A Study of Impact of Chronic Pain on Lifestyle and resource usage in the community

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A STUDY OF THE IMPACT OF CHRONIC PAIN ON LIFESTYLE AND RESOURCE USAGE IN THE COMMUNITY

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PhD THESIS

SEPTEMBER 2002

DECLARATION

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

Signed......Jane Latham..........................(candidate)

Date......20/9/02.........

STATEMENT 1

This thesis is the result of my own investigations, except where otherwise stated.

Other sources are acknowledged by giving explicit references. A bibliography is appended.

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Appendices

A STUDY OF THE IMPACT OF CHRONIC PAIN ON LIFESTYLE AND RESOURCE USAGE IN THE COMMUNITY

SUMMARY

This exploratory and descriptive study of the impact of chronic pain in the community is based in two general practices, one in London and the other in the south of England. Purposive sampling criteria identifies three groups (each group, n = 40), with patients selected at random from the general practice databases. Group 1 patients have chronic pain, which can only be identified through repeat analgesic prescriptions on general practice databases. Group 2 patients had visited their GP over the previous six months for other problems supposedly unrelated to pain, and Group 3 had no visits to their GP over the previous six months and are therefore supposedly fit and well. An additional cohort originally selected as patients for Groups 2 and 3 was subsequently identified at interview as having chronic pain (n = 16), but did not request repeat analgesic prescriptions.

To assess demographic profiles, lifestyle disability and resource utilisation, all patients (n = 136) completed a demographic data sheet, the Sickness Impact Profile and a Resources Questionnaire. Groups 1 and 4 also completed the McGill Pain Questionnaire. Group 1 chronic pain patients generally appear to report greater levels of lifestyle disability, and greater utilisation of health and social care and financial resources over longer periods of time than the other three groups. Although not reporting the same levels as Group 1, Group 4 patients with previously unrecognised chronic pain do generally appear to have greater levels of lifestyle disability and greater utilisation of resources than Groups 2 and 3 and warrant further investigation.

The findings of this study therefore indicate the need for more large-scale studies in general practice to explore further the impact of chronic pain in the community. The findings also inform the development of a proposed model of primary/secondary care for chronic pain.

1. INTRODUCTION

The need to develop a study, which describes the impact of the chronic pain experience on patients in the community, arose initially from observations of the researcher when working as a clinical nurse specialist in pain management. During this period, it became evident when trying to arrange support and services for patients with chronic non-malignant pain that this group of patients is not generally perceived as a priority for either primary or secondary services. This apparent lack of support appears to be underpinned by a lack of insight from both professionals and the lay public into the impact that chronic pain may actually have on the lifestyle of the patient, their family and society as a whole, potentially over a period of many years.

Such lack of support is in stark contrast to the support the researcher has been able to offer patients with malignant disease when working in community and palliative care nursing. Although the emotive issues surrounding life-limiting malignant disease may contribute towards high levels of publicity and support for such patients, there is also a wealth of studies, which provide evidence of the devastating impact on all aspects of life for patients, family and society. Reviewing the literature on chronic pain in the community, however, whilst several studies demonstrate the drain on professional, family and societal resources, there are relatively few studies providing valid and reliable evidence of the support required for patients with chronic pain. The need for a study which provides further insight into the impact of chronic pain in the community has therefore been identified, in order to provide more credible, valid and reliable evidence of resources required for more appropriate and effective pathways of care.

Due to the apparent lack of chronic pain studies drawn from general practice populations in the UK, this exploratory and descriptive study is based within two general practices in England, one situated in London and the other on the south coast in Sussex. In addition to routine demographic data, the McGill Pain Questionnaire and Sickness Impact Profile are valid and reliable measures, which have been utilised to assess pain and lifestyle respectively, whilst the Resources Questionnaire has been developed for the purpose of this study to assess resource utilisation. Findings therefore provide further insight not only into health and social care profiles of chronic pain patients in the community, but also the impact that such profiles may have on lifestyle and resource usage.

In the initial design of the study, purposive sampling criteria identify Groups 1 - 3 as patients with chronic pain, other problems unrelated to pain and those who are supposedly fit and well respectively (all n = 40). Group 4 has subsequently been identified as an important additional cohort originally selected for Groups 2 and 3, but nevertheless found to have chronic pain at interview (n = 16). The exploratory and descriptive nature of the study, format of questionnaire responses and sample size all contribute to the non-parametric level of data analysis described in the methodology and findings. Similarities and differences between the four groups and two practices are discussed throughout the findings, in order to ascertain factors which may not only influence recommendations for future pathways of health and social care for chronic pain patients, but also highlight implications for resources required for such developments.

The findings from this study inform key recommendations for clinical practice and future research, which particularly highlight the need to develop more comprehensive and appropriate screening protocols, health and social care pathways at the primary/secondary care interface, and discipline specific and multi/inter-professional education programmes. These recommendations are drawn together in a proposed model of primary/secondary care for chronic pain. This model describes how the management of chronic pain in general practice, joint primary/specialist secondary care protocols, and multi-professional health and social care working can be developed to provide a more positive and evidence-based approach to the care of chronic pain patients in the community.

2. LITERATURE REVIEW

2.1. Introduction

Extensive and systematic review of the literature currently relating to chronic pain has been undertaken by utilising a range of processes. Search strategies include specialist/multi-professional C.D. Rom packages such as Medline, Cinhal, Psychomed and Cochrane databases, with data being accessed from 1990. Key words/phrases utilised either in isolation, or in a number of combinations when accessing such systems include 'chronic pain', 'primary health care', 'community care', 'multi-professional', 'nursing', 'classification', 'socio-economic', 'methods', 'statistics', 'epidemiology', 'standards', 'quality', 'organisation', 'administration', 'treatment, 'management', 'utilisation', 'audit', and 'evaluation'. Internet sites such as the Department of Health, World Health Organisation, and The Pain Society also provided information on related health/social care policies and specific pain agendas.

Review of the literature highlights increasing acknowledgement and understanding of the subjective, individual and multi-dimensional concepts of pain, and evidence of a range of treatments and multi-professional strategies being developed for the treatment of chronic pain. There is, however, a lack of literature specifically relating to the management of chronic pain in the community, or care pathways across the primary/ secondary care interface. The following framework is therefore used to justify the research, enable presentation of the evidence and relevant research in a systematic way, to enhance the analysis, and also to ensure the field is well researched and the relevant information presented.

2.2. Prevalence and characteristics of chronic pain
2.3. Impact of chronic pain on lifestyle
2.4. Cost implications of chronic pain to society
2.5. Chronic pain in primary care
2.6. Summary

2.2. Prevalence and characteristics of chronic pain

For the purpose of describing prevalence and characteristics of chronic pain, attempts have been made to define pain in several different settings. The best way to look at these definitions is therefore to see how they have all arisen. Prevalence studies have been undertaken in pain clinic, general practice and general population settings, each of which provides different indications of pain prevalence. Methodological differences in study design, including population source and pain definitions, have been recognised in all settings as contributing towards ambiguity in pain prevalence rates. Examples of papers, which discuss such factors include: Andersson et al 1993, Crombie 1993, Crombie et al 1994, Raspe and Kohlmann 1994, Smith et al 1996, Birse and Lander 1998, Verhaak et al 1998, Bassols et al 1999. Verhaak et al (1998: 235) therefore suggest that:

> *'...Given the subjective elements involved in the measurement of chronic pain, an objective assessment of its 'real' prevalence seems a contradiction'.*

Pain clinic prevalence studies (for example: Bowsher et al 1987, Davies et al 1992) inherently assess only a unique self-limiting group due to factors such as catchment population, local referral systems and available clinical expertise. With as few as one per cent of chronic pain problems being referred to pain clinics (Smith et al 1996) and pronounced differences between even closely situated pain clinics (Davies et al 1992), such studies are not therefore able to provide generalised estimates of disease and/or symptom frequency (Crombie1993).

Whilst there are few general practice-based pain prevalence studies *(see Table 2.1)*, such studies can relate the number of patients with pain to the total number of patients registered at the practice in order to provide frequency estimates. Compared to both general population and pain clinic studies, these estimates should therefore provide a better indication of the magnitude of pain as a public health problem (Crombie 1993). However, lack of clarity in defining pain is again evident since early studies such as Baker and Mersky (1967), which fails to discriminate between acute and chronic pain when reporting prevalence of pain in patients who present to general practitioners (GPs) (63.8%, n = 276).

Pain definition	**Data collection**	**Size/prevalence**	**Study/country**
Pain that led to GP visit (any other pain excluded)	GP interview	n = 2886 22.0% total: 61.0% acute vs. 39.0% chronic	Frolund and Frolund (1986): Denmark *
Low back pain: any time in life/ 1 yr previously	Postal survey: registers of 136 GPs, 8 areas	n = 2667 58.3%: lifetime 36.1%: previous yr	Walsh et al (1992): Britain
Pain: lasted > 1 day in last month Pain: > 3 mths	Postal survey: from registers of 2 general practices	n = 1340 56.0%: > 1 day 35.0%: > 3 mths; 13.0%:widespread	Croft et al (1993): England
Pain most of the time ≥ 6 mths in last yr	Consecutive primary care attendees	Total n = 25916 Sample n = 5438 22.0%	Gureje et al (1998): 15 centres in 14 countries

* = included in review by Verhaak et al (1998)

Table 2.1 Examples of general practice pain prevalence studies (compiled from the literature, Latham 2002)

General population surveys should provide information on how much pain there actually is (Crombie 1993), however, methodological differences again contribute towards evidence of variation in prevalence *(see Table 2.2)*. A review of population or primary health care pain prevalence studies from 1984 to 1994 (n = 15) confirms such differences, and highlights that no studies specifically report on 'chronic benign pain' in the general population (Verhaak et al 1998). This review also suggests that whilst definitions such as acute versus chronic pain yield variation in prevalence data, neither sub-definitions nor type of methodology utilised appears to affect reported prevalence. For example, no clear-cut differences are evident between prevalence based on complex versus simple pain definitions, duration of pain and patient self-assessment versus physician assessment.

Pain definition	Data collection	Size/prevalence	Study/country
Pain: last 2 wks/ often, but not last 2 wks	Telephone survey + interview if had a pain complaint	n = 827 16.0%: last 2 wks 3.0%: other often	Crook et al (1984): Canada *
How many days had 7 types of pain over last yr	Telephone survey of census population sample	n = 1254 Individual % for 7 types of pain	Sternbach (1986): USA *
Back pain most days for ≥ 2 wks	Data from national health survey (NHANES II)	n = 10404 13.8%: cum. lifetime prev. 10.3%: in last yr 6.8%: point prev.	Deyo and Tsui-Wu (1987a, 1987b): USA
Pain ≥ 1 day/recur at 1 of 5 sites in last 6 mths	Postal survey + non-responders telephoned	n = 1016 Individual % for 5 sites of pain	Von Korff et al (1988): USA *
Had any pain: if so, how long? + characteristics	Postal survey	n = 827 66.0%: any pain 40.0%: > 6 mths	Brattberg et al (1989): Sweden *
Chronic pain: diabetic/general populations	Survey in hospital clinic and community	n = 962 diabetics n = 328 gen. pop. 25.2% vs. 15.5%	Chan and MacFarlane (1989): England
Musculo-skeletal pain last year: > 1 mth most days	Data from national health survey (NHANES I)	n = 3023 14.4%: chronic 7.4%: ? chronic	Magni et al (1990): USA *
Chronic pain: last ≥ 3 mths	Telephone survey	Households: 1037 Individuals: 2942 7.0%: ≥ 3 mths	Rigge (1990), Bowsher et al (1991): Britain
Perceived persistent or recurrent pain	Random postal survey: 15.0% of population register	n = 1609 55.0%: ≥ 3 mths 49.0%: > 6 mths 12.8%:?syndrome	Andersson et al (1993): Sweden *
Musculo-skeletal pain last year: > 1 wk	Letter/telephone contact + interview by Dr.	n = 702 44.9%: > 1 wk 26.0%: point prev.	Ballina Garcia et al (1994): Spain
Musculo-skeletal pain > 1 mth: local/widespread	Postal survey	n = 11780 17.0%:widespread 37.0%:back/neck	Hagen et al (1997): Norway
Pain last 12 mths: 77+ years	77.8%: interview others: tel/proxy	n = 537 73.0%	Brattberg et al (1996): Sweden
Usually not free of pain/discomfort	National Health Survey (NPHS)	n = 16989 17.0%	Millar (1996): Canada
Any pain: last 6 mths	Telephone survey	n = 410 44.0%	Birse and Lander (1998): Canada
Unduly prolonged pain: last 6 mths +	Postal survey	n = 1304 40.0%	Chrubasik et al (1998): Germany

Any pain in the last 6 mths	Telephone interview	n = 1964 78.6%	Bassols et al (1999): Spain
Widespread pain: ≥ 3 mths	Postal survey	n = 3004 4.7%	Hunt et al (1999): England

* = included in review by Verhaak et al (1998)

Table 2.2 Examples of general population pain prevalence studies (compiled from the literature, Latham 2002)

Prevalence of pain has, however, been found to vary with sub-definitions across studies, which does reflect differences in sample aetiology and definition criteria. The Clinical Standards Advisory Group (1994), for example, estimate the overall magnitude of 'backache' in the UK (point prev. = 15.0% - 30.0%, 1 month prev. = 30.0% - 40.0%, lifetime prev. = 60.0% - 80.0%). However, when the same criteria excludes back pain lasting less than two weeks, Deyo and Tsui-Wu (1987a) report a lower point prevalence (6.8 %, n = 10404). Croft et al (1993) also estimate a higher prevalence of chronic widespread pain in England and Wales when utilising the American College of Rheumatology (ACR) definition than Hunt et al (1999) who use a more stringent definition than that of the ACR (11.2% vs. 4.7%, n = 1340 and 3004 respectively).

Crook et al (1984) further breakdown persistent and intermittent pain prevalence (11.0% vs. 5.0% respectively, n = 827), whilst Von Korff et al (1990) report lower prevalence rates for severe/persistent pain than recurrent pain overall (severe/persistent overall = 8.0%, > 6 days = < 3.0%; recurrent overall = 37.0%; n = 1016). Deyo and Tsui-Wu (1987a) also report pain duration and pain severity for back pain of at least two weeks duration (< 1 month = 33.2%, 1 - 5 mths = 33.0%, ≥ 6 mths = 32.7%; mild = 21.2%, moderate = 43.4%, severe = 35.4%; n = 1516).

Graded verbal descriptor scales have therefore been utilised in an effort to further define and structure pain prevalence rates. Magni et al (1990) for example, grade musculo-skeletal pain into mild, moderate and severe (60.3%, 30.3% and 8.4% respectively; n = 416), while Chrubasik et al

(1998) grade persistent and episodic pain into mild, severe and intolerable (11.0%, 25.0% and 3.5%; 2.0%, 10.0% and 1.0% respectively; n = 1304). However, it is suggested that many of these terms may not mirror clinically relevant pain due to diffuse and vague concepts that are not easy to interpret (Brattberg et al 1990). A graded hierarchical scale of pain-related intensity and disability has subsequently been developed and evaluated on three groups of pain patients (back, headache and temporomandibular; n = 1213, 779 and 397 respectively) (Von Korff et al 1992):

Grade I;	low disability – low intensity
Grade II;	low disability – high intensity
Grade III;	high disability – moderately limiting
Grade IV;	high disability – severely limiting

Von Korff et al (1992) report significant and monotonically increasing relationship at both baseline and one-year follow-up for employment, pain-related functional limitations, depression, poor self-related health, frequent use of opioids and pain-related doctor visits ($p \leq 0.001$ - $p \leq 0.01$). In comparison, the number of days in pain over the previous six months relates more weakly to the same variables, and there is no apparent difference between recent and less recent onset of pain. Von Korff et al (1993) also utilise this scale to suggest that the outcome for back pain in primary care is best predicted by pain-related disability and days in pain rather than duration since onset (n = 1128), a view subsequently supported by Miedema et al (1998). Von Korff et al (1993: 855) therefore suggest that:

> *'...it may be more meaningful to distinguish characteristic levels of pain intensity, pain-related disability, and pain persistence than to classify patients as acute or chronic'.*

Historical and cultural variables between countries over time may not allow direct extrapolation of studies to other societies or groups (Locker 1989, Andersson et al 1993, Bassols et al 1999). Such reservations are supported by Gureje et al (1998) who report that whilst a 21.5 per cent prevalence of persistent pain in primary care patients is found across 15 centres in 14 countries (n = 25916), rates vary considerably between countries (for example: Ibadan, Nigeria 5.5% - Santiago, Chile 33.0%).

The Nuprin Pain Report (n = 1254) suggests that ethnicity may influence the frequency pain is reported, for example whites are more likely to report pain than blacks or Hispanics (Sternbach 1986). This is supported by Deyo and Tsui-Wu (1987a) who report significant racial differences in the life-time prevalence of low back pain (for example: white = 14.2%, black = 11.4%, other = 9.3%, $p < 0.005$). An apparent race-sex interaction is also observed with white men having the highest prevalence and black men the lowest prevalence (15.0% and 7.7% respectively). Women of both races are found to be similar, and closer to the white male rate (white women = 13.4% vs. black women = 14.5%).

Despite methodological differences, studies do consistently find that back, joint, head and extremity pains are the most frequently reported problems (for example: Crook et al 1984, Sternbach 1986, Brattberg et al 1989, Bowsher et al 1991, Millar 1996, Birse and Lander 1998, Gureje et al 1998, Bassols et al 1999). Andersson et al (1993), however, highlight that the estimated prevalence of individual problems is dependent on the source, for example 90 per cent of their general population sample complain of musculo-skeletal pain, whereas pain clinic studies report more evidence of complex syndromes such as neuropathic pain. Caution is also suggested when defining characteristics into such major groupings (Crombie 1993), for example, The International Association for the Study of Pain (IASP) (1986) recognise 34 syndromes within the major group of head pain alone.

Crook et al (1984) supported by Bowsher et al (1991) find that patients with pain generally report an associated diagnosis, with musculo-skeletal, headache and abdominal problems being most frequent. Different prevalence rates are also reported for diabetic patients compared to other chronic pain patients (25.2% vs. 15.5% respectively) (Chan and MacFarlane 1989), which reflects the importance of understanding individual disease processes. Focusing specifically on pain prevalence in disabled adults (Office of Population Censuses and Surveys (OPCS) 1988), Astin et al (1996) reports that severe pain is most closely associated with musculo-skeletal and circulatory diagnoses.

Onset of pain, however, is reported as spontaneous or unknown for over a third of patients (68.5%, n = 133), with pain after accidents being more frequent for those with persistent pain (26.0%, n = 23) (Crook et al 1984). Such findings are supported by Birse and Lander (1998) who also find over half of patients report spontaneous onset of pain (59.0%, n = 195), with pain due to accidents the most common antecedent (19.0%, n = 62). Deyo and Tsui (1987a) report that the peak age of onset for low back pain appears to be in the 20 - 29 year age group, with the number of new cases then slowly declining (for example: 20 - 29 years = 28.1%, 40 - 49 years = 20.4%, > 60 years = 4.7%).

In a review of 105 epidemiological pain studies, Unruh (1996) highlights that several methodological and statistical limitations of research must be considered when evaluating gender and the pain experience, for example:

i) gender is rarely the primary focus of research, but is typically a socio-economic variable;
ii) outcomes may be presented as percentages, with a lack of evidence of statistical significance of gender;
iii) uneven gender distribution within samples may obscure or exaggerate gender outcomes.

Unruh (1996) also concludes that greater attention should be given to the potentially damaging impact of gender-related prejudices, to ensure that optimal pain management is provided on an individual basis.

Although a range of prevalence rates across studies may reflect differing methodologies, women do consistently appear to report a greater number of pain symptoms more frequently than men. Examples of such studies include; Crook et al 1984, Frolund and Frolund 1986, Magni et al 1990, Croft et al 1993, Millar 1996, Birse and Landers 1998, Chrubasik et al 1998, Gureje et al 1998, Bassols et al 1999. Other studies, however, suggest there is no difference between the sexes (Brattberg et al 1989, Andersson 1993). Although Koutantji et al (1998) report that women do report a significantly greater number of symptoms than men, even when menstrual pain is excluded ($p < 0.05$, n = 180), they find no significant difference between the sexes for frequency of pain episodes overall.

There is evidence that higher female prevalence rates are related to specific disorders, for example headache, abdominal, menstrual and facial pain (Von Korff et al 1988, Koutantji et al 1998). This would support reports that other disorders such as cardiovascular disease in the form of chest pain may have a slightly higher male prevalence (Frolund and Frolund 1986, Koutantji et al 1998, Bassols 1999). Andersson et al (1993) and Bassols et al (1999) also find significantly higher levels of pain intensity for women than men ($p < 0.05$ and $p < 0.001$ respectively). Such differences are supported by Affleck et al (1999) who report that although rheumatoid arthritis patients have higher pain levels overall than osteoarthritis patients (n = 76 and 71 respectively), women have 72 per cent more pain than men regardless of the form of arthritis.

Evidence of debate about change in pain prevalence with age has been shown to be dependent on factors such as the site and type of pain (Sternbach 1986, Von Korff et al 1988, James et al 1991). Whilst Birse and Landers (1998) find similar prevalence for all age groups over 44 years, other authors suggest an increase with age (for example: Magni et al 1990, Bowsher et al 1991, Millar 1996, Chrubaşik et al 1998). Other studies find that pain prevalence generally increases with age, but then decreases in the elderly (Crook et al 1984, Deyo and Tsui-Wu 1987a), with women on average reporting maximum prevalence rates five years before men (Andersson 1993). Bassols et al (1999), however, suggest that whilst prevalence decreases with age, pain intensity increases.

Acknowledging the difficulties of comparing studies, Brattberg et al (1989 and 1996) suggest that pain prevalence increases up to the 45 - 64 age group, decreases in the younger elderly (65 - 74 years), and increases again in those aged 75 years and over (for example: 50.0% vs. 36.1% vs. 72.8% respectively). It is suggested that differences occur even within the over 77 year age group itself, for example, men over 85 years report more severe pain than those aged 77 - 84 years and women report decreased mild and severe pain with age (Brattburg et al 1996).

Compared to those with college education, self-reported low back pain is found to be more prevalent for those with only elementary school education (11.2% vs. 17.3% respectively) (Deyo and Tsui-Wu 1987a). The lower educational group is also significantly more likely to visit their GP for back pain (74.3% vs. 47.9%, $p < .0001$) and be hospitalised (40.8% vs. 27.1%, $p = .001$). Those with a lower level of education and from lower social class groups also report experiencing pain more frequently in a broad range of areas (Bassols et al 1999). Van der Meer and Mackenbach (1998) support such patterns when suggesting the course of health status in chronic illness is significantly less favourable for those with a lower educational level than those with higher vocational training or a university degree ($p < 0.05$, total n = 1921, low back pain n = 921).

Whilst the Nuprin Pain Report finds no striking differences in pain prevalence for different income groups, it does indicate slight differences in specific types of pain (Sternbach 1986). Lower income groups for example, report more joint pains and less muscle pains than higher income groups. Hagen et al (1997), however, surprisingly suggest from their general population survey of musculo-skeletal pain (n = 11780) that the prevalence of low back pain may be greater among highly educated, unmarried men. Conversely, Magni et al (1990) find in data extrapolated from a United States National Health Survey that those with a lower income are significantly more likely to report chronic musculo-skeletal pain ($p < 0.001$, n = 416).

Rekola et al (1993) report that occupation appears to influence pain prevalence age trends for musculo-skeletal symptoms. Visits to Finnish health physicians for example, is highest for men with low back pain in the 45 - 54 age group, and for women with neck pain in the 55 - 64 age group, which reflects regional employment trends. The link between social class and the type of work undertaken is highlighted when men in classes IV and V are found to be more likely to consult their GP about low back pain and time off work than social classes I and II (Walsh et al 1992). Such findings support Bowsher et al (1991) who report the overall prevalence of chronic pain in classes IV and V to be more than double that of classes I and II (15.0% vs. 7.0%, n = 328 and 177 respectively).

The evidence in this section therefore confirms the ambivalence surrounding pain prevalence both overall and in relation to sub-definitions. The influence that different population samples may have on interpretation of data is also evident. It is suggested that such problems may be minimised if studies focus on specific conditions, and in order to obtain meaningful and interpretable results they should also be clear and consistent with agreed definitions (Crombie 1993, Crombie et al 1994). A paucity of studies based within general practice, which can provide valuable important data to inform public health agendas, particularly highlights the need for further study in this area.

Although certain common demographic and clinical characteristics of patients with pain have been identified, caution is suggested when extrapolating data to other societies and groups. The majority of studies focus on unique sample groups such as those obtained from a specific diagnostic group, or pain clinic patients. Further studies would therefore be helpful within the general practice setting to further describe demographic and clinical characteristics of patients with pain in the community and also confirm whether such characteristics are similar or in any way different from other groups of general practice patients.

2.3. Impact of chronic pain on lifestyle

2.3.1. Impact of chronic pain on health status and disability

Von Korff et al (1988) suggest that patients with pain are more likely to characterise their health status as only fair or poor compared to those without pain (17.0% - 24.0% vs. 9.0% respectively). Such differences are supported by Birse and Landers (1998) who report that those without pain generally report their perceived health status as better than their peer group, whilst over a quarter of chronic pain patients report it to be worse (worse = 1.0% vs. 26.9%, n = 193 and 182 respectively). Patients with persistent pain from 14 countries with broad cultural differences are also assessed by physicians as having more unfavourable health status than those without pain (33.4% vs. 20.9% respectively) (Gureje et al 1998). However, cross-cultural characteristics should be considered when significant association is only found in five centres ($p < 0.05$).

Compared to the general population, chronic pain patients (n = 150) are found to have a significant reduction in health related quality of life ($p < 0.001$), which equates to patients with major illness such as depression or cardiopulmonary disease (Becker et al 1997). Consistently higher levels of depressive or anxiety disorders are also reported by all pain groups at 15 international centres ($p < 0.05$) (Gureje et al 1998). Von Korff et al (1988) supported by Magni et al (1990) find the prevalence of major depression is significantly higher for those with pain compared to those without (5.9% - 10.7% vs. 2.0%, 18.3% vs. 8.8% respectively, $p < 0.01$). However, Von Korff et al (1988) also report that higher levels of 'non-pain' somatic symptoms are associated with increased levels of depression, anxiety, family stress and poorer self-rated health in pain patients.

Widespread musculo-skeletal pain is reported to result in significantly lower levels of health-related quality of life than more localised regional pain ($p < 0.001$, n = 2042 and 4366 respectively) (Hagen et al 1997). Whilst supporting such findings, Hunt et al (1999) also suggest that chronic pain sub-definitions may influence perception of health status. For example, more stringent definitions of widespread chronic pain show clearer associations with feelings such as fatigue, 'non-pain' somatic symptoms and low levels of self-care than those that are less stringent. There is also evidence that significantly more persistent pain patients report poorer perceived general health compared to those with intermittent pain ($p < 0.01$) (Crook et al 1984), and that subjective health is better for those with pain duration of less than 12 months (Peters et al 2000).

Astin et al (1996) report that 1.7 million (30.0%) of disabled adults in private households in Britain are estimated to have pain symptoms severely affecting their daily activities. In America, Frymoyer and Cats-Baril (1991) highlight that as early as 1977, health statistics estimated that 5.2 million were disabled from back pain alone, of which half were thought to be permanently disabled. Although Workers Compensation statistics in America suggest that disability for back pain alone is increasing at 14 times the population growth (Aronoff 1991), Frymoyer and Cats-Baril (1991) suggest that it seems unlikely that prevalence per se has changed over time. However, they assert that what may have changed is society's perception, most particularly of the resultant disability, and health professionals response to that change in perception.

Whilst few studies have tried to relate symptoms with disability (Peach 1989), Mudrick (1988) identifies pain as a significant predictor of disability among mildly impaired disabled adults ($p < 0.01$, n = 2694) with data extrapolated from an American National Survey of Disability and Work (total n = 5519). She also suggests that even when functional limitations are modest, the presence of chronic pain may produce disability.

Conversely, severely impaired disabled adults not reporting pain are significantly less likely to report that they are disabled ($p < 0.01$, n = 1986).

Henriksson et al (1992), however, highlights that whilst a third of fibromyalgia patients (67.0%, total n = 58) report that little or no pain free time influences their daily life considerably, symptoms such as fatigue are also equally or more disabling. Bassols et al (1999) nevertheless confirm that personal and social activities are significantly or totally affected in 10.4 per cent of patients who suffer chronic pain. Activities most severely affected include working, studying and household duties (39.8%), labour-related tasks (36.2%) and sleep (34.1%). Significantly greater impact is reported for patients with generalised pain of longer duration and greater severity compared to those with less severe localised pain ($p < 0.05$, both groups n = 57) (Andersson et al 1996). Peters et al (2000) also suggests that more activity limitation appears to be associated with a longer duration of pain for patients with an unclear diagnosis.

The influence that different pain characteristics may have on overall limitation of activity is reported by Von Korff et al (1988) (range = facial pain 14.0% - headache 48.0%, n = 1016). Chan and MacFarlane (1989) find that compared to other diagnostic groups with pain, diabetic patients (n = 243) experience more restriction in walking (24.0% vs. 18.0%), other locomotor tasks (10.0% vs. 6.0%), domestic duties and employment (11.0% vs. 6.0%) and sleep disturbance (66.0% vs. 47.0%). Pain status does, however, also produce significant differences in the impact of chronic disability for the same diagnostic group (for example orthopaedic patients: $p < 0.05$, n = 109) (Lerner et al 1991).

Although Von Korff et al (1988) highlight that different disease characteristics may influence inability to work, much of the evidence relating to the impact of chronic pain on work and employment status is provided from back and musculo-skeletal pain studies. Miedema et al (1998) report that more chronic back patients stopped work during a seven-year period compared to non-chronic patients (26.0% vs. 15.0%, n = 124 and 317 respectively). Chronic musculo-skeletal pain also affects work over a one year period (for example: 7.9% = 1 - 30 days off work, 8.5% > 30 days, 23.1% changed jobs; n = 416) (Magni et al 1990). Such findings are supported by Bassols et al (1999) who report that pain overall results in time off work for 10.2 per cent of those in employment (41.2% < 1 week, 33.8% > 1 week - 1 month, average 47 days; n = 1015), with the unemployed reporting more limitations and bed rest.

Frymoyer et al (1983) report that the severity of pain also influences the ability to work, with greater low back pain severity being associated with increasing days off work over a one-year period (mean days: moderate pain = 21.7 vs. severe pain = 34.7; n = 565 and 288 respectively). Such findings are supported by Andersson et al (1996) who also find a significant increase in work absenteeism for those with generalised pain compared to those with localised or no pain (total days lost in last 3 mths = 2080, 1174 and 5; n = 57, 57 and 51 respectively, $p < 0.05$).

Whilst this data may not purely reflect the clinical 'pain' problem, difficulty in ascertaining temporal relationships often results in ambivalent findings relating to other potential contributory factors. Although Deyo and Tsui-Wu (1987b) for example, report that greater age in low back pain patients is significantly associated with days of activity limitation and household activity ($p < 0.0001$), Brattberg et al (1989) find activity limitation is as great for both the 45 - 64 and 65 - 84 year age groups. Scudds and Robertson (1998), however, also report that those over 65 years with musculo-skeletal pain are three times more likely to have difficulties than a 'non-pain' group (n = 644 and 241 respectively).

Less ambivalence is evident in relation to education, occupation and income, with low job satisfaction consistently being reported as a potential contributory factor (for example: Frymoyer and Cats-Baril 1991, Van Poppel et al 1998). Deyo and Tsui-Wu (1987b) report that even after controlling for factors such as severity, sciatica, occupation and age, fewer disability days per year correlates significantly with male back pain patients with a higher level of education (for example, mean days of limited activity: college = 28.2 vs. elementary =118.6, $p < 0.001$). Similarly, the percentage of back pain patients who cut down on their activities, decrease substantially in proportion to increasing family income (for example, mean days of limited activity: < \$5,000 = 115.4 vs. ≥ \$25,000 = 34.4), with income having a strong independent relationship with days of absenteeism from work.

Patrick and Scrivens (1989) highlight that no one policy encompasses service or benefit provision for disabled people in Britain, which results in a bewilderingly complex system of community provision. This is supported by Locker (1989) who reports in a study of rheumatoid arthritis patients (n = 24) that social and economic provision is perceived by most to be unacceptable, inefficient, inflexible and unresponsive to individual needs. Aronoff (1991) also suggests in America, that although disability for back pain alone is increasing at 14 times the population growth, social security systems inherently discourage potentially disabled individuals from even attempting rehabilitation. For example, whilst a claimant must prove that they are unable to be gainfully employed because of impairment for at least one year, to be eligible for rehabilitation they must demonstrate both the potential for work and that rehabilitation would be beneficial.

Acquiring services and benefits is also shown to be an exhaustive process, which may also result in the creation of stigma due to moral judgements being made by those involved and resultant support required (Locker 1989, Walker et al 1999). Charlton (1989a) suggests that social stigma associated with chronic conditions is not necessarily addressed in disability and handicap classification and that patients applying for disability status would benefit if more weight was given to social and psychological effects of impairment.

Whilst many physicians and insurance companies believe that compensation causes and perpetuates pain disability, this is not supported empirically (Rohling et al 1995, Turk and Okifuji 1996, Gallagher 1999a). Studies such as Greenhough and Fraser (1989), for example, support compensation being a strong incentive to maintain disability status, however, other studies (for example: Mendelson 1984 and Gallagher et al 1995) find no significant difference between chronic pain patients receiving worker's compensation or not. Gallagher et al (1995) also report that receipt of compensation actually appears to predict better outcome in those at risk of poor outcome due to external locus of control.

Rohling et al (1995), in a meta-analysis of 157 studies (136 comparisons, compensated vs. non-compensated, n = 3802 and 3849 respectively) assert that compensation results in an increase in pain perception and a reduction, but not loss of ability to benefit from medical and psychological treatment. However, Rohling et al (1995) also highlight that from this analysis it is impossible to examine the effects of a number of potentially significant variables such as medication, chronicity, status of litigation or claim review and the type and method of compensation received. The need to consider factors other than compensation is confirmed by Turk and Okifuji (1996). Whilst they report no significant difference in physical findings for compensation and non-compensation chronic pain patients (n = 95 and 63 respectively), they also find the compensation group have:

i) significantly higher levels of pain, perception of pain interference and perceived disability ($p < 0.001$), depression ($p < 0.002$) and affective distress ($p < 0.04$);
ii) significantly lower levels of general activities ($p < 0.02$).

Comparing those with traumatic and insidious onset in the two groups, however, the trauma group reports significantly higher perception of pain interference ($p < 0.001$), distracting response by significant others ($p < 0.004$), affective distress ($p < 0.009$) and levels of pain ($p < 0.03$). Turk and Okifuji (1996) suggest that maladaptive beliefs and increased attention to bodily sensations associated with traumatic onset may account for some differences between compensation and non-compensation chronic pain patients. Gallagher et al (1995) also report that the likelihood of receiving compensation is determined by the level of emotional distress and suggest that when considering disability, the compensation system needs to develop a protocol which considers both physical and psychological morbidity and takes into account possible interactive effects.

This section therefore highlights that lower levels of perceived health status are evident for those reporting pain compared to those who do not have pain. Particular significance is found for variables in the pain history such as more widespread pain and more persistent pain. Co-existence of depressive and anxiety disorders would appear to be significantly higher for those with pain, although such symptoms may also be associated with higher levels of 'non-pain' somatic symptoms in patients with pain. Such findings therefore confirm the need for further studies to identify factors, which may be potentially important in the perceived health status assessment of pain patients.

Chronic pain is also demonstrated to have a major impact on both the prevalence and severity of disability, with evidence that those severely disabled with pain are more likely to report they are disabled than those without pain. Diagnoses, age, site, level of severity and spread of pain, education, occupation and economic status, all appear to be important influencing factors in the relationship between chronic pain and disability. Findings presented support the need for further research in general practice populations and also the development of screening strategies which will enable the needs assessment of disabled chronic pain patients in the community to be more accurately targeted.

Service or benefit provision for disabled people is, however, described as bewildering, complex and unresponsive to individual needs, with systems inherently discouraging positive rehabilitation. The lack of emphasis on social and psychological assessment and recognition of potential stigma are evident and further development of needs-assessment is therefore identified. The positive and/or negative influences of compensation versus non-compensation are, however, found to be ambivalent, highlighting the need to research co-existing factors, which may affect compensation.

2.3.2. Impact of chronic pain on society and the family

Feuerstein et al (1985) report that whilst chronic low back pain patients experience a greater degree of environmental stress than a healthy control group (n = 33 and 35 respectively), mechanisms that exacerbate pain differ within both family and work environments. Increased family conflict for example, causes an increased physiological stress response, which is associated with increased distress and increased pain. Patients in highly independent and organised families, however, may seek attention through pain behaviours, successful outcome being associated with lower distress and increased pain. In the work environment increased pain is associated with lower peer cohesion, physical comfort and job clarity, while lower levels of pain and depression are related to increased work pressure.

Social phobia is reported in 11 per cent of disabled workers with musculo-skeletal pain (n = 146), with onset always during childhood or adolescence and preceding injury (Asmundson et al 1996). It is suggested therefore, that chronic pain and social phobia may either occur co-morbidly with minimal influence on each other, or chronic pain symptoms may be an expression of social phobia, for which societal acceptance of related disability is more likely and may even be rewarded through compensation. Haber (1985) reports that whilst over half of women referred to their clinic (53.0%, n = 150) showed a history of physical and/or sexual abuse, there had been no previous psychological or social assessment. He suggests that such factors may never be assessed because the very nature of the underlying problem may portray denial of psychological distress.

More effort to seek emotional support and distraction from pain is evident for patients with relatively severe pain who are more distressed (Affleck et al 1992) and those with persistent compared to intermittent pain (91.0% vs. 64.0% n = 90 and 43 respectively) (Crook et al 1984). Whilst women are more likely to seek social support measures for coping with chronic pain (Unruh 1996), Affleck et al (1999) find that men appear to use more direct coping mechanisms and appear less able to control emotional consequences through social and psychological support. Bates and Rankin-Hill (1994) report the relationship between ethno-cultural identity and locus of control, but equally suggest that this is not an absolute predictor of control style as intra-ethnic variations are also evident.

Although the economic and social costs of caring for patients with chronic pain has been shown to be enormous, the cost borne by informal caregivers and families is often not taken into account (Kurti and O'Dowd 1995). Snelling (1990) highlights that evidence relating to the influence of factors such as family structure on pain is conflicting, and suggests that societal trends such as those towards smaller families places decreasing prominence on such factors. Whilst there is a paucity of general population studies, Crook et al (1984) suggest that nearly a third of patients with pain (30.0%, total n = 133) have a parent with a disability or chronic illness.

Koutantji et al (1998) find a significant difference in reported pain symptoms for students with one or more familial pain models compared to those without ($p < 0.001$, n = 138 and 42 respectively), and concludes that more pain symptoms are reported by those with a greater number of familial pain models. Significant relationship is also evident between familial pain models and pain symptoms for both sexes (overall $p < 0.001$, women $p < 0.05$, men $p < 0.001$ respectively), with women reporting significantly more familial pain models than men, even after excluding menstrual pain ($p < 0.05$). Koutantji et al (1998) suggests this may be determined by factors such as socially determined learning mechanisms, conformity to sex-role stereotypes, and rewards from social environments.

Evidence about the impact of chronic pain on the family is therefore mainly obtained from pain clinic studies, which intrinsically implies a unique population (Crombie 1993). Rodgers et al (1996) highlight methodological limitations in many such studies, for example heterogeneous samples and no control groups, when they suggest no significant difference between pain clinic physical trauma patients and general medical patients for the presence of pain or disability in a relative (n = 39 and 29 respectively). Block (1981), however, highlights the physiological impact of chronic pain on family members, when spouses (n = 16) show greater increases in skin conductance to painful rather than neutral facial displays, and greater increases are found for those with higher marital satisfaction levels.

More specific features of the pain experience such as work-related issues appear to have greater congruency between patients and family members (n = 100 pairs) than highly subjective areas which the patient may find difficult to communicate to others (Swanson and Maruta 1980). Whilst Rowat and Knafl (1985) report that over a third of spouses may have difficulty in describing their partners pain (38.0%, total n = 40), they find that sensory qualities and interestingly 'restrictive and dictating' aspects of pain are those that the spouse is most likely to describe. However, they also highlight that other factors may affect accurate assessment, for example, spouses with low stress levels report a markedly lower level of pain intensity than the patient, whilst spouses with high stress levels report more accurate patient pain intensity levels.

The importance of defining and assessing familial terms such as 'significant other' is highlighted by Flor et al (1989). Whilst a moderately strong association is found between pain impact and solicitous responses in male patients living with their wives, no such association is evident for those not living with a marital partner ($r = 0.44$ and $r = -0.08$, n = 49 and 35 respectively, $p < 0.001$). Conversely, whilst fewer differences are found between female patients living with their husbands and those not living with a marital partner, the relationship between pain impact and solicitous responses is higher for the unmarried group (r = 0.15 and r = 49, n = 68 and 35 respectively, $p < 0.001$).

Some form of health disturbance, which is directly attributed to the pain situation is experienced by 83 per cent of pain patient spouses (emotional, physical and social: 83.0%, 69.0% and 25.0% respectively) (Rowat and Knafl 1985). Whilst spouses of pain patients with higher marital distress report significantly more physical symptoms that significantly correlate with depressed mood ($p < 0.05$), all spouses of pain patients have significantly more pain symptoms than spouses of other patient groups. Flor et al (1987a), for example, compare spouses of chronic pain and diabetic patients, and find that the pain spouses report significantly more pain symptoms with greater frequency than the diabetic spouses (< 1 pain symptom per week: 86.0% and 45.0% respectively, both n = 20, $p < 0.01$).

Shanfield et al (1979) and Taylor et al (1990) also report that pain patients and their spouses experience a significant degree of psychiatric distress ($p < 0.05$ - $p < 0.001$, n = 44 and 61 couples respectively) on sub-scales of the Symptom Checklist-90 (SCL-90), which is an indicator of psychological adjustment (Tait 1999). However, with the exception of patient somatisation, levels do not reach those of psychiatric outpatients, with distress levels tending to decrease with age and increase among women and the unemployed. Whilst Taylor et al (1990) suggest that spouse and patient scores generally follow a similar pattern, chronic pain patients score significantly higher than spouses on hostility and somatisation ($p < 0.01$) and psychotism ($p < 0.05$), whilst spouses score highest on somatisation, depression and anxiety.

Particularly when patient distress levels are high, significant correlation is evident between patients and their spouses ($p < 0.001$) (Shanfield et al 1979). Taylor et al (1990) also report that depression, interpersonal sensitivity and paranoid ideation show a significant, positive correlation between patient and spouse scores ($p < 0.01$, $p \leq 0.01$ and $p < 0.05$

respectively). Such findings support Rowat and Knafl (1985) who find significant correlation between high stress spouses and their partners in relation to hopelessness ($p < 0.001$), with factors of uncertainty and helplessness being identified as central to the distress experienced by 60 per cent of all spouses.

A significant degree of agreement between male pain patients and their spouses is evident on the extent of low marital satisfaction ($p < 0.01$, $n = 58$ couples), with a greater percentage of spouses reporting lower levels (Flor et al 1987a). Flor et al (1987b and 1989) also find significantly higher correlation between spouse responses and pain impact levels for patients of both sexes who report higher marital satisfaction (for example male patient solicitousness: high vs. low satisfaction, $r = 0.45$ vs. $r = -0.16$, $p < 0.001$). Schwartz et al (1996) suggest that the spouse's negative feelings regarding the patients' pain ($n = 61$ male patients and spouses) are significantly related to spouse perception of patients employing pain behaviours in response to situations of marital conflict.

Low stress and marital satisfaction levels in spouses appear to be associated with avoidance, ignoring and punishing behaviours (Rowat and Knafl 1985, Flor et al 1987a, Schwartz et al 1996). Whilst spouse marital satisfaction levels appear not to be significantly correlated with spouse reinforcement, Flor et al (1987b) suggest more positively reinforcing spouses experience significantly more interference from the pain ($p < 0.05$), but better mood and control over their lives ($p < 0.01$ and $p < 0.05$ respectively). There is debate about the role of spouse reinforcement in pain behaviours. Flor et al (1987b) for example, report spouse reinforcement is positively associated with patient reports of pain or reduction in activities, but passive or punishing responses are associated with greater activity. Schwartz et al (1996), however, find negative and hostile interactions are most strongly related to patient psychosocial impairment ($p < 0.001$), functional impairment and pain intensity ($p < 0.01$).

Swanson and Maruta (1980) suggest that greater congruency overall may be associated with management problems and ultimately poor treatment outcomes, perhaps indicating an undesirable mutuality rather than excellent communication. Affleck et al (1999), however, suggest other factors such as support-provider response to specific diseases may have a positive or negative influence on potential treatment options when they suggest that following emotional support, osteoarthritis patients report less pain, but rheumatoid arthritis patients report more pain (n = 71 and 76 respectively). Less than 50 per cent of spouses, however, would appear to attempt to influence their partner's pain through direct physical action, despite being aware of influencing factors (Rowat and Knafl 1985).

This section highlights the potentially complex relationships, which may occur between both society as a whole and the family more specifically, and patients reporting chronic pain. However, debate is still evident in relation to the potential positive and negative influences of factors such as the home and work environment, support and coping mechanisms, familial pain models, health-related disturbance, levels of stress and marital satisfaction. Such ambivalence highlights not only the need for further research, but also the importance of comprehensive, individual assessment of such factors when assessing a patient with chronic pain.

2.4. Cost implication of chronic pain to society

Whilst there is evidence of significant utilisation of health care and social security resources by chronic pain patients, differences in systems between countries may influence estimates of the overall cost of chronic pain (Andersson et al 1993, Watson et al 1998, Hutubessy et al 1999). Andersson et al (1993) for example, suggests that higher prevalence rates from Scandinavia may reflect a state health and insurance system that encourages the report of symptoms. Crook et al (1984), however, report that persistent chronic pain patients (n = 90) do nevertheless report frequent visits to a wide range of health care professionals, including a total of 234 hospitalised days in the previous year.

Becker et al (1997) find that compared to the general population, chronic pain patients (n = 150) spend five times more days in hospital in a five year period prior to pain clinic referral ($p < 0.001$). Greater health service utilisation for disabled adults with pain than those without pain is also reported (for example GPs: 91.7% vs. 75.3% respectively) (Astin et al 1996). Primary care studies such as Browne et al (1982) provide evidence across diagnostic groups that a small number of patients are responsible for utilising a significant proportion of services (10.0% - 25.0% consume < 60.0% of services, n = 9313). Such findings are supported by those of Hitchcock et al (1994) who find that chronic pain patients attending a self-help organisation (n = 204) on average sought treatment from 10 different health care providers with an average of 10 visits over the previous year.

The large expenditure associated with complementary therapy in the United States population is reported by Eisenberg et al (1993) with data extrapolated from a 1990 general population survey. Whilst the findings include all conditions, back pain, headaches and other chronic pain problems comprise 89 per cent of the problems for which therapy was utilised. They suggest that Americans made an estimated 425 million visits to providers of complementary therapy, with associated expenditure amounting to $13.7 billion, of which $10.3 billion was paid out of pocket. In comparison, $12.8 billion was paid out pocket for all hospitalisations and only 388 million visits were made to primary care physicians during 1990.

The Nuprin Pain Report estimates that during 1984 - 1985 more than four billion days lost from work were directly attributable to pain, which is about 23 days per person (Sternbach 1986). For full-time employees alone, this equates to 550 million days lost from work, about five days per person and $55 billion then in lost productivity. Brena and Chapman (1983) suggest that with the total number of American Social Security pain-related beneficiaries increasing from two to five million from 1971 to 1980, the loss of wages combined with social support systems could have cost taxpayers from $15,000 to $24,000 per individual with pain in 1980.

Much of the literature estimating the cost of pain is disease or syndrome specific. Specific reviews of back pain, however, also suggest that a small number of patients are responsible for utilising a significant proportion of the services (for example: Aronoff (1991), 25.0% account for nearly 90.0% of costs; Frymoyer and Cats-Baril (1991), 5.0% of disabled account for ≥ 75.0% of costs). A one-year prospective study in primary care (n = 1059) also reflects such trends when a minority of back pain patients are found to be responsible for a large proportion of both back pain specific costs and total health care costs (Engel et al 1996). For example, 21 per cent with high back pain specific costs (≥ $600) accounted for:

(i) 66.0% of back pain costs/42.0% of total costs;
(ii) 55.0% of primary care visits/91.0% of specialist back pain visits;
(iii) 100% of hospital admissions for back pain.

Significant independent predictors for high cost patients are also identified:

(i) increasing chronic pain grade (both costs $p < 0.001$);
(ii) more persistent pain (back pain specific $p < 0.001$, total $p < 0.05$);
(iii) disc disorder/sciatica (back pain specific $p < 0.001$, total $p < 0.05$);
(iv) back pain disability compensation (back pain only $p < 0.05$);
(v) increasing depression (total costs only $p < 0.05$).

The potential cost of inappropriate referral is also highlighted (Liu and Byrne 1995), with six per cent of back pain patients (total n = 170) referred for specialist investigation and treatment not meeting the criteria for referral, but accounting for 19 per cent of all costs.

Extrapolating low back pain data (men n = 1221) to the 50 million working men in America as early as 1975 - 1978, Frymoyer et al (1983) suggests that 217 million days per annum are lost from this group of the work force alone, which equated then to $11 billion per annum. Deyo et al (1991) also specifically review the cost of back pain in America and confirm evidence of the high costs and increasing trends for both direct and indirect health costs. Chronic backache and headache alone (n = 23 and 24 million respectively) has also been estimated to account for approximately 700 lost working days per annum in America (Brena and Chapman 1983). In the United Kingdom, Wells (1985) estimates that chronic low back pain cost the National Health Service (NHS) £156 million in 1982, which was equivalent to one per cent of the total NHS budget. Sickness benefit payments also amounted to £193 million with 33 million days lost in industrial out-put.

The high cost of developing chronic back pain is reported by Watson et al (1998) during a three-year follow-up of social security back pain claimants in Jersey (total n = 2291). Whilst the total cost of benefits for 1994 was £1,287,204, only three per cent of patients absent from work for more than six months account for 33 per cent of the benefit paid. Recurrence of back pain episodes (n = 422 within one year) is also found to increase duration of absence from work (1st absence mean = 20.73 days versus 2nd absence mean = 36.8 days). Such findings support Webster and Snook (1990), who report that 25 per cent of high-cost workers compensation cases for back pain account for 95 per cent of costs.

Direct health care costs, which include hospital, medical specialist, general practice and paramedical care, have been estimated in the Netherlands for back pain in 1991 as $367.6 million (van Tulder et al 1995) and neck pain in 1996 as $159.6 million (Borghouts et al 1999). White et al (1999) find that such costs also differ between sub-diagnostic groups who suffer pain, for example, fibromyalgia patients report higher costs than other musculo-skeletal patients with pain ($1028 Cdn vs. $751 Cdn, n = 100 and 76 respectively). Both pain groups, however, also report higher costs than two non-pain control groups ($536 Cdn and $463 Cdn, n = 135 and 380).

Health care costs may nevertheless differ depending on the costing method utilised (Frymoyer and Cats-Baril 1991, Hutubessy et al 1999).

Utilising the human capital method, for example, which takes into account long-term absenteeism and disability, van Tulder et al (1995) estimate the indirect cost of back pain in the Netherlands in 1991 to be $4.6 billion. Hutubessy et al (1999), however, estimate that the same indirect costs utilising the friction cost method, which takes into account only relatively short-term actual production costs, are three times lower at only $1.5 billion. Borghouts et al (1999) also support such differentials when the proportion of indirect costs for neck pain in the Netherlands is found to differ substantially for 1996 when utilising the human capital and friction cost methods ($526.5 million vs. $96 million respectively).

This section confirms the magnitude of the cost of pain to both individuals and society, although the majority of studies provide data from countries such as America, Canada and the Netherlands, or focus on specific diagnostic groups such as back pain. As Watson et al (1998) and Hutubessy et al (1999) highlight however, differences in social security and health care systems may suggest caution if extrapolating data between countries and across diagnostic groups. Studies within the general practice setting would therefore be helpful in identifying the cost of pain in the community to both individuals and society and also ascertaining whether such costs are similar or in any way different from other groups of general practice patients.

2.5. Chronic pain in primary care

2.5.1. General practice

Smith et al (1996) highlight that there is little research on the impact of chronic pain in the community, despite the fact that musculo-skeletal pain ranks second only to respiratory disease in symptoms that present to GPs (McCormick et al 1995). Back symptoms alone during 1977 - 1978 accounted for three per cent (> 32 million) of all visits to American physicians (Cypress 1983) and were the highest symptomatic reason for visits in women aged 35 - 64 years and men aged 25 - 64 years. Rekola et al (1993) also report that musculo-skeletal symptoms account for 27 per cent of all visits to Finnish physicians (total sample n = 6526, on average 15 per 1000 inhabitants). The predominant role of the GP is confirmed in other studies of pain prevalence (Crook et al 1984, Deyo and Tsui 1987a, Chrubasik et al 1998) and general practice frequent attenders (Browne et al 1982, Andersson et al 1995).

Regional differences are reported by Bowsher et al (1991), with southern England having lower chronic pain prevalence than other parts of Britain (8.0% vs.4.0% respectively, n = 208). Such differences are also reported in countries other than Britain, for example Deyo and Tsui-Wu (1987a) find that the western states of America report a low back pain prevalence rate nearly 38 per cent higher than that of those in the north-east. Walsh et al (1992), however, suggest that prevalence rates for low back pain do not differ significantly overall in eight areas of Great Britain, but highlight marked regional variation in frequency of consultation rates. Patients from Arbroath and Peterlee for example, are three to four times more likely to consult their GP than patients from St. Austell or Dorking.

Multiple sites of pain and the amount of distress caused by symptoms rather than frequency or duration of symptoms is thought to determine whether a patient visits their GP (for example: Ingham and Miller 1979, Peach 1989, Ballina Garcia et al 1994, Chrubasik et al 1998). In a seven-year follow-up study, Miedema et al (1998) suggests that 28 per cent of back pain patients (total n = 1823) presenting to GPs develop symptoms that could be defined as a 'chronic back disorder'. Although patient beliefs may change as a result of consultation (Salmon et al 1996), several distinct cultural factors may influence chronic pain perception, the ability to cope with pain and also acceptance and outcome of treatment options in such visits (Bates et al 1993 and 1997, Bates and Rankin-Hill 1994):

i) the language barrier;
ii) cultural differences in standards for expressing pain;

iii) views on mind-body relationships within different cultures and medical settings;

iv) cultural differences in the doctor-patient relationship;

v) the role of health care providers as patient advocates/counsellors;

vi) differences in views on responsibility for pain.

Whilst De Bock et al (1994) suggest low association between a patient's perception of pain and that of the physician (n = 198), GPs may be expected to treat such complex biopsychosocial problems in only a 15-minute visit (Cypress 1983, Deyo and Phillips 1996). Deyo and Diehl (1986), however, report that for patients attending a walk-in back pain clinic (n = 140), an adequate explanation rather than the length of time a consultation takes, is more likely to result in greater patient satisfaction, medication compliance and positive self-rated outcomes. The therapeutic effect of patient-provider interaction itself is also highlighted when patients attending a chiropractor report significantly more satisfaction with the amount of information they are given, perceived amount of concern and confidence than patients attending family physicians ($p < 0.05$, n = 242 and 215 respectively) (Cherkin and MacCornack 1989).

Such findings may reflect the fact that family physicians and chiropractors (n = 476 and 208 respectively) appear to differ greatly in their beliefs about back pain and clinical responses to patients (Cherkin et al 1988). More physicians than chiropractors for example, report feeling poorly trained when first entering practice and being more uncomfortable with situations involving a degree of uncertainty (42.0% vs. 15.0% and 45.0% vs. 36.0% respectively, $p < 0.05$). Although fewer physicians feel precise diagnosis is a prerequisite for treatment (31.0% vs. 91.0%, $p < 0.05$), they support passive therapies rather than active interventions more than chiropractors (58.0% vs. 14.0%, $p < 0.05$). Whilst more physicians believe that most back pain resolves within a few weeks without professional help (88.0% vs. 28.0%, $p < 0.05$), only 46 per cent report assuring patients of this fact.

However, more chiropractors feel they can do a lot to prevent acute back pain developing into a chronic situation (98.0% vs. 57.0%, $p < 0.05$).

Pain-related symptoms comprise 89 per cent of problems for which complementary therapies are utilised, with relaxation techniques, chiropractic and massage being the most common (Eisenberg et al 1993). However, there is evidence of concern from patients that doctors may not approve of alternative methods of care such as complementary therapies (Eisenberg et al 1993) or osteopathy (Vogel 1996). Eisenberg et al (1993) for example, find that whilst a third of the general population report using at least one complementary therapy in the previous year (34.0%, total n = 1539), 89 per cent of those patients self-referred, with 72 per cent not informing their doctor of the referral. This is despite 83 per cent of those patients also seeking treatment for the same condition from their doctor.

Sternbach (1986) and Ballina Garcia (1994) confirm that a number of patients with severe pain do not seek professional help due to lack of confidence in the ability to alleviate pain (18.0% and 17.1%, n = 1254 and 702 respectively). Indeed, failure rates of 18 per cent for analgesics and 40 per cent for other prescribed treatments are reported in both diabetic and other chronic pain patients (Chan and MacFarlane 1989). Bowsher et al (1991) also find that of those patients reporting chronic pain and taking analgesia in their UK survey, over two thirds still complain of pain (70.0%, n = 208). Whilst Becker et al (1997) confirm the wide variety of analgesics utilised prior to a specialist pain referral, Davies et al (1997) suggest that inadequate utilisation of standard chronic pain therapies in primary care may account for such poor outcomes.

Acknowledging the unique sample of chronic pain patients who attend a self-help pain organisation, Hitchcock et al (1994) find that half (50.0%, total n = 204) report inadequate pain relief, despite the use of analgesic and co-adjuvant therapies. Stronger medication rather than a higher dosage of the same medication is believed to be needed by 57 per cent of patients, with 41 per cent reporting that their physician has refused to prescribe enough pain medication to relieve their pain. A wide range of substances are also used to relieve pain, including greater use of sleeping pills and tranquillizers that are not prescribed for pain compared those specifically prescribed for pain (34.0% vs. 4.0% respectively).

Antonov and Isacson (1996) report from a Swedish National Living Survey that over a third of respondents utilise analgesics at least once during the previous two weeks (35.0%, n = 13295), with higher utilisation by women than men (42.4% vs. 26.8% respectively). Whilst self-perceived poor health status and pain explain much analgesic use, with lifestyle, sleep problems and health care utilisation identified as other independent factors, they also suggest that analgesics may be utilised to relieve symptoms and health problems other than pain. Millar (1996) supports such findings and reports that over half of patients with no pain have taken analgesics in the previous month (59.0%, total sample n = 16989).

This section confirms that despite chronic pain being one of the major sources of referral to GPs, there is little evidence of chronic pain research in this setting and further research is required. Referral to GPs is likely to occur with factors such as multiple pain sites and levels of distress present, while non-referral is influenced by lack of belief in GPs, poor analgesic efficacy and cultural influences. The potential of approaches such as chiropractic and complementary therapies are highlighted.

2.5.2. Community-based nursing practice

Poulton (1996) suggests that the nursing profession, are being encouraged to broaden their scope of practice, which includes in some circumstances being the first point of contact within the health care system. Indeed, there is evidence of the benefits to patients of such practice in pain management within the primary care setting since mid-1970, when Greenfield et al (1975) describe a nurse-administered protocol for triage and management of low back pain at a walk-in clinic. When evaluating two groups of patients randomly allocated to either a nurse protocol group or a physician group (n = 222 and 197 respectively), no significant difference was found in symptomatic relief or serious disease, but greater patient satisfaction was expressed with the care received in the nurse-protocol group.

Despite such shifts in health care delivery providing greater awareness of pain as a major health problem and continuing to push into expanded community-based nursing practice, Davis (1998) suggests that evidence of limited emphasis on pain management is due in part to lack attention to pain in nursing curricula. Watt-Watson (1987), for example, reported that the majority of graduate and student nurses (58.0% and 73.0%, n = 106 and 101 respectively) expect changes in vital signs for chronic pain and do not understand how to differentiate chronic from acute pain.

De Rond et al (2000) suggests that nurse education alone is not enough to improve pain management behaviour, however, in a study of hospital nurses (n = 216), they find that programmes incorporating both educational and clinical initiatives may have more beneficial impact on practice. Clarke et al (1996) highlight that although many authors have documented a lack of knowledge and inappropriate beliefs and attitudes about pain among nurses, there is little evidence of research relating specifically to primary care.

Whilst Tornkvist et al (1998) support the co-ordinating role of primary care services in relation to the management of pain, they also highlight the lack of knowledge and expertise available to meet such needs. Although the majority of district nurses in their study (85.0%, total n = 72) are in contact with patients suffering from chronic conditions at least once a week, only five have undertaken either a two-day pain course or an acupuncture course in addition to having district nursing and pre-registration training. Education in pain control was, however, seen as potentially improving care to a very high, large, or some degree by participants (59.0%, 29.0% and 11.0% respectively).

In the same study no written information, policies or procedures for pain management are evident and specialist expertise and co-operation from other team members is limited, despite nearly a third of nurses (61.0%) being dissatisfied with overall current practice. Individual assessment of chronic pain is found to be performed by only 30 per cent, with seven per cent utilising the visual analogue scale as a tool to evaluate treatments and only a minority of nurses recording a comprehensive nursing pain history and treatment plan. Such findings support Watt-Watson (1987) who reports that only three per cent of nurses (total n = 207) used any standard approach to pain assessment.

District nurses most satisfied with their own management of pain (54.0%) are also found to be significantly more satisfied with team co-operation, present routines ($p \leq 0.001$) and their own knowledge base and patient follow-up ($p < 0.01$) (Tornkvist et al 1998). Clarke et al (1996), however, reports inconsistency between perceived knowledge of pain management and actual practice (registered nurses, n = 120). Walker (1994) also finds that patients in pain at home (n = 190) may consider different factors to community nurses (n = 37) when evaluating satisfaction with their care. Acknowledging the limitations of only an elderly sample (> 65 years), she finds that whilst most patients value the psychosocial components of their care, the nurses appear to feel relatively helpless when medical treatments fail, despite recognising the importance of good social support.

This section highlights the broadening scope of practice, which nurses in all settings are being encouraged to undertake. Despite evidence of early initiatives relating to pain management in community nursing, nurse education and training required to develop such practice, does not appear to meet the needs of community nurses, and/or is not available in relevant pre- and post-registration curricula. Evidence of the need to review and develop training, which incorporates educational and clinical components, is also found in this review.

2.5.3. Pain management at the primary/secondary care interface

Despite successful diagnosis and treatment of problems such as low back pain recognised as remaining elusive (Borkan et al 1998) a paucity of chronic pain studies based within primary care still exists. Cherkin (1996) suggests that this has occurred due to pain specialists and surgeons dominating clinical and research agendas, whilst having little appreciation for the realities and concerns in the primary care setting. Strategies developed by such specialists may not, however, be the most appropriate for the problems which GPs encounter (Hart et al 1995). Waddell (1996) supports these concerns and concludes that as specialist services are generally inappropriate for the management of non-specific low back pain, there should be a fundamental shift in resources to primary care.

Overall, family practice and pain clinic patients ($n = 87$ and 44 respectively) are found to have similar demographic variables and pain profiles (Crook and Tunks 1985, Crook et al 1986 and 1989). The only significant difference is that more pain clinic patients report being disabled and unemployed ($p < 0.01$), with more likelihood of precipitating factors such as work-related accidents. Those referred to a pain clinic, however, report greater health care utilisation, impairment of work and leisure activity, with worse levels of social, emotional, physical functioning and life satisfaction, and greater difficulty in activities of daily living. Crook et al (1986) suggest therefore, that it is not the persistence of symptoms, but psychosocial distress that increases the probability of referral to specialist pain clinics by GPs.

Although Turner (1996) reports the potential benefit of developing interventions in primary care such as cognitive-behavioural therapies, ambivalent findings are nevertheless evident in relation to the efficacy of pain management initiatives in such settings. Von Korff et al (1994) suggest outcomes may be influenced by basic factors such as practice style, for example, a style consistent with back pain self-care is associated with higher satisfaction levels and patient education than a style frequently prescribing medication and bed rest (n = 266 and 239 respectively). Cherkin et al (1991a) also report differences are evident between GPs perceptions of their ability to treat pain in primary care and the outcomes reported by patients. After a medical education programme, for example, a significant proportion of family physicians report feeling more able to manage back pain ($p < 0.01$, n = 29), however, patient assessments find no significant improvement in outcomes (n = 157) (Cherkin et al 1991b).

The benefits of utilising resources in primary care for early treatment of pain is reported (Linton et al 1993), with eight times less risk of developing chronic back pain suggested for those on a back pain programme than those undergoing usual treatment (1 year follow-up, n = 134 and 106 respectively). Improvement occurs, however, only in those with no previous back pain history and no history of chronic back pain. Roland et al (1983) also report that low back pain for more than one week prior to initial presentation is one of the most consistent predictors of high disability and poor outcome (n = 230 episodes) and is related to recurrence over the following year, although not the initial episode. Von Korff et al (1993), however, suggest that the outcome for back pain in primary care (n = 1128) is best predicted by pain-related disability and days in pain rather than duration since onset.

Berwick et al (1989) fail to find any positive effect on pain or functional status for patients randomly allocated to a one-session low back school or one-year compliance package compared to those receiving usual care in primary care (n = 72 and 76 and 74 respectively). Only limited short-term success is also evident for back pain patients receiving an educational booklet with support from a specialist trained clinic nurse, compared to either usual care or an educational booklet with no support (total n = 293) (Cherkin et al 1996). Roland and Dixon (1989), however, report that significantly fewer patients receiving an educational booklet consulted with their GPs in the next year than those not in receipt (35.6% vs. 42.2%, n = 483 and 453 respectively, $p < 0.05$).

Whilst patient satisfaction is found to be a significant positive outcome of educational programmes, the subjective nature of liking the sessions and support is not necessarily associated with measured improvements in pain or function (Berwick et al 1989, Cherkin et al 1996). Indeed, increased levels of health care visits after the initial intervention due to such a positive outcome are found by Berwick et al (1989). McCarberg and Wolf (1999) report that whilst those receiving cognitive behavioural pain management treatment are significantly more satisfied with their treatment than those only receiving a home-study manual (78.0% vs. 43.2%, n = 113 and 132 respectively, $p < 0.001$), both groups exhibit improvements in pain-related lifestyle. Cherkin et al (1996) therefore suggests that positive outcomes in patient satisfaction alone do not justify the costs of training, salary and administration required for such educational programmes.

Significant short-term improvements are, however, reported for patients undertaking a nurse-delivered psycho-educational chronic pain self-management programme (n = 102) (LeFort et al 1998), which is modelled on a well-established cost-effective Arthritis Self-Help course (Kruger et al 1998). Moore et al (2000) report differences in outcomes over time for the administration of such programmes by, for example, lay volunteers and professional leaders, with more substantial improvements found at three month follow-up for those with professional leaders, but improvement at six months for those led by volunteers. Any differences with no-treatment control groups are not, however, evident at one year. LeFort et al (1998) suggest that such programmes may nevertheless have the potential to be reliably delivered in a variety of low-cost community settings.

McCarberg and Wolf (1999) suggest that the failure of programmes to demonstrate overall long-term activity gains in primary care may not only reflect the natural history of the disease, but also lack of the physical exercise component included in comprehensive pain rehabilitation programmes. Saunders et al (2000) also report that patients most in need of such programmes, are those most unlikely to participate. Of almost 6000 primary care back pain patients invited to participate in a self-management intervention, they report an uptake of only eight per cent (n = 481), with volunteers tending to have moderate activity limitation and to be white, older, retired and better educated.

Frolund and Frolund (1986) suggest that as few as 14 per cent of patients who present with pain symptoms (total n = 641) are referred to other services. Lack of communication between GPs and specialists about the purpose of such referrals is also reported (back pain patients, n = 182), with 74.7 per cent receiving specialist treatment following outpatient referral, but treatment being the main reason for referral in only 28.6 per cent of cases (Coulter et al 1991). Of those patients referred primarily for advice or reassurance, 68.5 per cent receive some form of treatment. Coulter et al (1991) also find that of 33.5 per cent of back pain patients are still consulting with their GP five years after specialist referral (total n = 179), with the highest proportion initially presenting to their GP a year or more prior to that referral. Such findings support Bowsher et al (1987), who highlight that duration of pain prior to specialist pain clinic referral is potentially detrimental to successful outcomes.

Even with initial supervision provided by a pain specialist, Becker et al (2000) find that GPs do not appear able to effectively manage patients with severe chronic pain in the primary care setting. Whilst patients undertaking out-patient multi-disciplinary pain treatment (n = 63) report significant reduction in pain intensity and psychological well-being ($p < 0.001$), quality of sleep and physical functioning ($p < 0.05$) in a six month follow-up period, no such improvement is reflected in a comparative group treated by a trained GP. However, only about only one per cent of chronic pain is thought to reach specialist pain units in the UK (Smith et al 1996).

Primary care is nevertheless recognised as a major referral source to specialist pain units, with Bowsher et al (1987) reporting that 46.5 per cent of referrals are from GPs as early as the mid-1970s (total n = 1056).

The majority of models currently developed for primary care, focus on the management of back pain. Von Korff (1999), for example, describes an individualised 'Stepped Care Model' of managing back pain in the community, which provides indicators of care for all back pain patients (Step 1) through to those with severe impairment (Step 3), with referral to more comprehensive programmes as the severity of impairment increases. Becker et al (2000) supports such a model when suggesting that a minimal intervention model within primary care for less severe chronic pain patients may potentially be more effective than attempting to manage patients with severe chronic pain in the primary care setting.

Benefits have been reported in care models such as the American 'pain medicine and primary care community rehabilitation model', which are based in the community and focus on combining specialist pain services with identified networks of community health care professionals (Gallagher et al 1999a and 1999b). Such models utilise outcomes-based algorithms for clinical conditions and situations and acknowledge the need for monitored and timely access to primary and specialist services through cohesive information systems. Reviewing a similar earlier model, Caudill et al (1991) report that compared with the year prior to being included in the treatment model, they found savings in costs for patients during both the year of treatment and in the year after treatment ended (15.0% and > 30.0% respectively).

This section demonstrates the lack of cohesive strategy for the management of chronic pain between the primary care and specialist pain management interface. The majority of clinical and research agendas still appear to be driven by secondary care clinicians, who may have little experience of the problems encountered in primary care, from where the majority of chronic pain patients are seen. No clear criteria are evident for referral of chronic pain patients by GPs to specialist services, with evidence that factors such as psychosocial distress rather than clinical pain profiles may potentially be catalysts for such referrals. The potential benefits of a primary/secondary model of care for chronic pain patients are however evident, although such a model requires further development within the UK healthcare system.

Evidence to date supports the fact that more positive outcomes may be obtained from earlier interventions for chronic pain in primary care, with less positive outcomes found for more chronic and complex problems. This would support the development of more cohesive pathways of care at the primary/secondary care interface of pain management. Ambivalence in relation to the efficacy of educational and cognitive-behavioural programmes in primary care also highlights the need for further research and evaluation of, for example, joint referral and outreach clinic initiatives within such a model of care.

2.6. Summary

This literature review therefore confirms the ambivalence surrounding pain prevalence both overall and in relation to sub-definitions. The influence that different population samples may have on interpretation of data is highlighted, with evidence of a paucity of prevalence studies based within general practice. Certain common demographic and clinical characteristics of patients with pain have been identified, although it is suggested that caution should be taken in extrapolating data to other societies and groups. The majority of studies, however, focus on unique sample groups such as those obtained from a specific diagnostic group, or a pain clinic.

Lower levels of perceived health status are evident for those reporting pain compared to those who do not have pain, with particular significance found for variables in the pain history such as more widespread pain and more persistent pain. Co-existence of depressive and anxiety disorders would appear to be significantly higher for those with pain, although such symptoms may also be associated with higher levels of 'non-pain' somatic symptoms in patients with pain. Chronic pain is confirmed as having a major impact on both the prevalence and severity of disability, with those severely disabled with pain more likely to report that they are disabled than those without pain. Diagnoses, age, site, level of severity and spread of pain, education, occupation and economic status, all appear important influencing factors in the relationship between chronic pain and disability.

Service or benefit provision for disabled people is found to be bewildering, complex and unresponsive to individual needs, with systems inherently discouraging positive rehabilitation. The lack of emphasis on social and psychological assessment and recognition of potential stigma are also supported, although the potentially complex relationships, which may occur between patients reporting chronic pain, the family and society as a whole are evident. However, debate remains in relation to the potential positive and negative influences of factors such as the home and work environment, support and coping mechanisms, familial pain models, health-related disturbance, and levels of stress and marital satisfaction.

Although the positive and/or negative influences of factors such as compensation versus non-compensation are found to be ambivalent, the magnitude of the cost of pain to both individuals and society is confirmed. However, the majority of studies present data from countries such as America, Canada, and the Netherlands, or focus on specific diagnostic groups such as back pain. Differences in social security and health care systems are therefore highlighted, with caution suggested if extrapolating data between countries and across diagnostic groups.

Despite chronic pain being one of the major sources of referral to GPs, there is little evidence of chronic pain research in this setting. Referral to GPs is likely to occur with factors such as multiple pain sites and levels of distress present, while non-referral is influenced by lack of belief in GPs, poor analgesic efficacy and cultural influences. The potential of approaches such as chiropractic and complementary therapies are highlighted. The broadening scope of practice, which nurses in all settings are being encouraged to undertake is highlighted. However, despite evidence of early initiatives relating to pain management in community nursing, nurse education and training required to develop such practice, does not appear to meet the needs of community nurses, and/or is not available in relevant pre- and post-registration curricula.

Lack of a cohesive strategy at the primary/specialist pain management interface is confirmed, with the majority of clinical and research agendas still being driven by secondary care clinicians, who may have little experience of the problems encountered in primary care. No clear criteria are evident for referral of chronic pain patients by GPs to specialist services, with evidence that factors such as psychosocial distress rather than clinical pain profiles may be catalysts for referral. However, the potential benefits of a primary/secondary model of care for chronic pain patients are highlighted. Evidence to date suggests that more positive outcomes may be obtained from earlier interventions for chronic pain in primary care, with less positive outcomes found for more chronic and complex problems. Evidence is also ambivalent in relation to the efficacy of educational and cognitive-behavioural programmes in primary care.

The paucity of pain prevalence studies based within general practice particularly highlights the need for further study in this area, with clear, consistent and agreed definitions optimising the potential for meaningful and interpretable results. The need for further studies to identify factors, which may be potentially important in the perceived health status assessment of pain patients in the community, is supported. Such studies would be helpful in confirming demographic and clinical characteristics of patients with pain in the community and also observing whether such characteristics are similar or in any way different from other groups of patients, thus providing valuable data to inform public health agendas.

On-going debate relating to components of the complex relationships, which may occur between society, the family and patients reporting chronic pain, highlights not only the need for further research, but also the importance of defining components required to enable comprehensive, individual assessment of such factors when assessing such patients. The need for further research in general practice and also development of screening strategies is supported, as this will enable the total needs assessment of disabled chronic pain patients to be more accurately targeted for health/social care and financial benefits. Such studies would also contribute towards identifying the cost of pain in the community to both individuals and society and ascertain whether such costs are similar or in any way different to other groups of patients.

Lack of a cohesive strategy for the management of chronic pain between the primary care/specialist pain management interface, indicates the need for a clearer pathway of care to be developed between the primary/secondary care interface. Such a model of care for chronic pain patients also requires further development within the UK healthcare system with particular emphasis on the need for further research and evaluation of primary/secondary care initiatives such as joint referral/outreach clinics. There is currently little evidence of such clinical initiatives in the general practice setting and further research is required. Evidence of the need to review and develop community practitioner training, which incorporates educational and clinical components, is also found in this review.

This literature review therefore confirms justification for a study based within general practice, which further researches the characteristics and lifestyle of chronic pain patients in the community, and which will contribute towards the development of more informed pathways of care for this group of patients.

3. METHODOLOGY

3.1. General introduction to the methodology chapter

Justification for a descriptive, exploratory study of chronic pain patients lifestyle disability and resource usage in UK general practice has been highlighted by observations in clinical practice, and confirmed by the literature review. The nature of the enquiry takes into account professional and lay-peoples views, which includes primarily presenting clear and acceptable rationale for the study in order to achieve consent from both the general practices and also from the local ethical committees. The need for quantitative rather than qualitative measures of health outcome, pain and resources has also been identified in order to address key issues requiring exploration and provide more objective findings on the inherently subjective nature of the chronic pain experience.

This chapter also includes decisions on purposive sampling criteria for a chronic pain group in general practice, and other groups of patients in general practice from whom comparisons can be drawn. Decisions relating to the method employed for the process of data collection, the circumstances in which data is collected, and planned process of analysis, which includes variable coding, data processing, and descriptive and statistical analysis employed are also described. The pilot study influences several sections of this chapter, and is therefore referred to as appropriate throughout the text. The following sections therefore present the methodological framework for this study.

3.2. Selection of the Sickness Impact Profile
3.3. Selection of the McGill Pain Questionnaire
3.4. The Resources Questionnaire
3.5. The Demographic Front Sheet
3.6. Access and sampling
3.7. Process of data collection
3.8. Planned process of analysis
3.9. Summary

3.2. Selection of the Sickness Impact Profile

3.2.1. Introduction

Until the 1970s health care was mainly structure, and/or process based, despite the obviously flawed assumption that structure and process relate highly to outcome. Increasing government and public interest in relation to the cost and quality of health care then highlighted that existing outcome measures were, however, inappropriate and/or insensitive (Brook and Appel 1973). The need for widely applicable, valid and reliable measurements of health care outcome, rather than structure or process based assessments was therefore recognised (Gilson et al 1975).

When considering how the actual concept of health is defined, The World Health Organisation (WHO) 1946 Constitution defined the principle as:

> *'... a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.' (WHO 1958: 459)*

Whilst providing no conceptual or operational definitions, this principle began to move away from negative concepts of health such as absence of disease or disability. The emphasis has continued to shift further towards individuals increasing control over their own health and lifestyle (for example: WHO 1985, Ottawa Charter for Health Promotion 1986, Department of Health 1992, 1996, 1998). Bowling (1997: 5) suggests:

> *'There is now broad agreement that the concept of positive health is more than the mere absence of disease or disability and implies 'completeness' and 'full functioning' or 'efficiency' of mind and body and social adjustment. Beyond this there is no one accepted definition.'*

To measure health outcome in the range of patient groups in this study *(see 3.5, pages 84 - 85)*, a broad measure of health outcome is required. This measure should also have the ability to complement other assessment tools being utilised in the study, such as the McGill Pain Questionnaire (MPQ) (Melzack 1975), which provides more specific profiles on the patients pain. The following framework therefore justifies from a practitioner perspective why the Sickness Impact Profile (SIP) most appropriately meets such criteria and is utilised in this study.

3.2.2. Rationale for selection over other health outcome measures
3.2.3. Evidence of validity
3.2.4. Evidence of reliability
3.2.5. Final revision and utilisation in pain studies

3.2.2. Rationale for selection over other health outcome measures

Many health outcome measures have been designed to measure specific outcomes such as functional ability, psychological well being, social environment and life-satisfaction. Bowling (1997) and McDowell and Newell (1996) provide comprehensive reviews of such measures. Broader health outcome measurement may be underpinned by professional and/or lay concepts of well being. Measures such as the McMaster Health Index Questionnaire (Chambers et al 1976) and the Short-Form-36 Health Survey (SF-36) (Brazier et al 1992), for example, are derived from professional concepts of well being. Wide discrepancies are, however, reported between health professional and patient assessments of outcome (Slevin et al 1988), and Bowling (1997: 10) suggests that:

> *'... few indicators attempt to measure patients' perceptions of improvement/satisfaction with level of performance; yet it is this element which is largely responsible for predicting whether individuals seek care, accept treatment and consider themselves to be well and 'recovered'.'*

The SIP (Bergner et al 1981) and the Nottingham Health Profile (Hunt et al 1980 and 1985) not only provide a broad health outcome measurement, but are also underpinned by concepts of well being derived from lay people. Whilst both profiles have been criticised for results being skewed towards the healthy end of the scale and not being sensitive to positive well-being (Brazier et al 1992, Hall et al 1987), this is not unique to these two profiles (Bowling 1997). The SIP was one of the first health outcome measures to be developed and within this context there is evidence of thorough reliability and validity testing in order to try and pre-empt potential criticism (Carter et al 1976). Anderson et al (1993) highlight that both the scale and scoring systems of the Nottingham Health Profile have been criticised for inconsistencies and anomalies, for example:

i) each section does not represent just one dimension and co-variation between items in different categories raises difficulties in interpreting a cross-category profile (Kind and Carr-Hill 1987);
ii) items provide only a limited measure of function, with some areas of disability not being addressed at all (Bowling 1997);
iii) the weighting system of items is not sensitive to people whose disabilities affect role performance and items in several sections do not have a wide range of scores (Jenkinson 1991).

The Nottingham Health Profile also comprises eight pain specific items, with the MPQ having been utilised during validity testing to provide concurrent evidence for differences pre/post surgery in arthritis patients (overall r = 0.74, pain specific r = 0.78, n = 98) (McDowell et al 1978). Concern may therefore be raised over potential duplication of data obtained from the two questionnaires. The Nottingham Health Profile therefore provides a relatively limited dimension profile with concerns in relation to reliability, validity and potential overlap with the MPQ. Whilst the length of the SIP has been raised as a potential problem (Bowling 1997, McDowell and Newell 1996), it nevertheless appears to provide a broader dimension profile with sounder evidence of reliability and validity.

The SIP has been adapted for the UK as the Functional Limitations Profile, with high levels of agreement found between the two profiles in terms of values assigned to individual items and the items rated 'most dysfunctional' (Charlton et al 1983, Patrick et al 1985, Charlton 1989a and 1989b). More consistent disagreement is evident as the severity of dysfunction becomes less severe, which supports the concept that 'health' is more difficult to define than 'illness'. Fitzpatrick et al (1989) and Williams and Bury (1989) support these findings in rheumatoid arthritis and chronic obstructive pulmonary disease patients (n = 105 and 92 respectively). Bowling (1997) therefore suggests that the SIP should still be used in preference to the Functional Limitations Profile because of more thorough evidence of validity and reliability.

The evidence in this section therefore supports selection of the SIP as best fulfilling the criteria required, with McDowell and Newell (1996: 436) confirming that:

> *'...The quality of the SIP is tacitly acknowledged in that it frequently serves as the gold standard against which other scales are evaluated.... The SIP illustrates the philosophy of the generic instrument: it seeks to be applicable in any country, to all age groups, and to any medical condition. It appears to achieve this objective.'*

3.2.3. Evidence of validity

Bergner et al (1976a: 396) state that development of the SIP arose from the question:

> *'...What can be done to change existing measures of health or to devise new measures of health which would be acceptable, appropriate, able to measure change in the short run, and universally applicable?'*

Impacts of sickness may be influenced by individual experiences such as unique sickness perceptions and processes of care (Gilson et al 1975). A measure of sickness as perceived by the individual therefore provides an overall impact of illness at a given time, is appropriate for heterogeneous population groups and will be appreciated by providers and consumers.

Over 2,250 specific statements describing sickness-related behavioural changes were elicited from patients, apparently healthy individuals, health professionals, carers and existing functional assessment instruments (Gilson et al 1975). The following criteria subsequently identified 312 unique items and 14 categories of items:

> *'Each statement must (a) describe the behavior, and (b) specify the nature of the dysfunction. Dysfunction was defined as including modification or impairment in degree or manner of carrying on an activity, cessation of an activity, or initiation of a new activity that interferes with or substitutes for a usual activity.'* Bergner et al (1976a: 400)

To interrelate and compare individual items and provide a basis for scoring, judges from nursing, medicine and hospital administration (n = 25) rated each item on an 11-point minimal to severe dysfunction scale. The scale value for the two most extreme items within each category were then judged on a single 15-point scale and an average scale value calculated (Carter et al 1976). The 15-point scale value of the remaining items for each category was then calculated within these commonly scaled end points. Correlation of each judge's ratings with the mean of the 25 judges ratings was generally moderate to high (r = 0.58 - 0.85). Twenty-nine items were excluded because they were scaled with 95 per cent confidence intervals greater than 2.0 scale points (Gilson et al 1975).

A broad range of group practice patients (n = 246) completed profiles to validate the construct of dysfunction and determine the extent to which scores relate to a more global assessment of dysfunction (Gilson et al 1975). Four groups of judges (total n = 100) not previously involved in item scaling but from the same sub-groups each rated 50 profiles (25 ratings on 200 profiles). Patient profile responses were rated on an 11-point dysfunction scale for each category and a 15-point dysfunction scale for the complete profile. Correlation of each judge's ratings with mean ratings of subject profiles was high for each group of judges. The agreement among judges on each profile scaled was consistently high for each of the four groups (*r* = 0.75 - 0.97).

Replication of scaling procedures (Carter et al 1976) in a random sample of group practice patients (n = 108) found that 97 participants assigned consistently higher values than those obtained in the earlier study (Gilson et al 1975). However, the relationship between items did not change, with the two scaling value sets showing highly significant similarity ($r = 0.92$, $p < 0.00001$). A combination of the ratings from the two studies is therefore used to provide final item scale values. Four methods of calculating category and overall scores all related sufficiently well to profile judging to give evidence of item scale values and the construct of dysfunction Bergner et al (1976a), with two methods retained for further evaluation:

(i) % of total possible dysfunction, which provides a relative frequency weighted by the magnitude of the scale and no. of items checked;

(ii) profile score, which indicates the number of items checked within one of four scale-point groupings.

From the group practice sample (total n = 246), Gilson et al (1975) report expected scoring profiles in different medical groups, use of 98 per cent of items at least once, a mean of 30 items checked per subject, and a positive relationship between self-assessment of sickness and profile scores. Bergner et al (1976b) find overall disability scores to be significantly different across four purposively selected sub-groups ($p < 0.001$, total n = 278) *(see Table 3.1)*, with category scores also discriminating among sub-groups.

Sub-group	**No. of patients**	**Mean % score**
Speech pathology group	48	23
Rehabilitation medicine group	75	22
Outpatient group - chronic problems	80	11
Group practice patients	75	4

Table 3.1. SIP overall disability scores for sub-groups of patients

SIP overall scores and self-assessment scales of sickness and dysfunction correlate moderately across the sample (*r* = 0.54 and 0.52 respectively) with ambulation, mobility/confinement, body movement, and leisure/pastime categories relating most highly to both assessments. Moderate correlation (*r* = 0.49) is also found with physicians assessment of dysfunction in the chronic problems sub-group, however, the relationship decreases with experience (for example: 1st yr. residents *r* = 0.76, experienced staff *r* = 0.33). Whilst Bergner et al (1976b) suggest this is due to less appointment time, Martin et al (1976) observe that experienced physicians place more weight on comparing patient self-reports of activity to others with the same diagnosis, which potentially leaves less perception to individual impacts of pain.

Differences are however evident across sub-groups, for example, SIP overall scores have low correlation with speech pathology patients compared to group practice patients for both sickness and dysfunction self-assessments (*r* = 0.21 vs. 0.74 and *r* = - 0.01 vs. 0.45 respectively). Low correlation is also found in the speech pathology sub-group for two speech pathologists ratings on a speech and communication problem scale (*r* = 0.27 and 0.32 respectively) and speech pathologists assessments of sickness and self-assessments (*r* = 0.08 and 0.06 respectively). Such differences may be attributed to the SIP reflecting a broad range of dysfunction across categories, whereas speech pathology patients may focus on speech and communication.

Assessment of the rehabilitation sub-group by therapists (n = 8) in a general hospital and a Veterans hospital finds differing correlation between the SIP overall score and Activities of Daily Living Index (Katz et al 1963) for the two sites (*r* = 0.34 and 0.59 respectively). Bergner et al (1976b), however, suggests that the Veterans hospital may provide more valid and reliable data due to more stringent assessment protocols. A moderately high, significant combined correlation is found for the Activities of Daily Living areas of functioning and the most closely related categories of the

SIP (ambulation and locomotion, mobility/confinement, body movement and personal hygiene categories, *r* = 0.64, *p* < 0.01). However, the otherwise low correlation reflected in the nutrition category (*r* = 0.16) may determine health status of those who are not severely ill, because such factors are not likely to be measured by the Activities of Daily Living Index (Bergner et al 1976b).

SIP overall scores and a two week sickness/work index devised from a National Health Interview Survey (Bergner et al 1976b) correlate significantly in the two outpatient sub-groups (*r* = 0.52 and 0.58, *p* < 0.001). However, they correlate poorly in the two inpatient sub-groups (*r* = 0.17 and 0.30), which supports the concept that the National Health Interview Survey is devised for large population groups in which the distribution of sickness is positively skewed. The same SIP categories correlate most highly for both the National Health Interview Survey and the Activities of Daily Living Index. A random sample of group practice patients and a concurrent sample of 'perceived sick' due to visit their physician (n = 696 and 199 respectively) were selected to test the assumption that:

> *'...strength of the relationship between the SIP and other measures of health status was a function of the similarity of the construct being measured and the similarity of the method of measurement.'*
>
> Bergner et al (1981: 794)

Findings of the study are found to support this assumption:

i) SIP scores relate most highly to dysfunction and sickness self-assessment (*r* = 0.69 and 0.63 respectively);

ii) the National Health Interview Survey index of activity limitation is less related (*r* = 0.55) because it refers to 14 days rather than one day and it measures restricted activity days in a general sense;

iii) clinician ratings of dysfunction and sickness are less related in each of the categories and overall (*r* = 0.50 and 0.40 respectively) which reflect sources other than the subject.

The importance of each SIP category to the total instrument, and evidence of minimal redundancy is also reported (Bergner et al 1981). The reproducibility of the same category and overall scores, for example, is higher than any such correlation among different category scores, with higher correlation of category scores to overall score (mean *r* = 0.66 and 0.60 respectively). Scores are also more highly reproducible than other measures of sickness and dysfunction and more highly related to the criteria reflecting the construct of sickness and the methodology employed in the SIP.

Bergner et al (1981) provide evidence of clinical validity in total hip replacement, hyperthyroidism and rheumatoid arthritis patients (each group n = 15). Correlation between the SIP overall score and all clinical measures range from moderate for adjusted T4, to high for analysis of hip function after at least three assessments (*r* = 0.41 and -0.81 respectively). The analysis of hip function also correlates more highly with the physical than the psychosocial dimension (*r* = -0.84 and 0.61 respectively), as does an Activity Index in arthritic patients (*r* = 0.66 and 0.56 respectively). Whilst neither dimension score correlates highly with adjusted T4 (*r* = 0.21 and 0.35 respectively), individual categories such as sleep/rest have the best relationship (*r* = unspecified).

A consistent pattern of dysfunction is also found across all patients in both hip replacement and hyperthyroid groups (Bergner et al 1981). The hip replacement group is characterised by substantial physical dysfunction, minimal psychosocial dysfunction and consistently greater dysfunction scores during hospitalisation for surgery, whilst the hyperthyroid group is characterised by moderate psychosocial and substantial independent category dysfunction and significant differences between the first and last administration scores. The idiosyncratic nature of rheumatoid arthritis, however, is reflected in distinct profiles which do not change over time and appear to be unaffected by changes in treatment.

3.2.4. Evidence of reliability

Bergner et al (1981) report significantly high test-retest reliability for both interviewer and interviewer-delivered administration (*r* = 0.97 and 0.87 respectively, $p < 0.01$), with a high internal consistency (*r* = 0.94). No test-retest reliability could be obtained for postal administration, and internal consistency for this method is found to be lower than for interviewer administration. Self-assessments of dysfunction and sickness and the National Health Interview Survey generally correlate higher with interviewer-delivered administration than interviewer administration (*r* = 0.74 vs. 0.64, 0.67 vs. 0.55, 0.60 vs. 0.57 respectively). Self-administration may therefore be more valid, but is dependent on ensuring that SIP instructions are understood (Bergner et al 1981).

Group practice patients who completed the questionnaire twice provide preliminary evidence of SIP overall score test-retest reliability (*r* = 0.80 - 0.88, n = 31) (Gilson et al 1975). Outpatients with chronic problems, rehabilitation medicine and speech pathology patients (n = 61, 36 and 22 respectively) subsequently completed various combinations of patient or interviewer administration and 235 or 146 item versions of the questionnaire (Pollard et al 1976). High test-retest reliability is found on two administrations within 24 hours for the total sample (*r* = 0.88, $p < 0.001$) with consistently high reliability over the variables of three sub-groups, four different combinations of administration type and format and six interviewers. Test-retest reliability for individual categories is slightly lower than the overall score correlation (*r* = 0.62 - 0.92, $p < 0.01$), which may be due to individual categories comprising fewer items focusing on one facet of dysfunction rather than total assessment (Pollard et al 1976).

Pollard et al (1976) describe calculation of an agreement per cent coefficient which assesses reliability of checking items on repeated administrations by dividing the number of agreements by the number of agreements plus disagreements. To avoid a falsely high measure of reliability if only small numbers of items are checked, items not checked at all are excluded. The overall agreement per cent coefficient utilising this method is 0.50, with reliability for individual categories similar and comparable across categories (mean = 0.47). The overall agreement per cent coefficient for a less conservative reliability coefficient which includes all items is 0.62 (Meltzer and Hochstim 1970). Both sets of coefficients are found to be moderate and consistent across levels of sub-groups, different combinations of administration type and format and interviewers (Pollard et al 1976).

Generally there appears to be similar reliability for subject variables of age, sex, education and self-assessment of sickness and dysfunction. In relation to variation in agreement per cent coefficient among subjects, Pollard et al (1976) reports the largest correlation between the number of items checked and the overall score. Whilst age, sex, and self-assessment of dysfunction are found to be statistically significant, correlation is however, found to be 'rather low' (r = unspecified).

A review of reliability data from three studies between 1973 to 1976 confirms high reliability for overall scores and moderate reliability for item agreement (Bergner et al 1981). For example, in the 1976 study of group practice patients and 'perceived sick' patients, a small test-retest sample (n = 53) have high reliability for overall scores and moderate reliability for item agreement ($r = 0.92$ and $r = 0.50$ respectively).

3.2.5. Final revision and utilisation in pain studies

Since identification of the original 312 items and 14 categories (Gilson et al 1975), SIP refinement reduced the interim version to 189 items and 14 categories (Bergner et al 1981). Due to high inter-category correlation, the two categories of movement of the body and personal hygiene have subsequently been combined into one body care/movement category, with item analysis also providing conclusive support for combining social interaction and family interaction categories as one social interaction category. Item duplication, infrequent use or requirement for major revision has resulted in further items being combined and exclusion of another 53 items (Bergner et al 1981). The final version of the SIP therefore comprises 136 items, each with an item number and scale value, for example, 070-083 indicates that item 70 has a scale value of 8.3 *(see Appendix A for the final version of the SIP utilised in this study)*.

Table 3.2 provides an overview of the final SIP categories and dimensions with codes and maximum scale values. Individual items are not scored separately, but grouped to form category, dimension and overall scores.

Dimension	**Category**	**Code**	**Max scale value**
Physical		SDI-03564	356.4
	Body care & movement	BCM-2003	200.3
	Mobility	M-0719	71.9
	Ambulation	A-0842	84.2
Psychosocial		SDII-03657	365.7
	Emotional behaviour	EB-0705	70.5
	Social interaction	SI-1450	145.0
	Alertness behaviour	AB-0777	77.7
	Communication	C-0725	72.5
Independent			
	Sleep and rest	SR-0499	49.9
	Home management	MH-0668	66.8
	Work	W-0515	51.5
	Recreation & pastimes	RP-0422	42.2
	Eating	E-0705	70.5
Overall		**SIP-10030**	**1003.0**

Table 3.2. SIP dimensions, categories, codes and maximum scale values

Twelve areas of activity are defined as categories and have a code with a maximum possible scale value. Specific dimensions include the physical dimension, which comprises three categories and the psychosocial dimension, which comprises four categories. Five categories are calculated independently and not included within a specific dimension.

Calculation is made by adding the scale values of each item checked, with the total then being divided by the maximum scale value for that category, dimension or overall profile. The final score is obtained by multiplying the resultant figure by 100.

The SIP has consistently proved to be a useful health outcome measure. Utilisation in early clinical studies includes malignant disease (Sugarbaker et al 1982, Johnson et al 1983), chronic obstructive pulmonary disease (McSweeny et al 1982), rheumatoid arthritis (Deyo et al 1982) and cardiac disease (Ott et al 1983, Bergner et al 1984). Whilst length of the SIP has previously been highlighted as a potential problem (McDowell and Newell 1996, Bowling 1997), relatively few patients complain this affects acceptability (Deyo et al 1983). Deyo et al (1982: 882) conclude:

> *'... the comparability of results with other studies, and the demonstration of findings that were not intuitively obvious or likely to be derived from other sources all provide reassurance that the SIP is practical, applicable to clinical populations and comprehensive... the SIP may help to increase physician awareness of patient distress and disability, to better describe the evolution of functional changes, and to measure responses to therapy in a more comprehensive manner'.*

For the purpose of this section, further discussion will focus on chronic pain studies. Reviews such as McDowell and Newell (1996) and Bowling (1997) provide details of studies relating to other clinical groups.

Adaptation of the SIP for chronic pain studies includes reducing the number of items (Deyo 1986), using specific sub-scales in isolation (Ciccone et al 1996) and altering wording to specify the context of pain (Follick et al 1985, Williams et al 1996). Generally such revisions do not appear to make significant improvements to the original version, particularly if used for the purpose for which it is primarily intended and confidence is to be maintained in relation to reliability and validity. The 24-

item Roland Scale, for example, is found to have good reliability, validity and sensitivity when compared with the SIP in relation to physical function, but does not appear to measure psychosocial function well (Deyo 1986, Jensen et al 1992a).

SIP profiles are found to differ between diagnostic groups, with consistently higher scores, for example, found for chronic low back pain patients (Follick et al 1985) than rheumatoid arthritis patients (Deyo et al 1982) (overall mean = 23.8 vs.15.6, n = 107 and 79 respectively). Greater disruption is also evident for psychosocial functioning in chronic low back pain patients (mean score = 24.7 vs. 11.3 respectively), with impact on individual category scores consistent with the areas of impairment most commonly observed in chronic low back pain, for example recreation, social interaction, home management and general mobility. Such findings are supported by Watt-Watson and Graydon (1989) in a small general pain clinic sample (n = 34).

Wahlgren et al (1997) report that first-onset low back pain does not appear to worsen overall during the first year, but SIP profiles highlight the unique individual experience (n = 76), with only a fifth of patients resolved of all symptoms after one year. Klapow et al (1993) identify outcomes for orthopaedic and pain clinic patients (n = 96 and 180 respectively) that may distinguish those at greater risk of developing chronic pain syndrome. Consistently higher SIP scores are reported for those with chronic pain syndrome attributes of greater pain, impairment and depression than those who have a more positive adaptation. Smith et al (1986) also report that cognitive distortion and over-generalisation, is closely related to disability in chronic low back pain (n = 138). There is evidence that the SIP has been utilised effectively in a number of studies as a measure of disability for chronic pain patients *(see Table 3.3)*.

Of particular relevance to this study, Kremer and Hampton Atkinson (1981) and Kremer et al (1982) utilise the SIP as a disability measure in construct validity studies of the MPQ for chronic benign and cancer pain patients. The two questionnaires subsequently provide complimentary data in a number of chronic pain studies *(see Tables 3.3 and 3.4)*.

Chronic pain experience	**Pain study**
Sleep disturbance in pain patients	Pilowsky et al (1985) *
Changes in usual activities and relationships	Watt-Watson & Graydon (1989)
Impairment, disability and handicap symptoms: low back pain classification	Harper et al (1992)
Chronic pain coping measures: individual vs. composite scores	Jensen et al (1992b)
Stress, coping and social support in discrimination of chronic pain groups	Klapow et al (1993) *
Relationship of pain-specific beliefs to chronic pain adjustment	Jensen et al (1994)
The prediction of disability: chronic pain patient-spouse interactions	Romano et al (1995) *
Non-organic symptom reporting in chronic non-malignant pain patients	Ciccone et al (1996)
Relationship between marital conflict/stress and patient pain behaviours	Schwartz et al (1996)
One-yr. follow-up of first onset low back pain	Wahlgren et al (1997)
Acceptance of pain as a predictor of adjustment in chronic pain patients	McCracken (1998)
Patient beliefs and pain behaviour: patient, spouse and observer reports	Jensen et al (1999)

* studies which utilise both the SIP and MPQ

Table 3.3. Examples of chronic pain studies, which utilise the SIP as a measure of disability (compiled from the literature, Latham 2002).

The need for reliable and valid outcome measures to evaluate effectiveness of chronic pain treatment strategies and multi-disciplinary pain clinics are highlighted (Aronoff et al 1983). Evidence that the SIP is significantly sensitive to changes pre-/post-treatment and over time for pain management strategies utilised by pain clinics and pain management programmes is found in a number of studies *(see Table 3.4)*.

Chronic pain treatment strategies	**Pain study**
Chronic low back pain (CLBP) group relaxation training vs. cognitive-behavioural therapy (2 yr. follow-up)	Turner (1982)
Impact of an 8-week chronic pain treatment programme on disability	Follick et al (1985)
Outpatient group treatment of chronic pain: effects of spouse involvement	Moore and Chaney (1985)
Operant vs. cognitive-behavioural group therapy for CLBP (1 yr. follow-up)	Turner and Clancy (1986, 1988*) Nicholas et al (1991)
Usual care vs. back school vs. back school + compliance package (18 mth. follow-up)	Berwick et al (1989) *
Randomised control trial evaluating in- and outpatient PMP (18 mth. follow-up)	Peters and Large (1990) * Peters et al (1992) *
Behavioural therapy for CLBP: component analysis	Turner et al (1990) *
Cognitive-behavioural therapy vs. non-psychological treatment for CLBP	Nicholas et al (1992)
Efficacy of cognitive therapy for CLBP	Turner and Jensen (1993)
Inpatient vs. outpatient cognitive-behavioural pain mgt. programme (1 yr. follow-up)	Williams et al (1996)
The clinical significance of behavioural treatment for CLBP	Slater et al (1997) *

* studies which utilise both the SIP and MPQ

Table 3.4. Examples of chronic pain studies, which utilise the SIP for pre-/ post treatment changes (compiled from the literature, Latham 2002).

SIP reliability and validity as a health outcome measurement for chronic pain is now recognised to the extent that it has also been utilised in reliability and validity studies for other assessment tools relating to the pain experience and pain management interventions. Examples of such assessment tools include the Low Back Pain Taxonomy (Harper et al 1992), the Sickness Impact Profile Roland Scale (Jensen et al 1992a), the Chronic Problem Illness Inventory (Romano et al 1992) and the Treatment Helpfulness Questionnaire (Chapman et al 1996).

The evidence presented in this section confirms the rationale for selection of the SIP as the most appropriate health outcome measure for this study.

Previous chronic pain studies support the benefits of combining data obtained from the SIP and MPQ, which are found to provide complementary profiles on such complex concepts. SIP reliability and validity is also confirmed, with evidence of effective utilisation of the SIP both generally in the field of chronic disability and more specifically in the field of chronic pain.

3.3. Selection of the McGill Pain Questionnaire

3.3.1. Introduction

The selection of a pain measurement tool, which would not only assess the chronic pain experience but also complement the broad health outcome measures of the SIP, was identified as being required for this study. However, when considering selection of such a measure, Skevington (1995: 25) highlights that:

> *'...the search for a method that is truly "objective" has taken up considerable research time and energy. While objectivity is frequently claimed, this often means that subjective biases inherent in the method, and the full range of psychometric properties, have not yet been thoroughly researched.'*

Due to evidence of extensive debate surrounding multi-dimensional pain assessment tools, it is not within the scope of this text to comprehensively discuss all perspectives. The following framework therefore supports selection of the MPQ from a practitioner perspective.

3.3.2. Evidence of validity
3.3.3. Evidence of reliability
3.3.4. Utilisation in chronic pain studies

To support this approach, reference to more in-depth debate of other perspectives such as statistical and factor-analytic methodologies employed and psychological perspectives is made within the text.

3.3.2. Evidence of validity

Early pain assessment tools such as Keele (1948) reflected theoretical concepts of that time - that pain was essentially a specific one-dimensional cutaneous sensation (Livingston 1943). During the 1960's, however, pain became recognised as an individual experience comprising a number of complex modalities (Melzack and Wall 1965). Within this context, Melzack and Torgerson (1971) compiled a list of 102 pain descriptor words derived from both the clinical literature and an earlier 44-word descriptor list (Dallenbach 1939).

Each word was categorised as sensory, affective or evaluative and placed within a descriptive sub-class, for which agreement or disagreement was obtained (n = 20). A comparable sample (n = 11) assigned a category to words with less than a 65 per cent agreement, which resulted in 16 sub-classes. In a preliminary study (n = unspecified), certain key descriptors identified as absent were subsequently added as miscellaneous category sub-classes (Melzack 1975). The final format of the MPQ therefore comprises four categories, 20 sub-classes and 78 words *(see Appendix B for the final version of the MPQ utilised in this study).*

Although Melzack (1975) reports utilisation of all sub-classes (n = 248), Reading et al (1982) suggest that whilst subjects (n = 90) sort descriptors into semantically similar groups, only 16 sub-classes are identified. Fernandez and Towery (1996) also report that students (n = 70), only retain 32 out of 55 sensory descriptors, but those retained resemble the original sub-classes, not the new sensory words derived from the miscellaneous category.

Students ratings (n = 70) of affective and evaluative words found relatively low disagreement and approximately equal scale value for distribution of seven evaluative words from the 16 sub-classes (Melzack and Torgerson 1971). These words were used as anchors for the scale to which a comparable sample (n = 70) assigned sensory words, with scale values and subject agreement being calculated for each word. Patient and student mean scale values were then used to calculate approximately equal distribution for five evaluative words, due to difficulties in discriminating scale levels five to seven (n = unspecified). These five words now comprise the present pain intensity scale (Melzack and Torgerson 1971).

Two diverse samples of doctors and lower social class patients (both groups n = 20) scaled the list of words with high agreement. Scale values were also assigned to three of the additional sub-classes, however sub-class 19 was not assigned scale values as the descriptors were not included in the original Melzack and Torgerson (1971) list. Correspondence with Professor Melzack requesting clarification of unspecified sample sizes and values for sub-classes 17 -20 was unable to provide any further information on these issues *(see Appendix C)*. *Table 3.5* shows patients mean scale values for the final 20 sub-classes.

Whilst Agnew and Merskey (1976) suggest there is no correlation between the intensity ranks of Melzack and Torgerson (1971) and patients with 'severe' chronic pain (n = 128), Gracely et al (1978) confirm the validity of such descriptor group scales. In two ratio scale experiments (n = 16 and 40 respectively) utilising cross-modality matching procedures to rate 15 sensory and 15 affective verbal pain descriptors, both types of descriptors correlate highly between the two experiments ($r = 0.99$). Two equal groups in the first experiment also correlate highly between groups ($r = 0.97$ and 0.98), over sessions ($r = 0.99$ and 0.98), between an individual's repeat data sets ($r = 0.96$ and 0.89) and between an individual's data and a mean scale from a similar group ($r = 0.96$ and 0.89).

A number of studies (for example: Reading et al 1982, Charter and Nehemkis 1983) suggest that although rank scores indicate an underlying intensity, they may not reflect the true intensity value for each descriptor within a sub-class. Melzack et al (1985) therefore developed the weighted rank value by summing doctor and patient mean intensity scale values for each descriptor (Melzack and Torgerson 1971) and dividing the resultant figure by a sum of the rank values for the sub-class.

Sensory	**Affective**	**Evaluative**	**Miscellaneous**
1. Flickering 1.89 Quivering 2.50 Pulsing 2.56 Throbbing 2.68 Beating 2.79 Pounding 2.85	11. Tiring 2.42 Exhausting 2.63	16. Annoying 1.89 Troublesome 2.42 Miserable 2.85 Intense 3.75 Unbearable 4.42	17. Spreading 3.30 Radiating 3.38 Penetrating 3.72 Piercing 3.78
2. Jumping 2.60 Flashing 2.75 Shooting 3.42	12. Sickening 2.75 Suffocating 3.45		18. Numb 2.10 Tight 2.25 Squeezing 2.35 Drawing 2.53 Tearing 3.68
3. Pricking 1.94 Boring 2.05 Drilling 2.75 Stabbing 3.45 Lancinating 3.50	13. Fearful 3.30 Frightful 3.53 Terrifying 3.95		19. Cool N/A Cold N/A Freezing N/A
4. Sharp 2.95 Cutting 3.20 Lacerating 3.64	14. Punishing 3.50 Gruelling 3.73 Cruel 3.95 Vicious 4.26 Killing 4.50		20. Nagging 2.25 Nauseating 2.74 Agonizing 3.20 Dreadful 4.11 Torturing 4.53
5. Pinching 1.95 Pressing 2.42 Gnawing 2.53 Cramping 2.75 Crushing 3.58	15. Wretched 3.16 Blinding 3.45		
6. Tugging 2.16 Pulling 2.35 Wrenching 3.47			
7. Hot 2.47 Burning 2.95 Scalding 3.50 Searing 3.88			
8. Tingling 1.60 Itchy 1.70 Smarting 2.00 Stinging 2.25			
9. Dull 1.60 Sore 1.90 Hurting 2.45 Aching 2.50 Heavy 2.95			
10. Tender 1.35 Taut 2.36 Rasping 2.61 Splitting 3.10			

Table 3.5 Descriptor categories and sub-classes with patients mean scale values (Melzack and Torgerson 1971, Melzack 1975)

Melzack et al (1985: 104) provide this example for sub-class 1:

$$(1.65 + 2.05 + 2.43 + 2.62 + 2.73 + 2.98) / (1 + 2 + 3 + 4 + 5 + 6) = 0.69$$

Descriptor weighted-rank values are calculated by multiplying the descriptor rank score by the weighted-rank value for that sub-class (for example; sub-class 1, 'pulsing' rank score 3 = 2.07 weighted-rank score).

The McGill Pain Questionnaire allows collection of five types of data:

(i) pain rating index based on mean scale values (PRI (S));
(ii) pain rating index based on rank values (PRI (R));
(iii) pain rating index based on weighted-rank values (PRI (WRV));
(iv) number of words chosen (NWC);
(v) present pain intensity (PPI).

High correlation is reported between PRI (S) and PRI (R) total and category scores in a range of pain patients ($r = 0.95$ and $r = 0.91 - 0.94$ respectively, n = 248) (Melzack 1975). This is reflected in all sub-classes with the exception of sub-class 19 ($r = 0.80 - 0.97$, $r = 0.23$ respectively). Generally somewhat higher correlation is evident for specific pain syndromes (for example PRI (R) and PRI (S) total scores: mean $r = 0.96$ vs. post-herpetic neuralgia $r = 0.99$, total n = 100). In chronic low back pain and musculo-skeletal pain (n = 81 and 64 respectively), PRI (S) is reported to be statistically more equivalent to PRI (WRV) than PRI (R) for all but the evaluative category (Melzack et al 1985). Slightly greater sensitivity is also evident for PRI (WRV), for example, significantly lower affective scores are found for patients receiving compensation than for those who are not ($p < 0.05$), but no such significance is found with PRI (R).

NWC correlates highly with PRI (R) and PRI (S) total scores ($r = 0.97$ and 0.89 respectively) (Melzack 1975). The PPI correlates significantly with the NWC and PRI (R) total ($p < 0.01$), with the evaluative category which originally provided PPI descriptors having the highest category correlation

(r = 0.49) (Melzack et al 1985). Most category correlation, however, is only between 0.29 - 0.42, which suggests that part of the PPI variance may be determined by factors such as single choice format and psychological state at time of completion. Higher correlation is found between PPI and the 20 sub-class PRI (R) than the 16 sub-class format (r = 0.39 and 0.33 respectively, n = 228), which suggests that the miscellaneous category also accounts for more of the variance of the PPI overall pain intensity.

Compared to single administration, Melzack (1975) reports higher correlation between the PPI and PRI (R) total score for average percentage changes in pre-/post electrical stimulation treatments (r = 0.94, n = 29). Comparing hypnosis and alpha feedback training (total n = 24), mean percentage decreases are also found in PRI (R) total scores for pre-/post baseline and all training sessions for the combined treatment group (16.0% and 34.0% respectively, $p < 0.02$ for T → B, n = 12) (Melzack and Perry 1975). Melzack (1975) highlights that whilst the NWC may not change significantly, intensity change within sub-classes is reflected in PRI (R) total scores. Taken together, these data indicate that although there may be considerable variance in the initial PPI and PRI anchors, there is high consistency in determination of changes from that designated level.

Whilst there is general agreement on the multi-dimensional concept of MPQ pain descriptors, there has been some criticism and debate in relation to the nature and number of the component dimensions. Crockett et al (1977), for example, highlights that the grouping of descriptors into dimensions was conducted on an 'a priori basis' and conformed to Melzack's 3-factor account of pain. Bailey and Davidson (1976) examined 39 pain descriptors derived from Dallenbach (1939) in two volunteer studies (n = 93 and 90) and report high congruence (r = 0.92) with the mean intensity ratings of Melzack and Torgerson (1971). Although intensity is confirmed as Factor 1 it only accounts for 15 per cent of the total variance, with adjective analysis suggesting it relates to affective-evaluative more than sensory adjectives.

Factor-analytic studies of the component dimensions have reported variable outcomes, which are undoubtedly accounted for by the different procedures employed and diverse populations sampled (Melzack and Katz 1992, Holroyd et al 1992). *Table 3.6* provides examples of such studies.

Study	**Descriptor**	**Sample**	**Factors & % of variance**	**Comments of note**
Crockett et al (1977)	MPQ: 20 sub-classes	Chronic low back pain (CLBP) (n = 85) Experimental (2 groups, total n = 129)	**1** Immediate anxiety (21.6%) **2** Perception of harm (23.3%) **3** Somesthetic pressure (19.0%) **4** Cutaneous sensitivity (22.4%) **5** Sensory information(13.7%)	Different responses for the 3 groups, e.g., CLBP * exhibits lower mean scores for factor 1, but higher mean scores for factor 2, both $p < 0.01$
Leavitt et al (1978)	Melzack & Torgerson (1971) list: 87 items	CLBP (n = 131)	**1** Emotional discomfort (38.0%) **2** Emotional-sensory **3** Sensory	Factor 1 also accounts for the largest NWC
Prieto et al (1980)	MPQ: 20 sub-classes	CLBP (n = 198)	**1** Sensory -pressure, spatial, temporal (77.0%) **2** Evaluative (10.0%) **3** Affective - sensory (6.9%) **4** Affective-punishing (6.1%)	
Byrne et al (1982)	MPQ: 20 sub-classes	CLBP (n = 98)	Strong cross-validity with factors 1 - 3 identified by Prieto et al (1980) (r= .83, -0.81 and -0.74).	No evidence of strong cross-validity for factor 4 identified by Prieto et al (1980) (r = -0.44)
Reading (1979)	MPQ: 20 sub-classes	Chronic dysmen. (n = 166)	**1** Affective - evaluative-reaction (38.3%) **2** Sensory - tenderness(20.2%) **3** Sensory - dullness (11.1%) **4** Affective - emotional, distressing(10.0%)	Reading (1979 and 1982) compare factor structure of acute and chronic pain

Reading (1982)	MPQ: 20 sub-classes	Acute post-episiotomy (n = 95)	6 less distinctive factors than Reading (1979), which reflect more specific sensory and emotional-sensory dimensions.	Confirm concurrent validity: ↑ scores for those requesting analgesia (sensory and evaluative $p < .01$, affective $p < .05$)
Holroyd et al (1992)	MPQ: 20 sub-classes	CLBP (n = 1372) Other chronic pain (n = 423)	**1** Evaluative (13.0%) **2** Sensory(1)(10.0%) **3** Affective (8.0%) **4** Sensory (2) (7.0%)	A second order factor is also identified: Pain-distress (62.0%)

Table 3.6. Examples of MPQ factor analytic studies (compiled from the literature, Latham 2002)

McCreary et al (1981) supported by Kremer et al (1983) report significant relationship between signs of emotional disturbance and description of back pain (n = 102). Only the affective dimension, however, appears to relate significantly to signs of emotional disturbance independent of pain intensity description ($p < 0.05$). Holroyd et al (1992) suggest that the three PRI categories typically share less than 10 per cent of their variance with independent measures of psychological adjustment and any PRI category differences may equally result from differences in their length and reliability as from their content.

Two identically structured studies highlight different confounding variables for the affective dimension across diagnoses. Kremer and Hampton Atkinson (1981) report significantly greater somatisation ($p < 0.001$), depression and anxiety ($p < 0.01$) and physical and psychosocial disability ($p < 0.02$) for chronic benign pain patients with higher affective scores than those with lower scores (n = 14 and 17 respectively). Although such findings are not evident in cancer patients (n = 40) (Kremer et al 1982), segregation of the affective dimension does significantly segregate other measures (for example: NWC and PRI total $p < 0.001$), indicating that cancer patients respond in a unique systematic manner. Comparison of these two groups (total n = 40) finds greater affective loading for those with low pain intensity cancer than chronic benign pain, with no such difference in high intensity groups. Kremer et al (1982) suggests this greater affective load may reflect the differential meaning of cancer versus benign pain.

Whilst Byrne et al (1982) support Melzack's (1975) scoring system, Crockett et al (1977) and Leavitt et al (1978) suggest it may be inappropriate to form the descriptor categories into three individual rating indices. Van Buren and Kleinknecht (1979) support this suggestion when they find a moderate proportion of variance shared among categories in dental patients (for example, sensory-affective r = 0.52 - 0.76, n = 60). Although Turk et al (1985) and Brennan et al (1987) support the general factor structure of the PRI total score (n = 70 and 127 respectively), they also do not support the three individual category rating scales. Melzack and Katz (1992: 163), however, believe such an argument is *'fallacious'*.

Holroyd et al (1992) identify a second-order pain-distress factor *(see Table 3.6)*, which accounts for 62 per cent of the variance associated with the factor structure (n = 1795). They therefore suggest that separate category scores may have limited discriminate validity and justifies scepticism about the practical use of multiple PRI sub-scales. Reading et al (1983) report that adjective grouping, but not category profiles, discriminate rheumatoid arthritis, post-episiotomy and wisdom tooth extraction profiles (total n = 180). Supported by Jerome et al (1988), they suggest valuable information may be lost when combining adjective sub-classes into category scores. With the finding that numerous descriptor combinations can also obtain the same category score, Holroyd et al (1992: 309) conclude:

> *'...As clinicians, we remain convinced that the PRI sub-classes can assist patients in characterising their pain. However, to determine if the PRI is useful in diagnosis...studies that evaluate parsimonious decision rules for making clinically relevant decisions with data from the PRI are required.'*

3.3.3. Evidence of reliability

Although Melzack (1975) recommends interviewer administration of the MPQ because instructions may be read inaccurately (n = unspecified), no significant difference is found in administration method for cancer outpatients (n = 36) (Graham et al 1980). Written administration is nevertheless suggested as preferable, purely in order to minimise bias from verbal cues or body language. McGuire (1984), however, reports that cancer inpatients (n = 24) require frequent reiteration of instructions and word meanings with patients preferring interviewer administration. The length of time taken to complete the questionnaire (mean = 24 minutes) is also highlighted as a problem for more seriously ill patients.

Whilst both types of administration scores may be interpreted as internally valid, Klepac et al (1981) consistently obtain higher interviewer administration scores in a study of pain threshold and tolerance volunteer groups (n = 80). They conclude that direct comparisons of the two types of administration scores should be treated with caution, having excluded the following potential influences:

i) PPI is significantly influenced by intensity ($p < 0.001$) but not mode;
ii) no group differences on retrospective rating of worst ever pain;
iii) the interview group only selected 8 words which required clarification (mean = 0.2 words per subject), but chose on average 2.85 words more than the written administration group.

Preliminary data indicates satisfactory reliability for pain descriptor subclass choice on three administrations of the MPQ at intervals of three to seven days (mean = 70.3%, n = 10) (Melzack 1975). Graham et al (1980) also report satisfactory reliability in cancer patients for two administrations (mean = 75.0%, n = 36), however, over four administrations they suggest consistency may be affected by other influences such as patient information. Patients unsure about treatment options, for example, are found to have a decreased consistency than those informed of treatment (mean = 66.0% vs. 80.4% respectively).

Graham et al (1980) report potential unreliability of assessing past pain experiences rather than present pain when no differentiation is found between weekly summary assessments for 'high' and 'low' intensity cancer pain groups (n = 16). Correlation between daily pain intensity and weekly summaries also fail to show a significant relationship (n = 11). Burckhardt (1984) however, utilises a one-week recall period with arthritis patients (n = 188) and supported by McGuire (1984) suggests that this format increases understanding of complex pain patterns and syndromes.

Preliminary profile scores (total n = 100) are provided for seven pain syndromes (Melzack 1975), with Dubuisson and Melzack (1976) reporting highly significant evidence from the same seven syndromes and labour pain (total n = 95) that descriptor profiles arise from eight distinct populations ($p < 0.001$). Individual descriptions of pain are also found to resemble the average description by all patients with the same diagnosis in 77 per cent of cases. Wilkie et al (1990) report that of 102 studies which utilise the MPQ from 1975-1987, only 51 provide adequate information for meta-analysis (total n = 3624). They do, however, also advocate cautious interpretation of findings due to factors such as lack of standardised use, and fail to obtain clear patterns of word selection for specific syndromes. Wide debate about the reliability and value of descriptor profiles in the diagnosis of pain syndromes supports this conclusion.

Van Buren and Kleinknecht (1979), Seymour et al (1983) and Grushka and Sessle (1984) (n = 60, 100 and 102 respectively) report similar dental pain profiles as Melzack (1975) and Dubuisson and Melzack (1976). Similar cancer pain profile scores are also found for Graham et al (1980), Charter and Nehemkis (1983) and McGuire (1984) (n = 36, 25 and 24 respectively). Only significantly higher PPI scores for Melzack (1975) are reflected in the evaluative scores of Graham et al (1980) (PPI = 2.8 vs. 2.0, PRI (E) = 4.1 vs. 3.2 respectively, $p < 0.05$). McGuire (1984), however, highlights the need to clarify cancer pain descriptor profiles due to evidence of ambivalence across these studies.

Significant differences between dental groups confirm the sub-diagnostic potential of profiles (NWC, PRI total, sensory and evaluative categories, $p < 0.05$) (Grushka and Sessle 1984), which supports Allen and Weinmann (1982) who report that migraine patients use affective words more frequently than tension headache patients (both n = 50). Jerome et al (1988) subsequently report that sensory descriptor profiles also diagnose the pain qualities of 73 per cent of cluster headache patients when compared with profiles of migraine and tension headache patients (n = 63, 83 and 242 respectively).

Failure to obtain systematic and unique pain language in chronic benign, cancer and renal pain patients is reported by Atkinson et al (1982) (n = 73, 33 and 20 respectively), a finding replicated across all major and sub-diagnostic categories and also patients with different intensity ratings. It is suggested, however, that selection of only chronic pain patients in this study compared to acute and chronic pain patients in the Dubuisson and Melzack (1976) study may account for such diverse findings between the studies. Reading (1982) partially supports this hypothesis when reporting that acute episiotomy patients (n = 95) utilise sensory sub-classes more than chronic dysmenorrhoea and pelvic pain patients (n = 166 and 31 respectively). However, differences are also evident within chronic pain groups, for example, pelvic pain patients select affective and evaluative sub-classes more frequently than dysmenorrhoea and episiotomy patients (sub-class 16 = > 90.0% vs. 50.0%, sub-class 20 = < 70.0% vs. < 40.0%).

Atkinson et al (1982) compare chronic pain patients matched on intensity rating but differing on psychopathology scores (n = 10 pairs). Patients with higher psychopathology scores are found to profile significantly greater affective descriptors ($p < 0.001$), NWC and sensory descriptors ($p < 0.01$), with significantly higher intensity descriptor ranking ($p < 0.01$). This suggests patients with psychological disturbance present with more diffuse patterns of higher ranked descriptors and may report higher pain intensity on a complex adjectival scale compared to numerical scale ratings.

The arthritis descriptors of Dubuisson and Melzack (1976) are generally supported by Burckhardt (1984) whilst utilising a one week recall for acute on chronic inpatients and chronic outpatients (both groups n = 94). Comparing the groups however, differences within profiles show that the acute on chronic group select sensory sub-classes more frequently, with more intense but less frequent selection of affective and evaluative sub-classes. Burckhardt (1984) not only confirms that this pattern reflects more closely the acute pain profiles described by Reading (1982), but also highlights that disease status is an important factor to consider when assessing chronic pain. Melzack et al (1986) confirm the discriminatory capacity of the MPQ in differential diagnosis in their study of trigeminal neuralgia and atypical facial pain (n = 43 and 31 respectively). Whilst recognising that this capacity may be influenced by factors such as high levels of anxiety and other psychological disturbance, they conclude:

> *'Experimenters are encouraged to modify the questionnaire to suit the needs of the particular syndromes being studied. The most important requirement of a measuring instrument is its utility. It is possible to tailor the MPQ to meet particular needs…'* Melzack et al (1986: 301)

Such modification is evident in the Back Pain Classification Scale (Leavitt 1983) and the Headache Scale (Hunter 1983). Melzack (1987) also reports that the Short-Form MPQ (SF-MPQ = 11 sensory and 4 affective descriptors) correlates highly with the original MPQ and has the ability to obtain qualitative information not obtained from only PPI and VAS scores. Skevington (1995), however, suggests that whilst the SF-MPQ may appear sensitive to clinical change and be administered in less than 10 minutes, some psychometric properties still need to be established.

3.3.4. Utilisation in chronic pain studies

Due to evidence of extensive utilisation of the MPQ in several formats, studies that utilise only discrete parts of the MPQ will not be included further in this section. The MPQ has been utilised in a range of studies, which evaluate the efficacy of pain management strategies in a variety of settings *(see Table 3.7)*.

Chronic pain treatment strategies	**Pain study**
Comparison of cognitive strategies	Rybstein-Blinchik (1979)
In-patient pain management programme (PMP): 1 yr. follow-up	Tyre and Anderson (1981)
Out-patient PMP: 24-43 mth. follow-up	Duckro et al (1985)
Comparison of cognitive-behavioural/ behavioural therapy: 6 mth. follow-up	Kerns et al (1986)
Predicting treatment outcome in chronic back pain patients	Kleinke and Spangler (1988)
Efficacy of cognitive-behavioural group therapy: age analysis	Puder (1988)
Operant vs. cognitive-behavioural therapy for chronic low back pain (CLBP): 1 yr. follow -up	Turner and Clancy (1988)
Usual care vs. back school vs. school + compliance package (18mth. follow-up)	Berwick et al (1989)
Cognitive therapy vs. self-management training in the treatment of headaches	Martin et al (1989)
Randomised control trial evaluating in- and outpatient PMP: 18mth. follow-up	Peters and Large (1990) Peters et al (1992)
Effectiveness of behavioural therapy for CLBP: component analysis	Turner et al (1990)
The clinical significance of behavioural treatment for CLBP	Slater et al (1997)
Gender differences in adaptation to chronic pain and treatment regimes	Turk and Okifuji (1999)

Table 3.7. Examples of chronic pain treatment studies, which utilise the MPQ (compiled from the literature, Latham 2002)

In addition to clinical and functional assessment (for example: Toomey et al 1983 and 1984, Davis 1989a, Hagglung et al 1989, Krause et al 1989), the MPQ has been utilised to assess psychosocial and psychological components of chronic pain. Acknowledging the inevitable overlap of these factors, *Table 3.8* provides examples of such studies.

Psycho-social/psychological factors	Pain study
Comparison of compensation and non-compensation in chronic low back pain (CLBP)	Mendelson (1984)
Impact of arthritis on quality of life	Burckhardt (1985)
Environmental stresses and CLBP	Feuerstein et al (1985)
Sleep disturbance in pain patients	Pilowsky et al (1985)
Impact of chronic pain on the spouse and family	Rowat and Knafl (1985) Flor et al (1987)
Relationship of stress, appraisal and coping in chronic low back pain (CLBP)	Turner et al (1987)
Medically incongruent CLBP: physical disability and ineffective coping	Reesor and Craig (1988)
The relative contribution of pain coping strategies in CLBP and age groups	Keefe et al (1990) Keefe and Williams (1990)
Relation between catastrophizing and depression in chronic pain patients	Sullivan and D'Eon (1990)
Pain and coping: elderly community patients	Walker et al (1990)
The role of major vs. minor stressful life events in the persistence of headache	Benedittis and Lorenzetti (1992)
Effect of compensation on emotional state and disability in CLBP	Guest and Drummond (1992)
Chronic pain perception, response and treatment: ethnic – cultural influences	Bates et al (1993, 1997) Bates and Rankin-Hill (1994)
Phantom limb patients: coping strategies	Hill (1993)
Stress, coping and social support in discrimination of chronic pain groups	Klapow et al (1993, 1995)
Pain duration: effects on psychosocial adjustment in orthopaedic patients	Hinkley and Jaremko (1994)
Effective multi-dimensional evaluation of the chronic pain experience	Gagne et al (1995)
The prediction of disability: chronic pain patient-spouse interactions	Romano et al (1995)
Pain coping strategies in the prediction of patient/spouse ratings of self-efficacy	Keefe et al (1997)
Relationship between pain, discomfort & QOL	Skevington (1998)
Catastrophizing, pain and disability in patients with soft tissue injuries	Sullivan et al (1998)

Table 3.8. Examples of psycho-social and psychological chronic pain studies, which utilise the MPQ (compiled from the literature, Latham 2002)

Skevington (1995) highlights that the MPQ is Anglo-Canadian in origin, therefore semantic and conceptual equivalence of word descriptors may differ in some ways than had they originated in Britain. The MPQ has been translated into, or used as the basis for pain descriptor questionnaires in other languages (Melzack and Katz 1992) *(see Table 3.9)*.

Translation or adaptation	**Pain study**
Finnish	Ketovuori and Pontinen (1981 and 1983)
Spanish	Laheurta et al (1982) * Bejarano et al (1985) *
Norwegian	Ljunggren (1983) Strand and Wisnes (1991)
Slovak	Bartko et al (1984) *
French	Boureau et al (1984) *
Italian	Maiani and Sanavio (1985) Benedittis et al (1988) Ferracuti et al (1990)
German	Kiss et al (1987) Radvila et al (1987) Stein and Mendl (1988)
Dutch (Flemish)	Vanderiet et al (1987) Verkes et al (1989)
Arabic	Harrison (1988)
Chinese	Hui and Chen (1989) *
Japanese	Satow et al (1990) *
Polish	Sedlack (1990)

* cited in Melzack and Katz (1992)

Table 3.9. Examples of MPQ translations and adaptations into other languages (compiled from the literature, Latham 2002)

Despite evidence of on-going debate, particularly in relation to multi-dimensional construct validity and component scoring methods, the MPQ is recognised as one of the most utilised, valid and reliable measures of the total pain experience. This is reflected in the fact that the MPQ has been utilised as in the validation of other assessment measures related to the pain experience *(see Table 3.10)*.

Validation of assessment tools	**Pain study**
Psychosocial Pain Inventory	Heaton et al (1982)
Pain, Ache, Hurt Assessment Tool	Gaston-Johansson et al (1985)
West Haven-Yale Multidimensional Pain Inventory (WHYMPI)	Kerns et al (1985)
Pain Behaviour Checklist	Philips and Jahanshahi (1986)
Chronic Pain Experience Instrument	Davis (1989b)
Chronic Pain Patients Sleep Diary	Haythornthwaite et al (1991)
Chronic Illness Problem Inventory	Romano et al (1992)
Sickness Impact Profile Roland Scale	Jensen et al (1992)
WHOQOL & WHOQOL-100	Skevington (1998)
Patient utility measure for chronic pain	Goossens et al (1999)

Table 3.10. Examples of other assessment measures, which utilise the MPQ during their development (compiled from the literature, Latham 2002)

As Skevington (1995: 57) concludes:

> *'The McGill Pain Questionnaire is still one of the better measures of subjective pain available to us. Its psychometric properties have been carefully and extensively researched, and despite its shortcomings it provides pain sufferers with a more comprehensive means of communicating their experience than many other measures...'*

Evidence presented in this section confirms the rationale for selection of the MPQ as the most appropriate multi-dimensional pain measurement tool for this study. Previous chronic pain studies support the benefits of combining data from the MPQ and SIP *(see 3.2.5, pages 60 - 61).* MPQ reliability and validity is also confirmed, with evidence of effective utilisation of the MPQ in identifying chronic pain profiles and also in measuring efficacy of chronic pain treatment strategies.

3.4. The Resources Questionnaire

The Resources Questionnaire was developed in response to the fact that no assessment tool could be identified, which provided the combination of descriptive data on utilisation of health care, social care and financial resources required for the purpose of this study. The process used in development of the Resources Questionnaire is drawn from Oppenheim (1992), who provides comprehensive and practical guidance on questionnaire design. The Resources Questionnaire is discussed in terms of sources of information and structure, with findings from the methodological pilot discussed and any changes identified.

A preliminary list of possible resources was developed by the researcher, drawing mainly on experience in district nursing, and primary and secondary care roles in palliative care and pain management. Due to the need to develop a list of resources around the three areas of health care, social care and financial resources, several other sources of information were accessed. At the two general practices participating in the study, the GPs and nurses provided a list of all the resources, which patients in their practice may utilise. These lists were combined with the researchers preliminary list to form a revised list, with feedback invited from both practices. The revised list was subsequently discussed with specialist pain clinicians, with confirmation that all relevant resources had been included.

Local social services departments also identified social care services most commonly utilised by clients. This list of resources proved to be the same as that provided by the general practices. The most difficult area to define, however, was that of financial resources. Information obtained from local social security offices proved to be fragmented, with the outcome that it was difficult to obtain a comprehensive overview of the benefits system. This observation would support evidence in the literature that attempting to access such benefits results in a bewilderingly complex system of provision, which may result in the creation of stigma (Patrick and Scrivens 1989, Walker et al 1999). Acknowledging the need to be aware of changes in financial benefits over time, Ennals (1992) provided an understandable overview of the concepts of the system, which clarified much of the apparent confusion about the different types of financial benefits available.

Initially, the questions were worded with options, for example, of 'numbers' of visits rather than 'how often' visits occurred. However, some of the GPs felt that 'how often' may be an easier concept for patients to remember, and this change in wording was made to the questionnaire for the pilot. During the pilot, however, respondents (n = 23) found that they had great difficulty in recalling 'how often', as this was complicated by factors such as having seen someone, for example, weekly for a month, and then not again that year. Although the interviewer-led process enabled patients to reach an answer in the end, the patient preference for 'number' of visits was reintroduced for the remainder of the study. To allow for the fact that an exact figure could be difficult for some patients to recall, groups of numbers were categorised, for example, 'once, 2 - 3, 4 - 6, 7 - 12, 13 - 24, more than 24 visits'.

A filter question is asked for each resource, which then excludes those respondents who have not utilised that particular resource from further questioning on that resource. If the respondent has utilised the resource, they are provided with a number of options, which define the number or length of time the resource has been utilised. To facilitate data analysis in this study, each of the questions has a variable name in SPSS, and each of the responses have codes for the variable *(see 3.8, pages 87 - 88)*.

The structure of the questionnaire is presented in the following order:

i) primary health care resources;
ii) social care resources;
iii) secondary health care resources;
iv) financial resources.

Financial resource utilisation has been placed last due to being perceived as potentially the most sensitive issue for some respondents (Oppenheim 1992). Other than changes to wording previously discussed, the Resources Questionnaire required no other changes in format after the pilot study. The data collected from respondents in the pilot is therefore no different to that collected from respondents in the main study, so pilot study data was included with that of the main study. The final version of the Resources Questionnaire utilised in this study therefore comprises a total of 31 questions, with eight for primary health care, five for social care, four for secondary health care, and 14 for financial resources *(see Appendix D)*.

3.5. The Demographic Front Sheet

Demographic factors, which may influence the chronic pain experience, were informed by the literature, clinical experience of the researcher, and discussion with the GPs and nurses in the two general practices. The Demographic Front Sheet was therefore designed for the purpose of this study, with key factors being age, gender, marital and employment status, and dependants. Following the pilot study, the Demographic Front Sheet required slight modification to improve data processing. Changes included the addition of the group number, practice code, disease category and a 'separated' category in marital status. The NHS number was not required, but study identification number was included instead.

This data was obtained from all patients in the pilot study, with only the format of where the details were documented being changed. To facilitate data analysis, each of the questions has a variable name in SPSS and each of the responses, have codes for the variable *(see 3.8, pages 87 - 88)*. All data collected from respondents in the pilot is therefore no different to that collected from respondents in the main study, so pilot study data was included with that of the main study. The final version of the Demographic Front Sheet utilised in this study therefore comprises all key factors and administrative details for each patient *(see Appendix E)*.

3.6. Access and sampling

The sample for this study was accessed from two general practices in Hastings and St. Leonards on the south coast of England, and Lewisham in London. The Hastings practice has four GPs, three practice nurses, and community nurses attached to the practice. Pharmaceutical, dental and ophthalmic services are also being developed in a new Health Centre. The practice population is approximately 7350, with a mixed social demography, which incorporates both pleasant residential districts and some highly deprived areas. The Jarman indices, which measure national deprivation levels, not only reflect this mix but also highlight evidence of relatively high deprivation for all four wards in the practice catchment area. For example, any score above zero on the Jarman indices indicates being underprivileged, and the scores for the four wards are 46.04, 30.63, 23.34 and 11.68.

The Lewisham practice has four GPs, five part-time practice nurses, and community nurses attached to the practice. A chiropodist, dietician, counsellor, family therapist, Citizens Advice Bureau advisor and social worker also have sessions based at the surgery. The practice is situated on a housing estate, and has a practice population of approximately 5972, all of whom live on the estate. The estate was originally a London Borough of Lewisham council estate, but a third of the properties are now privately owned, which has resulted in clear signs of deterioration in its appearance and upkeep. The Jarman indices also highlight evidence of relatively high deprivation for the estate, with a score of 29.6. Other profiles are not dissimilar for the Hastings and Lewisham practices, for example, rates for unemployment and those over 64 years of age are 20% and 18%, and 19% and 16% respectively.

Initial contact with both practices was with the lead GP, when a meeting was arranged to discuss the suggested protocol for the study and the implications that this may have for the staff at the practices. Both GPs invited the researcher to a meeting at their practices, to discuss the study with other members of the team. At the team meeting the study was presented, and any queries fully discussed, with both practices subsequently agreeing to be involved as sites for the study. A full description of the study protocol was then developed, which took into consideration the comments and working patterns of the two practices. The lead GPs agreed to approach the local Ethical Committees at East Sussex Health Authority, and Guy's, St Thomas' and Lewisham Health Authority, with the outcome that Ethical Committee approval was given for the study *(see Appendices F and G).*

Permission was gained from the practices to undertake purposive sampling from the patient records, which were accessed via the VAMP Vision GP database system in both practices. Taking into consideration the different roles and skill mix of the administration staff at both practices, it was agreed with the GPs and practice managers that data was accessed by office staff at the Hastings practice and the researcher at the Lewisham practice. The following criteria for the purposive sampling criteria for each group was, however, specifically structured for each practice.

Group 1: A randomised sample of patients who receive repeat analgesic prescriptions. This is the only search method currently available, which will identify chronic pain patients in general practice.

Group 2: A randomised sample of patients who have seen their GP over the last 6 months for other clinical problems, which are supposedly unrelated to pain.

Group 3: A randomised sample of patients who have not seen their GP over the last 6 months, and are therefore supposedly fit and well.

During the pilot study, seven patients initially selected for Groups 2 or 3 were identified at interview as having chronic benign pain. This was ascertained by a positive response to the Demographic Front Sheet question: 'Have you suffered more than three months pain in the last year?' These patients were not obtaining analgesic prescriptions from their GP, and would therefore not have been identified as having chronic pain through current general practice databases. For the purpose of further analysis, these patients were reallocated into a discrete cohort as Group 4 (n = 16), with the decision that any patients in the main study with the same criteria would also be reallocated to this cohort. The number of patients interviewed on the pilot study in each group and practice are shown in *Table 3.12.*

Group	**Hastings**	**Lewisham**	**Total**
Group 1	6	2	8
Group 2	5	0	5
Group 3	2	1	3
Group 2 → Group 4	0	3	3
Group 3 → Group 4	4	0	4
Total	17	6	23

Table 3.12. Patients interviewed for the pilot study by groups and practices

The Statistics Department at University of Wales College of Medicine has given advice in the planning stage on issues relating to suitability of the proposed study, methodology, sample size and the most appropriate statistical analysis of the data. In this study, for example, the alpha level chosen for the test is $p < .05$ for statistical significance, with power equal to .80, which is a 20 per cent risk of committing a Type II error (Polit and Hungler 1999). To estimate the needed sample size, visits to the GP was selected, as it was anticipated that there would be an important difference for groups, for example:

Median	50% more than 3, 50% less than 3	Group 2
	80% more than 3, 20% less than 3	Group 1

The needed sample size was calculated as 40 in Group 1 and 40 in Group 2 in order to provide an 80 per cent chance of ideal outcome. This would be 40 per group if using combined results and 40 per surgery if using centre differences, with the former being considered the preferred option.

After discussion with the GPs and statistician, the following exclusion criteria were identified for the study:

i) those under 18 years of age as the focus of the study is adults;
ii) those over 70 years as presentation of multiple pathology is more likely to occur, therefore confusing cause and effect interpretation of the data;
iii) GP assessment that the patient is unable to complete the questionnaires due to problems such as mental debility;
iv) all patients with malignant disease because of physical and psychological profiles, which may confound cause and effect interpretation of the data. There is also evidence of active research relating to pain processes and management in malignant disease, whereas there is a relative lack of research relating to chronic pain in general practice.

3.7. Process of data collection

The GPs suggested that initial contact with patients who were identified as fulfilling the criteria for the study should be by letter, with details of the study and a request to contact the surgery. A poor response was received from this method of approach (2 responses to 40 letters), which would support the evidence of less positive response to mailed rather than personal approaches (Oppenheim 1992). At the suggestion of the patients themselves, it was agreed with the GPs that a different system of follow-up should occur. The revised system entailed the researcher telephoning the patients after they had received the initial letter *(see Appendix H)*, which meant the onus was not on the patients to respond. This change resulted in a more positive response rate, which ranged from 1:1 for Group 1 with chronic pain to 1:4 for Group 3 who are supposedly fit and well, and facilitated the collection of the required sample size.

At the follow-up telephone contact from the researcher, any queries about the study and the implications for participants were clarified. If the patient agreed to be interviewed, depending on individual circumstances an appointment was arranged with the researcher, either at the surgery or at the patients home. Due to the pressure on room availability at both surgeries, agreement had been reached with the staff on times that appointments could be made. At each appointment, prior to commencing the interview schedule, informed written consent was gained from each participant *(see Appendix I).*

The researcher was present for all 136 interviews in this study (Groups 1 - 3, all n = 40, Group 4 n = 16). Overall, completion of the interview schedule does not appear to have been a problem, with potential concerns about, for example, some of the American terms in the SIP, or the length of time it may take to complete the questionnaire not being evident. However, some patients did comment that it was helpful to have the interviewer present throughout the interview, so that initial explanation could be given about how to complete the questionnaires and clarification could be provided on the description of specific financial benefits.

An initial prediction of 1 hour 30 minutes to 2 hours per interview was found to be excessive, with the range of time actually being 30 minutes to one hour 15 minutes. The longer period was generally for Groups 1 and 4, as the only criteria for completion of the MPQ was pain at the time of interview. The information on timing of the interview was therefore revised to approximately one hour after the pilot study, which appears to have been perceived as more 'user-friendly' when requesting participation of patients in the study.

3.8. Planned process of analysis

Data collected for this study has been processed and analysed using the SPSS statistical software package, with the study number for each patient being the vertical axis, and the variable name being the horizontal axis.

Each question from the Front Sheet, SIP, MPQ, and Resources Questionnaire has a variable name in SPSS, with each variable having codes for all the different potential responses. To facilitate analysis of questions, which may describe a broader theme, SPSS also provides the facility to sub-divide questions into more than one variable. For example:

MPQ part 1: Where is your pain? The number of places and anatomical sites can all be calculated as separate variables.

MPQ part 2: What does your pain feel like? The rank value, scale value and weighted rank value for each set of descriptors can be calculated as separate variables.

Data was entered into SPSS by the researcher and checked for accuracy. The Statistics Department at UWCM has given advice on the most appropriate statistical analysis for the data, having taken into account factors such as the exploratory and descriptive nature of the study and sample size. Acknowledging the limitations of such factors, statistical analyses such as cross-tabulation, means, percentages within samples and nonparametric tests have been utilised to demonstrate key issues and findings. Although parametric tests have a higher degree of sensitivity, nonparametric tests have been utilised for the following reasons:

(i) results for both questionnaires are obtained by scoring methods, which present ordinal level data;

(ii) differences in sample size for the four groups, with Group 4 having a smaller sample size than Groups 1 - 3;

(iii) normal population, homogeneous variances may not be assumed for the four groups due to the purposive sampling criteria.

In consequence, the parametric one-way analysis of variance (ANOVA) was rejected as a statistical measure for the SIP, which is completed by all four groups. The nonparametric Kruskal-Wallis test, which tests the difference between three or more independent groups based on rank score (Polit and Hungler 1999) is therefore utilised in preference. Similarly, the parametric independent samples *t* test was rejected as a statistical measure for the MPQ, which is completed only by Groups 1 and 4 because pain has to be present at the time of interview. The nonparametric Mann-Whitney test, which tests the difference between two independent groups based on rank score (Polit and Hungler 1999) is therefore utilised in preference. The non-parametric chi-square test has also been utilised within the process of data analysis to assess whether relationship exists between any two nominal level variables (Polit and Hungler 1999).

3.9 Summary

Chronic pain studies inherently have to address the dilemma of balancing selection of the most valid and objective measures with more subjective measures that may provide a valuable, but perhaps less valid and reliable insight into the individual nature of pain. The decision to utilise quantitative rather than qualitative measures in this study is therefore underpinned by the need to profile chronic pain patients in the community, and describe how these profiles may impact on lifestyle similarly or differently to other patients without pain. The choice of quantitative assessment tools is also influenced by the need to demonstrate a credible, valid and reliable rationale to the development of relevant care pathways for chronic pain patients in the community.

All the evidence of SIP and MPQ validity and reliability therefore adds to the reliability and validity of this study, in conjunction with evidence of appropriate methodological processes having been undertaken in development of the Resources Questionnaire, and during data access, sampling, collection and analysis. The initial poor response rate to written correspondence is particularly important to note, and if an adequate sample is to be obtained, the positive contribution of personal communication in such studies in general practice is supported. Statistical analysis utilised in this study has the facility to contribute towards a profile of pain experiences and lifestyle. A range of demographic, clinical and socio-economic factors are able to be explored in relation to the pain experiences, and similarities and differences observed between, for example, both practices, Groups 1 - 4 for the Demographic Front Sheet, SIP and Resource Questionnaire, and Groups 1 and 4 for the MPQ.

4. FINDINGS FROM THE DEMOGRAPHIC PROFILES

4.1. General introduction to the findings chapters

The total sample (n = 136) includes patients aged 18 - 70 years, with the only exclusion criterion being a diagnosis of cancer or cognitive impairment. The sample originally comprised three groups of patients from two general practices who have been identified and selected randomly from the general practice databases *(see 3.6, pages 84 - 85)*. The use of purposive sampling, which entails defined inclusion criteria, means that the three groups are defined as patients who have identifiable chronic pain (Group 1), other unrelated medical conditions (Group 2), or those who are supposedly fit and well (Group 3).

It is important to note that 16 patients originally selected for Groups 2 and 3 (n = 12 and 4 respectively) subsequently responded positively at interview that they had suffered from more than three months pain in the last year. These patients would not, however, have been identified through current general practice databases, and thus primary care epidemiological data as having chronic pain, due to the fact that pain is classified as a symptom rather than a primary disease process. The only criterion currently available, which identifies patients with chronic pain, is that of repeat analgesic prescriptions (Purves et al 1998). This interesting cohort of 16 patients is subsequently defined as Group 4. Whilst acknowledging the smaller sample size compared to the other three groups, data from this group has been included in order to provide a profile of these patients and also to ascertain any similarities or differences with the other three groups.

The total sample was obtained from two general practices in Hastings (n = 67) and Lewisham (n = 69). Whilst each practice has equal sample size for Groups 1 - 3 (each practice n = 20), the small difference in total practice sample size can be explained by the additional inclusion of Group 4 (Hastings practice n = 7, Lewisham practice n = 9). Each patient group therefore satisfy the following criteria:

Group 1 (n = 40); identifiable chronic pain patients recorded on the general practice database as receiving repeat analgesic prescriptions.

Group 2 (n = 40); patients who had seen their GP in the previous six months about problems supposedly unrelated to pain.

Group 3 (n = 40); patients who are supposedly 'fit and well', having not visited their GP in the previous six months.

Group 4 (n = 16); patients who originally fulfilled the selection criteria for Groups 2 and 3, but subsequently at interview are found to have the additional factor of chronic pain in common.

Findings presented in Chapters 4 - 7 illustrate the exploratory nature of the study and identify the need for research to develop mechanisms which will enable a profile of pain experiences and needs among these patients to be compiled. A range of demographic, clinical and socio-economic factors are explored in relation to pain experiences, and similarities and differences between groups and practices discussed. Whilst acknowledging the descriptive nature of the study with the limitations of relatively small sample sizes (Polit and Hungler 1999), relevant statistical analyses such as cross-tabulation, means, percentages within samples and nonparametric tests are presented to demonstrate key issues and findings.

Although parametric tests have a higher degree of sensitivity, nonparametric tests have been utilised for the following reasons:

(i) Results for both questionnaires are obtained by scoring methods, which present ordinal level data.

(ii) Differences in sample size for the four groups, with Group 4 having a smaller sample size than Groups 1 - 3.

(iii) Normal population, homogeneous variances may not be assumed for the four groups due to the purposive sampling criteria.

In consequence, the parametric one-way analysis of variance (ANOVA) was rejected as a statistical measure for the SIP, which is completed by all four groups. The nonparametric Kruskal-Wallis test, which tests the difference between three or more independent groups based on rank score (Polit and Hungler 1999) is therefore utilised in preference. Similarly, the parametric independent samples *t* test was rejected as a statistical measure for the MPQ, which is completed only by Groups 1 and 4 because pain has to be present at the time of interview. The nonparametric Mann-Whitney test, which tests the difference between two independent groups based on rank score (Polit and Hungler 1999) is therefore utilised in preference.

Chi-square test has been utilised within the process of data analysis, but although initially it does appear to demonstrate some statistical significance, the limitations of sample size are such that it is not possible to conclusively state that statistical significance is evident. For example, when analysing cross-tabulation of the four groups with other variables, not all cells reach the expected number of five required. However, data analysis does indicate that statistical significance may be achieved for several factors with a larger sample size. Whilst such a sample is beyond the scope of the exploratory and descriptive nature of this study, findings presented do indicate the need for more large-scale studies in order to support or refute statistical significance.

In order to address perceptions that differences may be evident between different areas of the country, which in this study are an inner city area and a south coast town, data for each practice are presented throughout each section. Acknowledging limitations of sample size previously described in this section, evidence of interesting similarities and differences between the two practices are discussed where appropriate. The following framework is therefore used to present findings from the data of all four patient groups and both general practices.

Chapter 4. Findings from the demographic profiles
Chapter 5. Findings from the McGill Pain Questionnaire
Chapter 6. Findings from the Sickness Impact Profile
Chapter 7. Findings from the Resources Questionnaire

4.2. Introduction to findings from the demographic profiles

The Demographic Front Sheet *(see Appendix E)* provides demographic profiles for all patients participating in the study (n = 136). This chapter therefore presents findings from the demographic profiles for the four patient groups and both general practices in the following format:

4.3. Gender and age
4.4. Marital status and dependants
4.5. Employment status
4.6. Duration of pain
4.7. Clinical diagnoses
4.8. Summary

4.3. Gender and age

The female to male percentage ratio is 55:45 (n = 75 and 61 respectively) for the total sample. Some differences between groups may be explained by purposive sampling criteria and socio-biological factors, for example, the ratio for Group 3 'fit and well' females to males is 45:55 (n = 18 and 22 respectively), with the reverse of the other three groups *(see Figure 4.1)*.

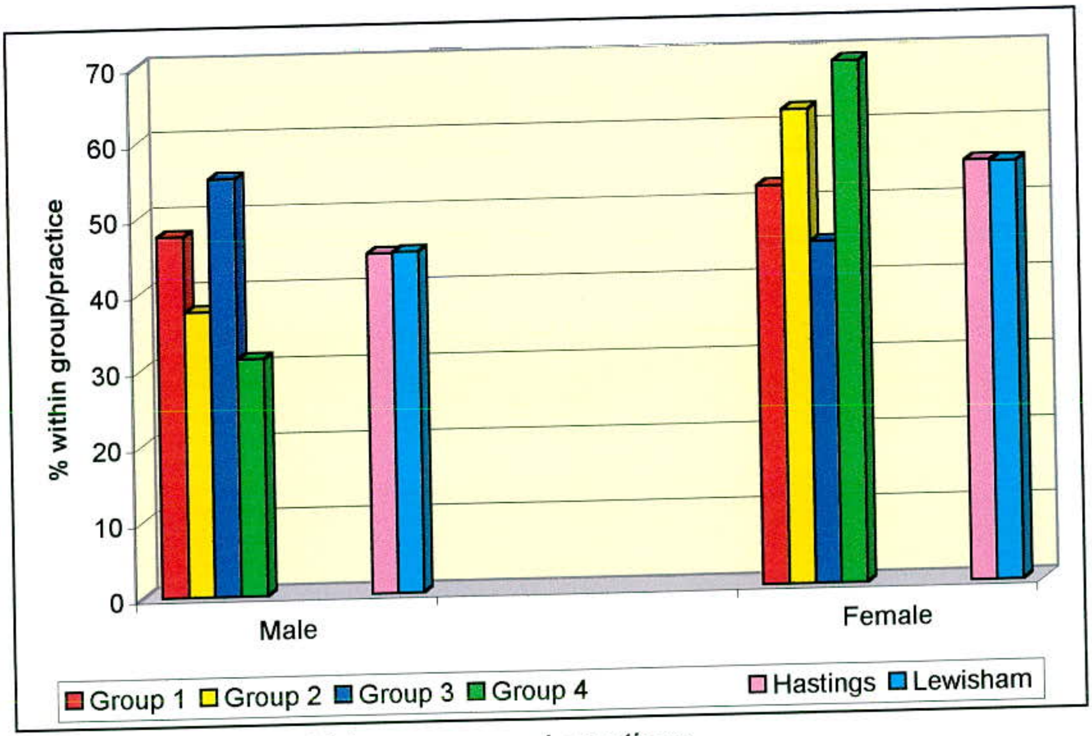


Figure 4.1. Gender: % for groups and practices

Whilst Groups 2 and 4 comprise a higher than average percentage of females (62.5% and 68.8%, n = 25 and 11 respectively) this is not reflected for Group 1 (52.5%, n = 21). However, there is evidence that a higher percentage of females report chronic pain than males *(see 2.2, pages 10 - 11)*. The Hastings practice and the Lewisham practice have similar profiles for gender *(see Figure 4.1)*.

The mean age for the total sample is 50 years (Groups 1 - 4: mean = 55, 51, 45 and 50 years; range = 19 - 70, 23 - 70, 24 - 68 and 24 - 70 respectively). Some differences between groups may again be explained by purposive sampling criteria and socio-biological factors, for example, Groups 1 and 2 include a higher percentage of older patients than Group 3 (55 - 70 years = 62.5% and 52.5% vs. 27.5%, n = 25, 21 and 11 respectively) *(see Figure 4.2)*. The percentage of older Group 4 patients is also between Groups 2 or 3, from where this sample was originally drawn (for example: 55 - 70 years = 37.5%, n = 6). Comparing the pain groups, Group 4 has a higher percentage of younger patients than Group 1 (for example: 35 - 54 years = 56.3% vs. 27.5%, n = 9 and 11 respectively).

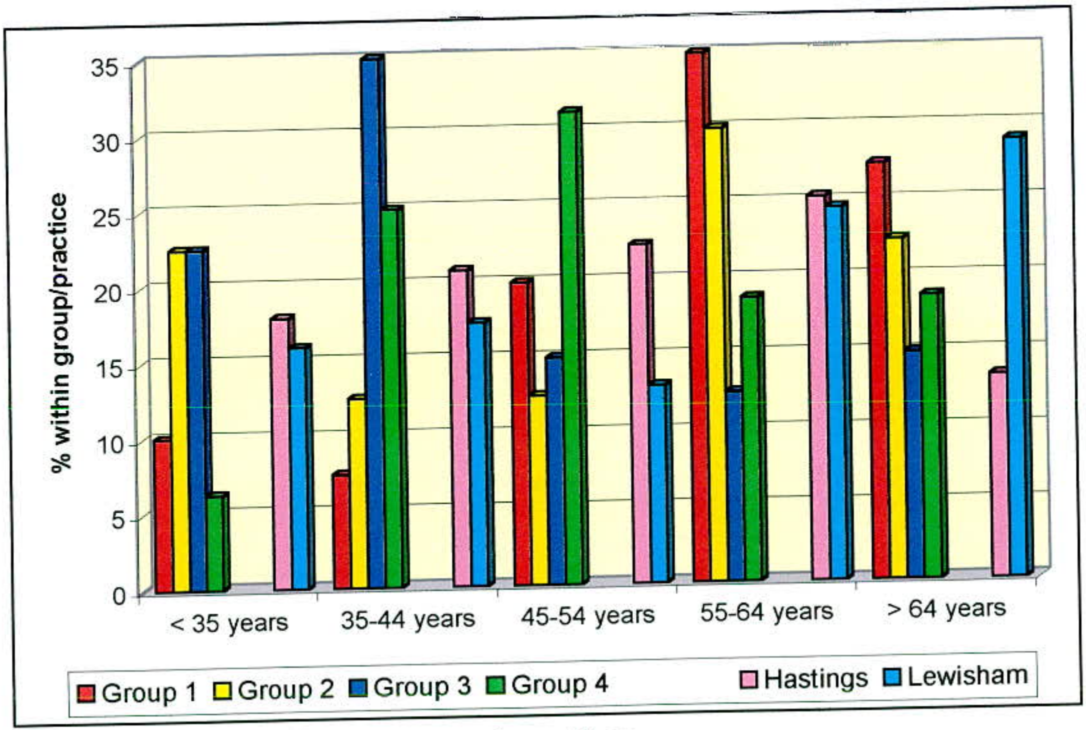


Figure 4.2. Age: % for groups and practices

Whilst the Hastings practice has an increasing percentage in each age group up to 64 years, this is not found in the Lewisham practice (for example: < 35 years = 17.9% vs. 15.9%, 45 - 54 years = 22.4% vs. 13.0%, n =11, 11, 15 and 9 respectively). However, the Lewisham practice has a higher percentage in the over 64 years age group than the Hastings practice (29.0% vs. 13.4%, n = 20 and 9 respectively). This is despite the perception that elderly people may choose to move from inner cities to south coast towns such as Hastings when they retire. Whilst the chi-square test suggests differences only for age may be statistically significant only for groups (p = 0.039), more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix J, 1)*.

4.4. Marital status and dependants

Overall, 67.6 per cent (n = 92) of the total sample are married, and 32.4 per cent (n = 44) are single, divorced, widowed or separated *(see Figure 4.3)*. Groups 3 and 4 have the highest percentage of those who are married than Groups 1 and 2 (77.5% and 81.3% vs. 62.5% and 57.5%, n = 31, 13, 25 and 23 respectively). However, a higher percentage of Groups 1 and 2 than Groups 3 and 4 are divorced (15.0%, and 17.5% vs. 2.5% and 6.3%, n = 6, 7, 1 and 1 respectively). Comparing the two practices, a higher percentage of the Lewisham practice than the Hastings practice are married (73.9% vs. 61.2%, n = 51 and 41 respectively). However, a higher percentage of the Hastings practice are divorced than the Lewisham practice (16.4% vs. 5.8%, n = 11 and 4 respectively).

Chronic pain appears to impact on marital status, with Group 1 having a higher percentage reporting impact than Group 4 (15.0% vs. 6.3%, n = 6 and 1 respectively) *(see Figure 4.4)*. Comparing practices, a slightly higher percentage in the Hastings practice report impact of chronic pain on marital status than the Lewisham practice (14.8% vs. 10.3%, n = 4 and 3 respectively) *(see Figure 4.4)*.

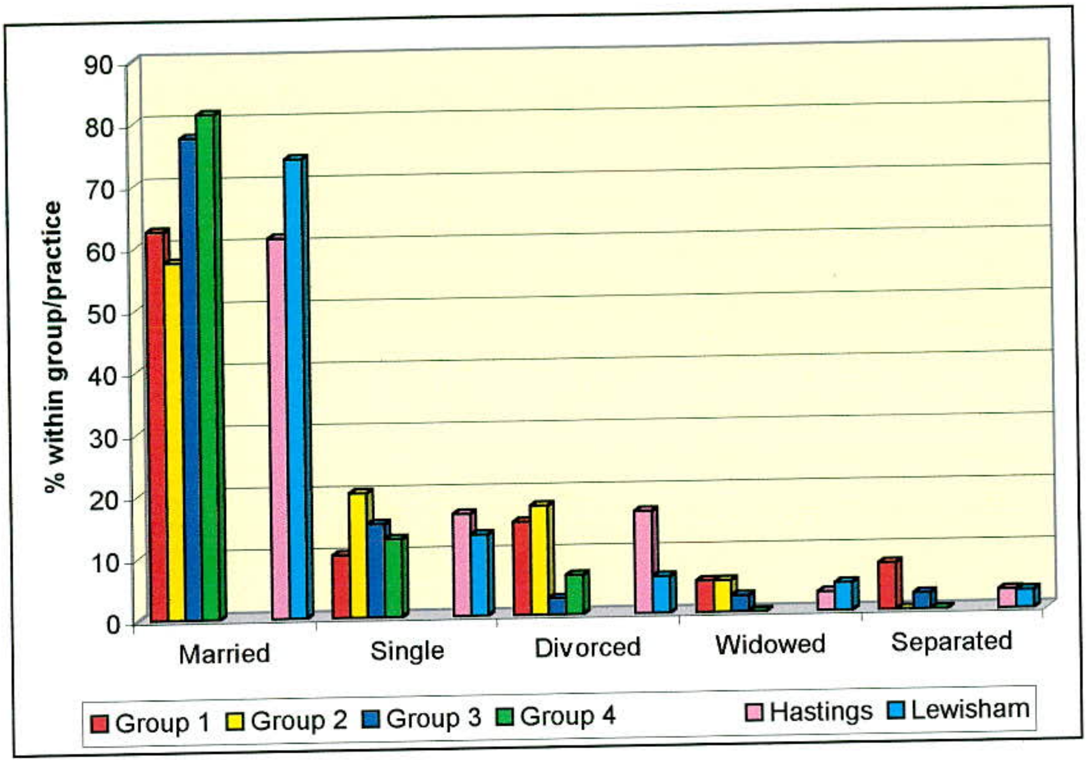


Figure 4.3. Marital status: % for groups and practices

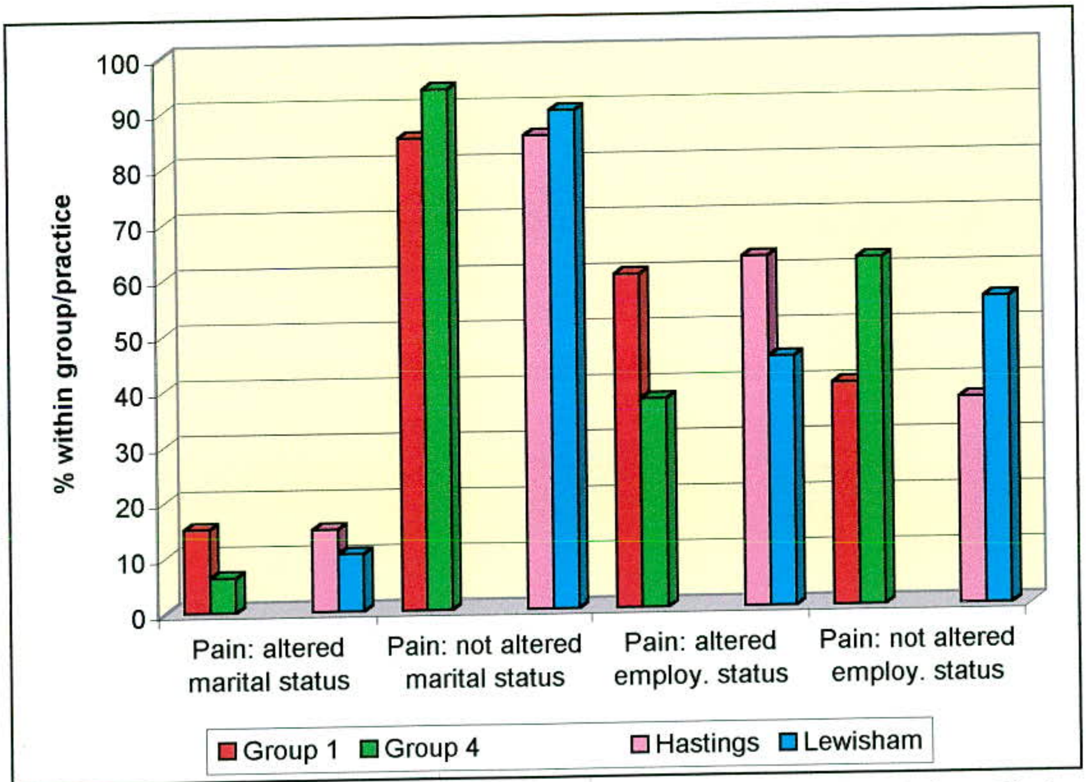


Figure 4.4. Impact of chronic pain on marital/employment status: % for Groups 1 and 4 and practices

Of the total sample, 64.7 per cent (n = 88) have no dependants, 20.6 per cent (n = 28) have one and 14.7 per cent (n = 20) have more than two dependants *(see Figure 4.5)*. Group 3 have the highest percentage with dependants whilst Group 1 have the lowest (55.0% vs. 20.0% n = 22 and 8 respectively). Although a similar pattern is found for the number of dependants over 64 years *(see Figure 4.6)*, differences are explained by the higher percentage of younger Group 3 patients and dependants than Group 1 (for example: < 44 years = 55.5% vs. 15.0%, n = 23 and 6; total no. dependants = 39 vs. 13, age < 19 years = 35 vs. 9 respectively).

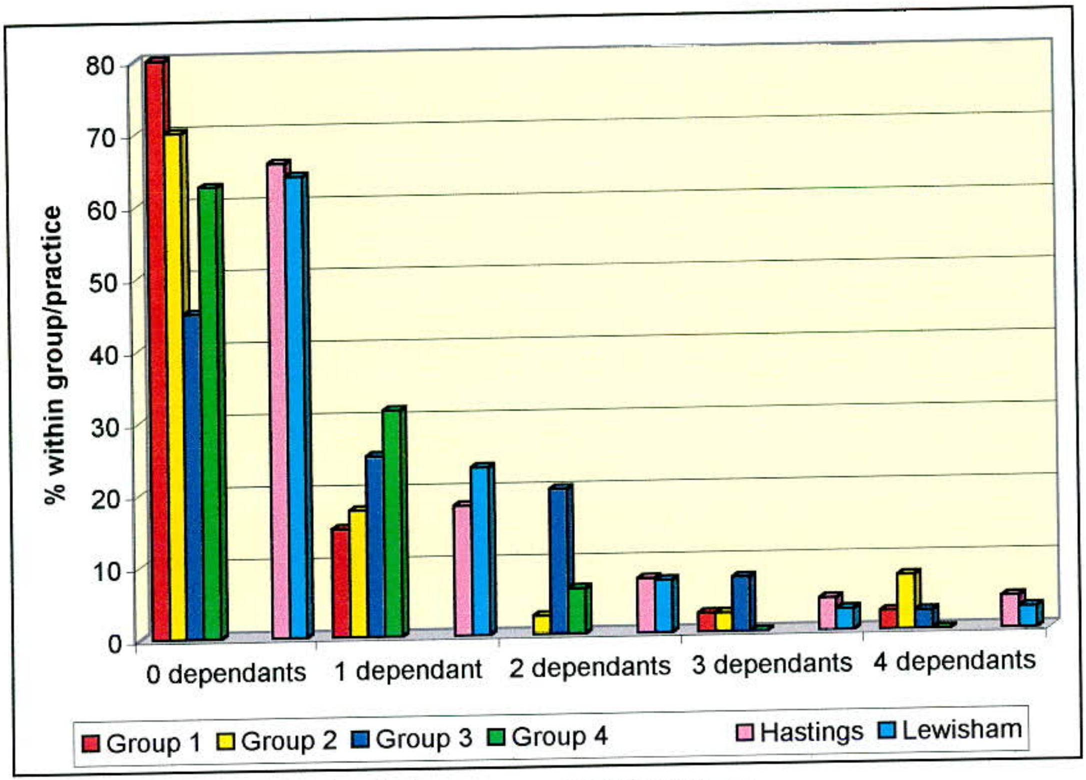


Figure 4.5. Dependants: % for groups and practices

The Hastings practice and the Lewisham practice have similar profiles for both the number and age of dependants *(see Figures 4.5 and 4.6)*. The chi-square test suggests differences only for the number of dependants and the age of the first two dependants may be statistically significant only for groups (p = 0.020, 0.048 and 0.009 respectively). However, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix J, 2 - 4)*.

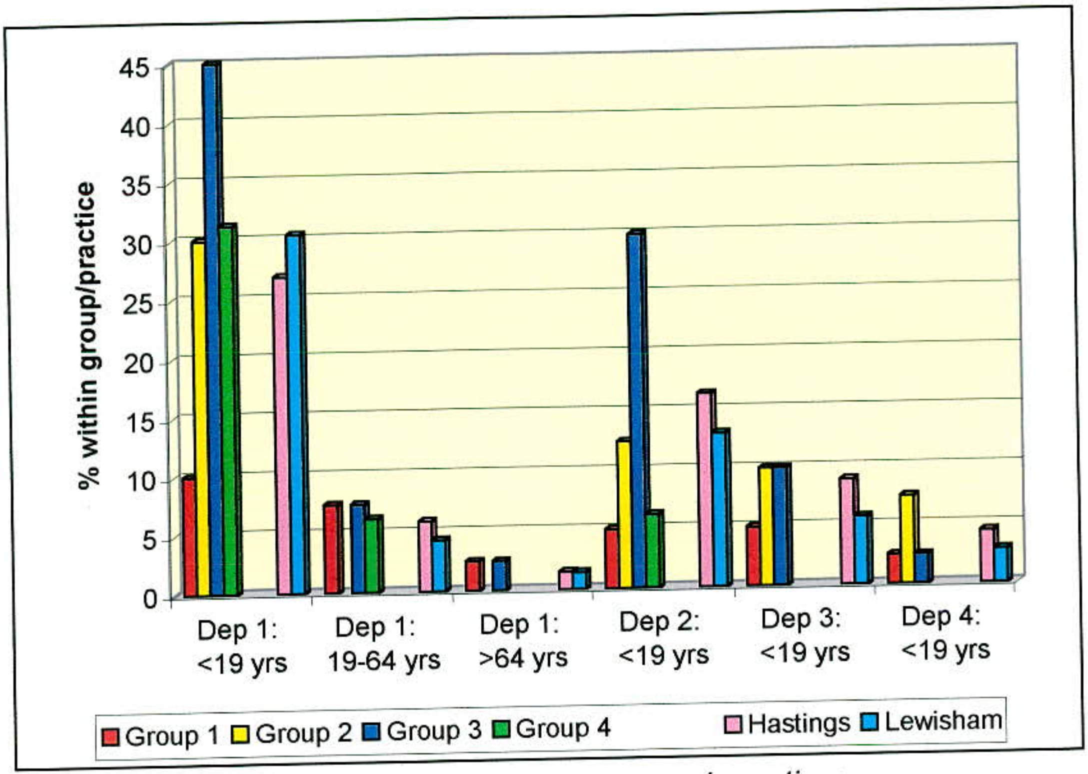


Figure 4.6. Age of dependants: % for groups and practices

4.5. Employment status

Overall for the total sample 27.9 per cent (n = 38) are fully employed, with 15.4 per cent (n = 21) in part-time employment, 23.5 per cent (n = 32) unemployed and 33.1 per cent (n = 45) retired. Of note is the high percentage of unemployed or retired Group 1 patients (37.5% and 47.5%, n = 15 and 19 respectively) compared to the other three groups *(see Figure 4.7)*. The percentage of unemployed for Group 4, for example, is only 6.3 per cent (n = 1), with 37.5 per cent (n = 6) in full time employment.

A higher percentage of the Lewisham practice are retired than the Hastings practice (39.1% vs. 26.9%, n = 27 and 18 respectively) *(see Figure 4.7)*, which reflects the higher percentage of those over 64 years in the Lewisham practice (29.0% vs. 13.4%, n = 20 and 9 respectively). Whilst the chi-square test suggests differences for employment status may be highly statistically significant only for groups (*p* = 0.000), more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix J, 5)*.

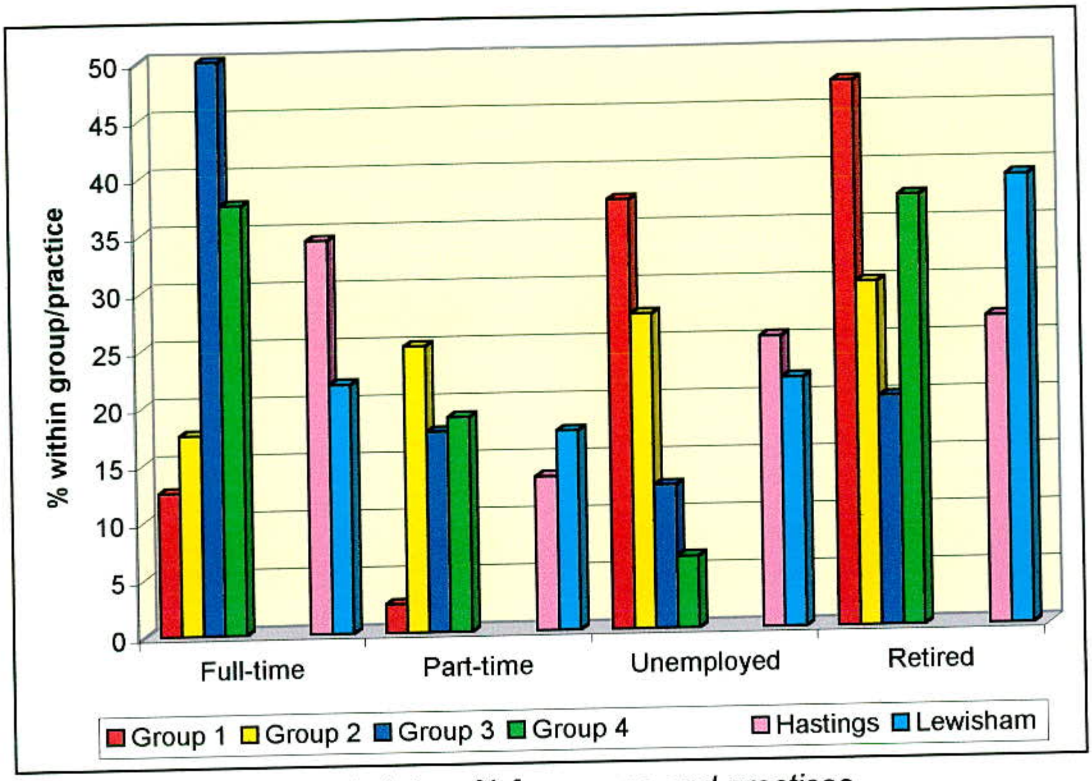


Figure 4.7. Employment status: % for groups and practices

Chronic pain appears to impact on employment status, with Group 1 having a higher percentage reporting impact than Group 4 (60.0% vs. 37.5%, n = 24 and 6 respectively) *(see Figure 4.4)*. Comparing practices, a higher percentage in the Hastings practice report impact of chronic pain on employment status than the Lewisham practice (63.0% vs. 44.8%, n = 17 and 13 respectively) *(see Figure 4.4)*. Differences for reported impact of pain on employment status are not found to be statistically significant for groups and practices when utilising the chi-square test.

Occupational and socio-economic status in this study utilise the Office of Population Census and Surveys (OPCS) Occupational Classification (SOC) (OPCS Employment Department Group 1990: 7) and the OPCS Socio-economic Classification (SEG) (OPCS 1991: 13 - 14). Throughout the text and in relevant Figures, the descriptor numbers are those utilised by the OPCS for each SOC or SEG classification *(see Appendices K and L)*. A range of occupations is evident for all four groups, however, differences are found when comparing group profiles *(see Figure 4.8)*.

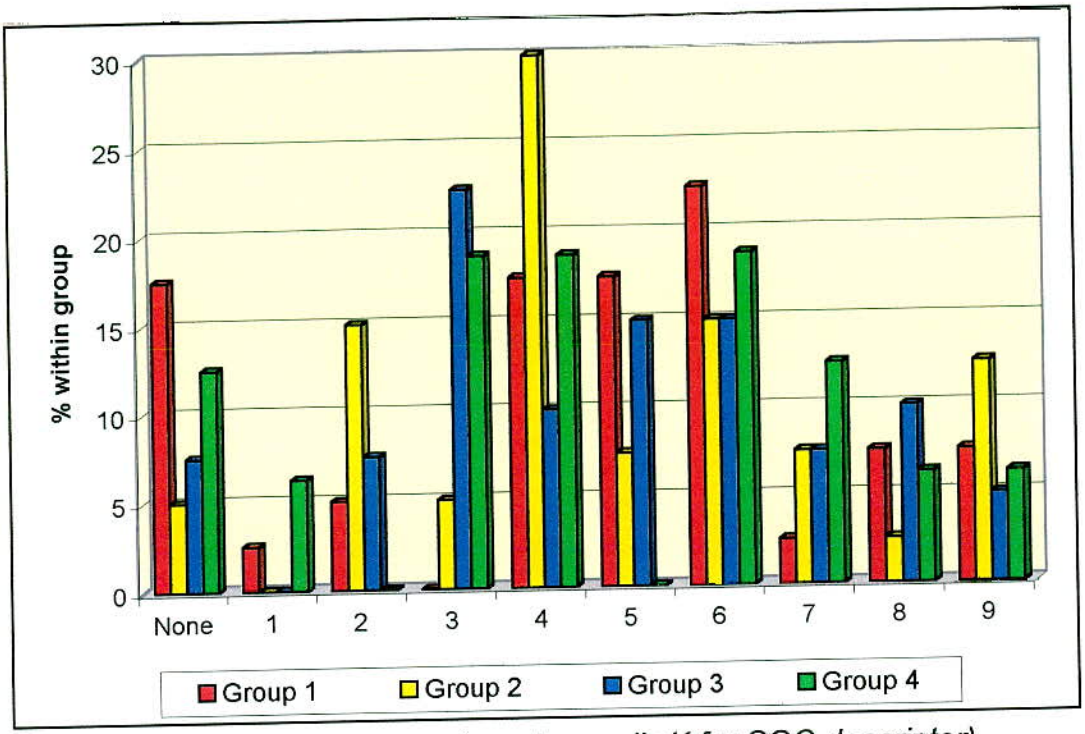


Figure 4.8. SOC: % for groups (see Appendix K for SOC descriptor)

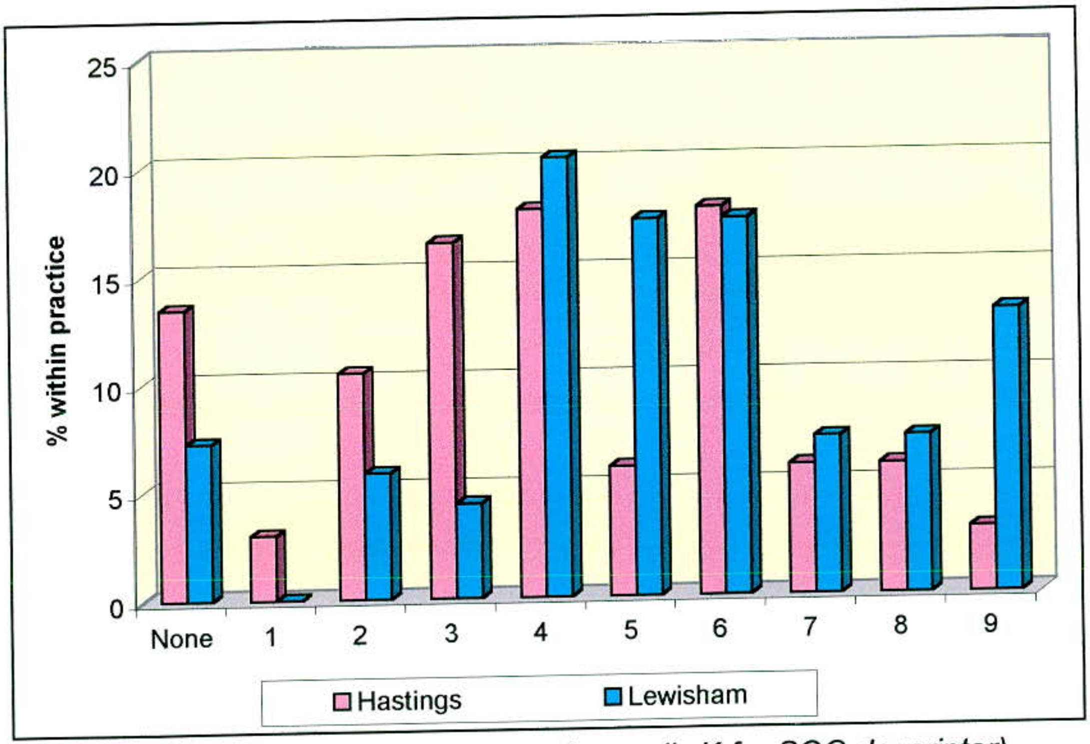


Figure 4.9. SOC: % for practices (see Appendix K for SOC descriptor)

The most common SOC is personal/protective services *(6)* for Group 1, associate professional/technical *(3)* for Group 3 (both 22.5%, n = 9), and clerical/secretarial for Group 2 *(4)* (30.0%, n = 12), with all three equal for Group 4 (all 18.8%, n = 3). No occupation is most common for Groups 1 and 4 (17.5% and 12.2%, n = 7 and 2 respectively). For both the Hastings and Lewisham practices, the most common SOC is clerical/secretarial *(4)* (20.3%, n = 14 and 17.9%, n = 12 respectively), with personal/protective services *(6)* equal highest in the Hastings practice *(see Figure 4.9)*. A higher percentage of the Hastings practice report no occupation, professional *(2)*, and associate professional/technical SOC *(3)* (13.4% vs. 7.2%, n = 9 and 5; 10.4% vs. 5.8%, n = 7 and 4; 16.4% vs. 4.3%, n = 11 and 3 respectively). The Lewisham practice report a higher percentage of craft/related *(5)* and other elementary SOC such as unskilled labour *(9)* (17.4% vs. 6.0%, n = 12 and 4; 13.0% vs. 3.0%, n = 9 and 2 respectively).

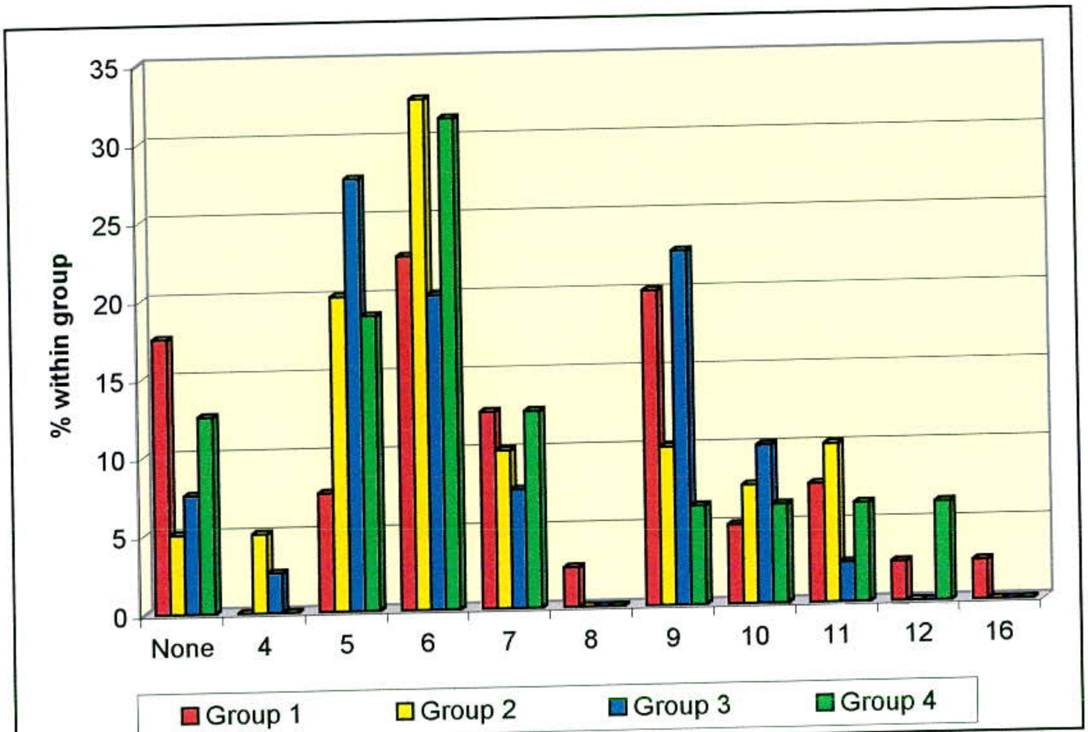


Figure 4.10. SEG: % for groups (see Appendix L for SEG descriptor)

Such patterns are reflected in SEG for both groups and practices *(see Figures 4.10 and 4.11)*. Whilst the chi-square test suggests differences for SOC and SEG may be statistically significant only for practices ($p \leq 0.047$), more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix J, 6 and 7)*.

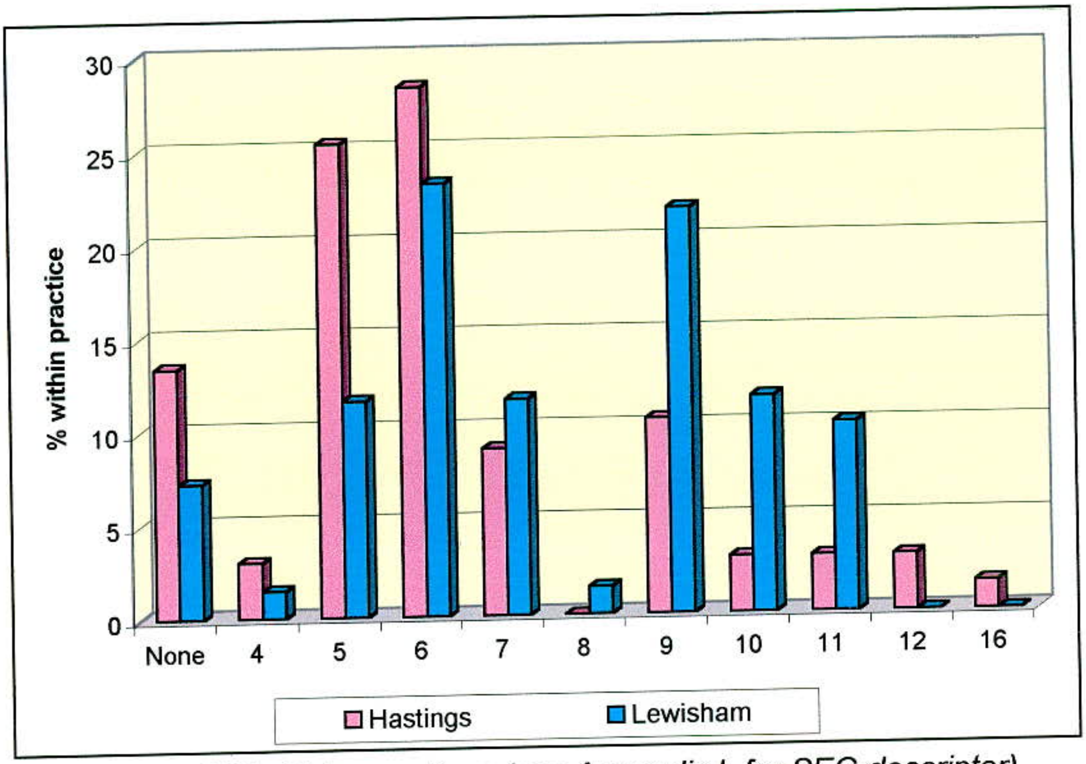


Figure 4.11. SEG: % for practices (see Appendix L for SEG descriptor)

4.6. Duration of pain

Patients with chronic pain report a broad range of pain duration (< 1 year - 60 years), however, different profiles are found for Groups 1 and 4 *(see Figure 4.12)*. None of Group 1 report pain of three months to one year duration, with 62.5 per cent (n = 25) reporting 2 - 10 years duration and 30 per cent (n = 12) more than 10 years duration. Group 4, however, has one report of three months to one year duration of pain, 68.8 per cent (n = 11) reporting 1 - 5 years duration and 25.1 per cent (n = 4) reporting more than 15 years pain duration. Importantly these four patients would not have been identified with chronic pain through current identification criteria.

The Hastings practice have a higher percentage reporting three months to two years and 10 - 15 years pain duration than the Lewisham practice (22.2% vs. 10.3%, n = 6 and 3; 14.8% vs. 6.9%, n = 4 and 2 respectively).

The Lewisham practice, however, has a higher percentage reporting more than 15 years pain duration than the Hastings practice (24.1%, n = 7 vs. 11.1%, n = 7 and 3 respectively) *(see Figure 4.12)*. Whilst the chi-square test suggests differences for duration of pain may be statistically significant only for Groups 1 and 4 (*p* = 0.013), more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix J, 8)*.

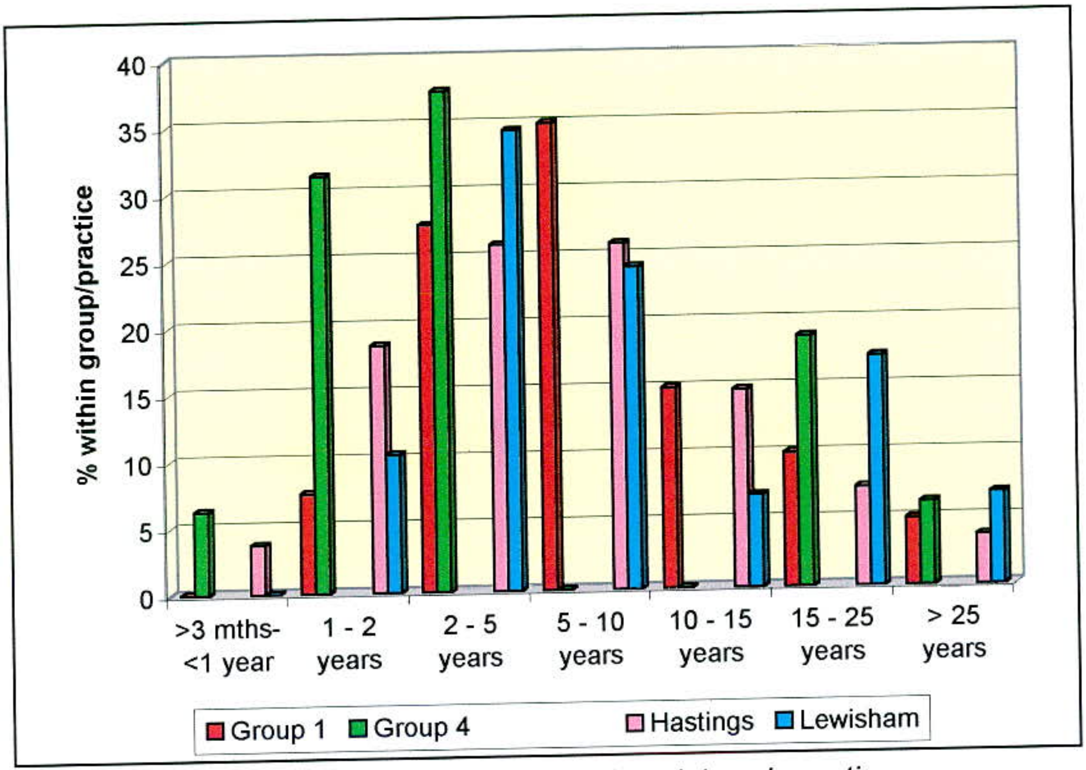


Figure 4.12. Pain duration: % for Groups 1 and 4 and practices

4.11. Clinical diagnoses

Utilising the International Classification of Diseases (World Health Organisation 1992), 60 clinical diagnoses identified for the total sample are classified into 10 major diagnostic groups *(see Table 4.1)*. The full diagnostic classification, including diagnoses within the major diagnostic groups are shown in *Appendix M*. Different diagnostic profiles for the four groups can to some extent be explained by purposive sampling criteria. The majority of Group 3, for example, report no primary diagnosis (95.0%, n = 38), whilst Group 2 identify a broad range of diagnoses *(see Figure*

4.13). The majority of Group 1 have primary musculo-skeletal diagnoses (92.5%, n = 37). Whilst the highest percentage of Group 4 also have primary musculo-skeletal diagnoses (31.3%, n = 5), a range of other diagnoses are also evident (for example: cardio-vascular = 18.8%, endocrine and dermatology = 12.5%, n = 3, 2 and 2 respectively).

Major diagnostic group	**No. of diagnoses**
Musculo-skeletal	19
Cardio-vascular	8
Gynaecology/Urology/Obstetrics	7
Gastro-intestinal/Biliary	5
Neurological	5
Thoracic	5
Mental Health	4
ENT/Opthalmology	3
Endocrine	3
Dermatology	1

Table 4.1. Major diagnostic groups

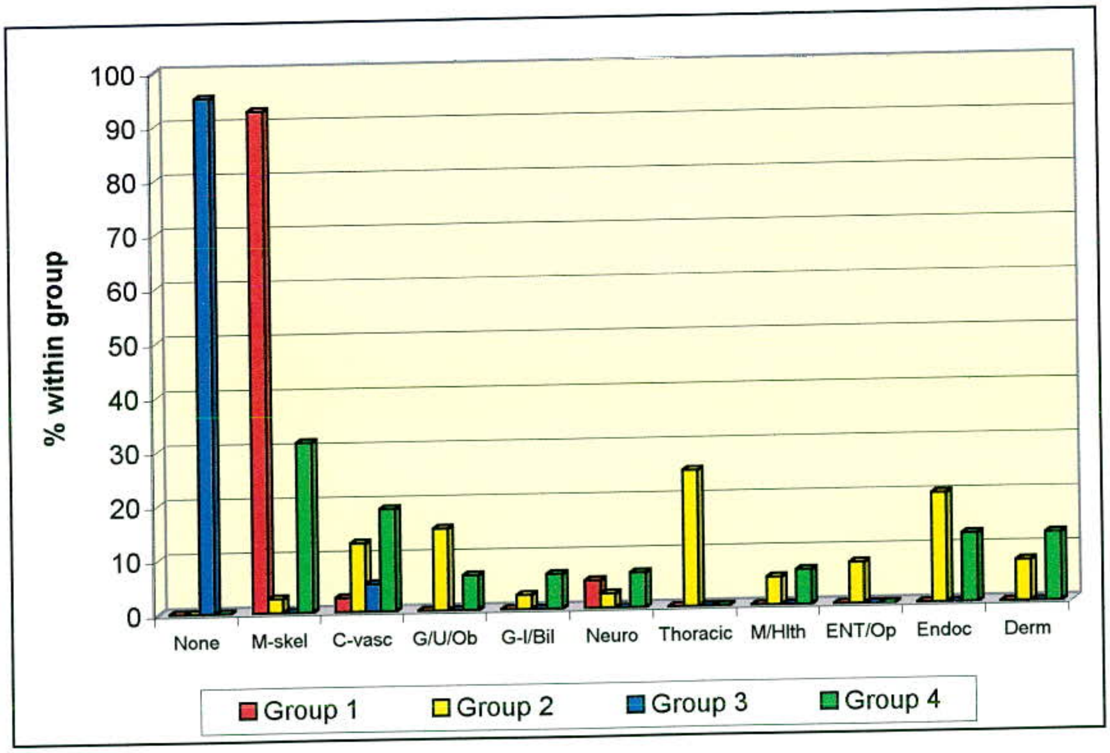


Figure 4.13. 1° diagnoses: % for groups

Slightly different primary diagnostic profiles are evident for the two practices *(see Figure 4.14)*. The Hastings practice, for example, has a higher percentage of musculo-skeletal and mental health diagnoses than the Lewisham practice (37.3% vs. 26.1%, n = 25 and 18; 4.5%, n = 3 vs. 0% respectively). The Lewisham practice, however, has a higher percentage of cardio-vascular, neurological and endocrine diagnoses than the Hastings practice (13.0% vs. 3%, n = 9 and 2; 5.8%, n = 4 vs. 0%; 10.1% vs. 4.5%, n = 7 and 3 respectively).

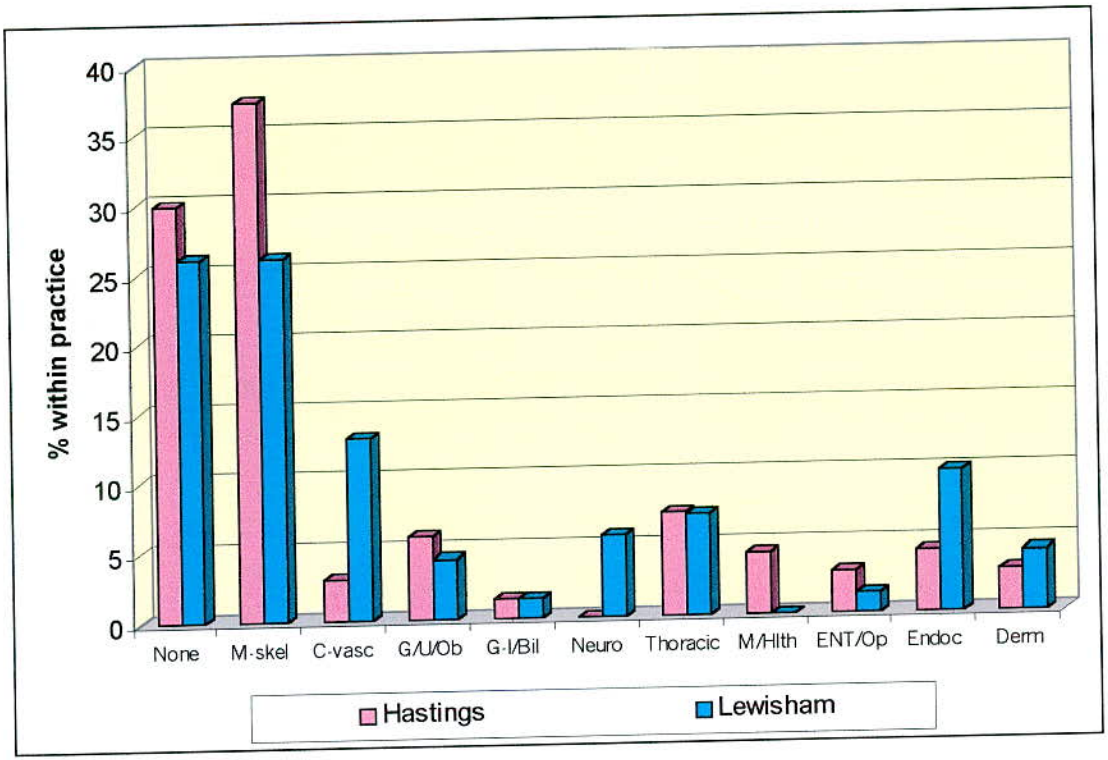


Figure 4.14. 1° diagnoses: % for practices

A percentage of patients in all four groups report no secondary diagnosis (Groups 1 - 4: 62.5%, 50.0%, 97.5%, 37.5%; n = 25, 20, 39 and 6 respectively). Group 4 has the highest percentage reporting secondary diagnoses (62.5%, n = 10), with the highest percentage being musculo-skeletal diagnoses (43.8%, n = 7). Groups 1 and 2 are found to have a range of secondary diagnoses *(see Figure 4.15)*. The Hastings practice has a higher percentage than the Lewisham practice reporting no secondary diagnoses (73.1% vs. 59.4%, n = 49 and 41 respectively), and a higher percentage for only thoracic and neurological diagnoses (4.5%, n = 3 vs. 0% and 3.0% vs. 1.4%, n = 2 and 1 respectively) *(see Figure 4.16).*

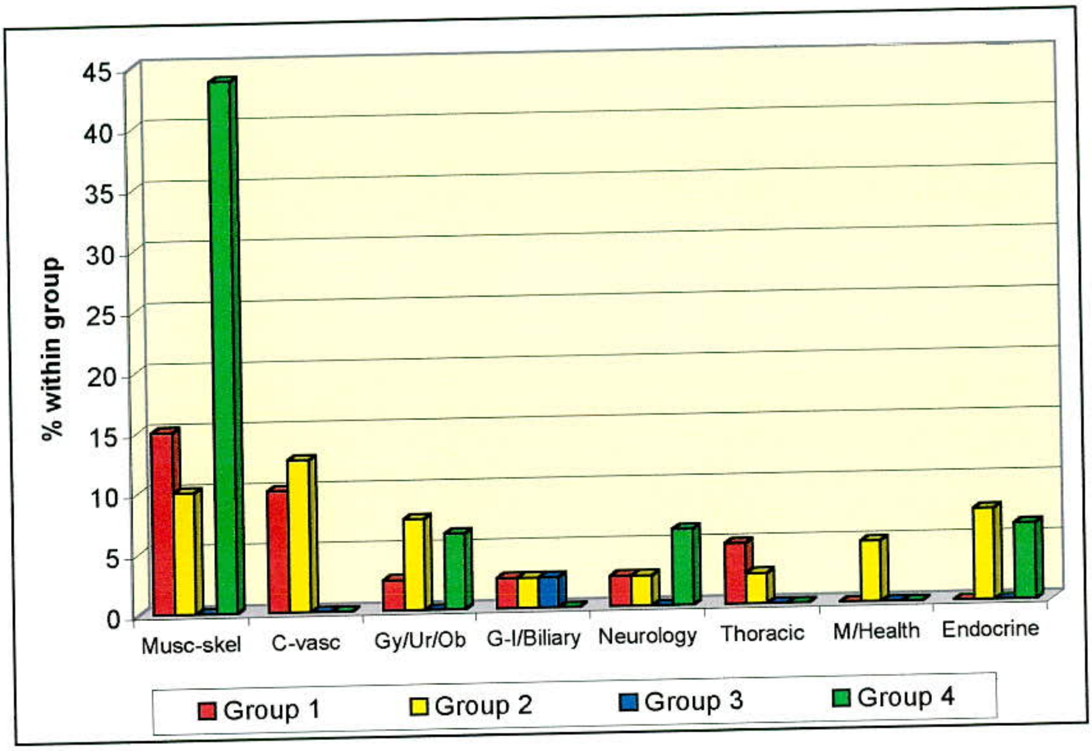


Figure 4.15. 2° diagnoses: % for groups

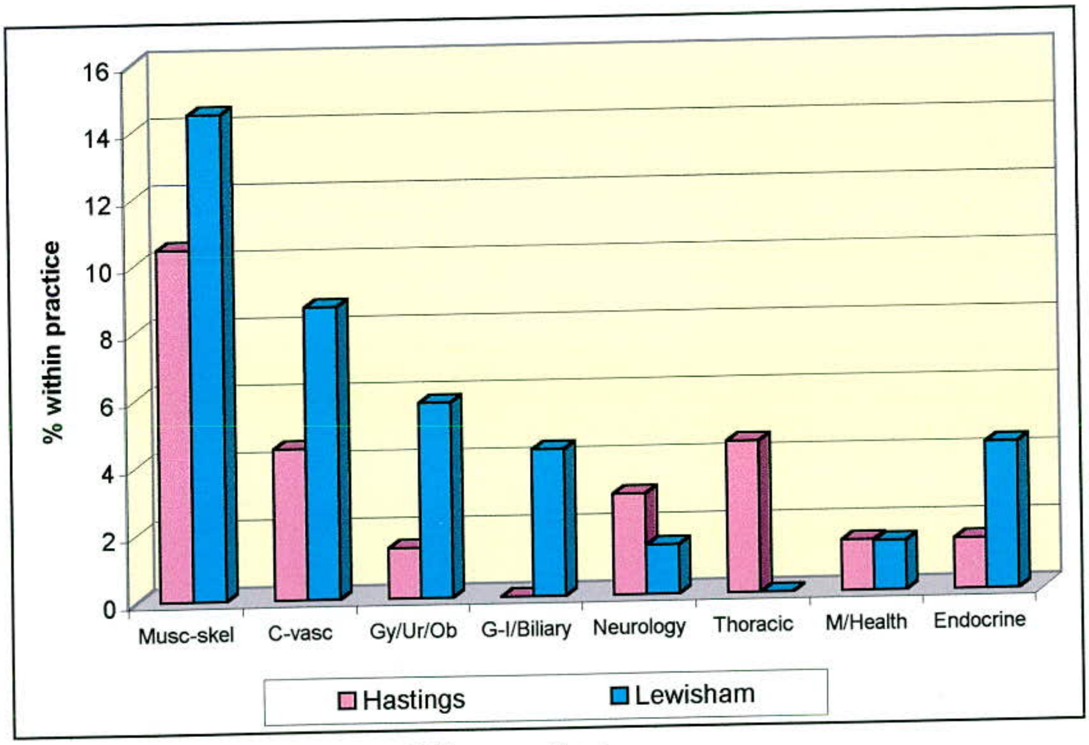


Figure 4.16. 2° diagnoses: % for practices

Whilst the chi-square test suggests differences for primary and secondary diagnoses may be highly statistically significant only for groups ($p \leq 0.001$), more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix J, 9 and 10)*.

4.8. Summary

The mean age for the total sample is 50 years, with a range of 19 - 70 years. Some differences between groups may be explained by purposive sampling and socio-biological factors, with Groups 1 and 2 including a higher percentage of older patients than Group 3 *(see Table 4.2)*, and older Group 4 patients between that for Groups 2 or 3. Comparing the pain groups, Group 4 has a higher percentage of younger patients than Group 1. Nearly a third of the total sample have no dependants, whilst a fifth have one dependant *(see Table 4.2)*. Group 3 has the highest percentage with dependants and Group 1 the lowest, with differences explained by the higher percentage of younger Group 3 patients and dependants. The chi-square test suggests differences for age, and number of dependants and age of the first two dependants may be statistically significant for groups.

A third of the total sample are retired, with over a quarter fully employed and slightly less than a quarter unemployed. Of note is the high percentage of unemployed or retired Group 1 patients compared to the other three groups *(see Table 4.2)*. Clerical/secretarial occupations are most common for both practices, with personal/protective services equal highest in the Hastings practice *(see Table 4.3)*. A higher percentage of the Hastings practice report no occupation, professional, and associate professional/technical occupations, whilst the Lewisham practice report a higher percentage of craft/related occupations and other elementary occupations such as unskilled labour. Such patterns are reflected in SEG for practices *(see Table 4.3)*. The chi-square test suggests differences for employment status may be highly statistically significant for groups, and SOC and SEG may be statistically significant for practices.

Patients with chronic pain report pain duration of less than one year to 60 years, however, different profiles are found for Groups 1 and 4 *(see Table 4.2)*. None of Group 1 for example, report three months to one year duration of pain, with 2 - 10 years and more than 10 years pain duration being reported by slightly less than two thirds and a third respectively. Group 4, however, has one report of three months to one year of pain, with more than a third reporting 1 - 5 years pain duration. Importantly, a quarter of Group 4 also report more than 15 years pain duration, but would not been identified with chronic pain through current identification criteria in general practice. The chi-square test suggests differences for duration of pain may be statistically significant for Groups 1 and 4

Diagnostic profiles for the four groups can to some extent be explained by purposive sampling criteria. The majority of Group 3, for example, report no primary diagnosis, whilst Group 2 identify a range of diagnoses. The majority of Group 1 and nearly a third of Group 4 have primary musculo-skeletal diagnoses. Group 4 has the highest percentage reporting secondary diagnoses with the highest percent being musculo-skeletal diagnoses, whilst Groups 1 and 2 have a range of secondary diagnoses. The chi-square test suggests differences for primary and secondary diagnoses may be highly statistically significant for groups.

Although the chi-square test initially appears to demonstrate statistical significance for a number of demographic variables, limitations of sample size are such that it is not possible to conclusively state that statistical significance is evident. However, the data analysis does indicate that statistical significance may be achieved for these variables with a larger sample size, and such findings are summarised within this context. Whilst a larger sample size is beyond the exploratory and descriptive nature of this study, the findings do indicate the need for further large-scale studies.

Other demographic profiles of interest such as those relating to gender and marital status, which do not indicate statistical significance, are also evident between groups and practices. Overall, however, the findings presented in this chapter highlight the generality of pain in terms of variables such as gender, age, family, occupation, diagnosis and geographical situation. Whilst some differences between groups may be explained by purposive sampling criteria and/or socio-biological factors, others provide further insight into differences between groups of patients who present to their GP with a broad range of diagnoses, with or without pain. Of particular interest are comparisons between the two groups of chronic pain patients. This study therefore confirms that pain is a very common symptom, which warrants automatic enquiry on any form of routine health-status assessment and further research in general practice.

Profile	Group 1	Group 2	Group 3	Group 4
Gender	Male: 47.5% (n=19) Female: 52.5% (n=21)	Male: 37.5% (n=15) Female: 62.5% (n=25)	Male: 55.0% (n=22) Female: 45.0% (n=18)	Male: 31.1% (n=5) Female: 68.8% (n=11)
Age **	< 35 years: 7.5% (n=3) 35-54 years: 27.5% (n=11) 55-64 years: 37.5% (n=15) > 64 years: 27.5% (n=11)	< 35 years: 22.5% (n=9) 35-54 years: 25.0% (n=10) 55-64 years: 30.0% (n=12) > 64 years: 22.5% (n=9)	< 35 years: 22.5% (n=9) 35-54 years: 50.0% (n=20) 55-64 years: 12.5% (n=5) > 64 years: 15.0% (n=6)	< 35 years: 6.3% (n=1) 35-54 years: 56.3% (n=9) 55-64 years: 18.8% (n=3) > 64 years: 18.8% (n=3)
Marital status	Married: 62.5% (n=25) Single: 10.0% (n=4) Widowed: 5.0% (n=2) Divorced/sep: 22.5% (n=9)	Married: 57.5% (n=23) Single: 20.0% (n=8) Widowed: 5.0% (n=2) Divorced/sep: 17.5% (n=7)	Married: 77.5% (n=31) Single: 15.0% (n=6) Widowed: 2.5% (n=1) Divorced/sep: 5.0% (n=2)	Married: 81.3% (n=13) Single: 12.5% (n=2) Widowed: - Divorced/sep: 6.3% (n=1)
Dependants **	Have dep/dant: 20.0% (n=8) < 19 yrs: 69.2% (n=9)	Have dep/dant: 30.0% (n=12) < 19 yrs: 100.0% (n=24)	Have dep/dant: 55.0% (n=22) < 19 yrs: 89.7% (n=35)	Have dep/dant: 37.5% (n=6) < 19 yrs: 83.3% (n=6)
Employment status *	Full-time: 12.5% (n=5) Part-time: 2.5% (n=1) Unemployed: 37.5% (n=15) Retired: 47.5% (n=19)	Full-time: 17.5% (n=7) Part-time: 25.0% (n=10) Unemployed: 27.5% (n=11) Retired: 30.0% (n=12)	Full-time: 50.0% (n=20) Part-time: 17.5% (n=7) Unemployed: 12.5% (n=5) Retired: 20.0% (n=8)	Full-time: 37.5% (n=6) Part-time: 1 8.8% (n=3) Unemployed: 6.3% (n=1) Retired: 37.5% (n=6)
SOC/SEC	No occupation: 17.5% (n=7) Person/protect: 22.5% (n=9)	No occupation: 5.0% (n=2) Clerical/sec: 30.0% (n=12)	No occupation: 7.5% (n=3) Asoc. prof/tech:22.5% (n=9)	No occupation: 12.5% (n=2) Gp 1-3 occs: all 18.8% (n=3)
Impact of pain: marital / employment status	Alt. marital: 15.0% (n=6) Alt. employ/t: 60.0% (n=24)	N/A - NO PAIN	N/A - NO PAIN	Alt. marital: 6.3% (n=1) Alt. employ/t: 37.5% (n=6)
Duration of pain **	< 2 years: 7.5% (n=3) > 10 years: 30.0% (n=12)	N/A - NO PAIN	N/A - NO PAIN	< 2 years: 37.5% (n=6) > 10 years: 25.1% (n=4)
Major clinical diagnosis Primary * Secondary *	1° musc/skel: 92.5% (n=37) 2° musc/skel: 15.5% (n=6)	1° thoracic: 25.0% (n=10) 2° cardio/vasc: 12.5% (n=5)	1° cardio/vasc: 5.0% (n=2) 2° gastro-int: 2.5% (n=1)	1° musc/skel: 31.3% (n=5) 2° musc/skel: 43.8% (n=7)

* Chi-square test suggests high statistical significance ($p \leq 0.005$) ** Chi-square test suggests statistical significance ($p \leq 0.05$)

Table 4.2. Summary of demographic profiles for Groups

Profile	Hastings	Lewisham
Gender	Male: 44.8% (n=30) Female: 55.2% (n=37)	Male: 44.9% (n=31) Female: 55.1% (n=38)
Age	< 35 years: 16.4% (n=11) 35-44 years: 20.9% (n=14) 45-54 years: 22.4% (n=15) 55-64 years: 26.9% (n=18) > 64 years: 13.4% (n=9)	< 35 years: 15.9% (n=11) 35-44 years: 17.4% (n=12) 45-54 years: 13.0% (n=9) 55-64 years: 24.6% (n=17) > 64 years: 29.0% (n=20)
Marital status	Married: 61.2% (n=41) Single: 16.4% (n=11) Widowed: 3.0% (n=2) Divorced/sep: 19.4% (n=13)	Married: 73.9% (n=51) Single: 13.0% (n=9) Widowed: 4.3% (n=3) Divorced/sep: 8.7% (n=6)
Dependants	Have dep/dant: 34.3% (n=33) < 19 yrs: 88.4% (n=38)	Have dep/dant: 36.2% (n=35) < 19 yrs: 90.0% (n=36)
Employment status	Full-time: 34.3% (n=23) Part-time: 13.4% (n=9) Unemployed: 25.4% (n=17) Retired: 26.9% (n=18)	Full-time: 21.7% (n=7) Part-time: 17.4% (n=12) Unemployed: 21.7% (n=15) Retired: 39.1% (n=27)
SOC/SEG **	No occupation: 13.4% (n=7) Clerical/sec: 17.9% (n=12) Person/protect: 17.9% (n=12)	No occupation: 7.2% (n=5) Clerical/sec: 20.3% (n=14)
Impact of pain: marital / employment status (Groups 1 and 4)	Alt. marital: 14.8% (n=4) Alt. employ/t: 63.0% (n=17)	Alt. marital: 10.3% (n=3) Alt. employ/t: 44.8% (n=13)
Duration of pain (Groups 1 and 4)	< 2 years: 22.2% (n=6) > 10 years: 25.9% (n=7)	< 2 years: 10.3% (n=3) > 10 years: 31.0% (n=9)
Major clinical diagnosis	1° musc/skel: 37.3% (n=25) 2° musc/skel: 10.4% (n=7)	1° musc/skel: 26.1% (n=18) 2° musc/skel: 14.5% (n=10)

** Chi-square test suggests statistical significance ($p \leq 0.05$)

Table 4.3. Summary of demographic profiles for practices

5. FINDINGS FROM THE McGILL PAIN QUESTIONNAIRE

5.1. Introduction

Analysis of MPQ data follows previously described recommendations in relation to dimensions, pain intensity scale, coding and scoring methods *(see 3.3.2, pages 64 - 71)*. Findings presented comprise information obtained from the introductory section and Parts 1 - 4 of the MPQ *(see Appendix B)*, which relate to the total pain experience at the time of interview. Due to the purposive sampling criteria, it could be anticipated that Groups 2 and 3, who have other unrelated medical conditions or who are supposedly fit and well, would not be eligible to complete the questionnaire because pain is unlikely to be present at the time of interview. It could, however, be anticipated that Groups 1 and 4 are more likely to complete the MPQ and should show similar results because both groups report a history of chronic pain when interviewed. Findings from the MPQ are therefore presented in the following format:

5.2. MPQ total/dimension descriptor scores
5.3. Sites of pain
5.4. Pain intensity
5.5. Pattern of pain over time
5.6. Factors that affect pain
5.7. Summary

5.2. MPQ total/dimension descriptor scores

The MPQ descriptor scores comprise a total descriptor score and sensory (S), affective (A) and miscellaneous (M) dimension scores *(see 3.3.2, pages 65 - 68)*. The three scoring methods described in the development of the MPQ are those of weighted rank value (WRV), scale value (SV), and rank value (RV). All three scoring methods have been utilised in order to ascertain if any similarities and/or differences are observed. As described *(see 3.8, pages 88 - 89)*, tests of statistical significance for nonparametric data include the Mann-Whitney test, as only Groups 1 and 4 meet the criteria that pain is present at interview, and the chi-square test.

5.2.1. Groups and practices

Total descriptor and dimension scores confirm that Groups 1 and 4 comprise patients with chronic pain, with only two Group 4 patients not having pain at the time of interview *(see Figures 5.1 and 5.2)*.

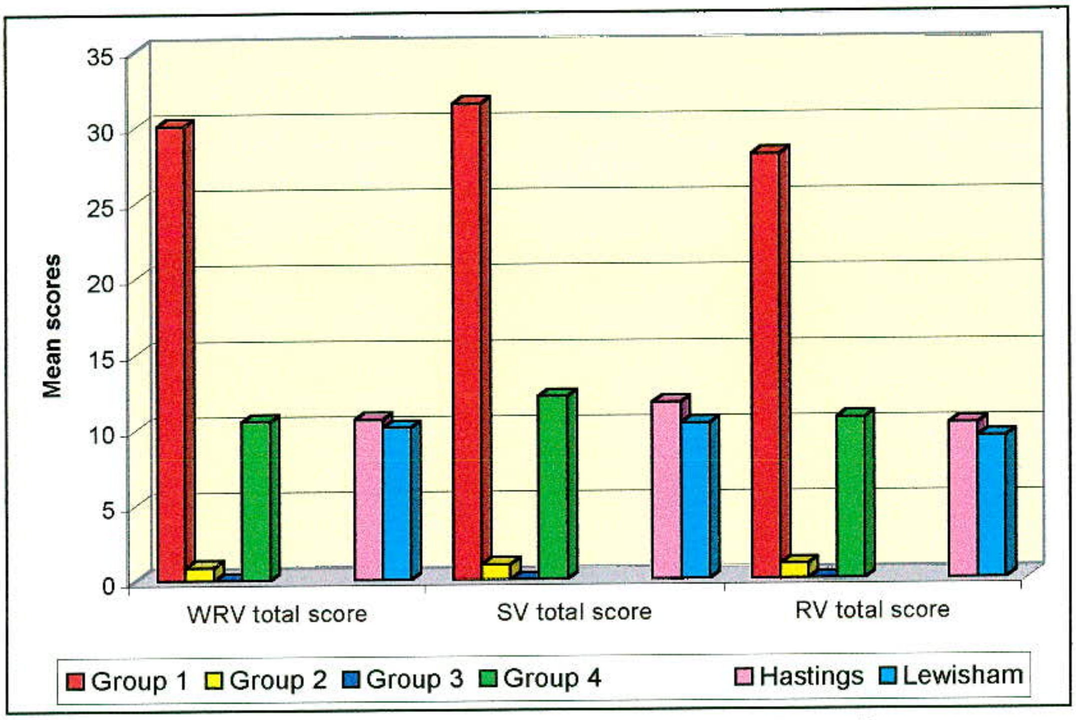


Figure 5.1. MPQ total descriptor scores for groups and practices

Consistently higher scores are found for Group 1 than Group 4 (for example WRV mean total scores = 30.03 vs. 10.47 respectively). The low Group 2 pain scores (WRV mean = 0.85) can be explained by four reports of acute pain at interview. Similar profiles are evident for the two practices, although the Hastings practice has slightly higher total descriptor, sensory, and miscellaneous dimension scores for Groups 1 and 4 than the Lewisham practice (for example WRV mean total scores: 25.48 vs. 23.48 respectively) *(see Figures 5.1 and 5.3)*. The Mann-Whitney test, which ranks the scores for two independent groups and provides mean rank scores for each group, suggests differences for all total descriptor, sensory, affective and miscellaneous dimension scores may be highly statistically significant only for Groups 1 and 4 (WRV, SV and RV for all scores: Asymp. Sig. (2-tailed) ≤ 0.002) *(see Appendix N, 1 and 2)*.

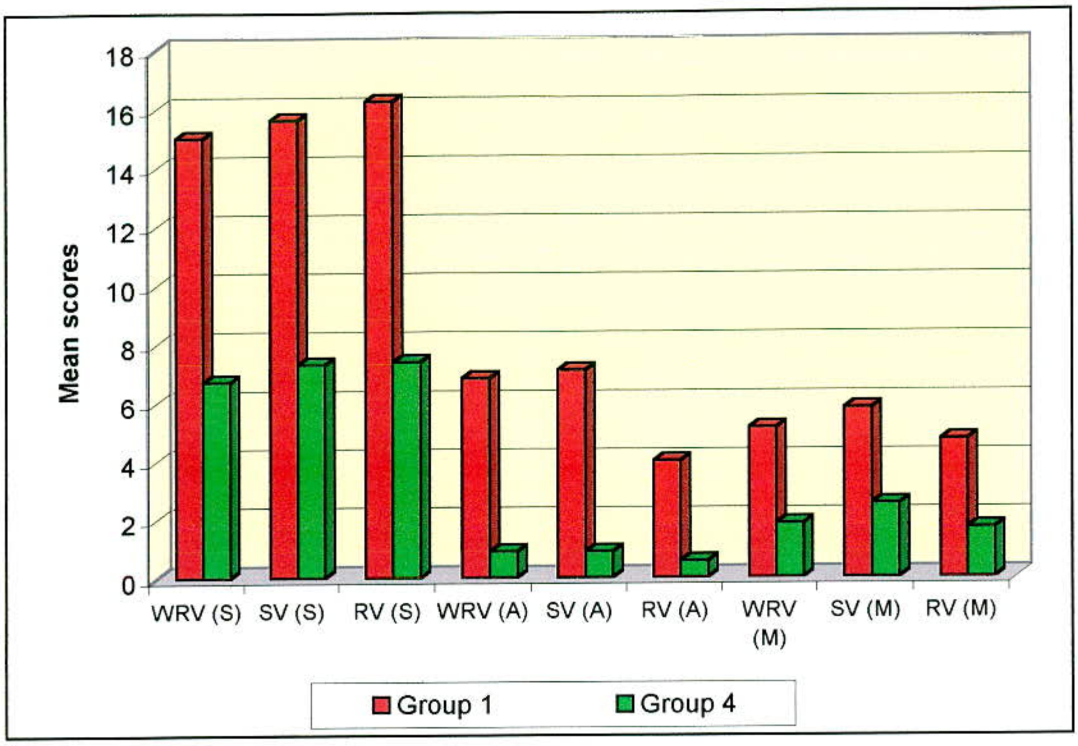


Figure 5.2. MPQ dimension scores for Groups 1 and 4

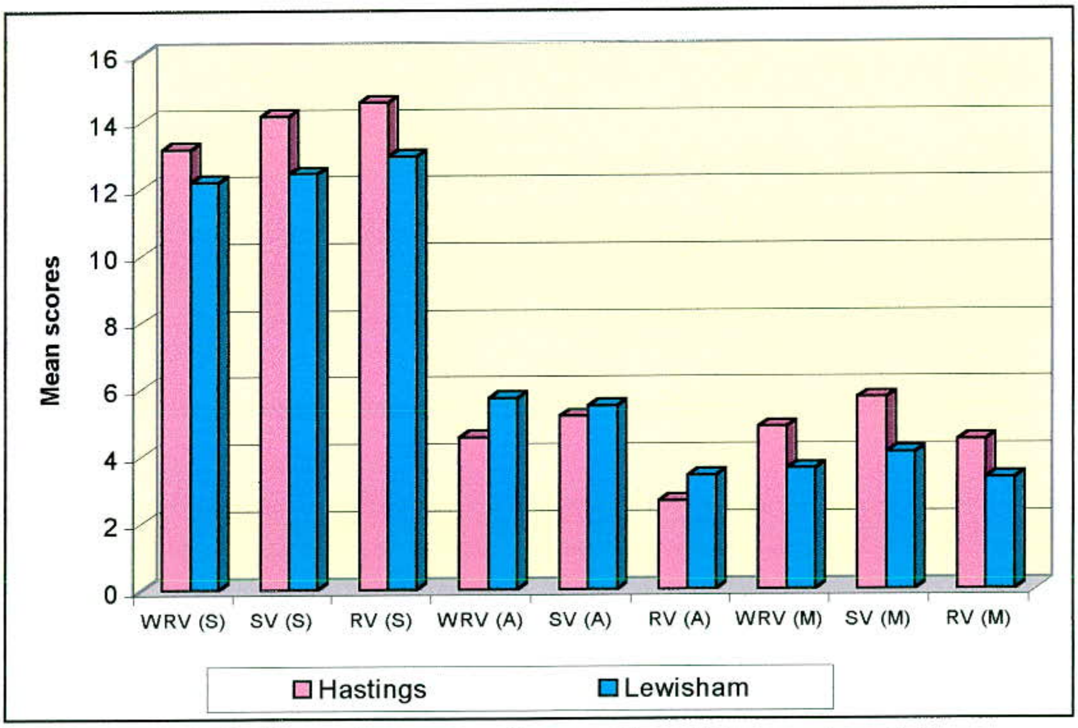


Figure 5.3. MPQ dimension scores for practices (Groups 1 and 4)

With the exception of lower RV (A) scores for Group 1, only small differences are observed for the different scoring methods (for example, mean sensory dimension scores for Group 1: WRV = 15.03, SV = 15.64, RV = 16.25). For the purposes of this study therefore, only MPQ data for Groups 1 and 4 will be further described, and MPQ scores will utilise only the WRV method, which is generally recognised as the more recent and accurate method than the SV and RV methods *(see 3.3.2, pages 65 - 67)*.

5.2.2. Clinical diagnoses

Primary gastro-intestinal/biliary diagnoses consistently have the highest MPQ total descriptor and dimension scores (total = 47.46, (S) = 25.36, (A) = 10.98, (M) = 8.09) *(see Figure 5.4)*. However, the limitations of this finding should be recognised with only one patient from Groups 1 and 4 in this diagnostic group.

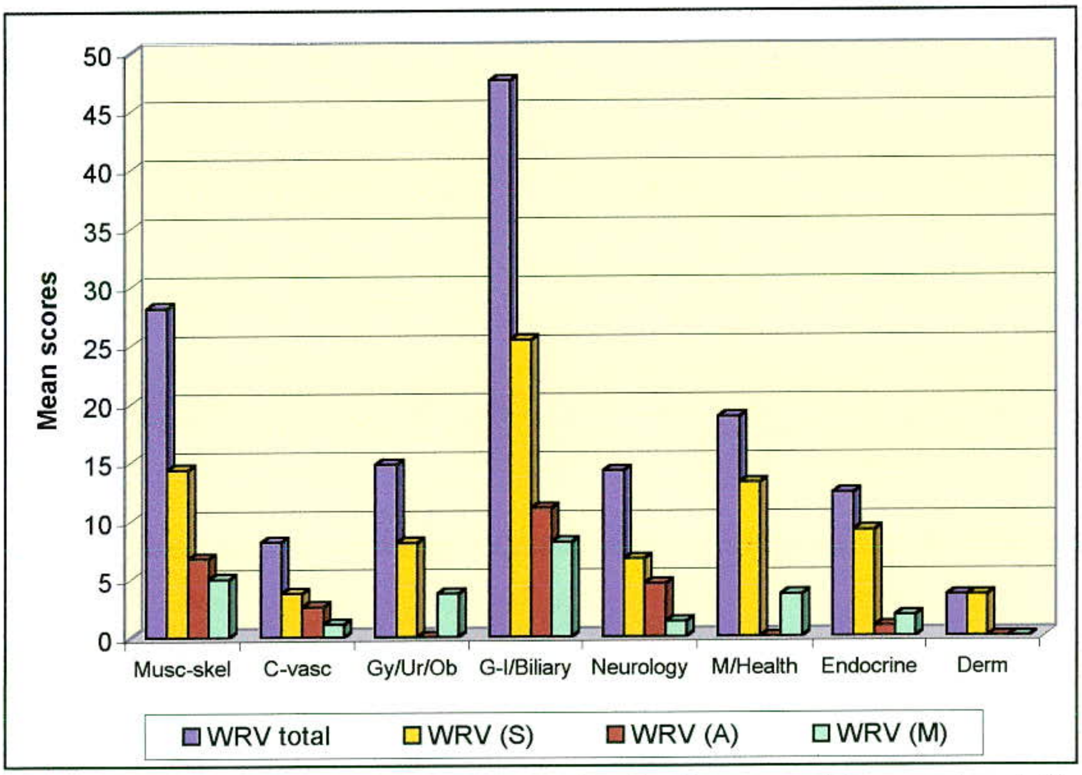


Figure 5.4. MPQ total/dimension scores for 1° diagnoses (Groups 1 and 4)

The second highest scores are consistently for musculo-skeletal diagnoses (total = 28.11, (S) = 14.32, (A) = 6.72, (M) = 4.94, n = 42). Although neurological diagnoses score the third highest affective dimension score, this is not reflected for the other scores (total = 14.16, (S)

= 6.64, (A) = 4.52, (M) = 1.31; n = 3). Whilst mental health diagnoses have the third highest total descriptor and sensory dimension scores, there is no score for the affective dimension (total = 18.75, (S) = 13.14, (A) = 0.00, (M) = 3.59). Such a pattern is also found for gynaecology/urology/obstetrics diagnoses, which have the next highest total score (total = 14.72, (S) = 8.03, (A) = 0.00, (M) = 3.66). However, the limitations of such findings should again be recognised, with only one patient in each of these groups.

Although secondary gastro-intestinal/biliary diagnoses have the highest total descriptor, affective and miscellaneous dimension scores (total = 34.53, (A) = 8.34, (M) = 8.26), secondary thoracic diagnoses have the highest sensory dimension scores *(see Figure 5.5)*. The limitations of such findings should again be recognised, with only one and two patients respectively in each of these diagnostic groups. Musculo-skeletal diagnoses have the second highest total descriptor and affective dimension scores (total = 29.01, (A) = 4.52, n = 13), but rank only fourth for both sensory and miscellaneous dimensions.

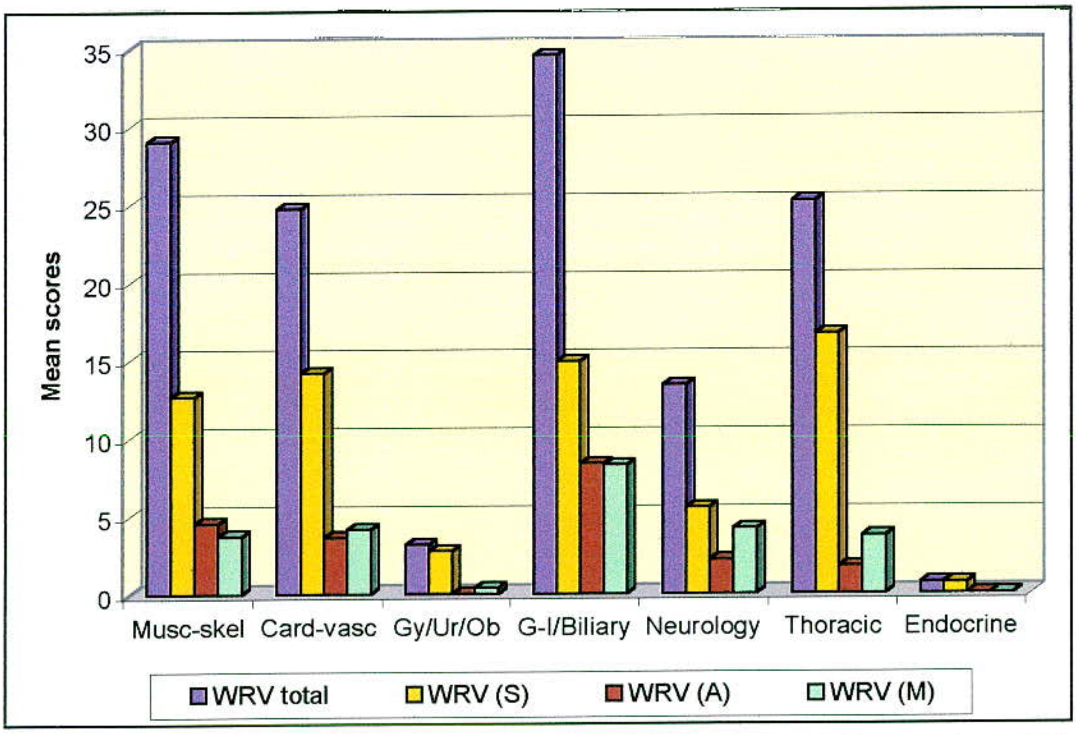


Figure 5.5. MPQ total/dimension scores for 2° diagnoses (Groups 1 and 4)

5.3. Sites of pain

5.3.1. Patterns of pain distribution

The body diagram in Part 1 of the MPQ *(see Appendix B)* is utilised by the patient to mark areas of the body where pain is experienced at the time of interview. The number of pain sites for Groups 1 and 4 is found to cover a broad range (Group 1 = 1 - 17, Group 4 = 0 - 9). Differences are evident between the two groups, with the majority of Group 4 (56.3%, n = 9) reporting one site of pain and only 12.5 per cent (n = 2) reporting 6 - 10 sites. Group 1, however, report greater numbers of pain sites overall, with the majority reporting more than one site (for example: 3 - 5 sites = 30.0%, 6 - > 10 sites = 35.0%, n = 12 and 14 respectively) *(see Figure 5.6)*. Comparing practices, the Hastings practice report more sites of pain than the Lewisham practice overall (for example: 6 - 10 sites = 25.9% vs. 13.8%, n = 7 and 4; > 10 sites = 14.8% vs. 3.4%, n = 4 and 1 respectively) *(see Figure 5.6)*.

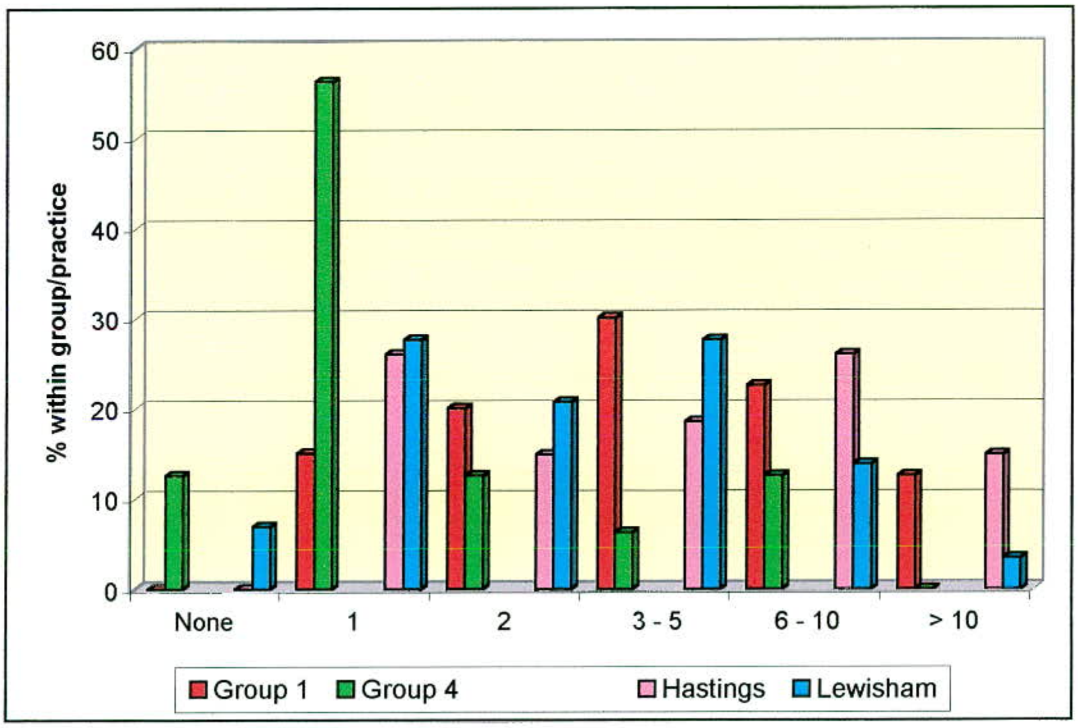


Figure 5.6. No. of pain sites: % for Groups 1 and 4 and practices

The primary sites of pain identified by Groups 1 and 4 are grouped into 13 anatomical areas *(see Figure 5.7)*. Although a percentage of patients in both groups identify more than one primary site of pain, a higher percentage is found for Group 1 than Group 4 (65.0% vs. 12.5%, n = 26 and 2 respectively). The greater percentage of pain sites overall within Group 1 is also reflected in 40 per cent of Group 1 (n = 16) reporting three or more primary sites of pain compared to only one Group 4 patient. Primary sites of pain differ between Groups 1 and 4, particularly in relation to those most commonly reported by Group 1 (for example: lower back = 57.5% vs. 6.3%, n = 23 and 1; legs = 27.5% vs. 6.3%, n = 11 and 1 respectively) *(see Figure 5.7)*. The most common primary site of pain for Group 4 is that of pelvis/hips (31.3%, n = 5).

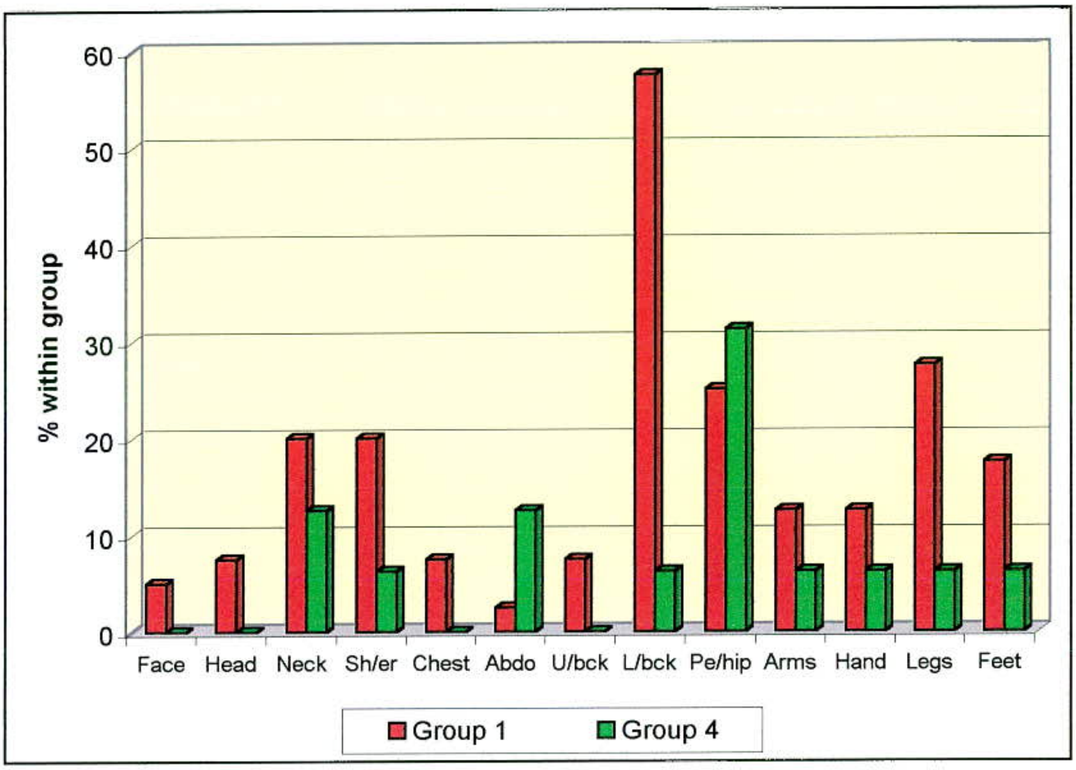


Figure 5.7. 1° pain sites: % for Groups 1 and 4

Although a percentage of patients in both practices identify more than one primary site of pain, a higher percentage is found in the Hastings practice than the Lewisham practice (63.0% vs. 38.0%, n = 17 and 11 respectively) *(see Figure 5.8)*. A higher percentage of the Hastings practice reporting three or more primary sites of pain than the Lewisham practice (37.0% vs. 24.0%, n = 10 and 7 respectively) also reflects the greater percentage of pain sites overall in the Hastings practice. The most common primary site of pain for the Hastings practice and the Lewisham practice is the lower back (55.6% and 31.0%, n = 15 and 9 respectively). However, the next most common primary sites of pain differ between the two practices (Hastings = pelvis/hips, 48.1% vs. Lewisham = shoulder, 20.7%, n = 13 and 6 respectively) *(see Figure 5.8)*.

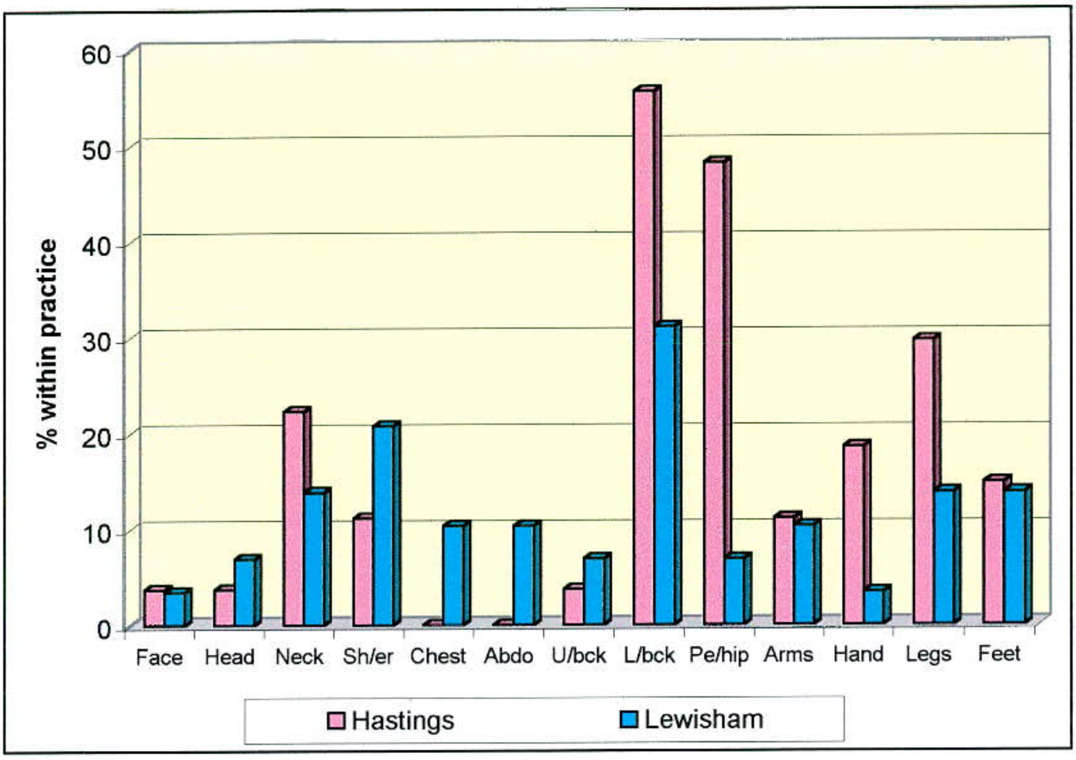


Figure 5.8. 1° pain sites: % for practices (Groups 1 and 4)

Secondary sites of pain identified by Groups 1 and 4 are grouped into 10 anatomical areas *(see Figure 5.9)*, with a higher percentage of Group 1 reporting secondary sites than Group 4 (50.0% vs. 18.8%, n = 20 and 3 respectively). Whilst this would again reflect the greater percentage of pain sites overall reported by Group 1, the same percentage of patients in Groups 1 and 4 report three or more secondary sites of pain (12.5%, n = 5 and 2 respectively). Although Groups 1 and 4 report the same most common secondary site of pain (legs = 27.5% and 12.5%, n = 11 and 2 respectively), differences are found for other secondary sites. Group 1, for example, report pelvis/hips to be the next most common site (22.5%, n = 9 vs. 0% respectively), whilst Group 4 report shoulder, hands and feet to be equally as common as legs (all 4 sites = 12.5%, n = 2).

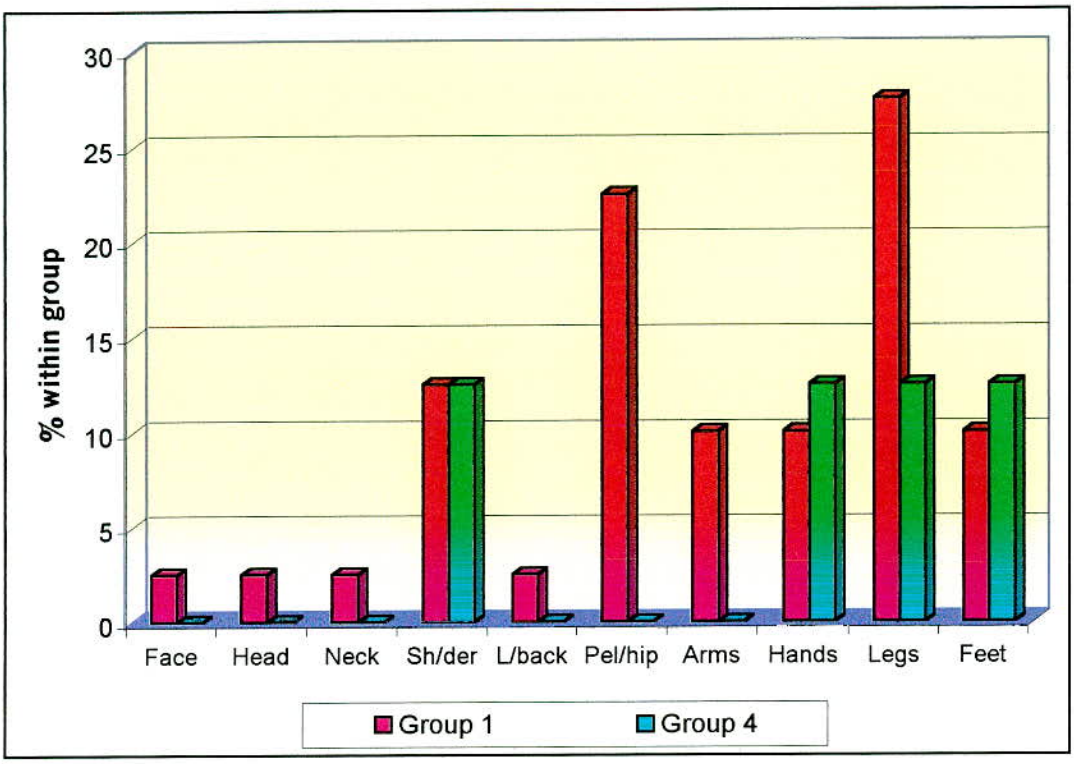


Figure 5.9. 2° pain sites: % for Groups 1 and 4

A similar percentage in the Hastings practice and the Lewisham practice report secondary sites of pain (40.7% and 41.4%, n = 11 and 12 respectively) *(see Figure 5.10)*. However, a higher percentage of the Hastings practice report more than one secondary site of pain than the Lewisham practice (for example: > 1 site = 33.3% vs. 20.7%, n = 9 and 6; ≥ 3 sites = 18.5% vs. 6.9%, n = 5 and 2 respectively). This again reflects the higher percentage of pain sites in the Hastings practice overall. The two most common secondary sites of pain are the same for the Hastings practice and the Lewisham practice (for example: legs = 29.6% and 17.2%, n = 8 and 5; pelvis/hips = 18.5% and 13.8%, n = 5 and 4 respectively). The Lewisham practice equally report the second most common secondary site of pain to be the hands (13.8%, n = 4).

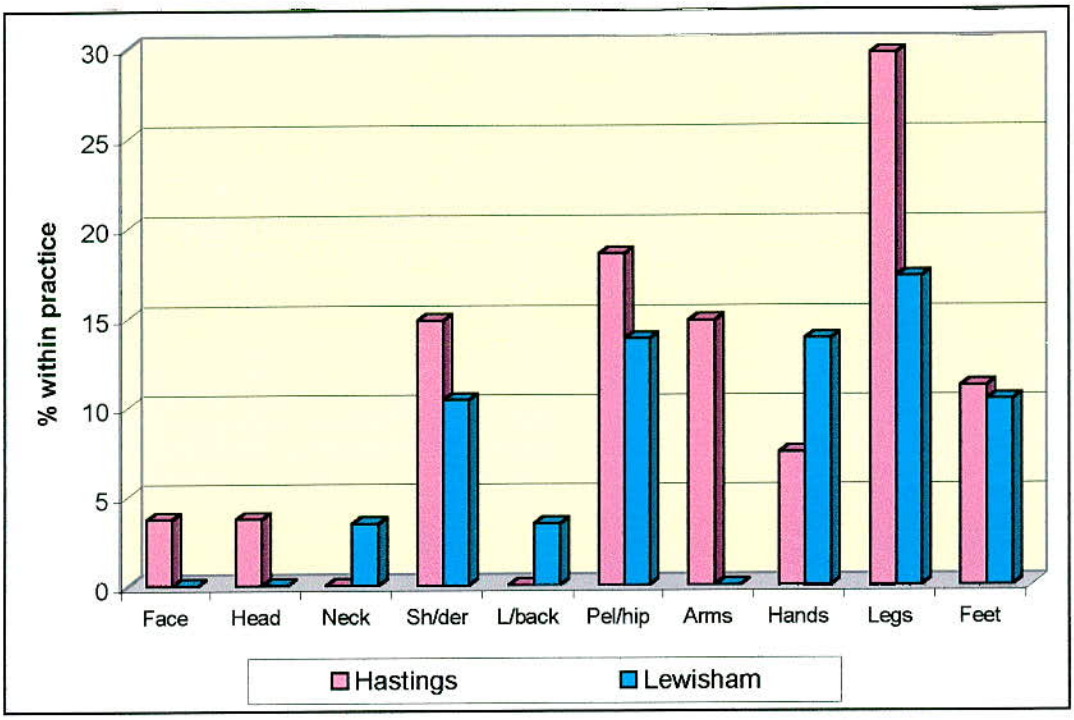


Figure 5.10. 2° pain sites: % for practices (Groups 1 and 4)

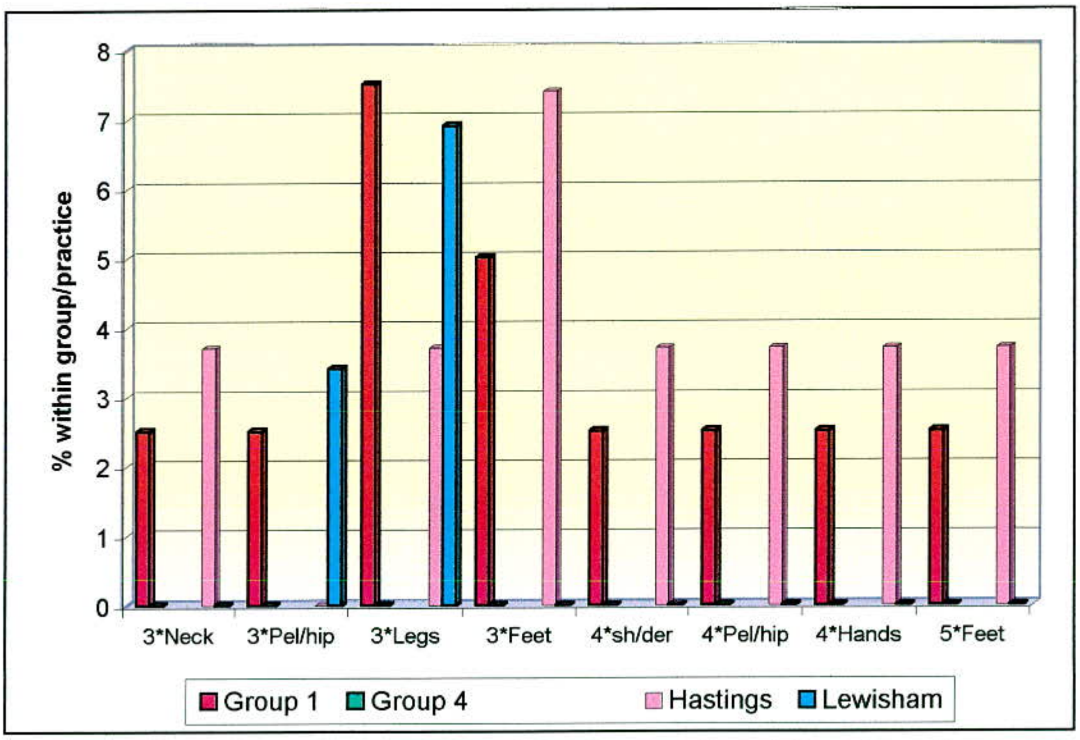


Figure 5.11. 3°, 4° & 5° pain sites: % for Groups 1 and 4 and practices

All additional sites of pain are grouped into six anatomical areas and only reported by Group 1 (22.5%, n = 9) *(see Figure 5.11)*. The most common additional sites of pain are the legs and feet (both sites = 7.5%, n = 3), with more than one additional pain site reported by only one patient (3° sites = 2, 4° site = 1). Additional pain sites are reported by a higher percentage of the Hastings practice than the Lewisham practice (for example: 22.2%, n = 6 vs. 10.3%, n = 3; feet = 11.0% vs. 0% respectively), again reflecting the greater percentage of pain sites reported by the Hastings practice overall.

Discussion is evident in the literature about the relationship of sites of pain with age and occupation *(see 2.2, pages 11 - 13)*. Comparing sites of pain with age, the face, head, chest, upper back and abdomen only have small numbers for each age group (Groups 1 and 4: all ≤ 4). The highest percentage with neck pain are 45 - 54 years (38.5%, n = 5), whilst low back, hand, leg and pelvis/hip pain are highest for 55 - 64 years (37.0%, 35.7%, 35.5% and 33.3%; n = 10, 5, 10 and 9, respectively) *(see Figure 5.12)*. Arm and foot pain are highest for 45 - 54 years and 55 - 64 years respectively (30.0% and 29.4%, n = 3 and 5), whilst shoulder pain is highest for 55 - 64 years and over 64 years (both = 29.4%, n = 5).

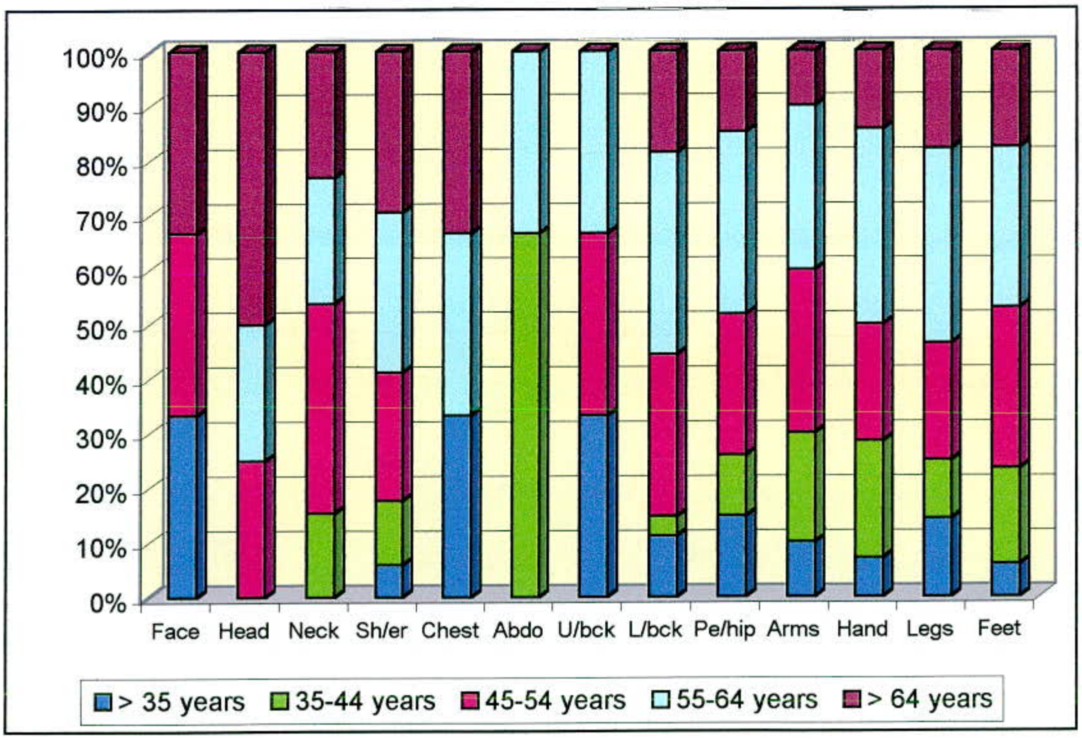


Figure 5.12. Age groups: % for pain sites

Comparing sites of pain with occupations, the face, head, chest, upper back and abdomen only have small total numbers for each SOC (Groups 1 and 4: all ≤ 4) *(see Figure 5.13)*. The highest percentage with no occupation have arm pain (50.0%, n = 5), although several other sites have more than a quarter reporting no occupation (for example: shoulder = 29.4%, hands = 28.6%, pelvis/hips = 25.9%; n = 5, 4 and 7). Neck, shoulder and low back pain are highest for personal/protective services (38.5%, 29.4% and 22.5%; n = 5, 5 and 6 respectively), whilst the highest percentage with hand, leg and pelvis/hip pain are clerical/secretarial occupations (35.7%, 25.0%, 18.5%; n = 5, 7 and 5 respectively). Both these occupational groups are also equal highest for foot and arm pain (feet = 23.5% and arms = 20.0%, n = 4 and 2 respectively).

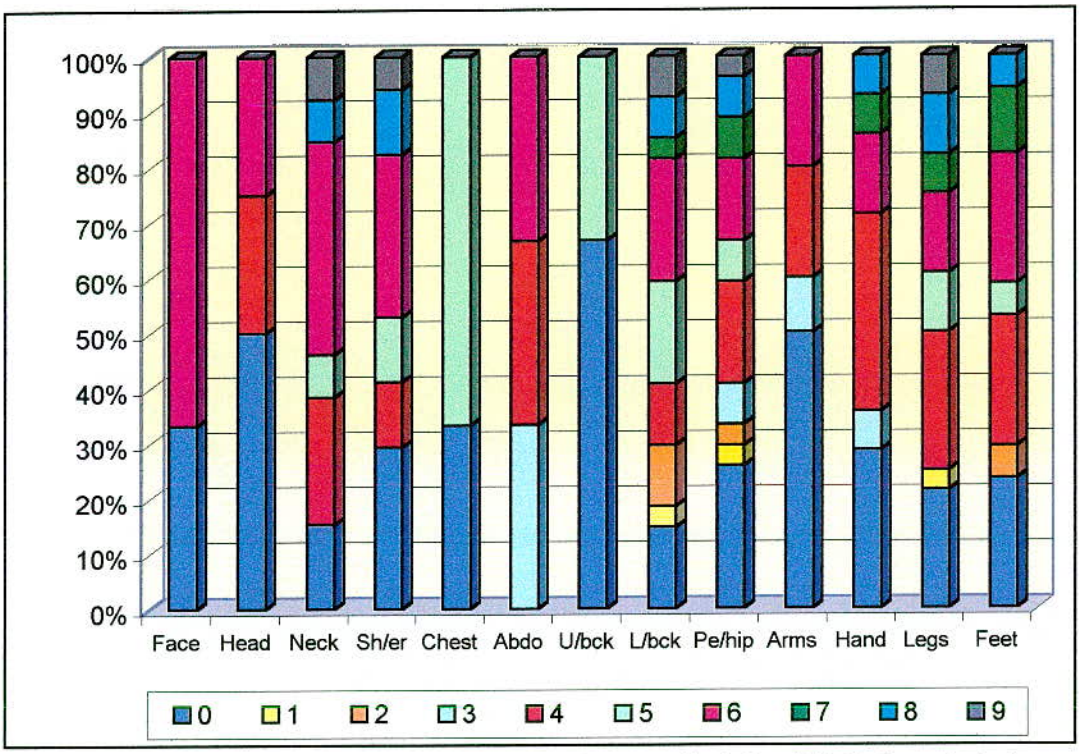


Figure 5.13. SOC: % for pain sites (see Appendix L for SOC descriptor)

The chi-square test suggests differences for the number of pain sites and lower back pain may be highly statistically significant ($p \leq 0.003$), and leg pain may be statistically significant ($p = 0.028$) for Groups 1 and 4. Pelvis/ hip pain is also suggested to be highly statistically significant for practices

($p \leq 0.002$) and foot pain statistically significant for age ($p = 0.024$). However, more large scale studies would be required to confirm statistical significance, due to some cells having less than the expected count *(see Appendix O, 1 - 5)*.

5.3.2. MPQ total/dimension scores for sites of pain

The highest total descriptor, affective and miscellaneous dimension scores are for 7 and 10 sites of pain (total = 59.01 and 52.25; (A) = 20.24 and 18.37; (M) = 14.73 and 9.38 respectively, both n = 1), with the highest sensory dimension score for 5 sites of pain (20.79, n = 3) *(see Figure 5.14)*. However, the limitations of such findings should be recognised due to the small numbers in these groups.

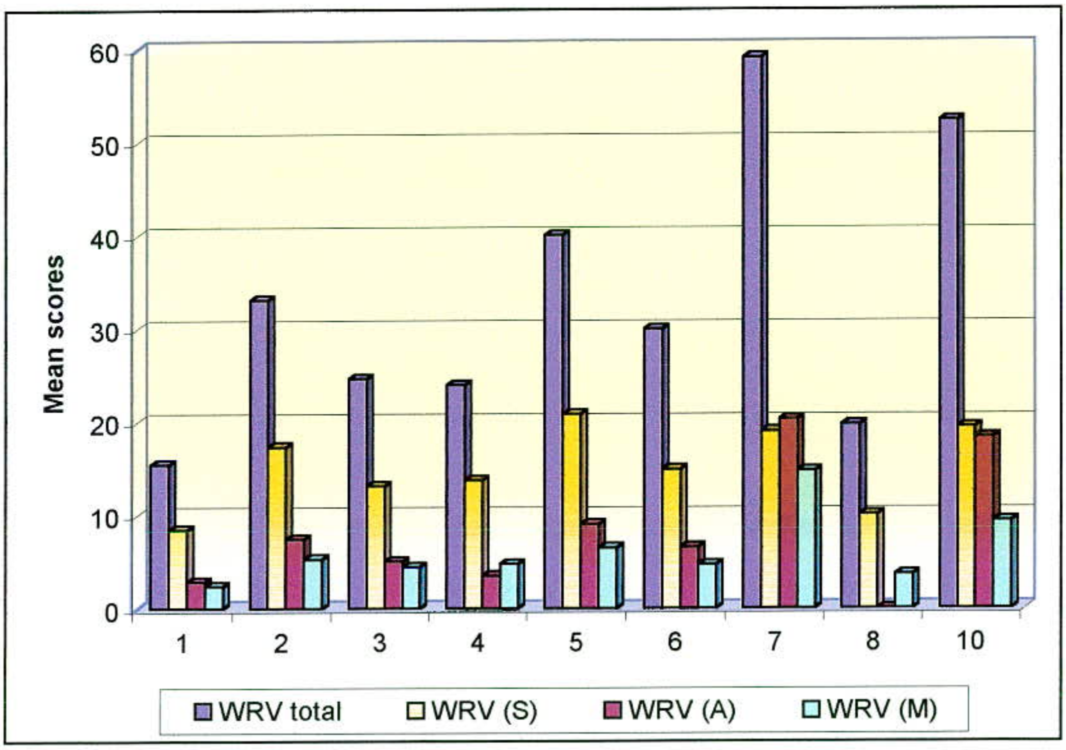


Figure 5.14. MPQ total/dimension scores for no. pain sites (Groups 1 & 4)

Although one site of pain has the lowest MPQ scores for all but the affective dimension (mean: total = 15.43, (S) = 8.40, (M) = 2.39), there is no support for more pain sites causing increasingly greater effect and distress *(see 2.5.1, pages 31 - 32)*. For example, 2 sites of pain has higher total and dimension scores than either 4 or 6 sites (for example 2 vs. 6 sites mean scores: total = 33.00 vs. 29.89; (S) = 17.30, vs. 14.92; (A) = 7.41 vs. 6.56; (M) = 5.26 vs. 4.71; n = 9 and 6 respectively). Although only one patient has eight sites of pain, it is of note that this high number of sites has no score for the affective dimension.

The highest total descriptor scores are for the face and head (37.47 and 37.15, n = 3 and 4 respectively), whilst chest and abdomen have the two lowest scores (16.91 and 18.12 respectively, both n = 3) *(see Figure 5.15)*. However, the limitations of such findings should be recognised due to the small number with these sites of pain. All other pain sites have a similar range of total descriptor scores, with the lowest score being for arms and the highest for feet (27.65 and 31.05, n = 10 and 17 respectively).

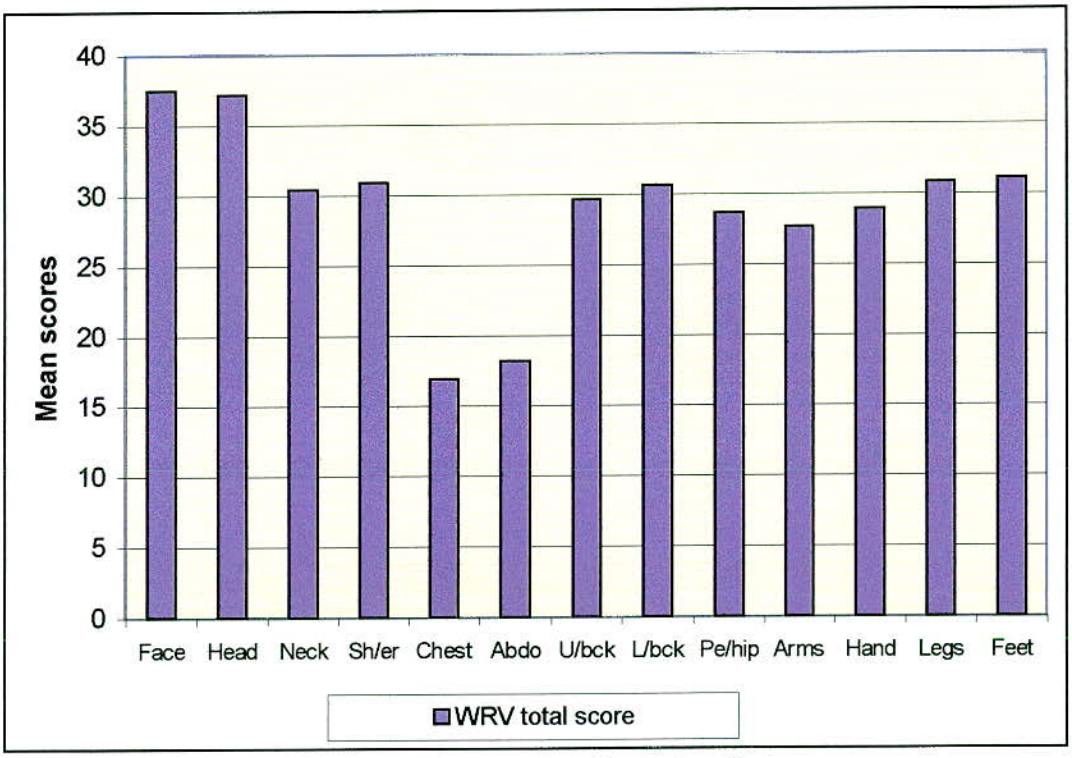


Figure 5.15. MPQ total descriptor scores for pain sites

Comparing dimension scores, face and head again have the highest sensory dimension scores (18.11 and 17.40 respectively) *(see Figure 5.16)*. Although the head also has the highest affective dimension score

(11.27), upper back has the second highest score (9.51, n = 3), with the face being only third highest (8.90). However, the limitations of such findings should be recognised due to the small number with these sites of pain. The highest miscellaneous dimension scores are for lower back and feet (both = 5.80, n = 25 and 17 respectively). Whilst the chest is the lowest score for both sensory and miscellaneous dimensions (7.39 and 1.81 respectively) and abdomen the lowest score for the affective dimension (3.66), no other pattern is evident for differences in pain sites.

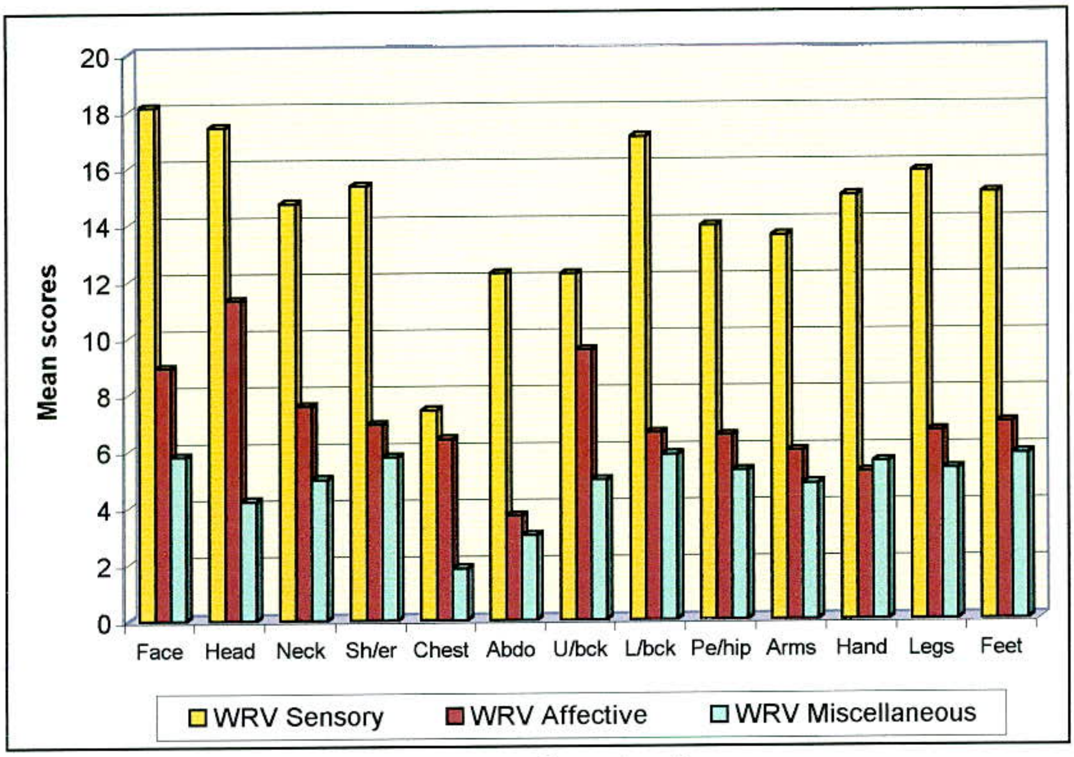


Figure 5.16. MPQ dimension scores for pain sites

5.4. Pain intensity

As previously described *(3.3.2, pages 64 - 65)*, the five-point MPQ pain intensity scale is derived from words validated as representing increasing pain intensity during development of the MPQ *(see Table 5.1)*. The intensity of pain at time of interview differs for Groups 1 and 4, with a higher percentage of Group 1 reporting a greater intensity of pain than Group 4 (for example level ≥ 3: 20.0%, n = 8 vs. 0% respectively) *(see Figure 5.17)*.

Pain intensity level	**Representative word**
1	Mild
2	Discomforting
3	Distressing
4	Horrible
5	Excruciating

Table 5.1. The five-point MPQ pain intensity scale

A higher percentage of Group 1 also report the greater of the two lower intensity levels, whilst both lower levels are reported equally for Group 4 (level 1 = 27.5% vs. 50.0%, level 2 = 52.5% vs. 50.0%; n = 11, 7, 21 and 7 respectively). Similar patterns of present pain intensity are found for both practices, with lower and higher pain intensity levels reported by the same number in both the Hastings and Lewisham practices (for example levels 1 - 2 = 85.1% and 85.2%, both n = 23) *(see Figure 5.17)*.

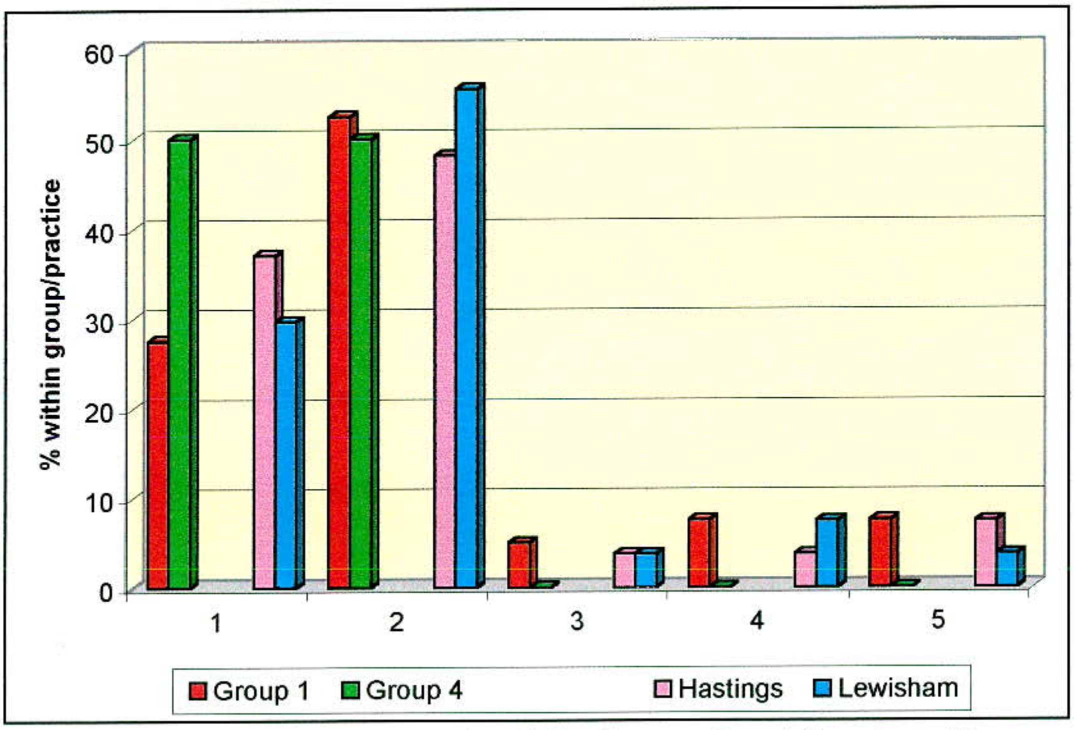


Figure 5.17. Present pain intensity: % for Groups 1 and 4 and practices

Worst ever pain intensity differs for Groups 1 and 4, with a higher percentage of Group 1 reporting a greater level than Group 4 (level 5 =

55.0% vs. 28.6%, n = 22 and 4 respectively) *(see Figure 5.18)*. The highest percentage of Group 4 report level 3 as worst ever pain intensity (42.9%, n = 6). Similar patterns are found for the worst ever pain intensity in both practices, with only a slightly greater mid-intensity report for the Hastings practice than the Lewisham practice (level 3 = 25.9% vs. 37.0%, level 4 = 18.5% vs. 11.1%, n = 7, 10, 5 and 3 respectively).

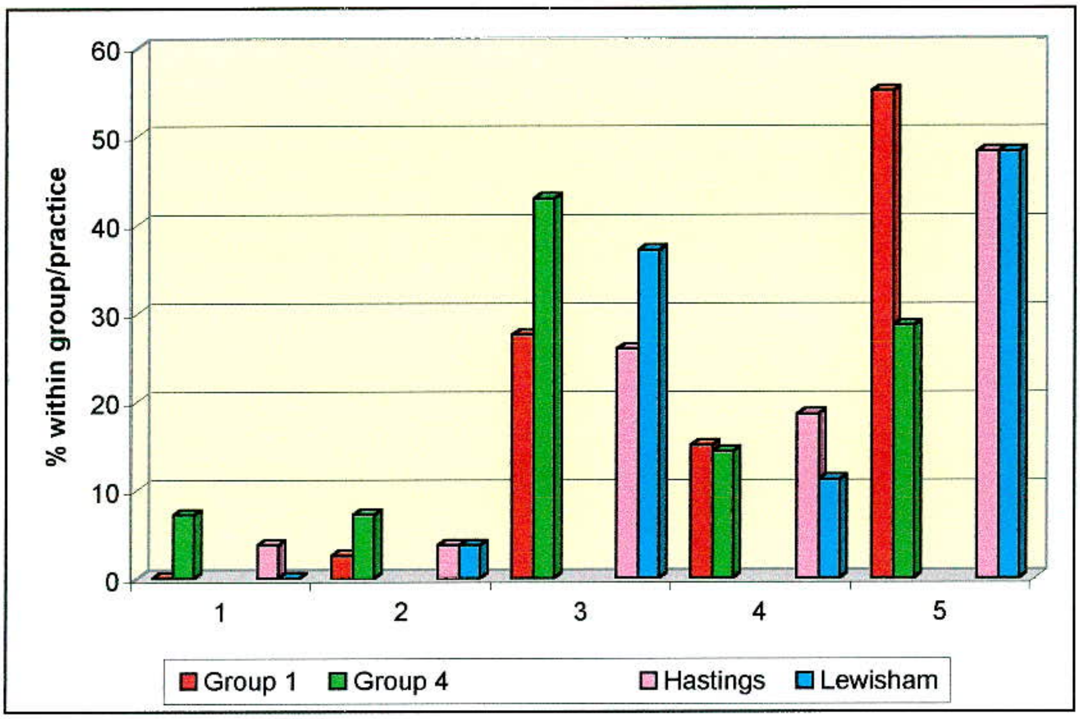


Figure 5.18. Worst ever pain intensity: % for Groups 1 and 4 and practices

Although worst pain experiences overall show a higher percentage of Group 1 reporting a greater intensity than Group 4, this pattern does not appear to be reflected as clearly for site-specific worst ever pain experiences. A higher percentage of Group 4, for example, report greater pain intensity for worst ever stomach-ache than Group 1 (levels 4 and 5 = 64.3% vs. 50.0%, n = 9 and 20 respectively) *(see Figure 5.19)*. Only a slightly higher percentage of Group 1 also report greater pain intensity for toothache and headache than Group 4 (levels 4 and 5 = 77.5% vs. 71.4% and 57.5%, vs. 50.0%, n = 31, 11, 23 and 7 respectively) *(see Figures 5.20 and 5.21)*.

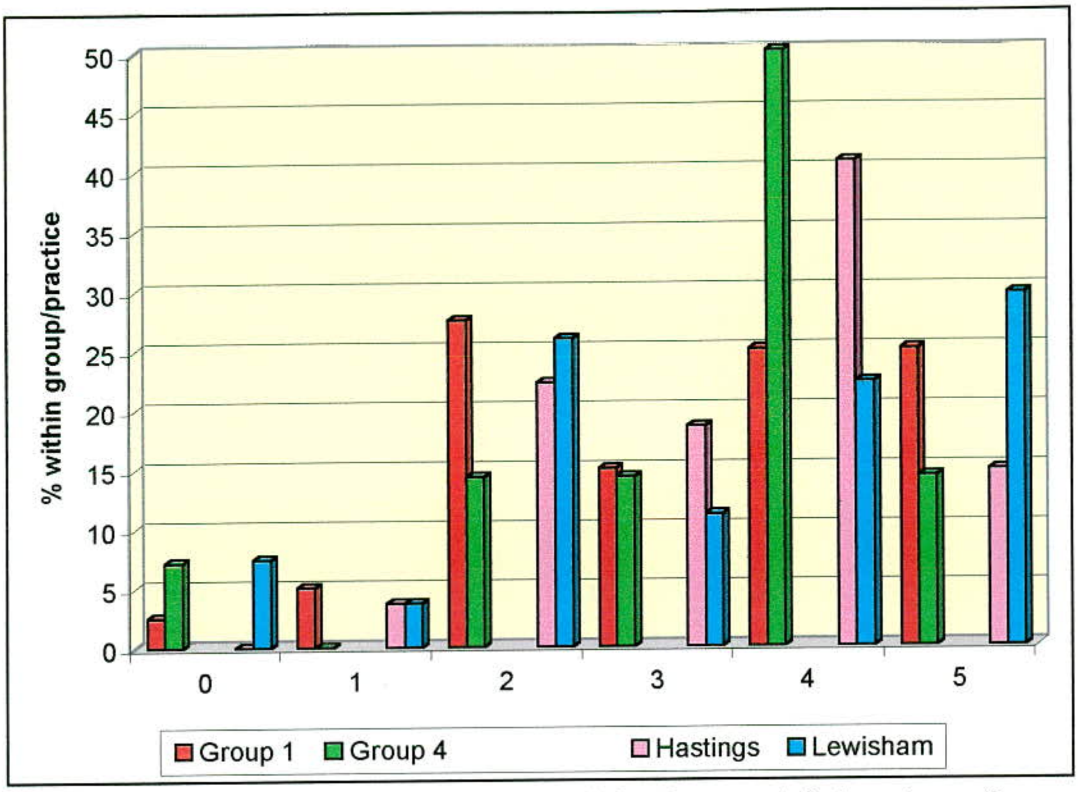


Figure 5.19. Worst ever stomach-ache: % for Groups 1 & 4 and practices

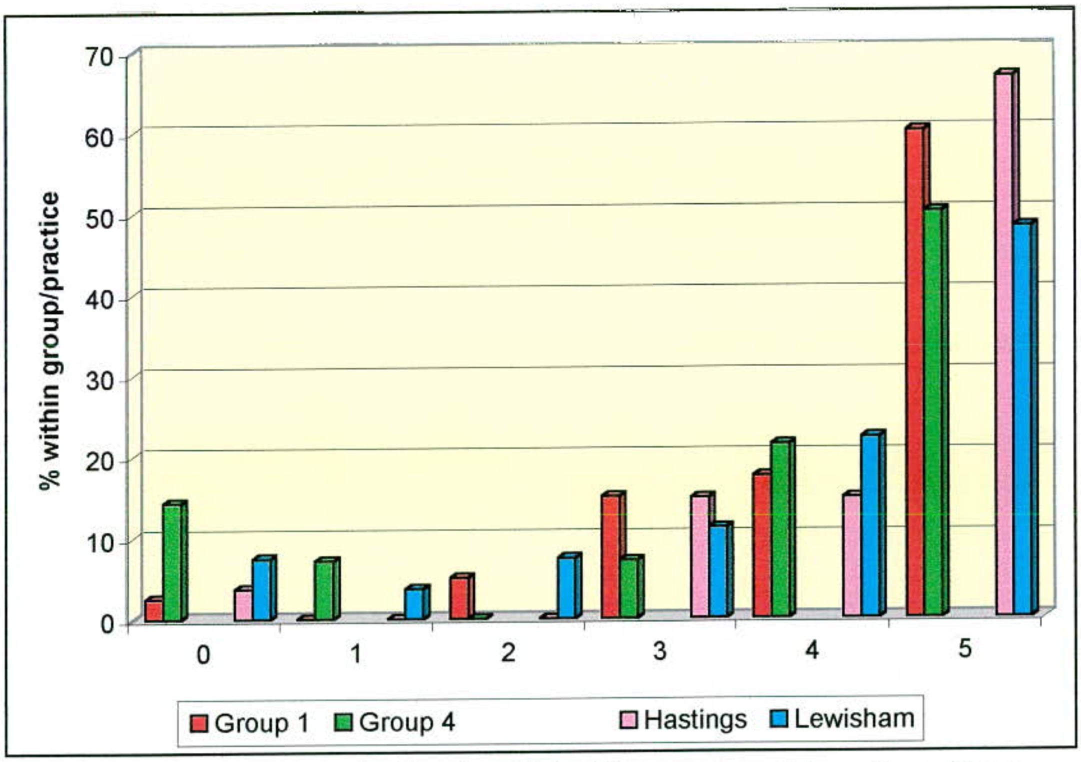


Figure 5.20. Worst ever toothache: % for Groups 1 and 4 and practices

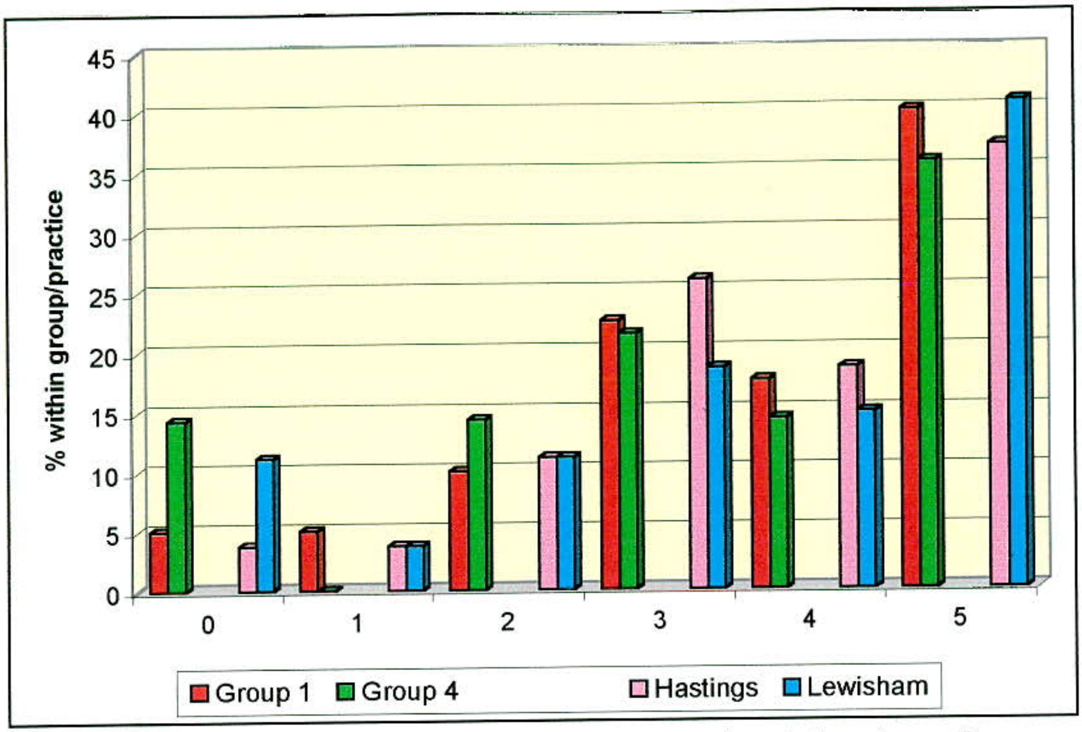


Figure 5.21. Worst ever headache: % for Groups 1 and 4 and practices

Acknowledging the small numbers reporting face, head and abdomen pain, there is an indication that the worst ever site-specific pain intensity may be influenced by factors such as the current site of pain. All those reporting the current site of pain to be abdominal, for example, score level 5 on the intensity scale for worst ever stomach-ache. Similarly, all four patients who report the current site of pain to be the head score level 5 on the intensity scale for the worst ever headache.

Both the Hastings practice and the Lewisham practice have a similar percentage reporting greater levels of stomach-ache and headache (levels 4 and 5 = 54.5% vs. 51.8%, n = 15 and 14; both = 55.5%, n = 15 respectively) *(see Figures 5.19 and 5.21)*. However, a higher percentage of the Hastings practice report greater pain intensity for the worst ever toothache than the Lewisham practice (levels 4 and 5 = 81.5% vs. 70.3%, n = 22 and 19 respectively) *(see Figure 5.20)*.

Group 1 report greater least ever pain intensity levels than Group 4 (level 0 = 2.5% vs. 28.6%, level 2 = 35.0% vs. 7.1%; n = 1, 4, 14 and 1 respectively) *(see Figure 5.22)*. The Hastings practice also report least ever pain intensity levels than the Lewisham practice (level 1 = 55.6% vs. 66.7%, level 2 = 37.0% vs. 18.5%; n = 15, 18, 10 and 5 respectively).

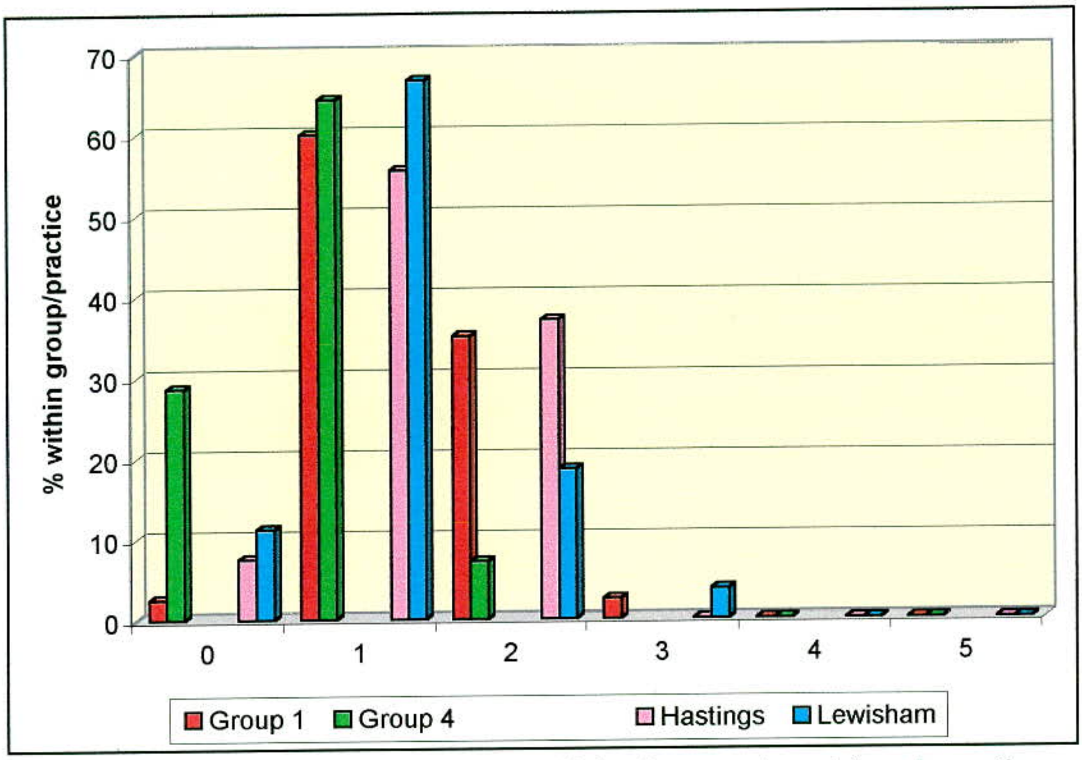


Figure 5.22. Least ever pain intensity: % for Groups 1 and 4 and practices

The chi-square test suggests differences only for least ever pain intensity may be statistically significance only for Groups 1 and 4 (p = 0.012), but more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix O, 6)*.

5.5. Pattern of pain over time

Part 3 of the MPQ *(see Appendix B)* identifies nine words, which describe how pain may change over time *(see Table 5.2)*. Differences are found for Groups 1 and 4 for descriptions of pain over time *(see Figure 5.23)*. Group 1 use the descriptor 'continuous' most frequently (60.0% vs. 21.4% n = 24 and 3 respectively), with a higher percentage than Group 4 also utilising 'steady' and 'constant'. Group 4, however, use 'intermittent' most frequently, which is also second most common for Group 1 (64.3% vs. 42.5%, n = 9 and 17 respectively). Descriptions are similar for practices, with three descriptors selected by the same percentage at both practices ('steady', 'rhythmic' and 'periodic') *(see Figure 5.24)*. Whilst the chi-square test suggests differences only for 'continuous' pain may be statistically significant only for Groups 1 and 4 (p = 0.013), more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix O, 7)*.

Group 1	**Group 2**	**Group 3**
1a:Continuous	2a: Rhythmic	3a: Brief
1b: Steady	2b: Periodic	3b: Momentary
1c: Constant	2c: Intermittent	3c: Transient

Table 5.2. MPQ words used to describe the pattern of pain over time

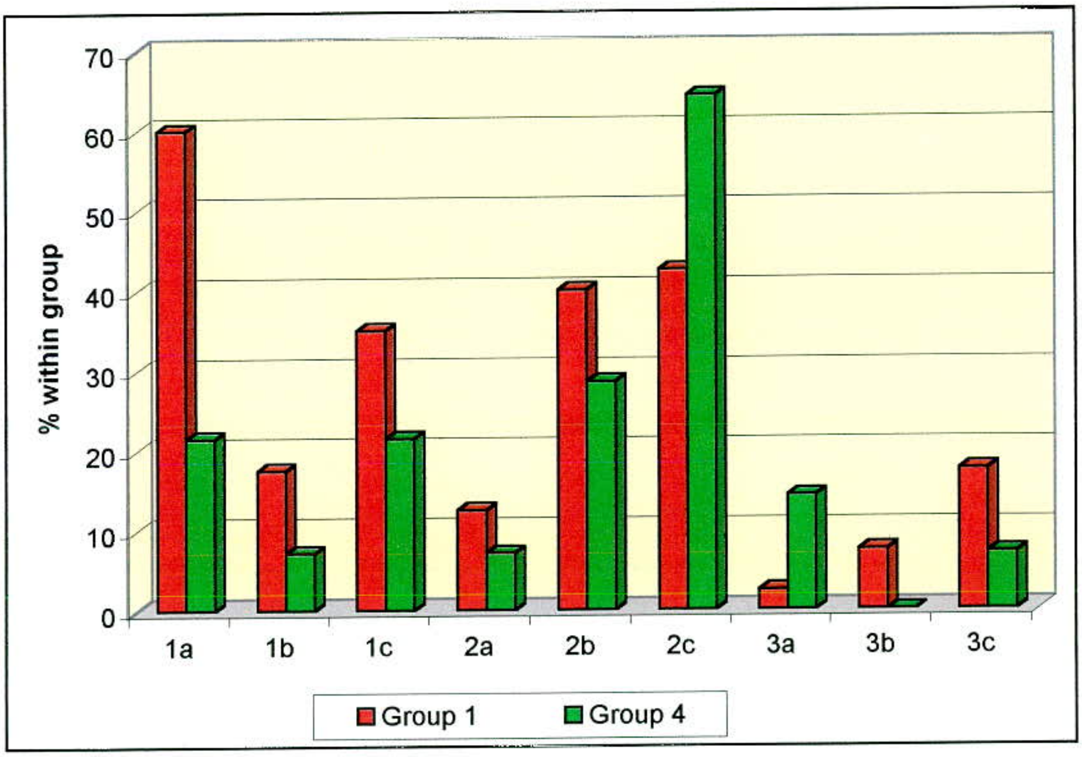


Figure 5.23. Pattern of pain over time: % for Groups 1 and 4 (see Table 5.2 for word descriptors)

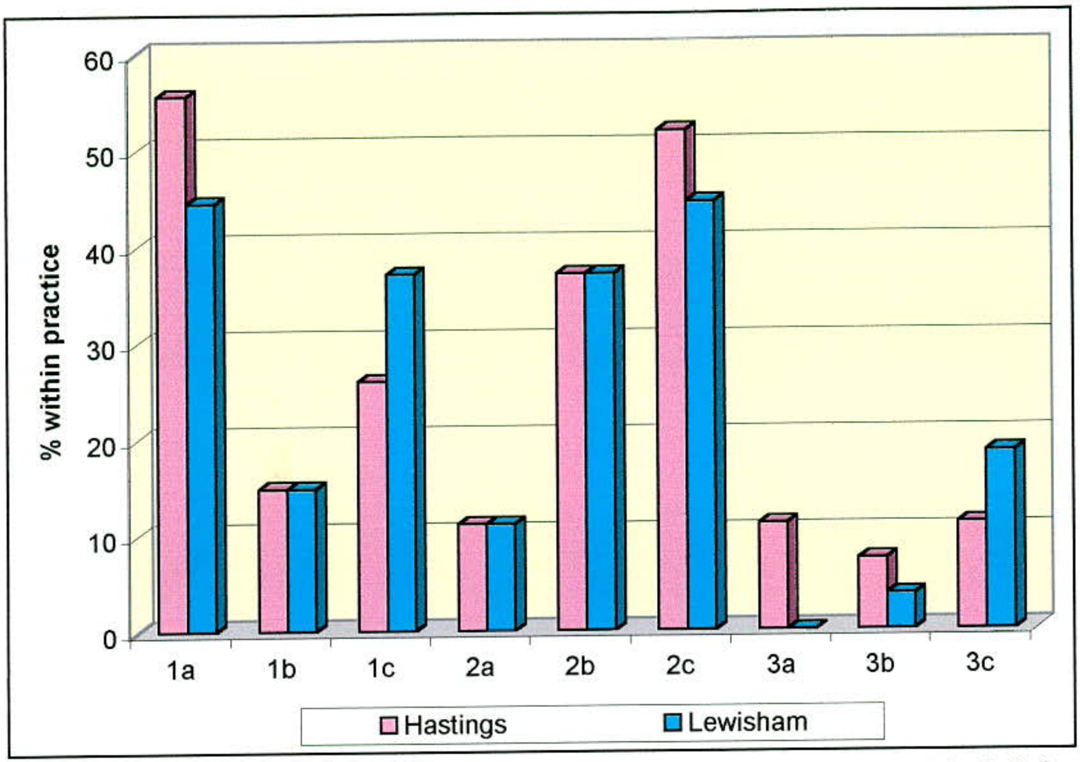


Figure 5.24. Pattern of pain over time: % for practices (see Table 5.2 for word descriptors)

5.6. Factors that affect pain

5.6.1. Factors that relieve pain

Groups 1 and 4 report taking a total of 16 different analgesics prior to interview, which are classified into five groups (British Medical Association and The Royal Pharmaceutical Society of Great Britain 2002) *(see Table 5.3 and Appendix P)*. A higher percentage of Group 4 report taking no primary analgesia than Group 1 (87.5% vs. 27.5%, n = 14 and 11 respectively), with greatest utilisation of primary analgesics for Group 1 being compound analgesics and NSAIDs (35.0% and 27.5%, n = 14 and 11 respectively) *(see Figure 5.25)*. Although the literature highlights concern over multiple medications *(see 2.5.1, pages 33 - 34)*, only three Group 1 patients report taking secondary therapeutic analgesics.

The Lewisham practice have a higher percentage who report taking no primary analgesic than the Hastings practice (51.7% vs. 37.0%, n = 15 and

10 respectively). Of particular importance are differences in utilisation of primary analgesics in the two practices, with a higher percentage of the Hastings practice utilising NSAIDs than the Lewisham practice (37.0% vs. 6.9%, n = 10 and 2 respectively) *(see Figure 5.25)*. A higher percentage of the Lewisham practice, however, utilise compound analgesics than the Hastings practice (31.0% vs. 22.2%, n = 9 and 6 respectively).

Major therapeutic group
1° simple analgesics
1° compound analgesics
1° non-steroidal anti-inflammatories (NSAIDs)
1° miscellaneous therapies
1° aromatherapy
2° compound analgesics
2° non-steroidal anti-inflammatories (NSAIDs)

1° = main therapy, 2° = other additional therapies

Table 5.3. Major therapeutic groups for 1° and 2° analgesic therapies

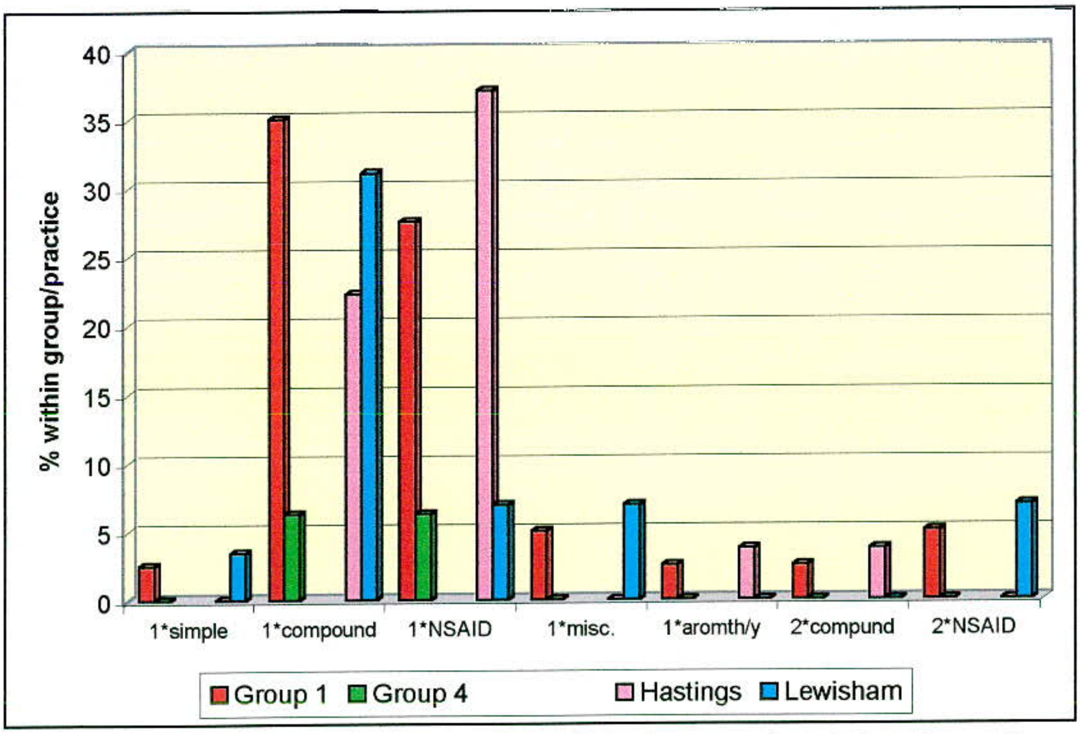


Figure 5.25. 1°/2° analgesic therapies: % for Groups 1 and 4 and practices

For those reporting administration of analgesic therapy prior to interview, a broad time band is evident (5 minutes - 11 hours) *(see Figure 5.26)*. The majority of Groups 1 and 4, however, report administration within the previous four hours (79.3% and 100%, n = 23 and 2 respectively). A higher percentage of the Hastings practice administer analgesic therapy within two hours than the Lewisham practice (58.8% vs. 42.8%, n = 10 and 6 respectively) *(see Figure 5.26)*.

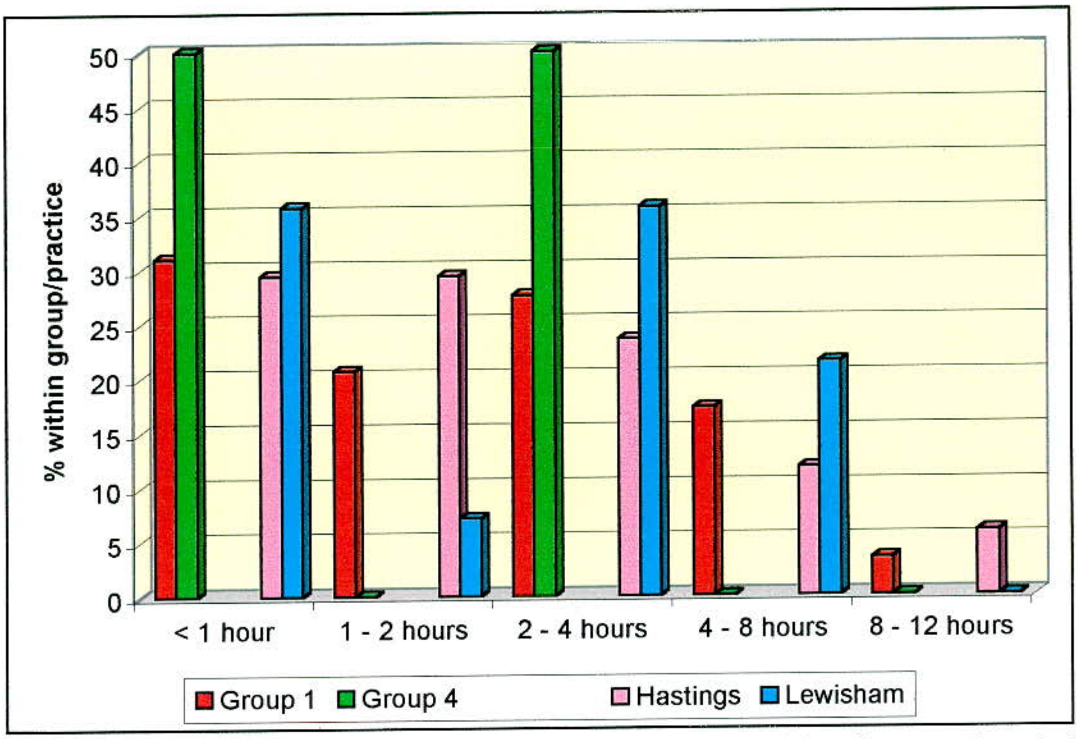


Figure 5.26. Time analgesic taken prior to interview: % for Groups 1 and 4 and practices

Group 1 and 4 report a total of 24 different factors that relieve pain, which are classified into 10 groups *(see Table 5.4 and Appendix Q)*. The highest percentage in both Groups 1 and 4 report analgesia/medication *(1°: 3)* as the primary factor that relieves pain (32.5% and 25.0%, n = 13 and 4 respectively) *(see Figure 5.27)*. Differences for other primary pain relieving factors are evident, with Group 1 reporting decreased activity *(1°: 2)* and postural change *(1°: 1)* as the next most reported (17.5% and 15.0% n = 7 and 6 respectively). Group 4, however, equally reports postural change *(1°: 1)*, complementary therapy *(1°: 5)* and topical/local therapy *(1°: 6)*

(12.5%, n = 2). Both groups also have reports of nothing that relieves pain *(1°: 10)* (10.0% and 6.3%, n = 4 and 1 respectively).

Group code	**Major group of pain relief factors**
1°: 1, 2°: 1, 3°: 1	Postural change
1°: 2, 2°: 2, 3°: 2	Decreased activity
1°: 3, 2°: 3, 3°: 3, 4°: 1	Analgesia/medication
1°: 4	Sleep
1°: 5, 4°: 2	Complementary therapy
1°: 6, 2°: 4, 3°: 4	Topical/local therapy
1°: 7	Increased activity
1°: 8	Psychological therapy
1°: 9	Alcohol
1°: 10	Nothing

1° = primary pain relieving factor, 2°, 3° and 4° = additional factors

Table 5.4. Groups of factors that relieve pain for Groups 1 and 4

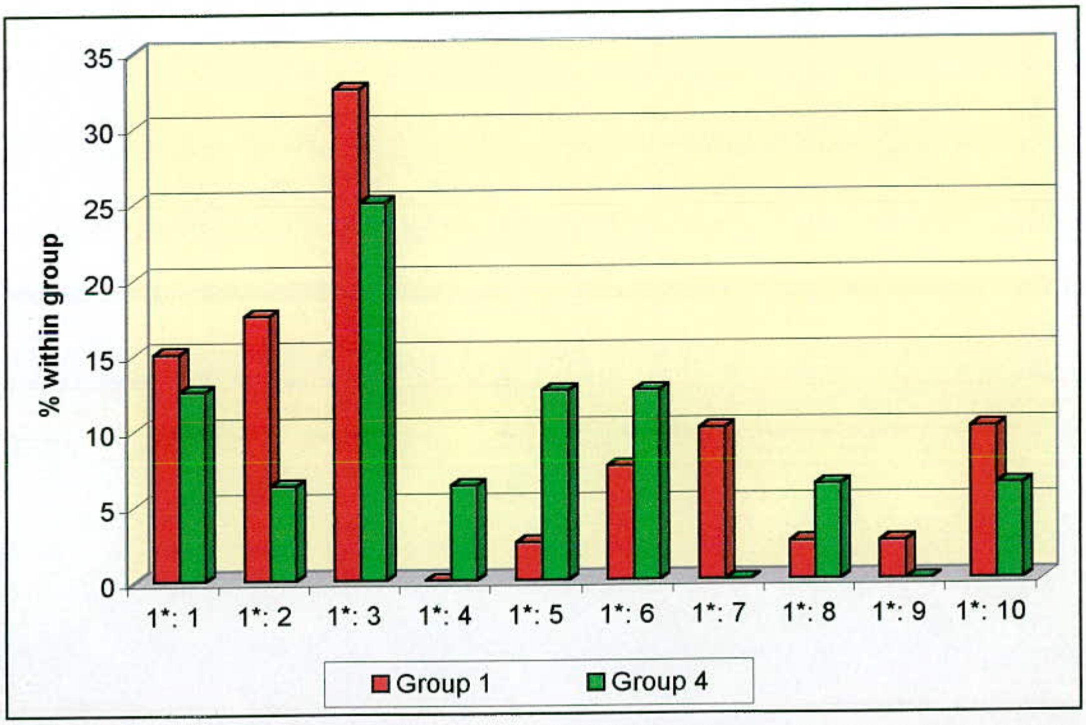


Figure 5.27. 1° factors that relieve pain: % for Groups 1 and 4 (see Table 5.4. for description of factors)

The highest percentage in both practices report analgesia/medication *(1°: 3)* to be the primary factor that relieves pain (33.3% and 27.6%, n = 9 and 8 respectively). The second most common factor is postural change *(1°: 1)* for the Hastings practice and topical/local therapy *(1°: 6)* for the Lewisham practice (22.2% and 17.2%, n = 6 and 5 respectively). Decreased activity *(1°: 2)* is the third highest factor for both practices (14.8% and 13.8% respectively, both n = 4) *(see Figure 5.28)*.

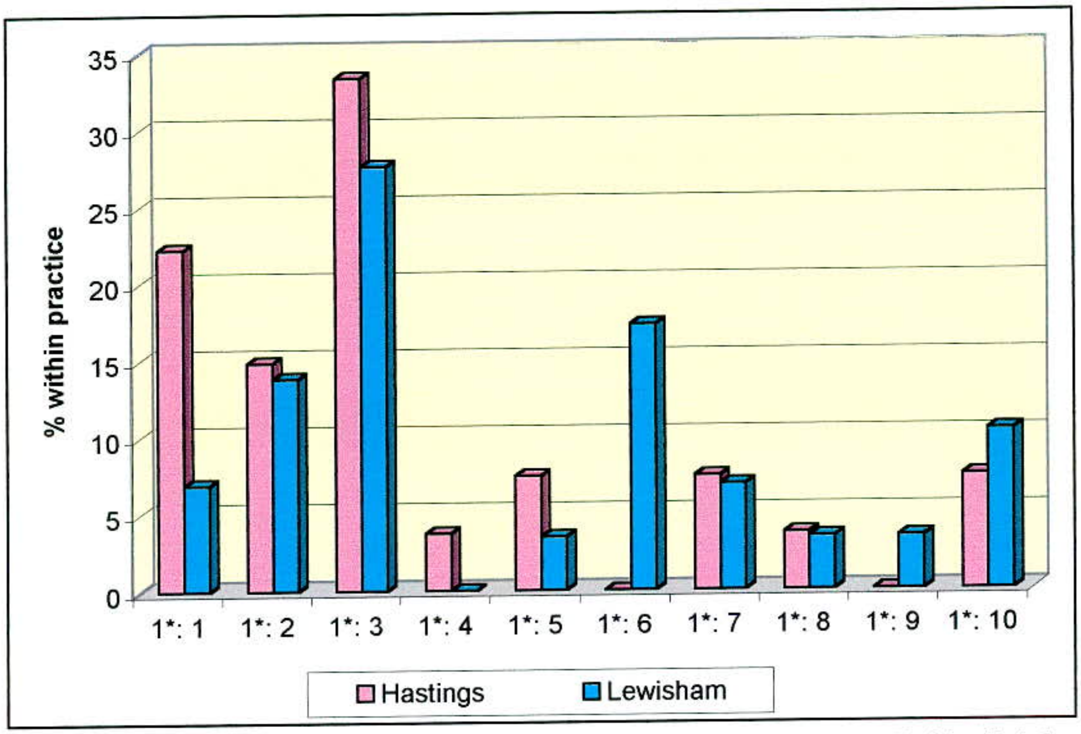


Figure 5.28. 1° factors that relieve pain: % for practices (see Table 5.4 for description of factors)

A higher percentage of Group 1 consistently report the use of all additional pain relief factors than Group 4 (for example 2° factors: 55.0% vs. 12.5%, n = 22 and 2 respectively) *(see Figure 5.29)*. The highest percentage of secondary pain relief factors reported for Group 1 are equally decreased activity *(2°: 2)*, topical/local therapy *(2°: 4)* and analgesia/medication *(2°: 3)* (all = 15.0%, n = 6). Analgesia/medication is also the only secondary pain relief factor *(2°: 3)* for Group 4 (12.5%, n = 2), and the most common tertiary pain relief factor for Group 1 *(3°: 3)* (15.0%, n = 6).

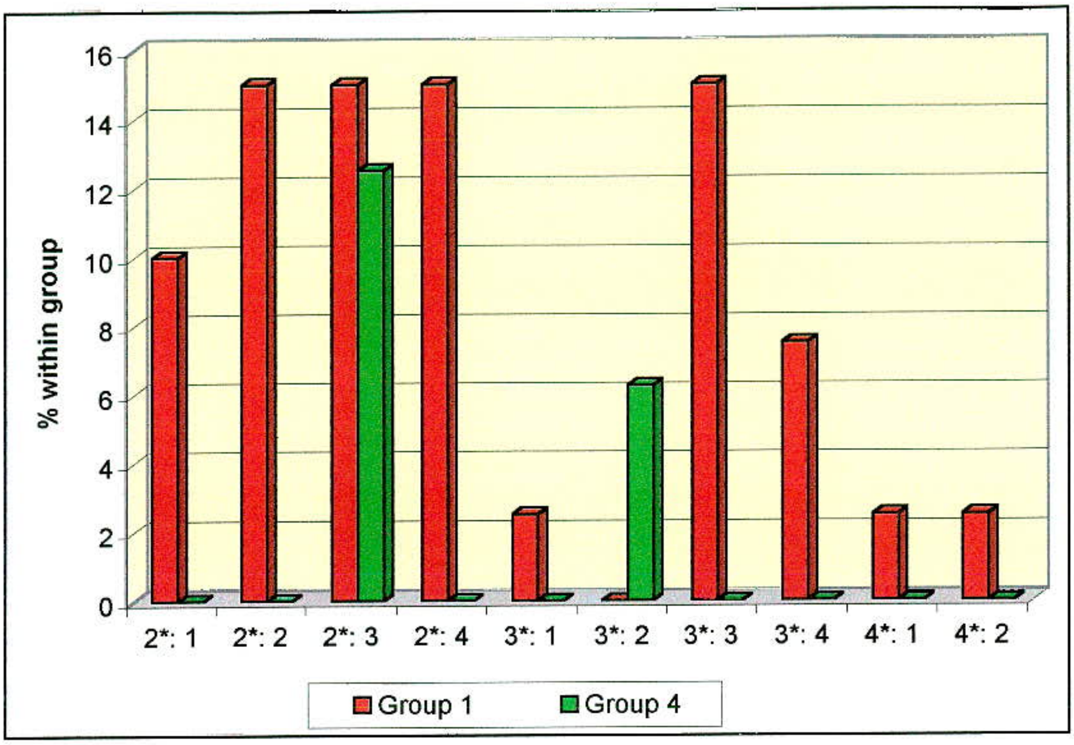


Figure 5.29. 2°, 3° and 4° factors that relieve pain: % for Groups 1 and 4 (see Table 5.4 for description of factors)

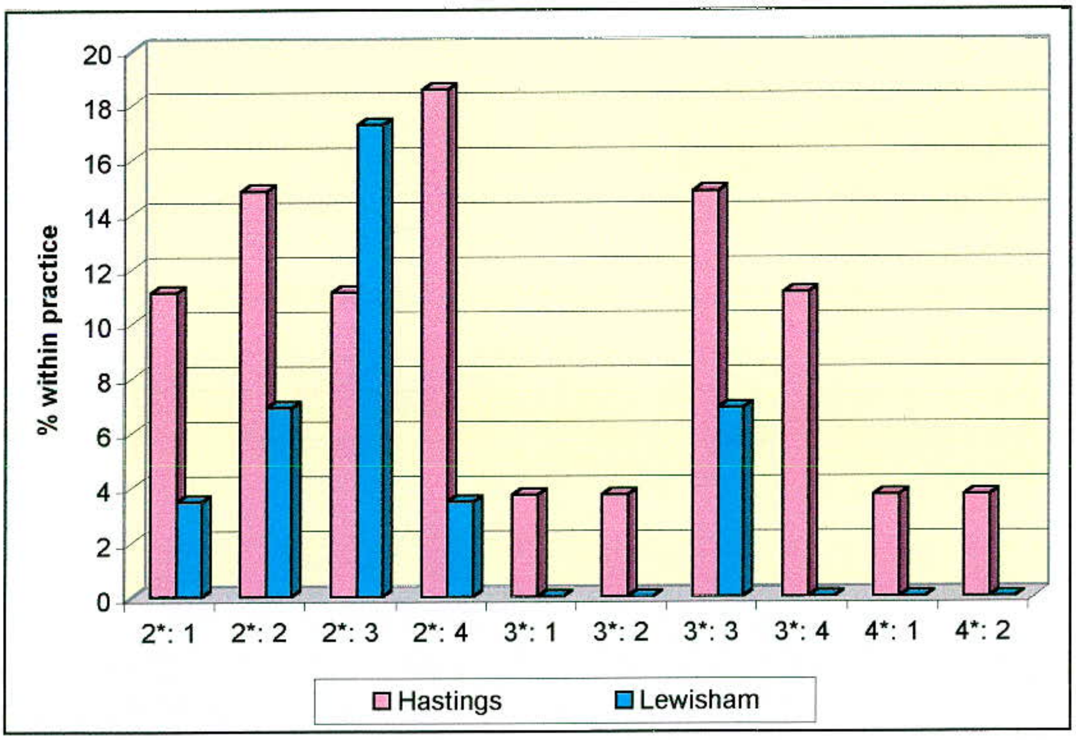


Figure 5.30. 2°, 3° and 4° factors that relieve pain: % for practices (see Table 5.4 for description of factors)

The Hastings practice consistently has a higher percentage reporting the use of additional pain relief factors than the Lewisham practice (for example 2° factors: 55.6% vs. 31.0%, n = 15 and 9 respectively) *(see Figure 5.30)*. The most commonly reported secondary pain relief factors are topical/local therapy *(2°: 4)* and decreased activity *(2°: 2)* for the Hastings practice (18.5% and 14.8%, n = 5 and 4 respectively) and analgesia/medication *(2°: 3)* for the Lewisham practice (17.2%, n = 5). Analgesia/medication is also the most common tertiary pain relief factor *(3°: 3)* for the Hastings practice and the only tertiary factor for the Lewisham practice (14.8 and 6.9%, n = 4 and 2 respectively).

The chi-square test suggests differences only for utilisation of analgesic therapies prior to interview may be highly statistically significant for Groups 1 and 4 (*p* = 0.005), and approaching statistical significance for practices (*p* = 0.054). Only use of secondary pain relief factors is also suggested to be statistically significant only for Groups 1 and 4 (*p* = 0.039). However, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix O, 8 - 10)*.

5.6.2. Factors that exacerbate pain

Group 1 and 4 report a total of 23 different factors that exacerbate pain, which are classified into 11 groups *(see Table 5.5 and Appendix R)*. The highest percentage in both Groups 1 and 4 report increased activity *(1°: 2)* to be the primary factor that exacerbates pain (42.5% and 31.3%, n = 17 and 5 respectively) *(see Figure 5.31)*. The second highest factor for Groups 1 and 4 is postural change *(1°: 1)* (22.5% and 12.5%, n = 9 and 2 respectively), which is also equal with gastro-intestinal factors *(1°: 7)* for Group 4. A percentage of Groups 1 and 4 also report that nothing in particular *(1°: 10)* exacerbates their pain (15.0% and 6.3%, n = 6 and 1 respectively).

Group code	Group of factors that exacerbate pain
1°: 1, 2°: 1, 3°: 1, 4°: 1	Postural change
1°: 2, 2°: 3, 3°: 3	Increased activity
1°: 3, 3°: 4	Lifting / carrying
1°: 4, 2°: 4	Local pressure
1°: 5, 2°: 5	Psychological
1°: 6,	Coughing / sneezing
1°: 7, 3°: 5	Gastro-intestinal
1°: 8	Alcohol
1°: 9	Weather
1°: 10, 2°: 6	Nothing
2°: 2, 3°: 2	Decreased activity

1° = primary factor which exacerbates pain, 2°, 3° and 4° = additional factors

Table 5.5. Groups of factors that exacerbate pain for Groups 1 and 4

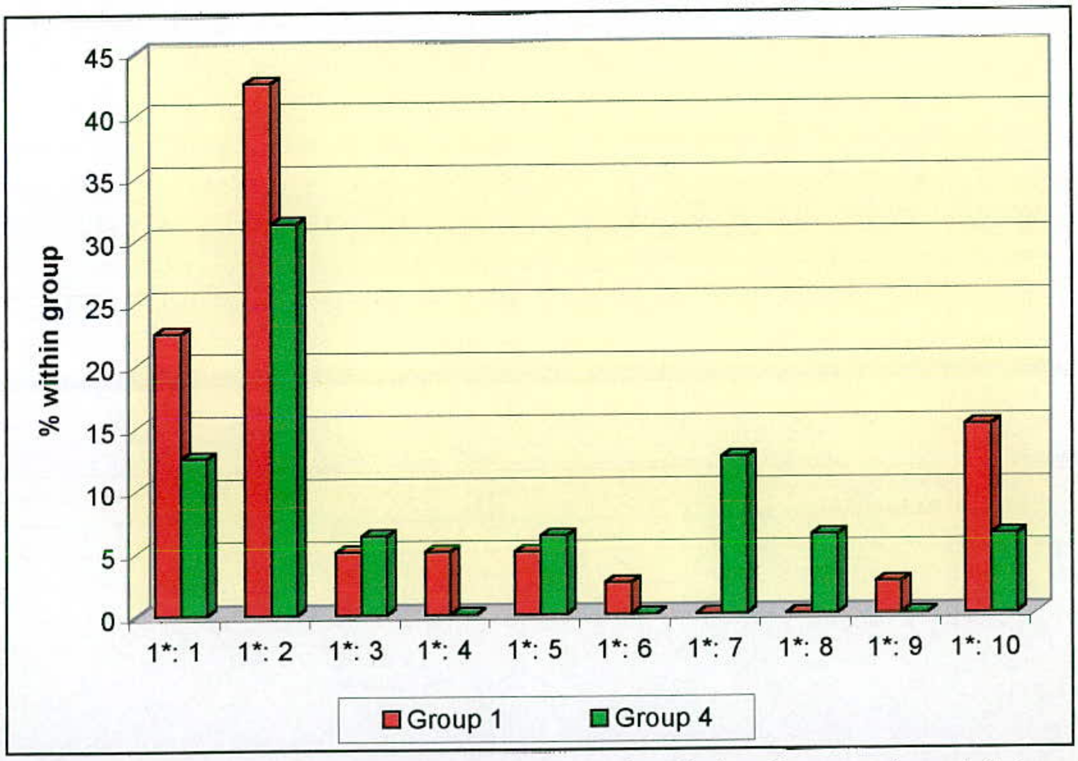


Figure 5.31. 1° factors that exacerbate pain: % for Groups 1 and 4 (see Table 5.5 for description of factors)

Both the Hastings practice and the Lewisham practice report increased activity *(1°: 2)* to be the most common primary factor that exacerbates pain (55.6% and 24.1%, n = 15 and 7 respectively), with postural change the second most common factor (25.9% and 13.8%, n = 7 and 4 respectively) *(see Figure 5.32)*.

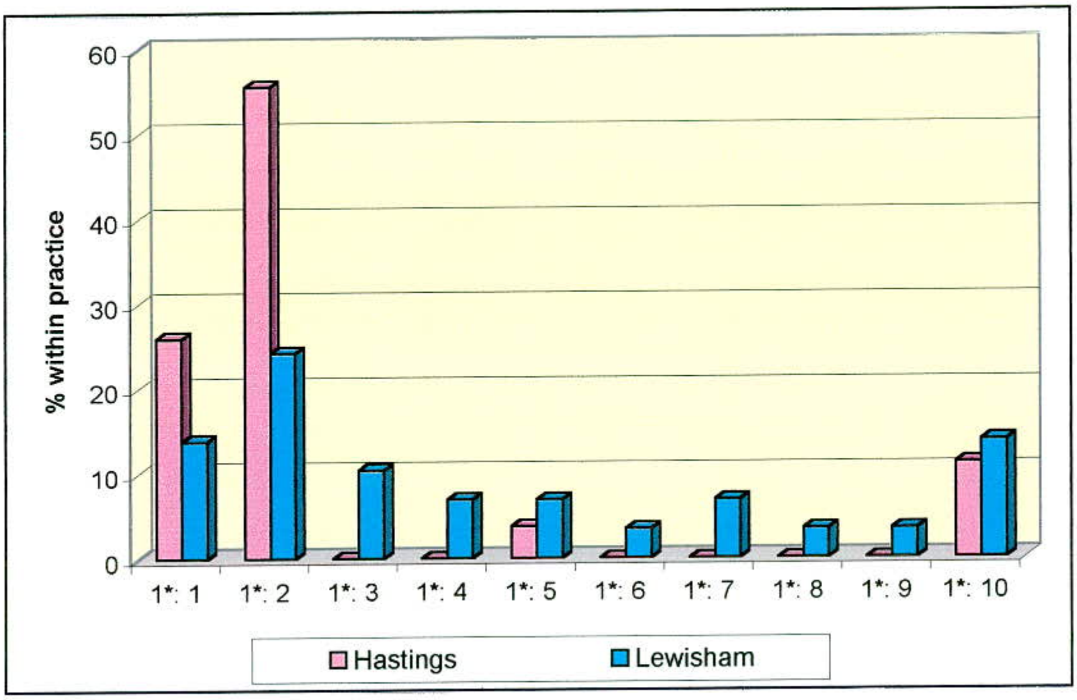


Figure 5.32. 1° factors that exacerbate pain: % for practices (see Table 5.5 for description of factors)

A higher percentage of Group 1 consistently report additional factors that exacerbate pain than Group 4 (for example 2° factor: 45.0% vs. 18.8%, n = 18 and 3 respectively) *(see Figure 5.33)*. The highest percentage of secondary factors that exacerbate pain are postural change *(2°: 1)* for Group 1 and increased activity *(2°: 2)* for Group 4 (25.0% and 12.5%, n = 10 and 2 respectively). Postural change *(2°: 1)* is also the only other secondary factor that exacerbates pain for Group 4 (6.3%, n = 1).

A similar percentage in the Hastings practice and the Lewisham practice report secondary factors that exacerbate pain (37.0% vs. 37.9%, n = 10 and 11 respectively) *(see Figure 5.34)*.

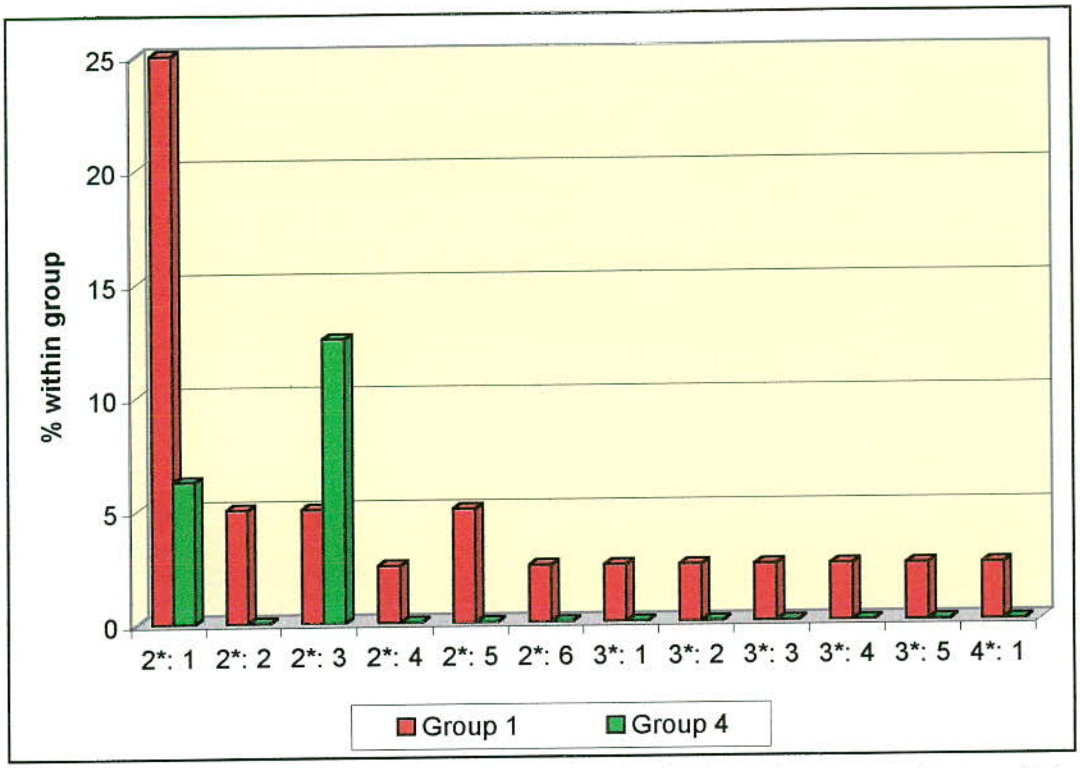


Figure 5.33. 2°, 3° and 4° factors that exacerbate pain: percentage within Groups 1 and 4 (see Table 5.5 for description of factors)

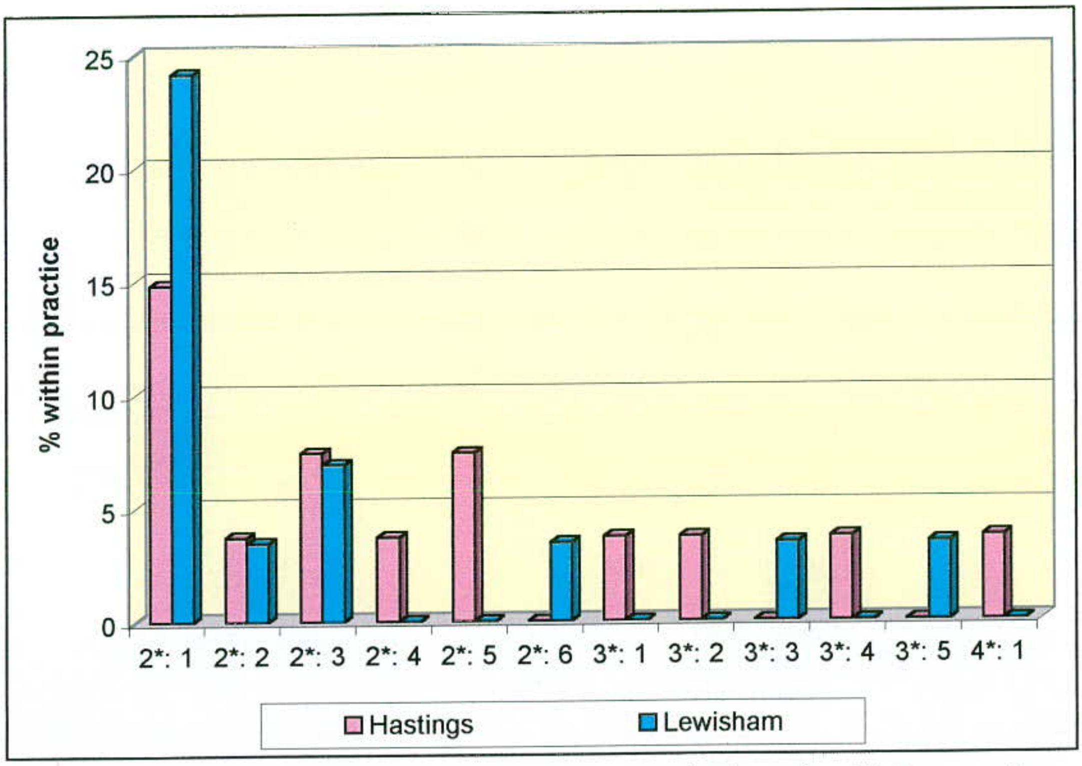


Figure 5.34. 2°, 3° and 4° factors that exacerbate pain: % for practices (see Table 5.5 for description of factors)

However, slightly more of the Hastings practice report third and fourth factors that exacerbate pain than the Lewisham practice (11.1% vs. 6.8%, n = 3 and 2; 3.7%, n = 1 vs. 0% respectively). The two most commonly reported secondary factors that exacerbate pain for both the Hastings practice and the Lewisham practice are postural change *(2°: 1)* (14.8% and 24.1%, n = 4 and 7 respectively) and increased activity *(2°: 2)* (7.4% and 6.9% respectively, both n = 2). Psychological factors *(2°: 5)* are also equal with increased activity in the Hastings practice.

Whilst the chi-square test suggests differences only for primary factors that exacerbate pain may be statistically significant only for Groups 1 and 4 (*p* = 0.050), more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix O, 11)*.

5.7. Summary

Group 1 has consistently higher total descriptor and sensory, affective and miscellaneous dimension scores than Group 4 *(see Table 5.6)*. The number of pain sites for Groups 1 and 4 covers a broad range, however, the majority of Group 4 report one site of pain and the majority of Group 1 more than one site of pain *(see Table 5.6)*. The Mann-Whitney test suggests differences for total descriptor scores and sensory, affective and miscellaneous dimension scores may be highly statistically for Groups 1 and 4. The chi-square test suggests differences for the number of pain sites may be statistically significant for Groups 1 and 4.

A higher percentage of Group 1 report more than one primary site of pain than Group 4 *(see Table 5.6)*. Primary sites of pain differ for Groups 1 and 4, particularly in relation to the lower back and legs, which are most commonly reported by Group 1. The most common primary site of pain for Group 4 is that of pelvis/hips *(see Table 5.6)*. Group 1 also has a higher percentage reporting secondary sites of pain than Group 4. Although both groups report legs as the most common secondary site of pain, Group 1 reports pelvis/hips as the next most common site, whilst Group 4 report shoulder, hands and feet to be equally as common as legs. All additional sites of pain are only reported by Group 1, with legs and feet the most common sites of pain *(see Table 5.6)*. For all pain sites, the chi-square test suggests differences for lower back pain may be highly statistically significant and leg pain may be statistically significant for Groups 1 and 4.

Group 1 reports greater least ever pain intensity levels than Group 4 *(see Table 5.6)*. Group 1 also uses the descriptor 'continuous' most frequently, with a higher percentage than Group 4 utilising the words 'steady' and 'constant' *(see Table 5.6)*. Group 4, however, uses the descriptor 'intermittent' most frequently, which is also the second most common descriptor for Group 1. The chi-square test suggests differences for least ever pain intensity and 'continuous' pain over time may be statistically significance for Groups 1 and 4.

Group 1 has a higher percentage utilising primary analgesic therapies than Group 4, with greatest utilisation being compound analgesics and NSAIDs *(see Table 5.6)*. Only Group 1 utilises secondary analgesic therapies, with a higher percentage than Group 4 also using more than one pain relief factor. The most common secondary pain relief factors for Group 1 are equally decreased activity, topical/local therapy and analgesia/medication, with the latter also being the only secondary pain relief factor reported for Group 4. The highest percentage in both Groups 1 and 4 report increased activity as the primary factor that exacerbates pain, with the second highest being postural change, which is equal with gastro-intestinal factors for Group 4 *(see Table 5.6)*. The chi-square test suggests differences for utilisation of analgesic therapies may be highly statistically significant and secondary pain relief factors and primary factors that exacerbate pain may be statistically significant for Groups 1 and 4.

The Hastings practice has a higher percentage reporting more than one primary site of pain than the Lewisham practice *(see Table 5.7)*. The most common primary site of pain for both practices is the lower back, with the next most common sites being pelvis/hips and shoulder respectively. Both practices have a similar percentage reporting secondary sites of pain, however the Hastings practice has a higher percentage reporting more than one secondary site. The two most common secondary sites of pain are legs and pelvis/hips for both practices, with hands being equal second for the Lewisham practice. Additional pain sites are reported by a higher percentage of the Hastings practice than the Lewisham practice *(see Table 5.7)*. For all pain sites, the chi-square test suggests differences only for pelvis/hip pain may be highly statistically significant for practices.

A higher percentage in the Lewisham practice report taking no primary analgesic than the Hastings practice *(see Table 5.6)*. Of importance are differences in utilisation of primary analgesics in the two practices, with a higher percentage of the Hastings practice utilising NSAIDs than the Lewisham practice. A higher percentage of the Lewisham practice, however, utilises compound analgesics than the Hastings practice. The chi-square test suggests differences for utilisation of analgesic therapies may be approaching statistical significance for practices.

Comparing sites of pain with age, the highest percentage with neck pain are 45 - 54 years, whilst low back, hand, leg and pelvis/hip pain are highest for 55 - 64 years. Arm and foot pain are highest for 45 - 54 years and 55 - 64 years, whilst shoulder pain is highest for 55 - 64 years and over 64 years. The chi-square test suggests differences only for foot pain may be statistically significance for age.

Other interesting, although not statistically significant findings, are evident for MPQ profiles for Groups 1 and 4 and both practices *(see Tables 5.6 - 5.8)*. Although Mann-Whitney and chi-square tests initially appear to demonstrate statistical significance for a number of variables, the limitations of sample size are such that it is not possible to conclusively state that statistical significance is evident. However, the data analysis does indicate that statistical significance may be achieved for these variables with a larger sample size, and such findings are summarised within this context. Whilst a larger sample size is beyond the exploratory and descriptive nature of this study, the findings do therefore indicate the need for further large-scale studies to provide further insight into pain profiles of chronic pain patients in the general practice population.

MPQ profile	Group 1 (n = 40)	Group 4 (n = 16)
Total descriptor score *	WRV: 30.0325	WRV: 10.4706
Sensory dimension *	WRV: 15.0260	WRV: 6.7038
Affective dimension *	WRV: 6.8278	WRV: 0.9038
Miscellaneous dimension *	WRV: 5.1253	WRV: 1.8531
Total number of pain sites **	1 site: 15.0% (n=6) 3- 5 sites: 30.0% (n=12) 6->10 sites:35.0% (n=14)	1 site: 56.3% (n=9) 3- 5 sites: 6.3% (n=1) 6->10 sites:12.5% (n=2)
Primary site of pain **lower back **** **legs *****	> 1 site: 65.0% (n=26) ≥ 3 sites: 40.0% (n=16) Low back: 57.5% (n=23) Legs: 27.5% (n=11) Pelvis/hip: 25.0% (n=10)	> 1 site: 12.5% (n=2) ≥ 3 sites: 6.3% (n=1) Low back: 6.3% (n=1) Legs: 6.3% (n=1) Pelvis/hip: 31.3% (n=5)
Secondary site of pain	≥ 1 site: 50.0% (n=20) ≥ 3 sites: 12.5% (n=5) Legs: 27.5% (n=11) Pelvis/hip: 22.5% (n=9)	≥ 1 site: 18.8% (n=3) ≥ 3 sites: 12.5% (n=2) Legs: 12.5% (n=2) Pelvis/hip: 0.0%
Additional sites of pain	≥ 1 site: 22.5% (n=9) Leg/feet:both 7.5% (n=3)	≥ 1 site: 0.0%
Present pain intensity	Level 1: 27.5% (n=11) Level ≥ 3: 20.0% (n=8)	Level 1: 50.0% (n=7) Level ≥ 3: 0.0%
Worst ever pain	Level 3: 27.5% (n=11) Level 5: 55.0% (n=22)	Level 3: 42.9% (n=6) Level 5 28.6% (n=4)
Least ever pain ***	Level 0: 2.5% (n=1) Level 2: 35.0% (n=14)	Level 0: 28.6% (n=4) Level 2: 7.1% (n=1)
Pattern of pain **continuous *****	Continuous:60.0%(n=24) Intermittent:42.5%(n=17)	Continuous:21.4% (n=3) Intermittent:64.3% (n=9)
Analgesic therapy **primary ****	Primary: 72.5% (n=29) Secondary: 7.5% (n=3) NSAIDs: 40.5% (n=16) Compound:30.0% (n=12)	Primary: 12.5% (n=2) Secondary: 0.0% NSAIDs: 6.3% (n=1) Compound: 6.3% (n=1)
Primary pain relief factors	Medication:32.5% (n=13) ↓ activity: 17.5% (n=7) postural ch:15.0% (n=6)	Medication:25.0% (n=4) ↓ activity: 6.3% (n=1) postural ch:12.5% (n=2)
Additional pain relief factors **secondary *****	Secondary:55.0% (n=22) 3rd / 4th: 30.0% (n=12) Medication:32.5% (n=13)	Secondary:12.5% (n=2) 3rd / 4th: 6.2% (n=1) Medication:12.5% (n=2)
Primary factors that exacerbate pain ***	↑ activity: 42.5% (n=17) postural ch:22.5% (n=9)	↑ activity: 31.3% (n=5) postural ch:12.5% (n=2)
Additional factors that exacerbate pain	Secondary:45.0% (n=18) 3rd / 4th: 15.0% (n=6) postural ch:30.0% (n=12) ↑ activity: 5.0% (n=2)	Secondary:18.8% (n=3) 3rd / 4th: 0.0% postural ch: 6.3% (n=1) ↑ activity: 12.5% (n=2)

* Mann-Whitney test: high statistical significance (Asymp. Sig (2-tailed) ≤ 0.002)

** Chi-square test suggests high statistical significance ($p \leq 0.005$)

*** Chi-square test suggests statistical significance ($p \leq 0.05$)

Table 5.6. Summary of MPQ profiles for Groups 1 and 4

MPQ profile	**Hastings (n = 27)**	**Lewisham (n = 29)**
Total descriptor score	WRV: 25.4778	WRV: 23.4803
Sensory dimension	WRV: 13.1637	WRV: 12.1683
Affective dimension	WRV: 4.5281	WRV: 5.7003
Miscellaneous dimension	WRV: 4.8333	WRV: 3.5917
Total number of pain sites	1 - 2 sites: 40.7% (n=11) 3 - 5 sites: 18.5% (n=5) 6->10 sites:40.7% (n=11)	1 - 2 sites: 48.3% (n=14) 3 - 5 sites: 27.6% (n=8) 6->10 sites:17.2% (n=5)
Primary site of pain pelvis / hips *	> 1 site: 63.0% (n=17) ≥ 3 sites: 37.0% (n=10) Low back: 55.6% (n=15) Pelvis/hip: 48.1% (n=13) Shoulder: 11.1% (n=3)	> 1 site: 38.0% (n=11) ≥ 3 sites: 24.0% (n=7) Low back: 31.0% (n=9) Pelvis/hip: 6.9% (n=2) Shoulder: 20.7% (n=6)
Secondary site of pain	≥1 site: 40.7% (n=11) ≥ 3 sites: 18.5% (n=5) Legs: 29.6% (n=8) Pelvis/hip: 18.5% (n=5)	≥ 1 site: 41.1% (n=12) ≥ 3 sites: 6.9% (n=2) Legs: 17.2% (n=5) Pelvis/hip: 13.8% (n=4)
Additional sites of pain	≥ 1 site: 22.2% (n=6) Feet: 11.1% (n=3) Legs: 3.7% (n=1)	≥ 1 site: 10.3% (n=3) Feet: 0.0% Legs: 6.9% (n=2)
Present pain intensity	Level 1: 37.0% (n=10) Level ≥ 3: 14.8% (n=4)	Level 1: 29.6% (n=8) Level ≥ 3: 14.8% (n=4)
Worst ever pain	Level 3: 25.9% (n=7) Level 4: 18.5% (n=5)	Level 3: 37.0% (n=10) Level 4 11.1% (n=3)
Least ever pain	Level 1: 55.6% (n=15) Level 2: 37.0% (n=10)	Level 1: 66.7% (n=18) Level 2: 18.5% (n=5)
Pattern of pain	Continuous:55.6%(n=15) Constant: 25.9%(n=7)	Continuous:44.4%(n=12) Constant: 37.0% (n=10)
Analgesic therapy Primary **	Primary: 63.0% (n=17) Secondary: 3.7% (n=1) NSAIDs: 37.0% (n=10) Compound:25.9% (n=7)	Primary: 48.3% (n=14) Secondary: 6.9% (n= 2) NSAIDs: 13.8% (n=4) Compound: 31.0% (n=9)
Primary pain relief factors	Medication:33.3% (n=9) ↓ activity: 14.8% (n=4) postural ch:22.2% (n=6)	Medication:27.6% (n=8) ↓ activity: 14.8% (n=4) Topical/loc:17.2% (n=5)
Additional pain relief factors	Secondary:55.6% (n=15) 3rd / 4th: 40.7% (n=11) Medication:29.6% (n=8) Topical/loc:29.6% (n=8)	Secondary:31.0% (n=9) 3rd / 4th: 6.9% (n=1) Medication:24.1% (n=7) ↓ activity: 14.8% (n=4)
Primary factors that exacerbate pain	↑ activity: 55.6% (n=15) Postural ch:25.9% (n=7)	↑ activity: 24.1% (n=7) Postural ch:13.8% (n=4)
Additional factors that exacerbate pain	Secondary:37.0% (n=10) 3rd / 4th: 14.8% (n=4) Postural ch:22.2% (n=6) ↑activity: 7.4% (n=2) Psychologic:7.4% (n=2)	Secondary:37.9% (n=11) 3rd / 4th: 6.8% (n=2) Postural ch:24.1% (n=7) ↑ activity: 6.9% (n=2) Psychologic:0.0%

* Chi-square test suggests statistical significance ($p \leq 0.005$)

** Chi-square test suggests approaching statistical significance ($p = 0.054$)

Table 5.7. Summary of MPQ profiles for practices (Groups 1 and 4)

Variable	Total	Sensory	Affective	Misc/eous
Primary diagnosis				
Musculo-skeletal	28.11 (n=42)	14.32	6.72	4.94
Cardio-vascular	8.13 (n=4)	3.74	2.56	1.07
Gynae/Urology/Obstetrics	14.72 (n=1)	8.03	0.00	3.66
Gastro-intestinal/Biliary	47.46 (n=1) *	25.36 *	10.98 *	8.09 *
Neurological	14.16 (n=3)	6.64	4.52	1.31
Mental health	18.75 (n=1)	13.14	0.00	3.59
Endocrine	12.25 (n=2)	9.07	0.87	1.80
Dermatology	3.52 (n=2)	3.51	0.00	0.00
Secondary diagnosis				
Musculo-skeletal	29.01 (n=13)	12.66	4.52	3.72
Cardio-vascular	24.70 (n=4)	14.16	3.62	4.15
Gynae/Urology/Obstetrics	3.16 (n=2)	2.75	0.00	0.41
Gastro-intestinal/Biliary	34.53 (n=1) *	14.90 *	8.34 *	8.26 *
Neurological	13.39 (n=2)	5.52	2.19	4.17
Thoracic	25.17 (n=2)	16.67	1.74	3.73
Endocrine	0.72 (n=1)	0.72	0.00	0.00
Number of sites				
1 site	15.43 (n=18)	8.40	2.85	2.39
2 sites	33.00 (n=9)	17.30	7.41	5.26
3 sites	24.58 (n=8)	13.11	5.02	4.43
4 sites	23.90 (n=7)	13.74	3.50	4.78
5 sites	39.98 (n=3)	20.79 *	9.00	6.49
6 sites	29.89 (n=6)	14.92	6.56	4.71
7 sites	59.01 (n=1) *	18.99	20.24 *	14.73 *
8 sites	19.72 (n=1)	10.07	0.00	3.66
10 sites	52.25 (n=1)	19.45	18.37	9.38
Sites of pain				
Face	37.47 (n=3) *	18.11 *	8.90	5.77
Head	37.15 (n=4)	17.40	11.27 *	4.19
Neck	30.36 (n=12)	14.69	7.54	4.95
Shoulder	30.85 (n=17)	15.31	6.89	5.75
Chest	16.91 (n=3)	7.39	6.36	1.81
Abdomen	18.12 (n=3)	12.22	3.66	2.97
Upper back	29.64 (n=3)	12.19	9.51	4.91
Lower back	30.58 (n=25)	17.02	6.57	5.80 *
Pelvis/hips	28.63 (n=26)	13.87	6.46	5.23
Arms	27.65 (n=10)	13.53	5.93	4.77
Hands	28.90 (n=13)	14.94	5.17	5.54
Legs	30.77 (n=28)	15.78	6.62	5.27
Feet	31.05 (n=17)	15.02	6.91	5.80 *

* highest total descriptor/dimension score

Table 5.8. Summary of MPQ profiles for pain-related diagnoses/sites (Groups 1 and 4)

6. FINDINGS FROM THE SICKNESS IMPACT PROFILE

6.1. Introduction

Analysis of SIP data follows recommendations in relation to content, coding and scoring method *(see 3.2.3, pages 57 - 59)*. Findings comprise information obtained from the overall total, dimensions and categories, and a discrete section within the SIP work category, which comprises four questions on work and retirement status and health related status of retirement or not working *(see Appendix A)*. As described *(see 3.8, pages 88 - 89)*, tests of statistical significance for nonparametric data include the Kruskal-Wallis test as all four groups completed the SIP, and the chi-square test. SIP findings for groups, practices, clinical diagnoses and sites of pain are described within all the sections of this chapter, with evaluation reflecting the context that SIP scores tend to be positively skewed *(see 3.2.2, page 48 - 49)*.

Due to the purposive sampling criteria for each group, it could be anticipated that there should be no differences between Groups 1 and 2, because both of these groups are ill and receiving treatment. However, differences could be anticipated between these two groups and Group 3 patients who are supposedly fit and well, whilst Group 4 patients should show similar results to Group 1. In order to ascertain if there is evidence of such anticipated similarities and differences, the text will reflect comparisons between these four groups throughout. Findings from the SIP are therefore presented in the following format:

6.2. SIP overall total/dimension scores
6.3. SIP physical dimension categories
6.4. SIP psychosocial dimension categories
6.5. SIP independent categories
6.6. SIP statements on work/retirement status
6.7. Summary of findings from the SIP

6.2. SIP overall total and dimension scores

The overall total comprises the physical and psychosocial dimensions, physical and psychosocial dimension categories, and independent categories. Comparing overall total scores, Group 1 score consistently higher than the other three groups, and as anticipated Group 3 consistently has the lowest scores (for example overall total mean: Group 1 = 23.60 vs. Group 3 = 1.17) *(see Figure 6.1)*. Unexpectedly, however, Group 4 score consistently higher than Group 2 (overall total mean = 8.69 vs. 2.76 respectively). The pattern of physical and psychosocial dimension scores for Groups 1 - 4 reflect those for the overall total score (for example physical dimension mean: 21.88 vs. 1.13 vs. 0.94 vs. 7.06 respectively) *(see Figure 6.1)*. Although similar overall total and dimension profiles are found for both practices, the Hastings practice consistently score slightly higher than the Lewisham practice (for example: overall total mean = 9.98 vs. 8.29 respectively) *(see Figure 6.1)*.

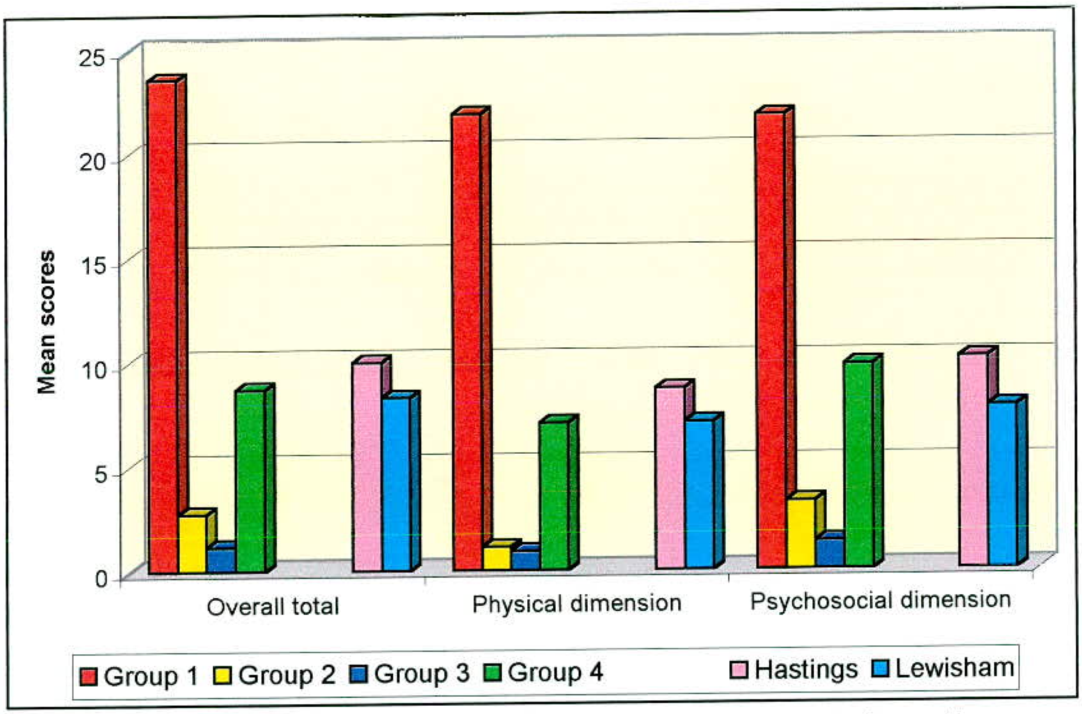


Figure 6.1. SIP overall total/dimension scores for groups and practices

Musculo-skeletal primary diagnoses have the highest overall total and physical dimension scores (mean = 21.20 and 20.30 respectively, n = 43), with the highest psychosocial dimension scores for neurological diagnoses (mean = 20.24, n = 4) *(see Figure 6.2)*. The second highest scores are also neurological diagnoses for the overall total and physical dimension, and musculo-skeletal diagnoses for the psychosocial dimension (mean = 14.42, 8.53 and 19.21 respectively). Next highest scores are mental health diagnoses for the overall total and psychosocial dimension, and gastro-intestinal/biliary diagnoses for the physical dimension (mean = 11.64 and 16.47, mean = 4.80; n = 3 and 2 respectively). A range of scores is otherwise evident for primary diagnoses, for example, overall total scores range from cardio-vascular to ENT/opthalmology diagnoses (mean = 7.87 - 0.37, n = 11 and 3 respectively).

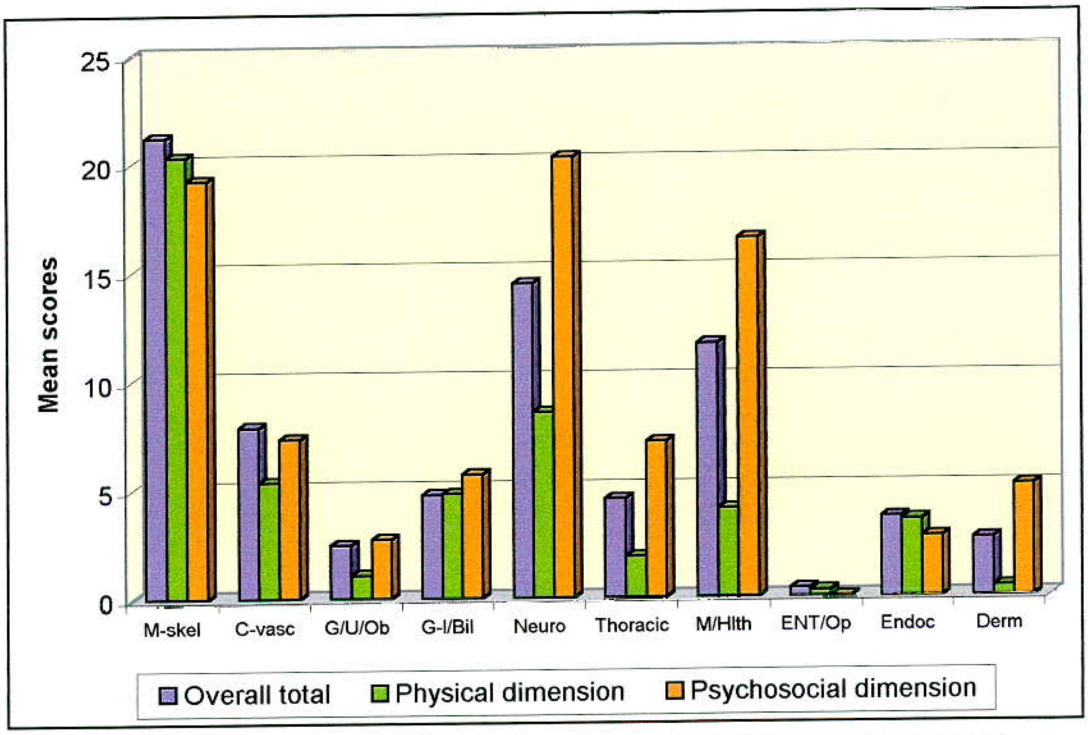


Figure 6.2. SIP overall total/dimension scores for 1° diagnostic groups

Slightly different patterns are evident for secondary diagnoses, with the highest overall total and psychosocial scores for neurological diagnoses (mean = 18.47 and 23.39 respectively, n = 3) and the highest physical dimension scores for thoracic diagnoses (mean = 21.43, n = 3) *(see Figure 6.3)*. The second highest scores are thoracic diagnoses for overall total scores, neurological diagnoses for the physical dimension, and mental health diagnoses (n = 3) for the psychosocial dimension (mean = 15.70, 15.33 and 20.76 respectively). Musculo-skeletal diagnoses (n = 17) have the next highest scores for all overall total, physical and psychosocial dimension scores (mean = 13.75, 11.31 and 13.94 respectively). A range of scores is otherwise evident for secondary diagnoses, for example, physical dimension scores range from cardio-vascular to mental health diagnoses (mean = 6.18 - 0.93, n = 9 and 2 respectively).

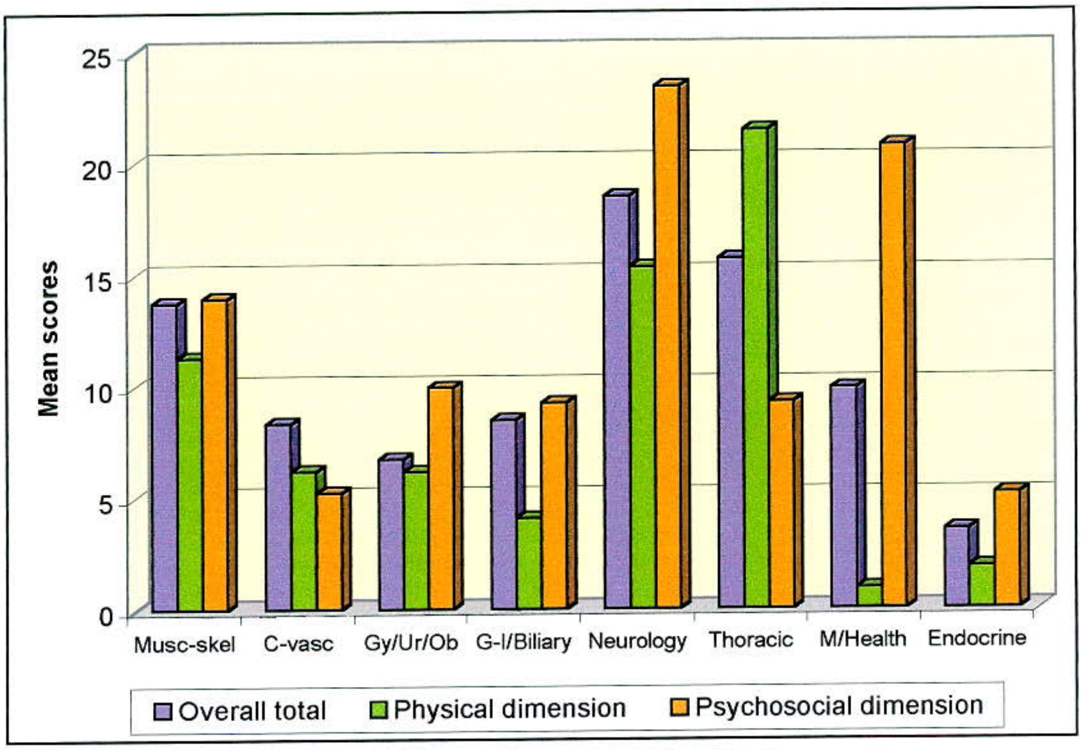


Figure 6.3. SIP overall total/dimension scores for 2° diagnostic groups

Overall total and dimension scores increase for 1 - 7 sites of pain (for example, overall total mean for sites: 1 = 9.38, 2 = 17.74, 5 = 28.81; n = 18, 9 and 3 respectively) *(see Figure 6.4)*. The only exception is four sites of pain, which has lower psychosocial dimension scores than three sites (mean = 17.72 vs. 22.27, n = 7 and 8 respectively). Although there is no clear scoring pattern for 7 - 10 sites of pain (for example: 10 sites < 7 sites; 8 sites < 7 and 10 sites), the limitations of such findings should be recognised with only one patient reporting each of the higher number of pain sites.

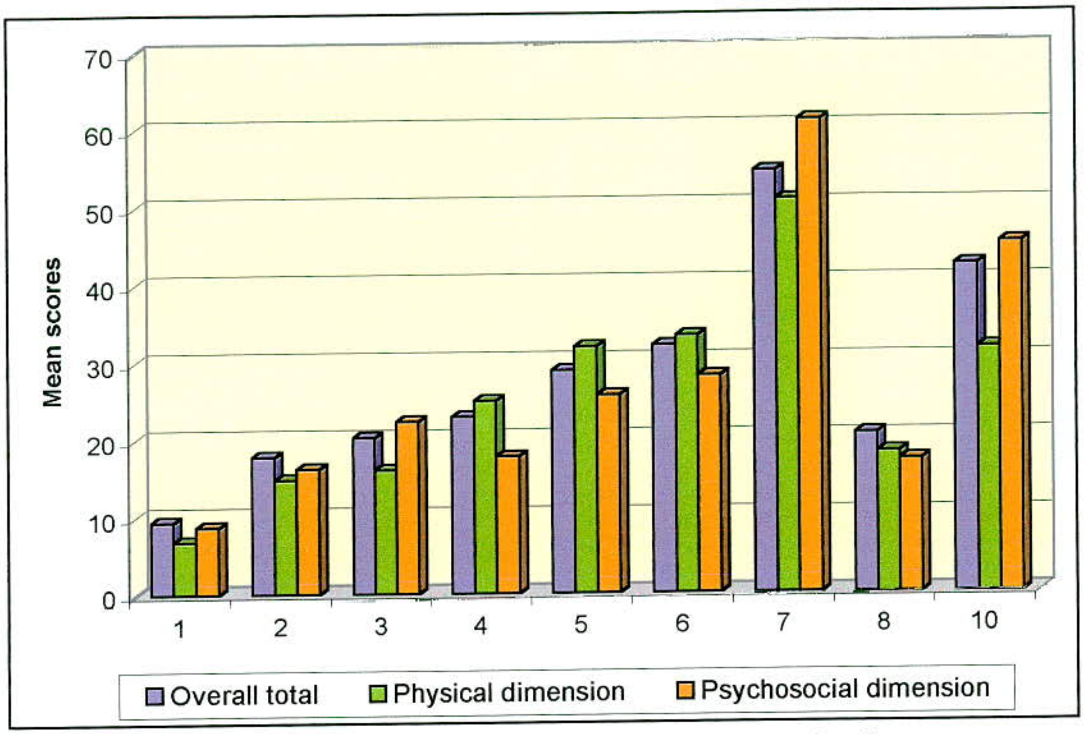


Figure 6.4. SIP overall total/dimension scores for no. pain sites

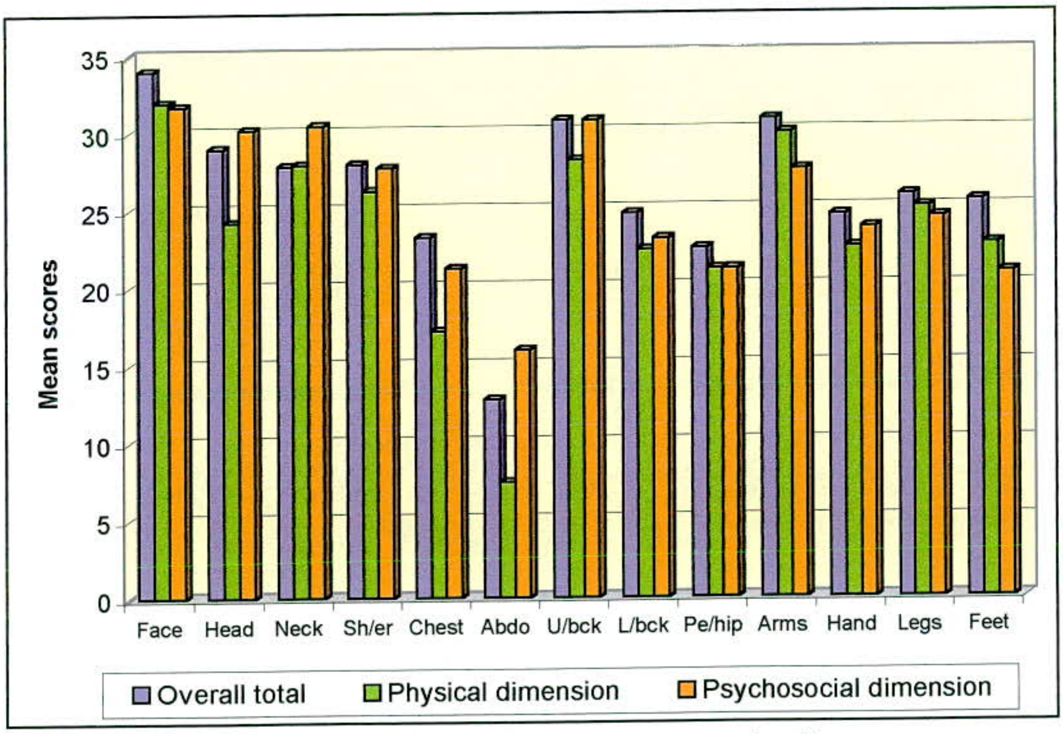


Figure 6.5. SIP overall total/dimension scores for pain sites

The highest overall total, physical and psychosocial dimension scores for the different sites of pain are consistently found for the face (mean =

33.98, 31.92 and 31.69 respectively, n = 3), with equivalent lowest scores consistently for the abdomen (mean = 12.74, 7.45 and 15.96 respectively, n = 3) *(see Figure 6.5)*. The second and third highest overall total and physical dimension scores are both for the arms and upper back (mean = 30.80 and 30.73, 29.91 and 28.18; n = 10 and 3 respectively). The upper back also has the second highest psychosocial dimension scores (mean = 30.75), with similar scores for the neck and head (mean = 30.44 and 30.18, n = 4 and 12 respectively). A range of dimension scores is otherwise evident for sites of pain, for example, overall total scores range from the head to pelvis/hips (mean = 28.97 - 22.48, n = 4 and 26 respectively), and physical dimension scores from the neck to chest (n = 3) (mean = 27.92 - 17.18).

The Kruskal-Wallis test suggests differences for overall total, physical and psychosocial dimension scores are highly statistically significant only for groups (Asymp. Sig. = 0.000) *(see Appendix S, 1)*. The chi-square test suggests overall total, physical and psychosocial dimension scores may be highly statistically significant for secondary diagnoses ($p \leq 0.004$). Overall total scores may also be statistically significant ($p = 0.009$) and psychosocial dimension scores approaching statistical significance for primary diagnoses ($p = 0.054$). However, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix T, 1 - 5)*.

6.3. SIP physical dimension category scores

The physical dimension comprises body care/movement, mobility and ambulation categories. Category scores for groups reflect patterns for overall total and dimension scores, with Group 1 having the highest scores and Group 3 the lowest (for example ambulation category mean: 26.98 vs. 1.31 respectively) *(see Figure 6.6)*. Group 4 again score higher than Group 2 (for example body care/movement category mean: 7.06 vs. 0.93 respectively). Although similar physical dimension category profiles are found for both practices, the Hastings practice again consistently scores slightly higher than the Lewisham practice (for example ambulation category mean: 10.14 vs. 9.98 respectively) *(see Figure 6.6)*.

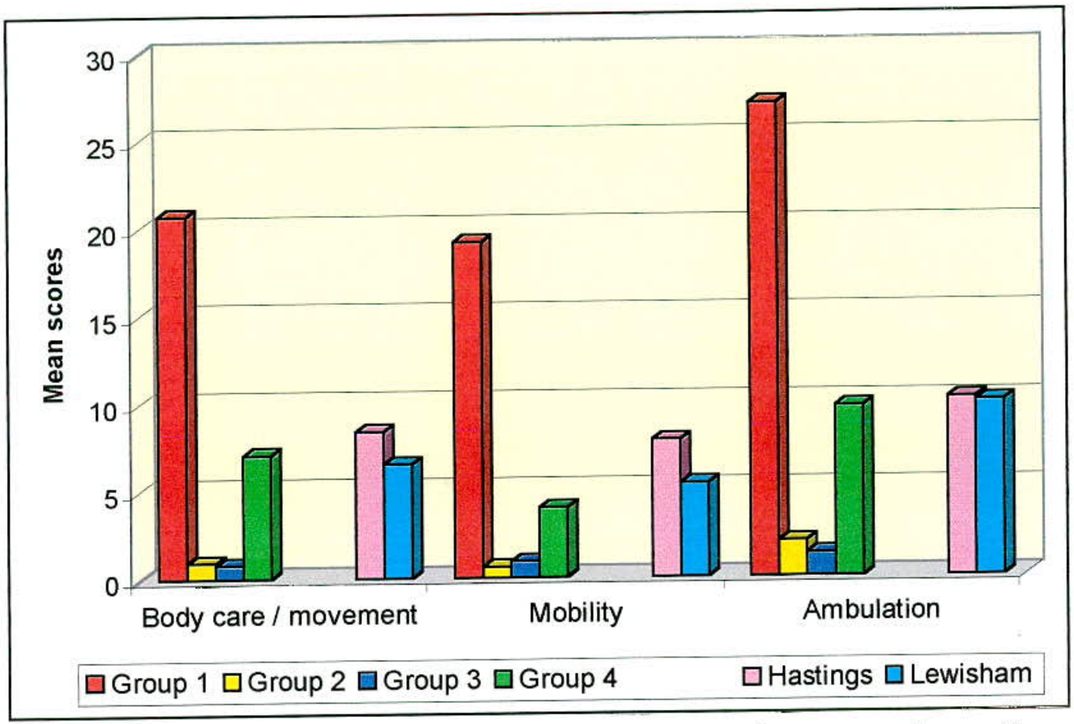


Figure 6.6. SIP physical dimension category scores for groups & practices

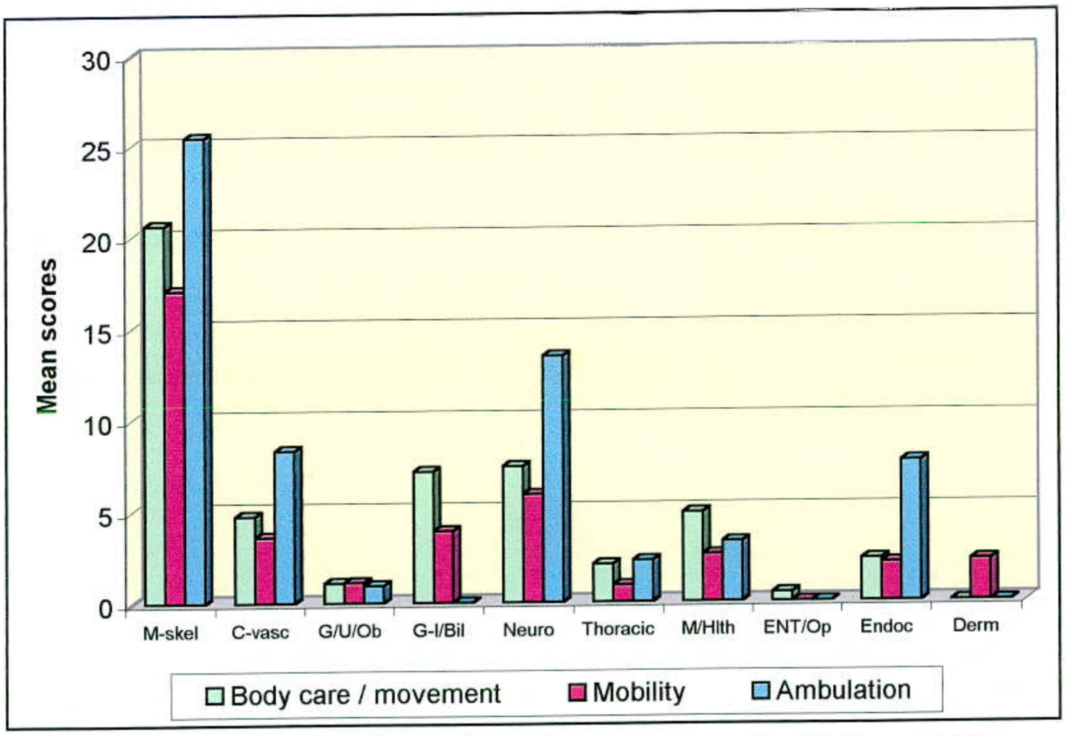


Figure 6.7. SIP physical dimension category scores for 1° diagnoses

Musculo-skeletal primary diagnoses consistently have the highest scores for all three categories of body care/movement, mobility and ambulation (mean = 20.62, 17.06 and 25.44 respectively, n = 43) *(see Figure 6.7)*. Neurological diagnoses have the equivalent second highest scores (mean = 7.43, 5.88 and 13.45 respectively, n = 4), with the next highest being gastro-intestinal/biliary diagnoses for body care/movement and mobility (mean = 7.14 and 3.90 respectively, n = 2), and cardio-vascular diagnoses for ambulation (mean = 8.30, n = 11). A range of physical dimension category scores is otherwise evident for primary diagnoses, for example, body care/movement scores range from mental health to dermatology diagnoses (mean = 4.89 - 0, n = 3 and 5 respectively).

Different patterns are evident for secondary diagnoses, with thoracic diagnoses having the highest body care/movement and ambulation scores and second highest mobility scores (mean = 20.85, 28.10 and 15.35 respectively, n = 3) *(see Figure 6.8)*. Neurological diagnoses have the highest mobility and also the second highest body care/movement and ambulation scores (mean = 16.04, 14.99 and 15.60 respectively, n = 3).

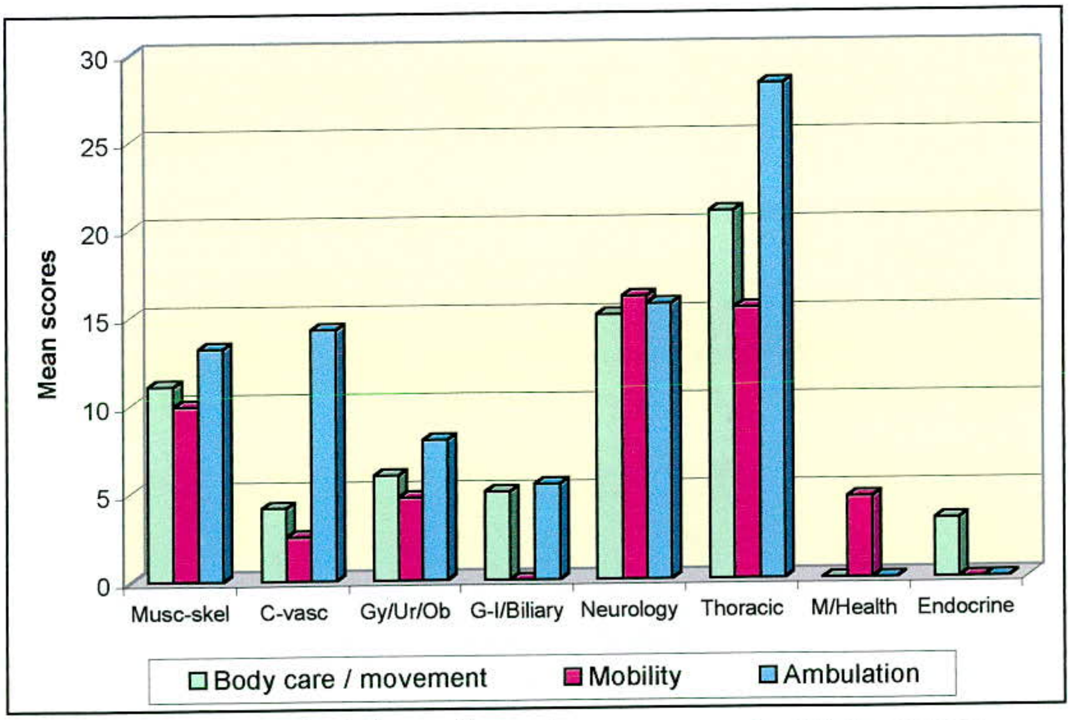


Figure 6.8. SIP physical dimension category scores for 2° diagnoses

The next highest scores are musculo-skeletal diagnoses for body care/movement and mobility (mean = 11.05 and 9.90 respectively, n = 17), and cardio-vascular diagnoses for ambulation (mean = 14.25, n = 9). A range of physical dimension category scores is otherwise evident for secondary diagnoses, for example, body care/movement scores range from gynaecology/urology/obstetric to mental health diagnoses (mean = 5.94 - 0, n = 5 and 2 respectively).

Some differences are found in patterns of physical dimension category scores for the total number of pain sites. Body care/movement and mobility scores generally increase for 1 - 7 sites of pain (for example mobility category mean for sites: 1 = 5.08, 3 = 12.71 and 5 = 35.93; n = 18, 8 and 3 respectively). The only exception is six sites of pain (n = 6), which has lower body care/movement scores than five sites (mean = 30.02 vs. 32.85) *(see Figure 6.9)*.

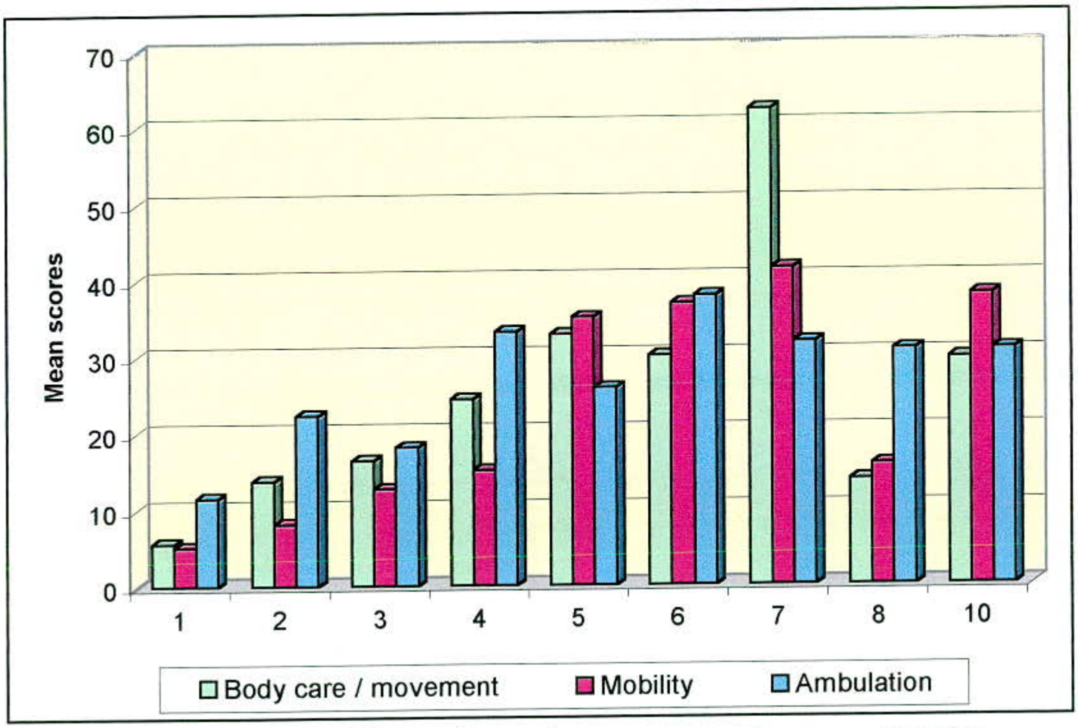


Figure 6.9. SIP physical dimension category scores for no. pain sites

No clear pattern is evident for ambulation scores, or for 7 - 10 sites of pain for any of the physical dimension category scores (for example: 10 sites <

7 sites, 8 sites < 7 and ≤ 10 sites). However, the limitations of such findings should be recognised, with only one patient reporting each of the higher number of pain sites.

Slightly different physical dimension category scores are found for sites of pain, except for the abdomen, which is lowest for all categories *(see Figure 6.10)*. The arms, face and upper back have similar highest scores for body care/movement (mean = 29.82, 29.52 and 29.34, n = 10, 3 and 3 respectively), with face and arms also having the highest mobility and ambulation scores respectively (mean = 37.51 and 34.64). The next highest scores are neck and head for mobility (mean = 28.86 and 28.13, n = 12 and 4 respectively), and face for ambulation (mean = 32.98). A range of physical dimension category scores is otherwise evident for sites of pain, for example, body care/movement scores range from the shoulder to the chest (mean = 28.19 - 14.56 n = 17 and 3 respectively).

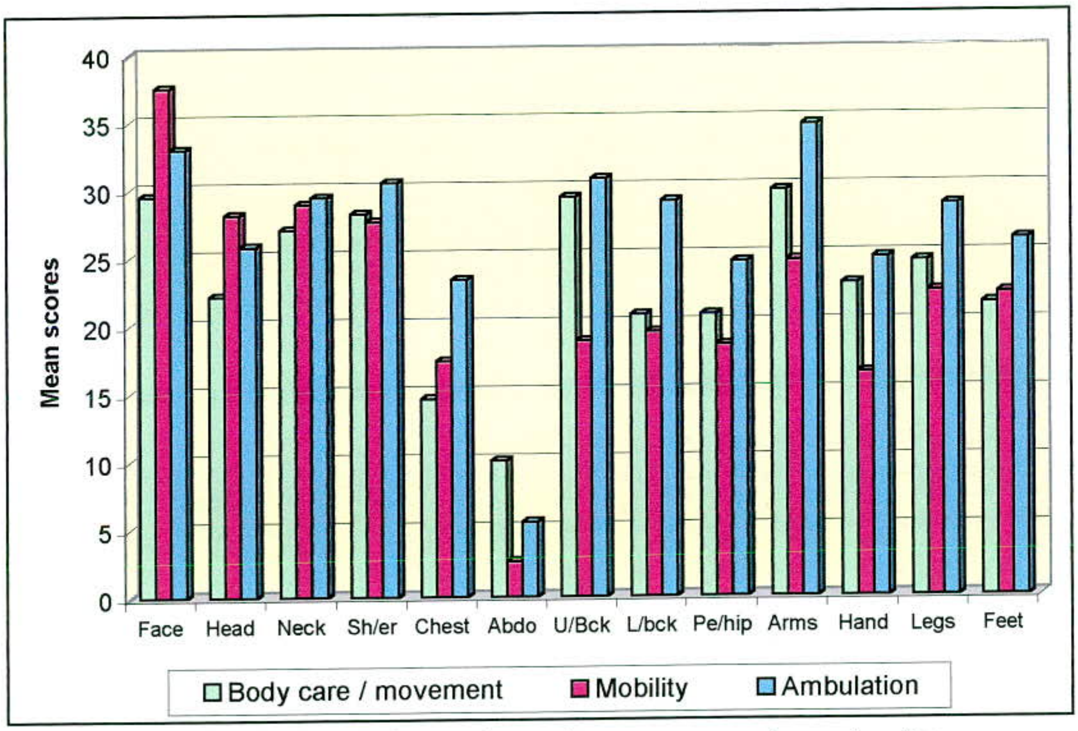


Figure 6.10. SIP physical dimension category scores for pain sites

The Kruskal-Wallis test suggests differences for all physical dimension category scores are highly statistically significant only for groups (Asymp.

Sig. = 0.000) *(see Appendix S, 2)*. The chi-square test suggests high statistical significance for body care/movement scores for secondary diagnoses, mobility scores for lower back and face, and ambulation scores for neck and lower back ($p \leq 0.002$). Statistical significance is also suggested for body care/movement scores for pelvis/hips, legs, shoulder and neck, mobility scores for legs, arms, neck, shoulder, pelvis/hips and hands, and ambulation category scores for pelvis/hips and chest ($p \leq$ 0.047. However, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count) *(see Appendix T, 6 - 22)*.

6.4. SIP psychosocial dimension category scores

The psychosocial dimension comprises emotional behaviour, social interaction, alertness behaviour, and communication categories. Category scores for groups again reflect patterns for overall total and dimension scores, with Group 1 having the highest scores and Group 3 the lowest *(see Figure 6.11)*.

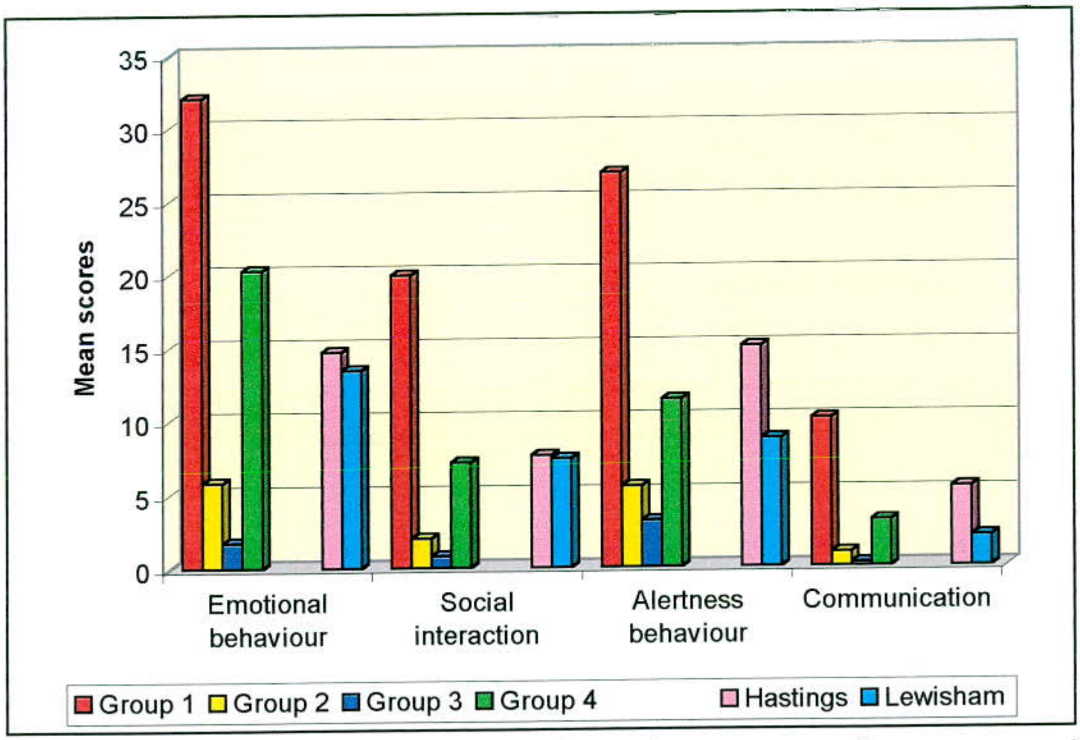


Figure 6.11. SIP psychosocial dimension category scores for groups and practices

Such a pattern is particularly evident for the emotional behaviour category (mean = 32.06 vs. 1.74 respectively). Group 4 again score consistently higher than Group 2, also particularly in relation to emotional behaviour (mean = 20.29 vs. 5.81 respectively). Although similar psychosocial dimension category profiles are found for both practices *(see Figure 6.11)*, the Hastings practice again consistently scores slightly higher than the Lewisham practice, particularly in relation to alertness behaviour (mean = 14.98 vs. 8.69 respectively).

Musculo-skeletal primary diagnoses have the highest social interaction and communication category scores (mean = 17.10 and 9.14 respectively, n = 43), and neurological and mental health diagnoses the highest emotional behaviour and alertness behaviour scores respectively (mean = 38.33 and 31.75, n = 4 and 3) *(see Figure 6.12)*.

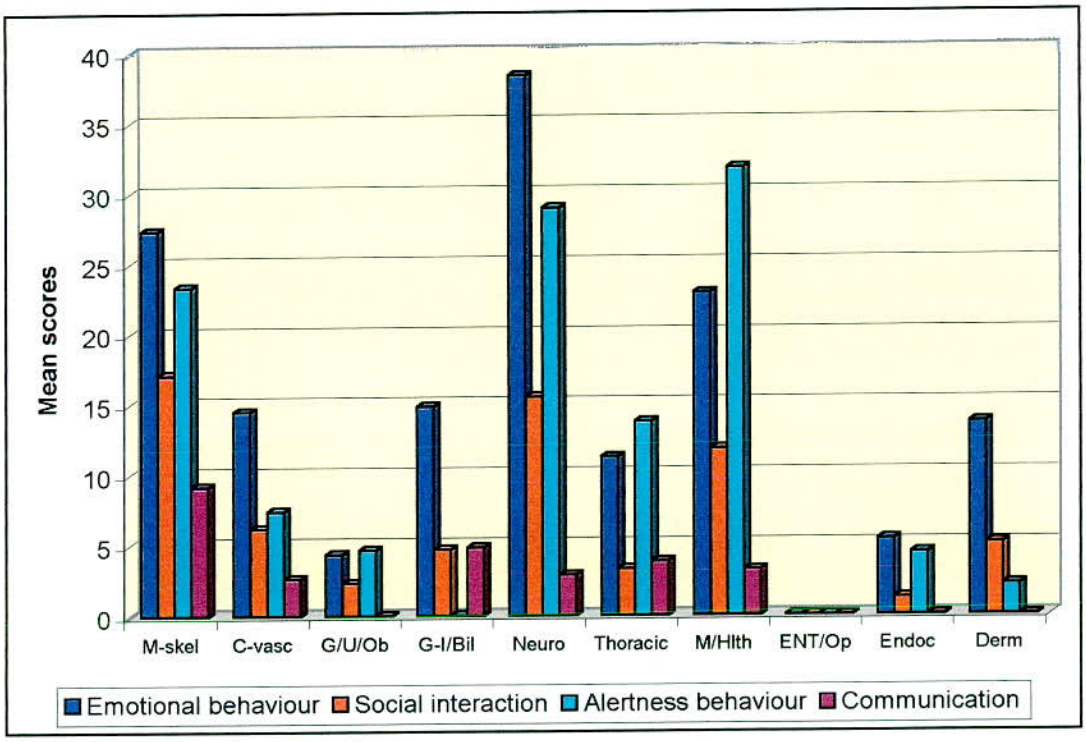


Figure 6.12. SIP psychosocial dimension category scores for 1° diagnoses

The next highest scores are neurological diagnoses for alertness behaviour and social interaction (mean = 28.90 and 15.50 respectively), musculo-skeletal diagnoses for emotional behaviour (mean = 27.32), and gastro-intestinal/biliary diagnoses for communication (mean = 4.83, n = 2). The ENT/opthalmology group (n = 3) has no score for any categories. A broad range of psychosocial category scores is otherwise evident, for example, alertness behaviour scores range from musculo-skeletal to gastro-intestinal/biliary diagnoses (mean = 23.33 - 0).

Slightly different patterns are evident for secondary diagnoses *(see Figure 6.13)*. Mental health diagnoses have the highest scores for emotional behaviour and alertness behaviour scores (mean = 32.98 and 44.98 respectively, n = 2), and neurological diagnoses the highest social interaction and communication scores (mean = 18.51 and 24.37 respectively, n = 3). Neurological diagnoses also have the second highest emotional behaviour and alertness behaviour scores (mean = 28.60 and 26.86 respectively), with thoracic diagnoses the second highest social interaction and communication scores (mean = 13.72 and 11.95 respectively, n = 3). A range of psychosocial category scores is otherwise evident, for example, alertness behaviour scores range from musculo-skeletal (n = 17) to thoracic diagnoses (mean = 15.73 - 0).

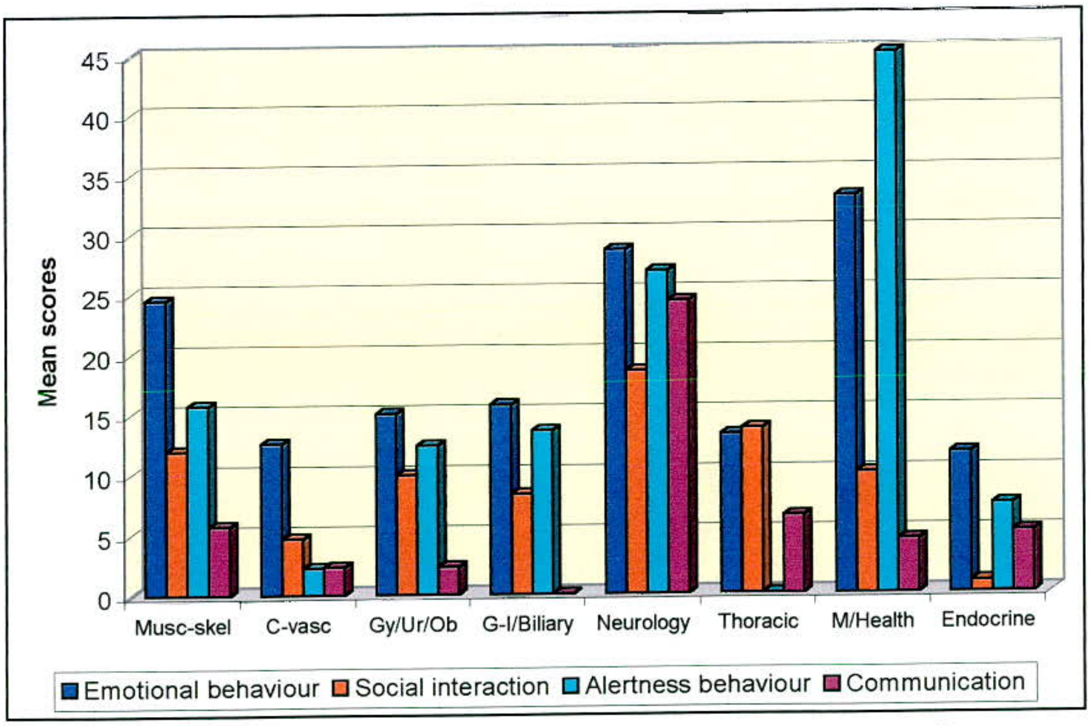


Figure 6.13. SIP psychosocial dimension category scores for 2° diagnoses

No clear pattern emerges for the total number of pain sites and psychosocial dimension category scores (for example, alertness behaviour category mean for sites: 1 = 9.19, 3 = 28.12, 5 = 23.90, 7 = 100.00 and 10 = 9.38; n = 18, 8, 3, 1 and 1 respectively) *(see Figure 6.14)*. In the emotional behaviour category, eight sites of pain (n = 1) also scores lower than one site (mean = 18.44 vs. 19.55 respectively). However, the limitations of such findings should be recognised, with only one patient reporting each of the higher number of pain sites.

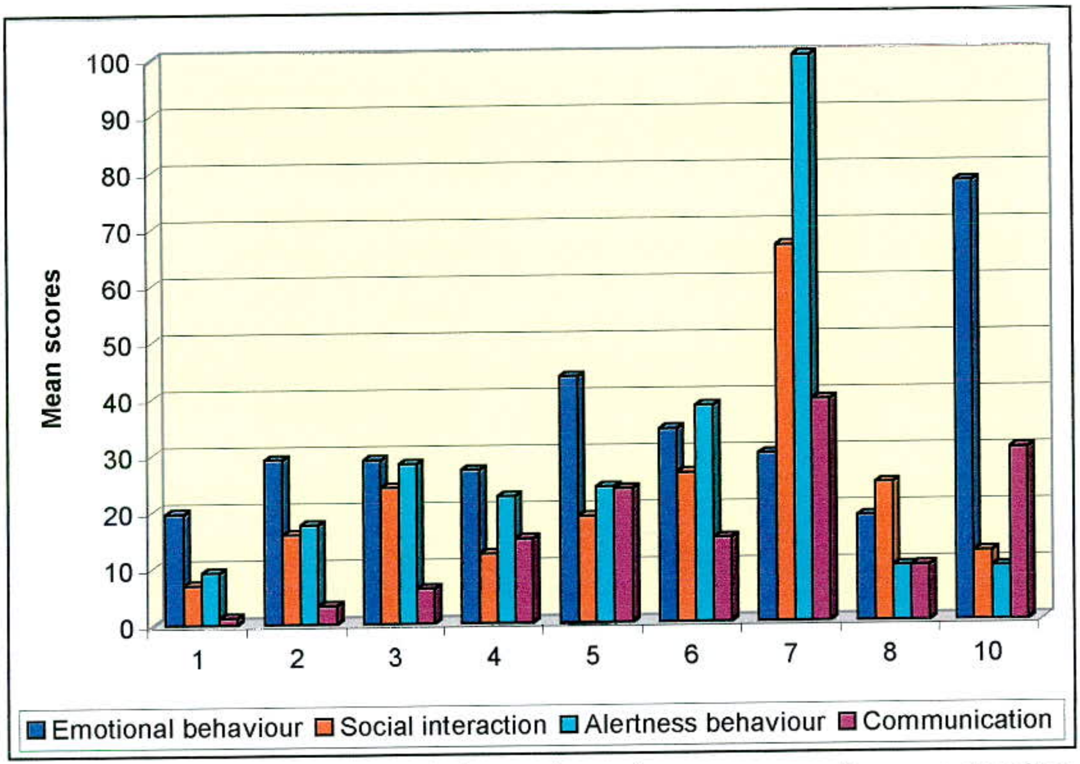


Figure 6.14. SIP psychosocial dimension category scores for no. pain sites

Slightly different patterns of psychosocial dimension category scores are found for sites of pain. Whilst the upper back has the highest scores for both social interaction and alertness behaviour (mean = 32.80 and 48.18 respectively, n = 3), the highest emotional behaviour and communication scores are for the head and face respectively (mean = 53.97 and 20.23, n = 4 and 3) *(see Figure 6.15)*. The face also has the second highest emotional behaviour, social interaction and alertness behaviour scores (mean = 48.13, 23.75 and 42.30 respectively), with arms the second highest communication scores (mean = 19.03, n = 10). A broad range of psychosocial dimension category scores is otherwise evident, for example, alertness behaviour scores range from the head to the abdomen (n = 3) (mean = 39.93 - 6.57 respectively).

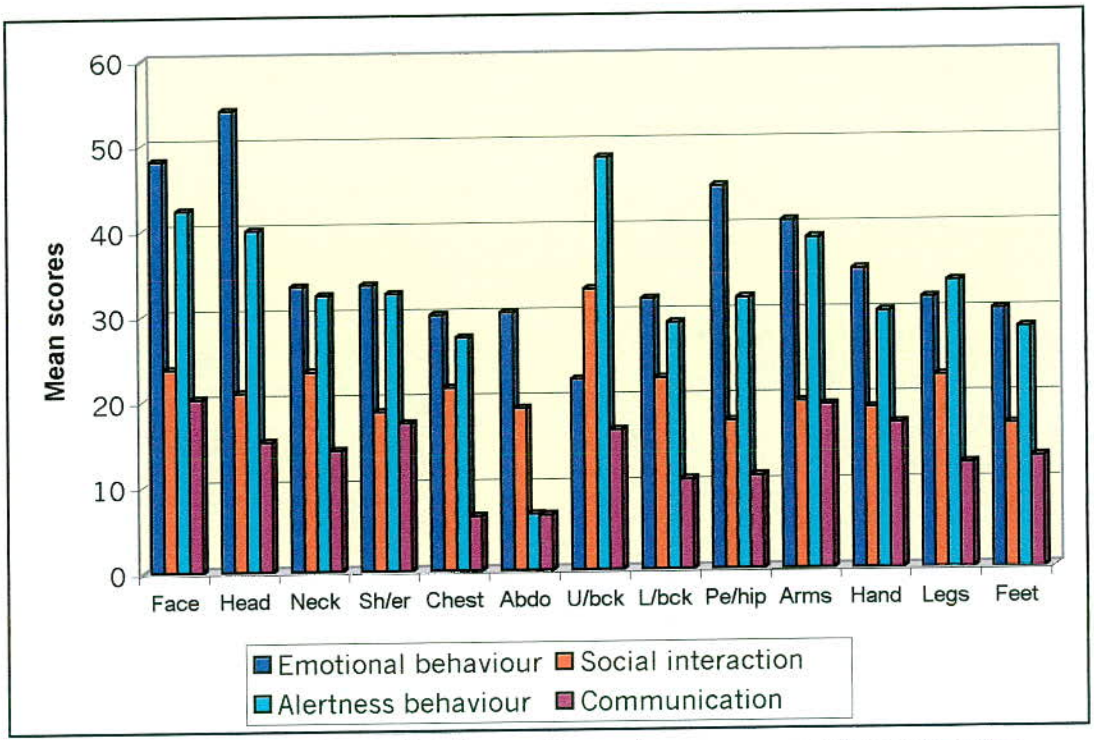


Figure 6.15. SIP psychosocial dimension category scores for pain sites

The Kruskal-Wallis test suggests differences for all psychosocial dimension category scores are highly statistically significant only for groups (Asymp. Sig. = 0.000) *(see Appendix S, 3)*. The chi-square test suggests high statistical significance for all psychosocial dimension category scores for secondary diagnoses, alertness behaviour scores for shoulder, face, hands and neck, and communication scores for face, neck, pelvis/hips and arms, ($p \leq 0.005$).

Statistical significance is suggested for alertness behaviour scores for primary diagnoses, emotional behaviour scores for the face, social interaction scores for pelvis/hips, hands, neck, shoulder, chest and abdomen, alertness behaviour scores for chest, arms and pelvis/hips and communication scores for the hands and chest ($p \leq 0.041$). Social interaction and communication scores for arms and head respectively are also suggested to be approaching statistical significance ($p = 0.054$). However, further large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix T, 23 - 49)*.

6.5. SIP independent category scores

The independent categories comprise sleep/rest, home management, work, recreation/pastimes and eating. Category scores for groups again reflect patterns for overall total and dimension scores, with Group 1 having the highest scores and Group 3 the lowest (for example recreation/ pastimes category mean: 36.47 vs. 0.95 respectively) *(see Figure 6.16)*. Group 4 again score consistently higher than Group 2 (for example work category mean: 15.84 vs. 7.28 respectively).

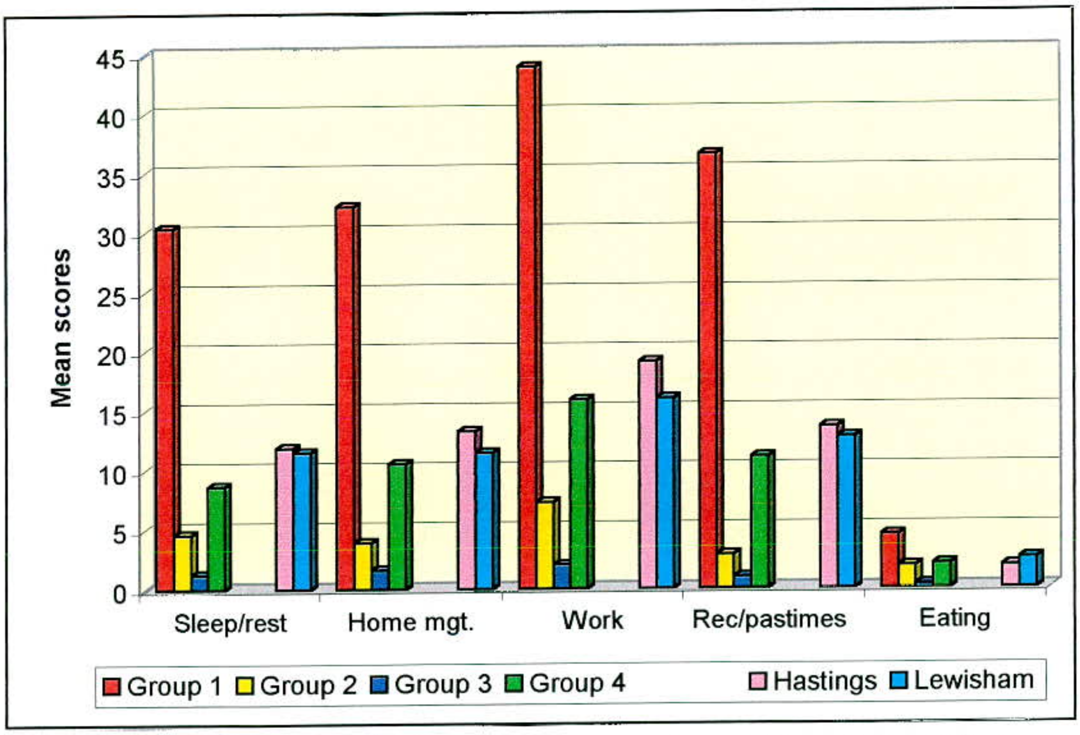


Figure 6.16. SIP independent category scores for groups and practices

When comparing all SIP overall total, dimension and category scores, the highest score overall is the independent category of work for Group 1, and the lowest Group 1 score overall is for the independent category of eating (mean = 43.81 and 4.48 respectively). Although similar independent category profiles are found for both practices *(see Figure 6.16)*, the Hastings practice again consistently scores slightly higher than the Lewisham practice except for eating (for example ambulation category mean: 10.14 vs. 9.98 respectively).

Primary musculo-skeletal diagnoses have the highest category scores for sleep/rest, home management, and recreation/pastimes (mean = 26.21, 29.01 and 33.16 respectively, n = 43) *(see Figure 6.17)*. Mental health and endocrine diagnoses have the highest scores for work and eating respectively (mean = 46.73 and 4.06, n = 3 and 10 respectively).

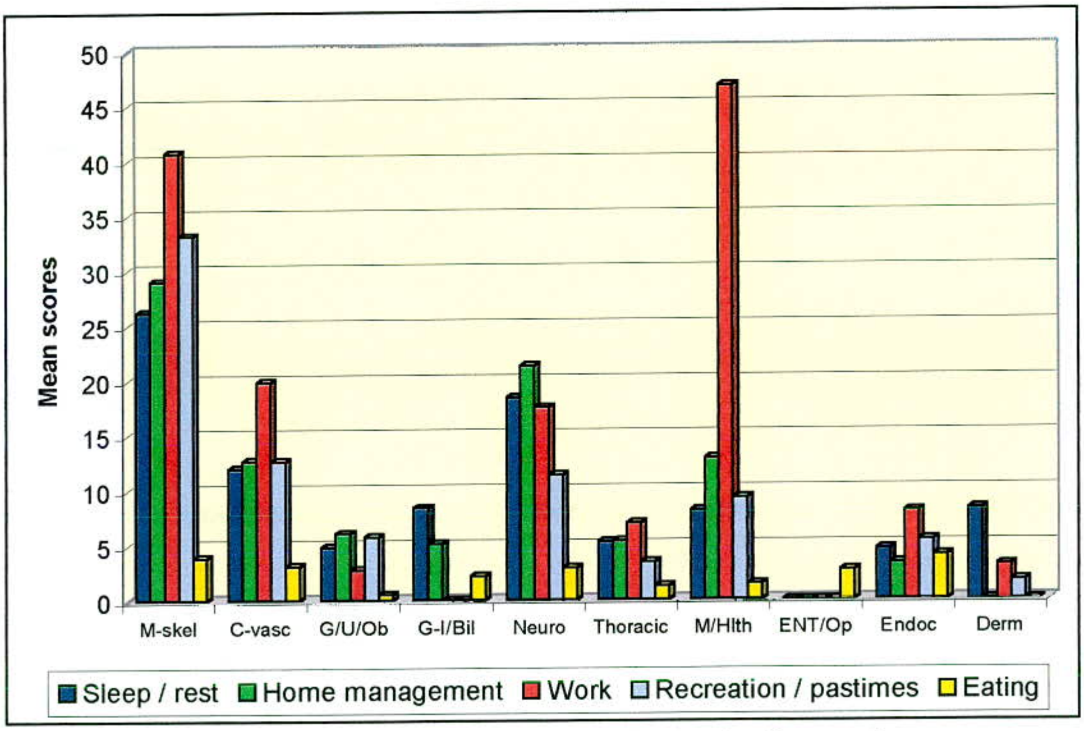


Figure 6.17. SIP independent category scores for 1° diagnostic groups

The second highest scores are also musculo-skeletal diagnoses for work and eating (mean = 40.76 and 3.88 respectively), with neurological diagnoses for sleep/rest and home management, and cardio-vascular diagnoses for recreation/pastimes (mean = 12.04, 12.88 and 12.64, n = 4 and 11 respectively). The lowest scores overall are ENT/opthalmology diagnoses, which only score for the eating category (mean = 2.67, n = 3). A range of independent category scores is otherwise evident, for example, work scores range from cardio-vascular to gastro-intestinal/biliary diagnoses (n = 2) (mean = 19.88 - 0).

Different patterns are evident for secondary diagnoses, with thoracic diagnoses having the highest home management and recreation/pastimes category scores (mean = 27.74 and 23.78 respectively, n = 3). The highest sleep/rest, work and eating scores are for neurological, cardio-thoracic and endocrine diagnoses respectively (mean = 21.11, 31.16 and 5.23; n = 3, 9 and 4 respectively) *(see Figure 6.18)*.

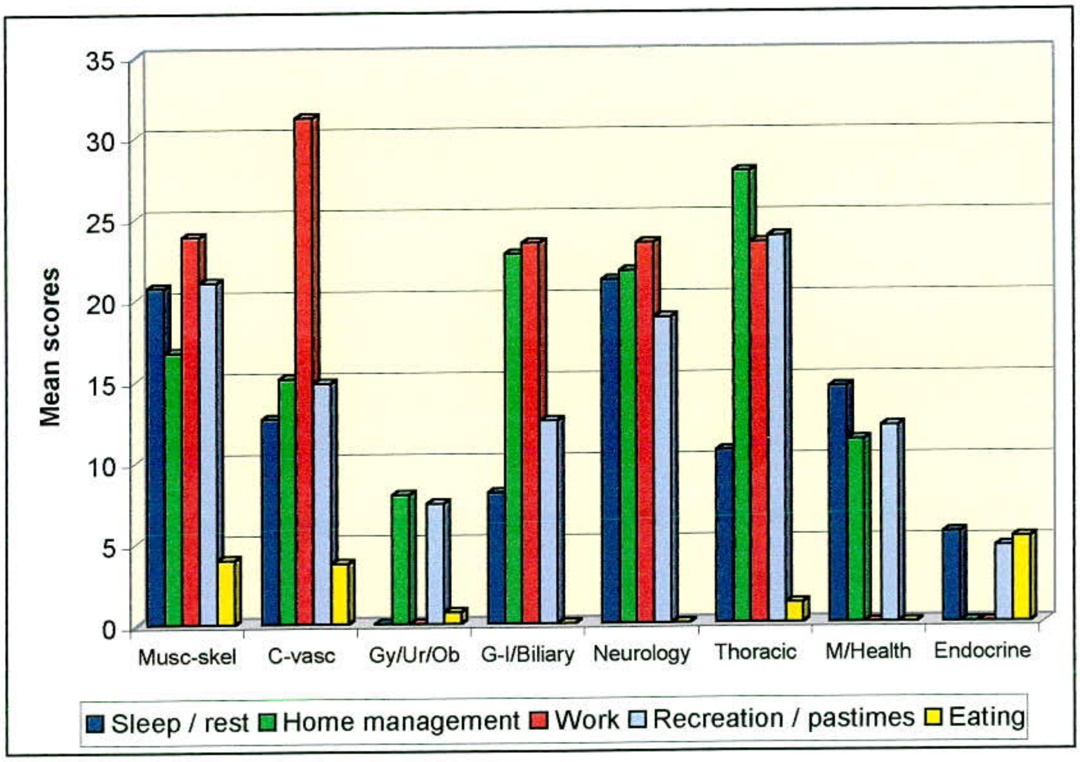


Figure 6.18. SIP independent category scores for 2° diagnostic groups

Musculo-skeletal diagnoses have the second highest scores for sleep/rest, work, recreation/ pastimes and eating (mean = 20.74, 23.85, 21.05 and 3.95 respectively, n = 17), with gastro-intestinal diagnoses the second highest home management scores (mean = 22.70, n = 3). A range of independent category scores is otherwise evident, for example, home management scores range from neurological to endocrine diagnoses (mean = 21.66 - 0).

Differences in independent category scores are found for the total number of pain sites. Home management and recreation/pastimes scores increase for 1 - 7 sites of pain with the exception of three sites (for example, recreation/pastimes category mean for sites: 1 = 5.08, 2 = 28.88, 3 = 25.65, 4 = 34.80 and 6 = 44.47, n = 8) *(see Figure 6.19)*. Such clear patterns are not, however, evident for sleep/rest, work and eating scores for 1 - 7 sites of pain. Comparing 7 - 10 sites of pain, there is again no clear pattern for independent category scores, with the exception of work where 7 - 10 sites have the same score (all means = 70.10). However, the limitations of such findings should be recognised, with only one patient reporting each of the higher number of pain sites.

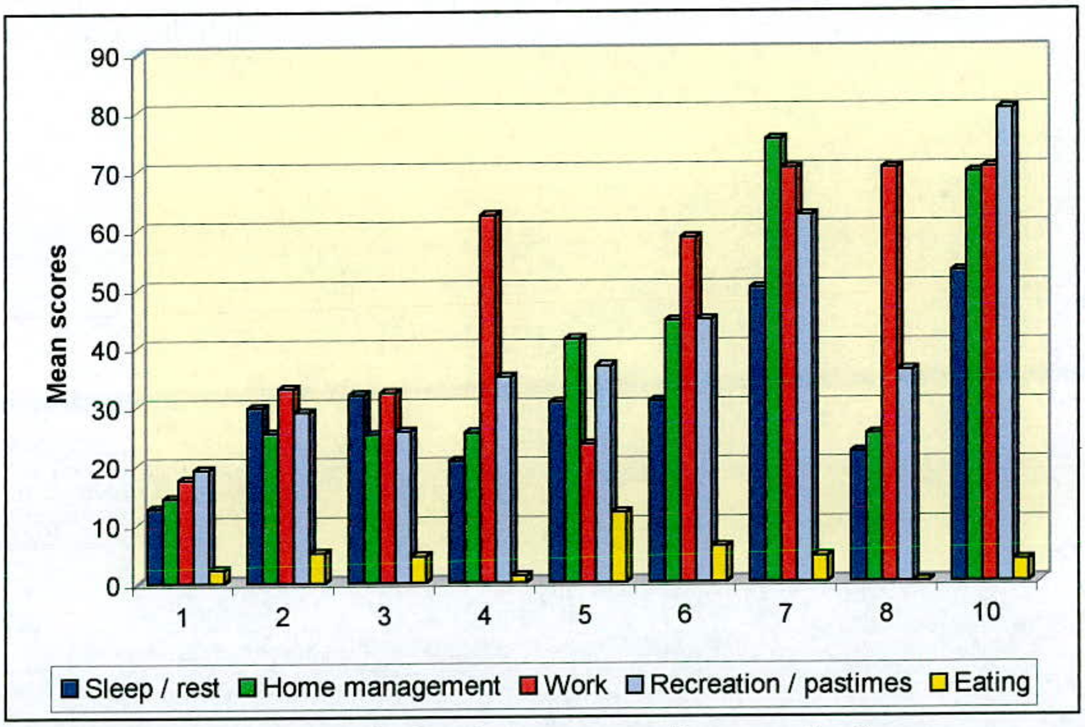


Figure 6.19. SIP independent category scores for no. pain sites

Different patterns of independent category scores are found for sites of pain. The highest scores for home management and recreation/pastimes are the face (mean = 56.29 and 57.26 respectively, n = 3), with the chest having the highest scores for sleep/rest and eating (mean = 49.90 and 6.67 respectively, n = 3) *(see Figure 6.20)*. The highest work category scores are for the upper back (mean = 70.10, n = 3). The arms have the second highest home management, work and eating scores (mean = 42.34, 63.09 and 6.38 respectively, n = 10), with the head having the second highest sleep/rest and recreation/pastimes scores (mean = 46.74 and 45.08 respectively, n = 4). A range of independent category scores is otherwise evident, for example, recreation/pastimes scores range from the arms to the abdomen (n = 3) (mean = 44.83 - 18.01 respectively).

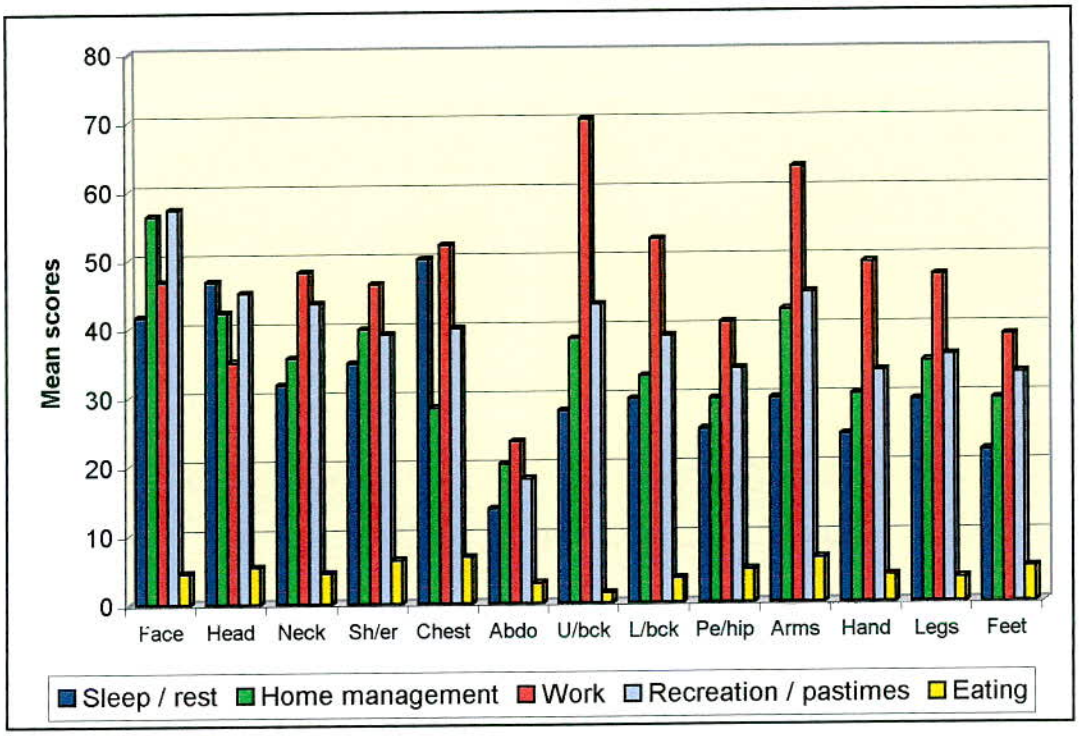


Figure 6.20. SIP independent category scores for pain sites

The Kruskal-Wallis test suggests differences for all independent category scores are highly statistically significant only for groups (Asymp. Sig. = 0.000) *(see Appendix S, 4)*. The chi-square test suggests high statistical significance for work scores for primary diagnoses, home management and recreation/pastimes scores for secondary diagnoses. High statistical significance is also suggested for home management scores for neck, pelvis/hips, hands, shoulder and face, sleep/rest scores for the face and chest, recreation/pastimes scores for the neck and lower back, and work scores for pelvis/hips ($p \leq 0.003$).

Statistical significance is suggested for sleep/rest scores for pelvis/hips, upper back and neck, recreation/pastimes scores for hands and arms, eating scores for arms and chest, and home management scores for arms ($p \leq 0.023$). Recreation/pastimes and sleep/rest scores for the chest and head respectively are also suggested to be approaching statistical significance ($p \leq 0.057$). However, further large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix T, 50 - 72)*.

6.6. SIP statements on work and retirement status

6.6.1. Work and retirement status

Comparing the two groups who are ill and receiving treatment, a lower percentage of Group 1 report working on a regular basis than Group 2 (15.0% vs. 42.5%, n = 6 and 17 respectively) *(see Figure 6.21)*. Although Group 3 are supposedly fit and well and Group 4 have previously unidentified chronic pain, a similar percentage of both groups report working on a regular basis (67.5% vs. 62.5%, n = 27 and 10 respectively). Group 1 have the highest percentage not working and retired (for example: Group 1 = 47.5% vs. Group 2 = 30.0%, n = 19 and 12 respectively) *(see Figure 6.21)*. Group 1 also has the highest percentage who are not working and are not retired (for example: Group 1 = 37.5% vs. Group 2 = 27.5%, n = 15 and 11 respectively), with only one Group 4 patient (6.3%) not working and not retired.

A lower percentage of the Lewisham practice reports working on a regular basis than the Hastings practice (39.1% vs. 49.3%, n = 27 and 33 respectively) *(see Figure 6.21)*. Whilst a similar percentage of both practices report not working on a regular basis and not being retired, there is a higher percentage of those who are retired in the Lewisham practice than the Hastings practice (39.1% vs. 25.4% n = 27 and 17 respectively). This would support demographic findings that the Lewisham practice has a higher percentage over the age of 64 years than the Hastings practice *(see 4.3, page 96)*.

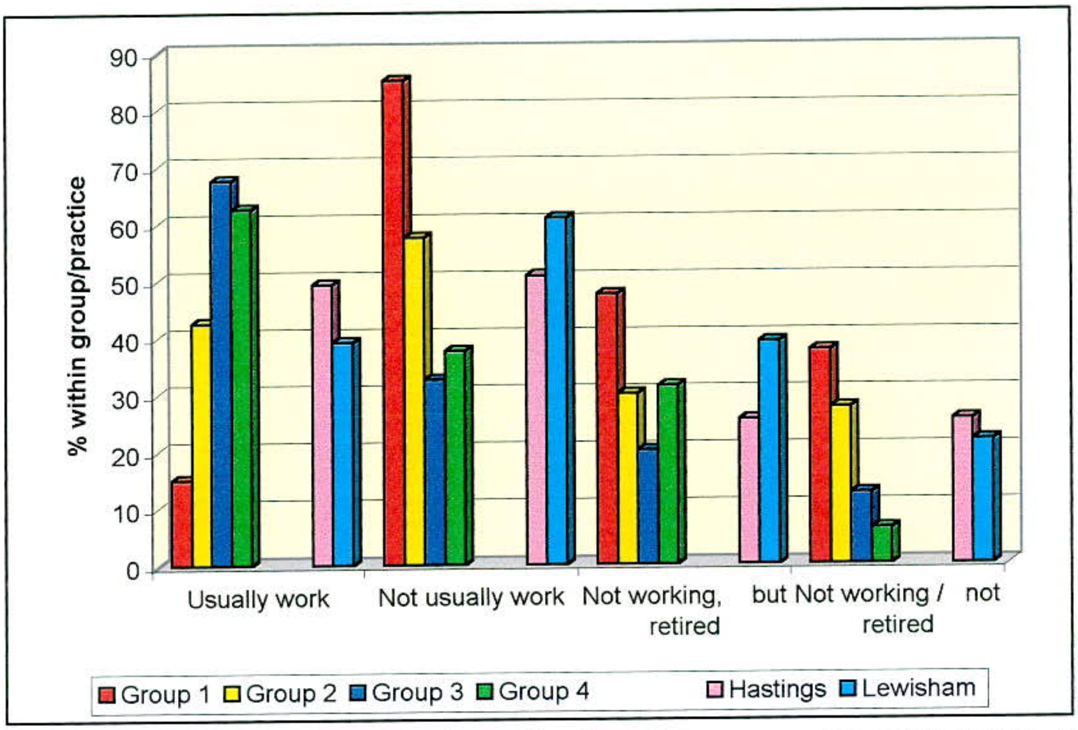


Figure 6.21. Do you usually do work other than managing your home, if not are you retired? Responses for groups and practices

Primary dermatology and gynaecology/urology/obstetric diagnoses have the highest percentage who report working on a regular basis (80.0% and 71.4%, n = 4 and 5 respectively) *(see Figure 6.22)*. However, none of the mental health group (n = 3), and more than 70 per cent of musculo-skeletal, neurological and cardio-vascular diagnoses report not working on a regular basis (79.1%, 75.0% and 72.7%, n = 34, 3 and 8 respectively). The highest percentage not working but being retired are neurological, cardio-vascular and endocrine diagnoses (75.0%, 63.6% and 60.0%, n = 3, 7 and 6 respectively) *(see Figure 6.22)*. Mental health and gastro-intestinal/biliary diagnoses, have the highest percentage not working and not being retired (66.7% and 50.0%, n = 2 and 1 respectively).

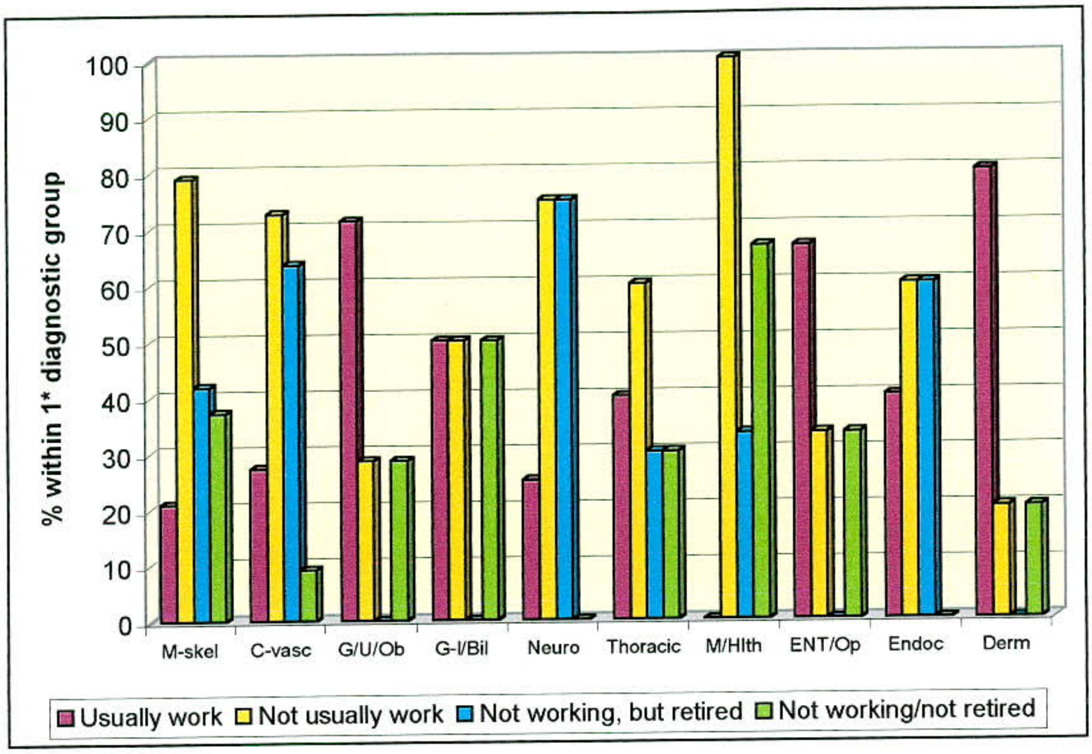


Figure 6.22. Work/retirement status for 1° diagnostic groups

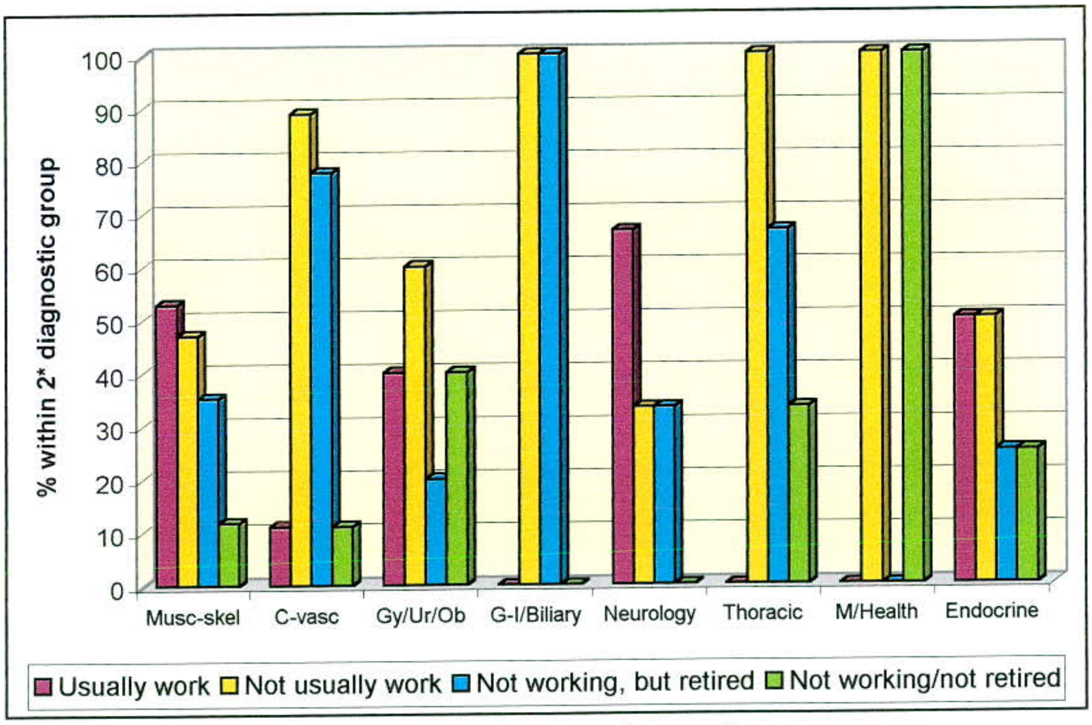


Figure 6.23. Work/retirement status for 2° diagnostic groups

Neurological, musculo-skeletal and endocrine secondary diagnoses have the highest percentage working on a regular basis (66.7%, 52.9% and

50.0%; n = 2, 9 and 2 respectively) *(see Figure 6.23)*. However, no gastro-intestinal/biliary, thoracic and mental health diagnoses (n = 3, 3 and 2 respectively), and 88.9 per cent of cardio-vascular diagnoses (n = 8) report not working on a regular basis. All gastro-intestinal/biliary diagnoses and a high percentage of cardio-vascular and thoracic diagnoses (77.8% and 66.7%, n = 7 and 2 respectively) report not working but being retired, whilst all mental health diagnoses are not working and not retired *(see Figure 6.23)*.

No pattern is evident for 1 - 5 pain sites and the ability to work on a regular basis (for example work for sites: 1 = 44.4%, 2 = 11.1%, 3 = 50.0% and 4 = 14.3%; n = 8, 1, 4, and 1 respectively) *(see Figure 6.24)*.

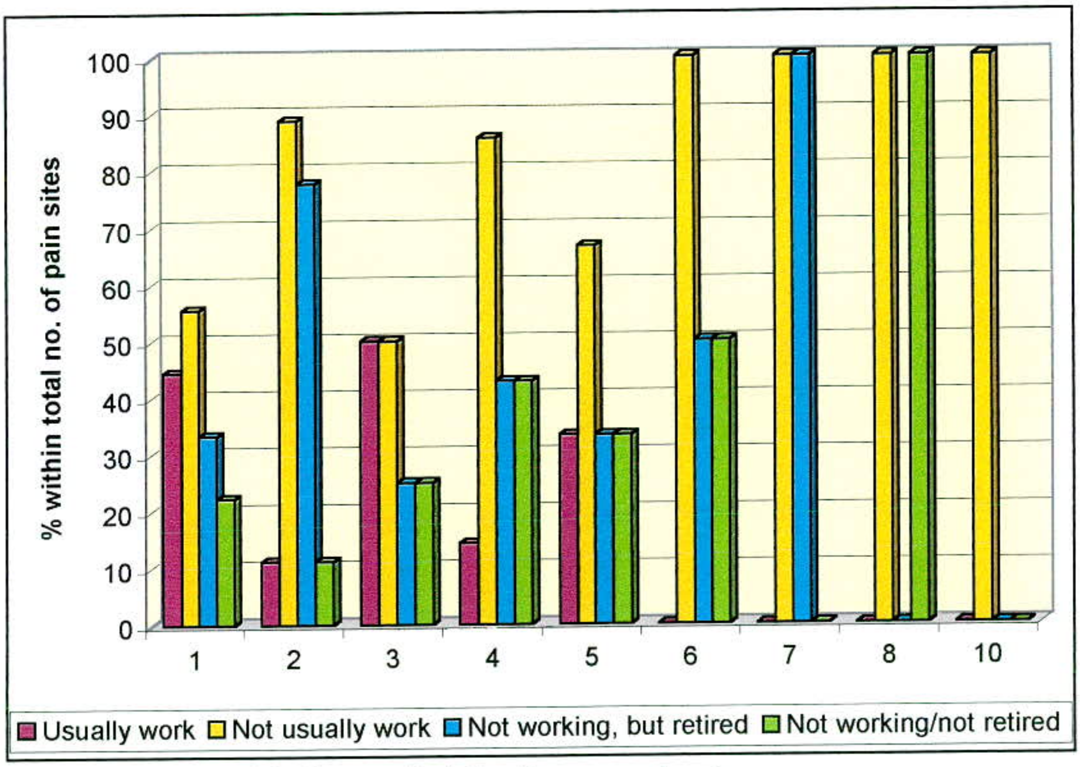


Figure 6.24. Work/retirement status for no. pain sites

Whilst no patients with six sites of pain (n = 6), or 7 - 10 sites, report working on a regular basis, the limitations of such findings should be recognised with only one patient reporting each of the higher number of pain sites. Although two sites of pain has the lowest percentage not working on a regular basis, this group also has the highest percentage who are retired (77.8%, n = 7) *(see Figure 6.24)*. Whilst half of those with six sites of pain and the one patient with seven sites are retired, both those with eight or ten sites of pain are not working and not retired.

Different patterns are evident for sites of pain, with the abdomen having the highest percentage of those who work on a regular basis (66.7%, n = 2) *(see Figure 6.25)*. However, none with face, head, upper back and arm pain work on a regular basis (n = 3, 4, 3 and 10 respectively). Several other sites of pain also have a high percentage who do not work on a regular basis, for example, more than 80 per cent for shoulder, hands, lower back and neck pain (88.2%, 84.6%, 84.0% and 83.3%, n = 15, 11, 21 and 10 respectively). Half or more with shoulder, head and neck pain report not working on a regular basis but being retired (58.8%, 50.0% and 50.0%, n = 10, 2 and 6 respectively). The highest percentages not working on a regular basis and not being retired are for arms, face and upper back (70.0%, 67.7% and 67.7%, n = 7, 2 and 2 respectively).

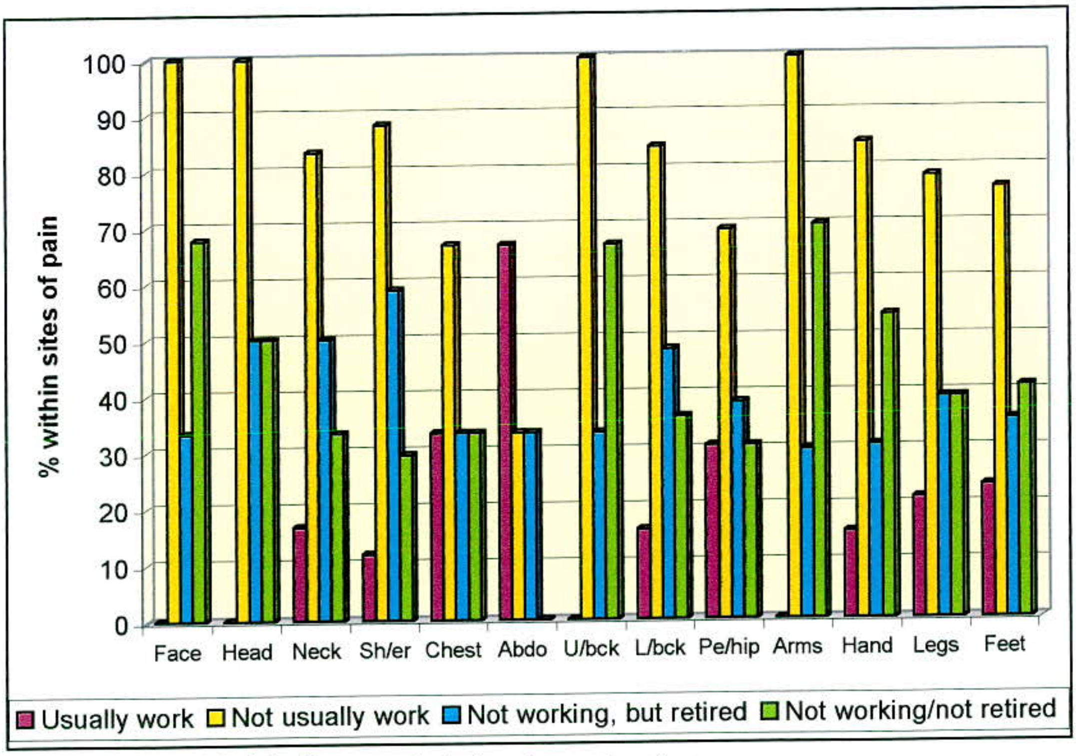


Figure 6.25. Work/retirement status for pain sites

The chi-square test suggests differences for both work and retirement status for groups and primary diagnoses, and only retirement status for arm pain may be highly statistically significant ($p \leq 0.005$). Statistical significance is also suggested for retirement status for secondary diagnoses ($p = 0.023$), however, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix T, 73 - 78)*.

6.6.2. Health related retirement or not working

Groups 1 and 4 have the highest percentage with health related retirement (22.5% and 12.5%, n = 9 and 2 respectively) *(see Figure 6.26)*. However, a similar percentage of Groups 1 and 2 report that whilst retired, this is not health related (25.0% and 22.5%, n = 10 and 9 respectively).

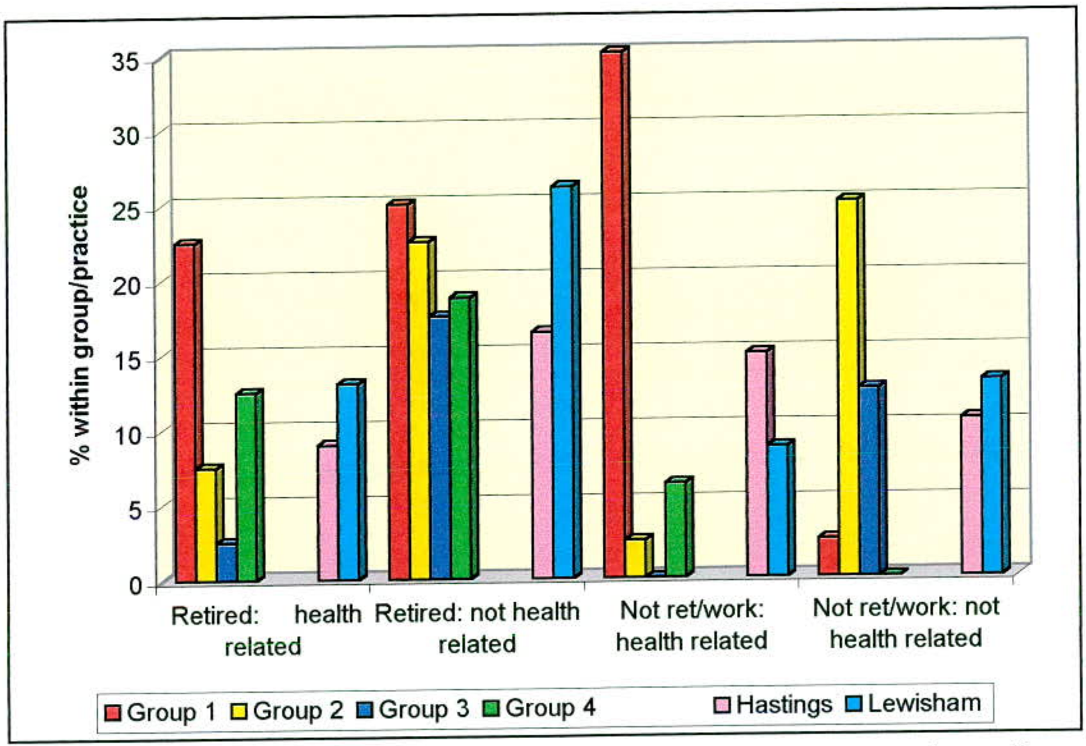


Figure 6.26. Health related retirement/not working for groups and practices

Although it is recognised that the Lewisham practice has a higher percentage over the age of 64 years who are retired *(see 4.3, page 96)*, there is also a higher percentage reporting health related retirement than the Hastings practice (13.0% vs. 9.0% n = 9 and 6 respectively) *(see Figure 6.26)*.

Group 1 also has the highest percentage who report that not being retired and not working is health related (for example: Group 1 = 35.0% vs. Group 2 = 2.5%, n = 14 and 1 respectively) *(see Figure 6.26)*. Group 2, however, has the highest percentage who report that not being retired and not working is not health related (for example: Group 2 = 25.0% vs. Group 1 = 2.5%, n = 10 and 1 respectively). The only Group 4 patient who is not retired and not working reports this to be health related. Whilst a similar percentage of both practices report not being retired and not working, a higher percentage of the Hastings practice report that not being retired and not working is health related than the Lewisham practice (14.9% vs. 8.7%, n = 10 and 6 respectively).

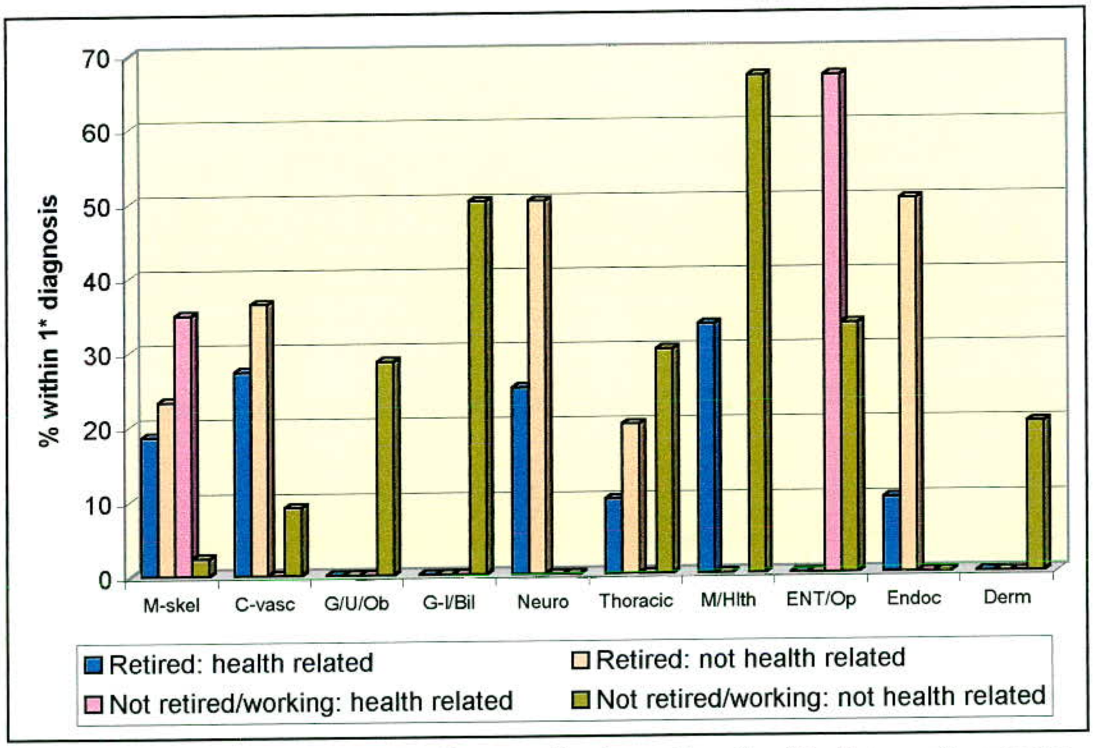


Figure 6.27. Health related retirement/not working for 1° diagnostic groups

Health related retirement is reported for primary cardio-vascular and musculo-skeletal diagnoses (27.3% and 18.6%, n = 3 and 8 respectively), with one patient for each of mental health, neurological, thoracic and endocrine diagnoses (33.3%, 25.0%, 10.0% and 10.0% respectively) *(see Figure 6.27)*. Neurological and endocrine diagnoses have the highest percentage of retirement not related to health (both = 50.0%, n = 2 and 5 respectively). Not being retired and not working is reported to be health related for only musculo-skeletal and mental health diagnoses (34.9% and 33.3%, n = 15 and 1 respectively) *(see Figure 6.27)*. However, a small number in eight primary diagnostic groups report that not being retired and not working is not health related (for example: neurological = 66.7%, gastro-intestinal/biliary = 50.0% and thoracic = 30.0%, n = 1, 1 and 3 respectively).

Health related retirement for secondary diagnoses is again reported by the cardio-vascular and musculo-skeletal groups (33.3% and 23.5%, n = 3 and 4 respectively), with one patient for each of gastro-intestinal/biliary, neurological and thoracic diagnoses (all = 33.3%) *(see Figure 6.28)*.

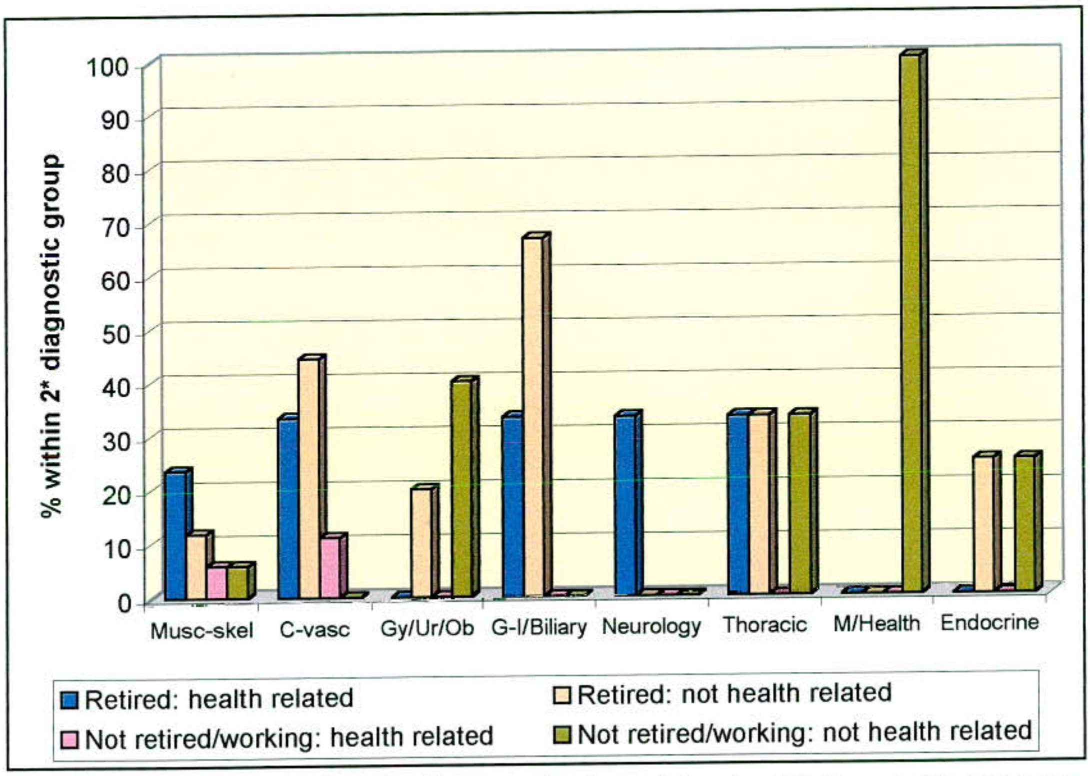


Figure 6.28. Health related retirement/not working for 2° diagnostic groups

Gastro-intestinal/biliary and cardio-vascular diagnoses also have the highest percentage of retirement not related to health (66.7% and 44.4%, n = 2 and 4 respectively). Not being retired and not working is reported to be health related by only one patient in each of the cardio-vascular and musculo-skeletal secondary diagnostic groups (11.1% and 5.9% respectively) *(see Figure 6.28)*. Five other groups, however, have a small number who report that not being retired and not working is not health related (for example: mental health = 100%, gynaecology/urology/ obstetrics = 40.0% and thoracic = 33.3%; n = 2, 2 and 1).

No clear pattern is evident for 1 - 6 sites of pain for health related retirement (for example no. of sites: 1 = 5.6%, 2 and 6 = 33.3%, 3 = 12.5% and 4 = 42.9%; n = 1, 3, 3, 2 and 1 respectively) *(see Figure 6.29)*.

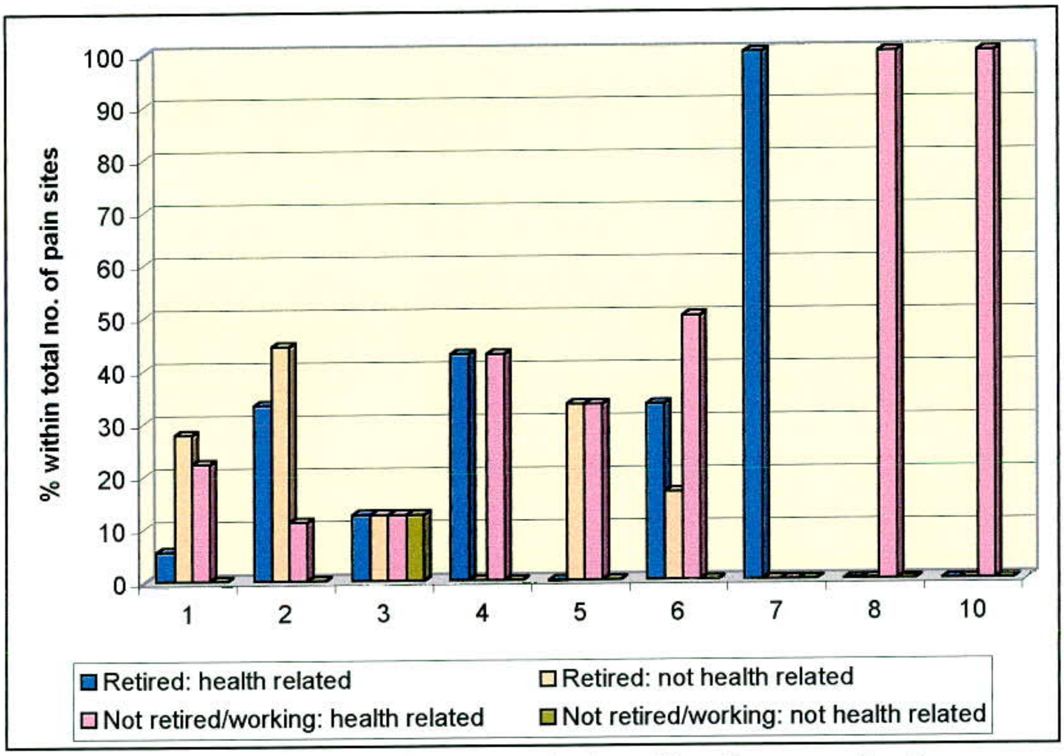


Figure 6.29. Health related retirement/not working for no. pain sites

The only patient with seven sites of pain, however, reports that retirement is health related. Except for one patient with three sites of pain, all those who are retired and not working report this to be health related *(see Figure*

6.29). No clear pattern is evident for 1 - 5 sites of pain (for example: 1 site = 22.2%, 2 sites = 11.1%, 4 sites = 42.8%, 5 sites = 33.3%; n = 4, 1, 3 and 1 respectively). However, all patients with six, eight and ten sites of pain report not being retired and not working to be health related (50.0%, 100% and 100%, n = 3, 1 and 1 respectively).

Health related retirement is reported for all pain sites except the head and the face (range: shoulder = 35.3% - feet = 17.7%, n = 6 and 3 respectively) *(see Figure 6.30)*. The head and face have the highest percentage reporting that retirement is not related to health (50.0% and 33.3%, n = 2 and 1 respectively), whilst there are no reports for chest, abdomen and upper back. Health related status of not being retired and not working is reported for all sites except the abdomen. The highest percentage is the arms (70.0%, n = 7), with second highest being for the face and upper back (both = 66.7%, n = 2) *(see Figure 6.30)*.

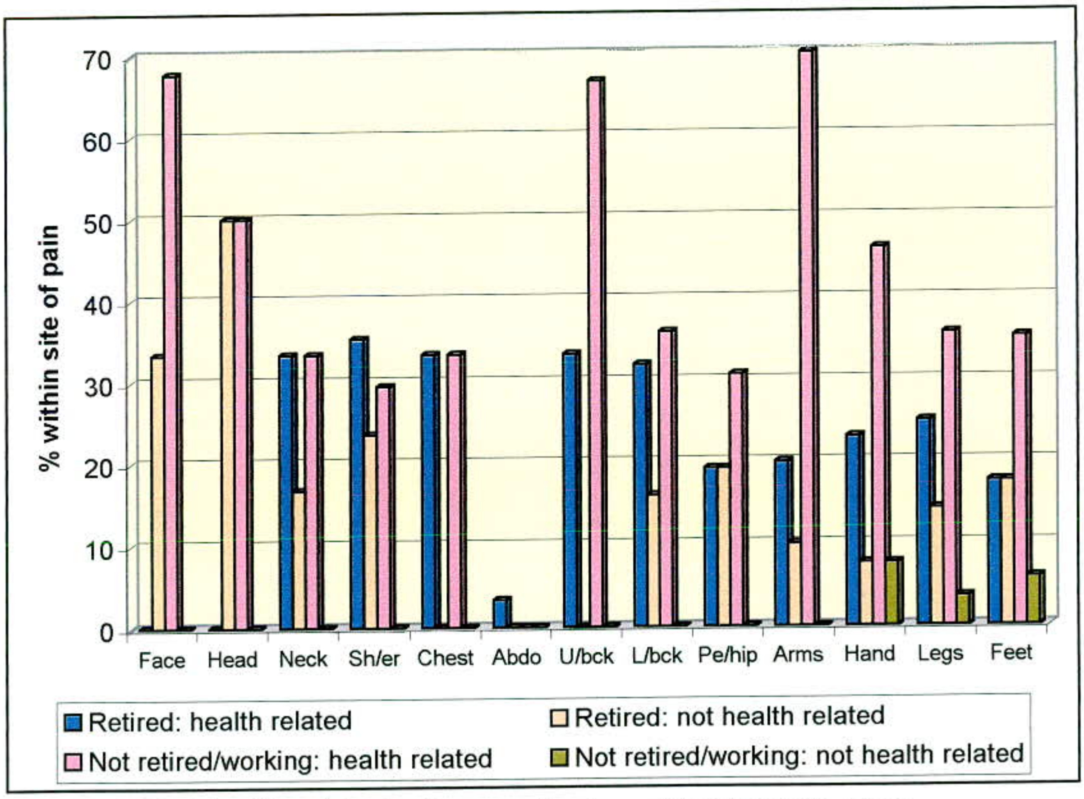


Figure 6.30. Health related retirement/not working for pain sites

The chi-square test suggests differences for health related status of not being retired and not working may be highly statistically significant for groups, primary diagnoses and arm pain ($p \leq 0.005$), and statistically significant for secondary diagnoses and hand pain ($p \leq 0.035$). Health related status of retirement is suggested to be statistically significant for both primary and secondary diagnoses ($p \leq 0.034$). However, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix T, 79 - 85)*.

6.7. Summary

Group 1 consistently scores higher than the other three groups for overall total, dimension and category scores *(see Table 6.1)*. Group 4 also score consistently higher than Group 2, whilst Group 3 have the lowest scores except for mobility for which Group 2 has the lowest scores. Group 1 has a lower percentage than Group 2 who report working on a regular basis, with similar percentages for Groups 3 and 4 *(see Table 6.1)*. Group 1 has the highest percentage for not working but being retired, not working and not being retired, and health related status of not being retired and not working. Overall total, dimension and category scores for Groups 1 - 4 are found to be highly statistically significant when utilising the Kruskal-Wallis test. The chi-square test suggests differences for groups may be highly statistically significant for work and retirement status, and health related status of not being retired and not working *(see Table 6.1)*.

Primary musculo-skeletal diagnoses have the highest scores for the overall total, physical dimension, all physical dimension category scores, and social interaction, communication, sleep/rest, home management and recreation/pastimes scores *(see Table 6.2)*. Other highest scores are neurological diagnoses for the psychosocial dimension and emotional behaviour, mental health diagnoses for alertness behaviour and work and endocrine diagnoses for eating. Musculo-skeletal diagnoses also have the second highest scores for the psychosocial dimension, and emotional behaviour, work and eating.

The second highest scores for the overall total, physical dimension categories, and alertness behaviour, social interaction, sleep/rest and home management are also for neurological diagnoses, whilst gastro-intestinal/ biliary and cardio-vascular diagnoses have the second highest scores for communication and recreation/pastimes respectively. The chi-square test suggests high statistical significance for differences for work scores, and statistical significance for overall total and alertness behaviour scores for primary diagnoses, whilst psychosocial dimension scores may be approaching statistical significance *(see Table 6.2)*.

More than 70 per cent of musculo-skeletal, neurological and cardio-vascular diagnoses and no mental health diagnoses report not working on a regular basis *(see Table 6.2)*. The highest percentage not working but being retired is for neurological diagnoses, with mental health diagnoses having the highest percentage not working and not being retired. The most health related retirement is reported for cardio-vascular and musculo-skeletal diagnoses, and only musculo-skeletal and mental health diagnoses report that not being retired and not working is health related. The chi-square test suggests differences for work status, retirement status and health related status of not being retired and not working may be highly statistically significant for primary diagnoses. Statistical significance is also suggested for health related status of retirement *(see Table 6.2)*.

Different patterns are evident for secondary diagnoses, with neurological diagnoses having the highest overall total, psychosocial dimension, and mobility, social interaction, communication and sleep/rest scores *(see Table 6.3)*. Whilst thoracic diagnoses have the highest physical dimension, and body care/movement, ambulation, home management and recreation/ pastimes scores, mental health diagnoses have the highest emotional behaviour and alertness behaviour scores. The highest work and eating scores are for cardio-vascular and endocrine diagnoses respectively.

Neurological diagnoses also have the second highest scores for the physical dimension, and body care/movement, ambulation, emotional behaviour, alertness behaviour, sleep/rest, work and recreation/pastimes. The second highest scores for the overall total, and mobility, social interaction and communication are for thoracic diagnoses, whilst mental health and gastro-intestinal/biliary diagnoses have the second highest psychosocial dimension and home management scores respectively. The chi-square test suggests differences for overall total and dimension scores, and body care/movement, emotional behaviour, social interaction, alertness behaviour, communication, home management and recreation/pastimes scores may be highly statistically significant for secondary diagnoses *(see Table 6.3)*.

Whilst neurological diagnoses have the highest percentage working on a regular basis *(see Table 6.3)*, all gastro-intestinal/biliary diagnoses and over 75 per cent of cardio-vascular diagnoses report not working but being retired, and all mental health diagnoses report not working and not being retired. The most health related retirement is again reported for cardio-vascular and musculo-skeletal diagnoses, and only one patient with both musculo-skeletal and mental health diagnoses reports health related status of not being retired and not working. The chi-square test suggests differences for retirement status, health related status of retirement, and health related status of not being retired and not working may be statistically significant for secondary diagnoses *(see Table 6.3)*.

Arm, face and upper back pain all have similar highest scores for body care/movement, with face and arm pain also having the highest mobility and ambulation scores respectively *(see Table 6.4)*. The second highest scores for mobility and ambulation are for neck and face pain respectively. The chi-square test suggests differences for mobility scores for lower back and face, and ambulation scores of neck and lower back pain may be highly statistically significant. Statistical significance is also suggested for body care/movement scores for pelvis/hips, legs, shoulder and neck, mobility scores for legs, arms, neck, shoulder, pelvis/hips and hand, and ambulation scores for pelvis/hips and chest pain *(see Table 6.4)*.

Upper back pain has the highest scores for social interaction and alertness behaviour, whilst the highest emotional behaviour and communication scores are head and face pain respectively *(see Table 6.4)*. Second highest scores are also face pain for emotional behaviour, social interaction and alertness behaviour, and arm pain for communication scores. The chi-square test suggests differences for alertness behaviour scores for shoulder, face, hands and neck, and communication scores for face, neck, pelvis/hips and arm pain, may be highly statistically significant. Statistical significance is suggested for emotional behaviour scores for face, social interaction scores for pelvis/hips, hands, neck, shoulder, chest and abdomen, alertness behaviour scores for chest, arms and pelvis/hip, and communication scores for hands and chest pain. Social interaction and communication scores for arms and head pain respectively may be approaching statistical significance *(see Table 6.4)*.

The highest scores for home management and recreation/pastimes is face pain, for sleep/rest and eating is chest pain, and for work is upper back pain *(see Table 6.4)*. Second highest scores are arm pain for home management, work and eating, and head pain for sleep/rest and recreation/pastimes. The chi-square test suggests differences for home management scores may be highly statistically significant for neck, pelvis/hips, hands, shoulder and face pain. Sleep/rest scores for face and chest, recreation/pastimes scores for neck and lower back, and work scores for pelvis/hips pain may also be highly statistically significant. Statistical significance is suggested for sleep/rest scores for pelvis/hips, upper back and neck, recreation/pastimes scores for hands and arms, eating scores for arms and chest, and home management scores of arm pain. Recreation/pastimes and sleep/rest scores for chest and head pain respectively may be approaching statistical significance *(see Table 6.4)*.

None of those with face, head, upper back, and arm pain report usually working on a regular basis *(see Table 6.4)*. The highest percentage not working on a regular basis but being retired have shoulder pain, whilst arm pain has the highest percentage not working on a regular basis and not being retired. Health related retirement is reported similarly for all sites of pain except head and face pain, both of which report no health related retirement. All sites except the abdomen have reports that being retired and not working is health related, with the highest percentage again being for arm pain. The chi-square test suggests differences for retirement status and health related status of not being retired and not working is highly statistically significant only for arm pain. Statistical significance is suggested for health related status of not being retired and not working only for hand pain *(see Table 6.4)*.

Although not statistically significant, some other findings are of interest. The Hastings practice, for example, consistently has slightly higher scores than the Lewisham practice except for the eating category. Some interesting patterns are also evident for SIP scores for the total number of pain sites, whilst the highest overall total and dimension scores are consistently found for face pain *(see Table 6.4)*. These results highlight both the overall impact and the impact on the specific physical, psychosocial and independent domains of life for those living with and without pain.

Whilst some differences may be explained by purposive sampling criteria and socio-biological factors, others provide further insight into the complex, multifaceted impact of chronic pain in the community. Data analysis does indicate that statistical significance may be achieved for several factors with a larger sample size, and such findings have been summarised within this context. Whilst a larger sample size is beyond the scope of the exploratory and descriptive nature of this study, the findings do therefore indicate the need for further more large-scale studies.

SIP descriptor	Group 1	Group 2	Group 3	Group 4
Overall total *	23.60	2.76	1.17	8.69
Physical dimension *	21.88	1.13	0.94	7.06
Psychosocial dimension*	21.77	3.27	1.36	9.79
Body care/movement *	20.73	0.93	0.77	7.06
Mobility *	19.18	0.62	0.95	3.97
Ambulation *	26.98	2.02	1.31	9.71
Emotional behaviour *	32.06	5.81	1.74	20.29
Social interaction *	19.91	2.00	0.79	7.16
Alertness behaviour *	26.86	5.51	3.15	11.40
Communication *	10.06	0.96	0.23	3.13
Sleep/rest *	30.38	4.60	1.22	8.67
Home management *	32.16	3.91	1.60	10.49
Work *	43.81	7.28	2.00	15.84
Recreation/pastimes *	36.47	2.81	0.95	11.03
Eating *	4.48	1.84	0.31	2.03
Usually work **	15.0% (n=6)	42.5% (n=17)	67.5% (n=27)	62.5% (n=10)
Retired **	47.5% (n=19)	30.0% (n=12)	20.0% (n=8)	31.3% (n=5)
Health related retirement	22.5% (n=9)	7.5% (n=3)	2.5% (n=1)	12.5% (n=2)
Health related not working/not retired **	35.0% (n=14)	2.5% (n=1)	None	6.3% (n=1)

* Kruskal-Wallis test: high statistical significance (Asymp. Sig. = 0.000)

** Chi-square test suggests high statistical significance (*p* = 0.000)

Table 6.1. Summary of SIP overall, dimension and category scores and work/retirement statements for Groups 1 - 4

SIP descriptor	**Musc-skeletal**	**Cardio-vascular**	**Gynae / uro / obs**	**G - I / biliary**	**Neur-ology**	**Thoracic**	**Mental health**	**ENT / opthal.**	**Endo-crine**	**Derm-atology**
Overall total **	21.20	7.87	2.46	4.75	14.42	4.53	11.64	0.37	3.65	2.67
Physical dimension	20.30	5.34	1.07	4.80	8.53	1.87	4.05	0.28	3.52	0.45
Psychosocial dimension ***	19.21	7.32	2.72	5.68	20.24	7.16	16.47	0.00	2.74	5.11
Body care/ movement	20.62	4.74	1.10	7.14	7.43	2.05	4.89	0.05	2.31	0.00
Mobility	17.06	3.58	1.11	3.90	5.88	0.92	2.60	0.00	2.10	2.25
Ambulation	25.44	8.30	0.95	0.00	13.45	2.27	3.29	0.00	7.64	0.00
Emotional behaviour	27.32	14.50	4.34	14.83	38.33	11.25	22.89	0.00	5.36	13.65
Social interaction	17.10	6.16	2.28	4.69	15.50	3.30	11.80	0.00	1.23	5.10
Alertness behaviour **	23.33	7.41	4.63	0.00	28.90	13.76	31.75	0.00	4.43	2.16
Commun-ication	9.14	2.60	0.00	4.83	2.86	3.84	3.22	0.00	0.00	0.00

(Table 6.2 continued on next page)

SIP descriptor	Musc-skeletal	Cardio-vascular	Gynae / uro / obs	G - I / biliary	Neur-ology	Thoracic	Mental health	ENT / opthal.	Endo-crine	Derm-atology
Sleep/rest	26.21	12.04	4.87	8.42	18.44	5.33	8.15	0.00	4.63	8.26
Home management	29.01	12.71	6.12	5.17	21.30	5.38	12.88	0.00	3.31	0.00
Work *	40.76	19.88	2.75	0.00	17.53	7.01	46.73	0.00	8.08	3.11
Recreation/ pastimes	33.16	12.64	5.79	0.00	11.38	3.44	9.32	0.00	5.45	1.71
Eating	3.88	3.07	0.51	2.15	2.90	1.23	1.43	2.67	4.06	0.00
Usually work *	20.9% (n = 9)	27.3% (n = 3)	71.4% (n = 5)	50.0% (n = 1)	25.0% (n = 1)	40.0% (n = 4)	None	66.7% (n = 2)	40.0% (n = 4)	80.0% (n = 4)
Retired *	41.9% (n = 18)	63.6% (n = 7)	None	None	75.0% (n = 3)	30.0% (n = 3)	33.3% (n = 1)	None	60.0% (n = 6)	None
Health related retirement **	18.6% (n = 8)	27.3% (n = 3)	None	None	25.0% (n = 1)	10.0% (n = 1)	33.3% (n = 1)	None	10.0% (n = 1)	None
Not working/not ret. h/related *	34.9% (n = 15)	None	None	None	None	None	33.3% (n = 1)	None	None	None

* Chi-square test suggests high statistical significance ($p \leq 0.001$)

** Chi-square test suggests statistical significance ($p < 0.05$)

*** Chi-square test suggests approaching statistical significance ($p = 0.054$)

Table 6.2. Summary of SIP overall, dimension and category scores and work/retirement statements for 1° diagnoses

SIP descriptor	Musculo-skeletal	Cardio-vascular	Gynae / uro / obs	G - I / biliary	Neur-ology	Thoracic	Mental health	Endocrine
Overall total *	13.75	8.33	6.72	8.45	18.47	15.70	9.88	3.53
Physical dimension *	11.31	6.18	6.16	4.08	15.33	21.43	0.93	1.85
Psychosocial dimension *	13.94	5.22	9.93	9.22	23.39	9.27	20.76	5.16
Body care/ movement *	11.05	4.13	5.94	4.97	14.99	20.85	0.00	3.30
Mobility	9.90	2.49	4.70	0.00	16.04	15.35	4.59	0.00
Ambulation	13.19	14.25	7.96	5.42	15.60	28.10	0.00	0.00
Emotional behaviour *	24.51	12.60	15.06	15.74	28.60	13.24	32.98	11.63
Social interaction *	11.95	4.71	9.93	8.32	18.51	13.72	10.00	0.90
Alertness behaviour *	15.73	2.19	12.38	13.60	26.86	0.00	44.98	7.34
Communication *	5.96	2.30	2.29	0.00	24.37	6.44	4.42	5.07

(Table 6.3 continued on next page)

SIP descriptor	Musculo-skeletal	Cardio-vascular	Gynae / uro / obs	G - I / biliary	Neur-ology	Thoracic	Mental health	Endocrine
Sleep/rest	20.74	12.65	0.00	8.08	21.11	10.62	14.53	5.51
Home management *	16.73	15.10	7.96	22.70	21.66	27.74	11.23	0.00
Work	23.85	31.16	0.00	23.37	23.37	23.37	0.00	0.00
Recreation/pastimes *	21.05	14.82	7.39	12.48	18.80	23.78	12.09	4.68
Eating	3.95	3.73	0.72	0.00	0.00	1.23	0.00	5.23
Usually work	52.9% (n = 9)	11.1% (n = 1)	40.0% (n = 2)	None	66.7% (n = 2)	None	None	50.0% (n = 4)
Retired **	35.3% (n = 6)	77.8% (n = 7)	20.0% (n = 1)	100% (n = 3)	33.3% (n = 1)	66.7% (n = 2)	None	25.0% (n = 1)
Health related retirement **	23.5% (n = 4)	33.3% (n = 3)	None	33.3% (n = 1)	33.3% (n = 1)	33.3% (n = 1)	None	None
Not working/not retired health related **	5.9% (n = 1)	11.1% (n = 1)	None	None	None	None	None	None

*Chi-square test suggests high statistical significance ($p < 0.005$)

** Chi-square test suggests statistical significance ($p < 0.05$)

Table 6.3. Summary of SIP overall, dimension and category scores and work/retirement statements for 2° diagnoses

SIP descriptor	Face	Head	Neck	Shoulder	Chest	Abdomen	Upper back	Lower back	Pelvis / hips	Arms	Hands	Legs	Feet
Overall total	33.98	28.97	27.85	27.98	23.22	12.74	30.73	24.72	22.48	30.80	24.61	25.88	25.51
Physical dimension	31.92	24.19	27.92	26.23	17.18	7.45	28.18	22.39	21.14	29.91	22.52	25.09	22.72
Psychosocial dimension	31.69	30.18	30.44	27.73	21.22	15.96	30.75	23.12	21.16	27.54	23.81	24.46	20.90
Body care/ movement	29.52	22.14	27.01**	28.19**	14.56	10.02	29.34	20.69	20.71**	29.82	22.95	24.57**	21.47
Mobility	37.51 *	28.13	28.86**	27.59**	17.34	2.60	18.78	19.44 *	18.45**	24.65**	16.40**	22.36**	22.22
Ambulation	32.98	25.77	29.39 *	30.46	23.32**	5.50	30.68	29.04 *	24.56**	34.64	24.83	28.75	26.18
Emotional behaviour	48.13**	53.97	33.34	33.45	29.88	30.12	22.22	31.61	44.72	40.63	34.91	31.55	30.11
Social interaction	23.75	20.90	23.31**	18.58**	21.31**	18.87**	32.80	22.31	17.28**	19.49 ***	18.68**	22.36	16.67
Alertness behaviour	42.30*	39.93	32.28*	32.40*	27.20**	6.56	48.18	28.77	31.64**	38.62**	29.93*	33.45	27.97
Communication	20.23*	15.17 ***	14.15*	17.28	6.30**	6.44	16.28	10.45	10.82*	19.03*	16.87**	12.12	12.83

(Table 6.4 continued on next page)

SIP descriptor	Face	Head	Neck	Shoulder	Chest	Abdomen	Upper back	Lower back	Pelvis / hips	Arms	Hands	Legs	Feet
Sleep/rest	41.68 *	46.74 ***	31.68**	34.81	49.90 *	13.69	27.85**	29.50	25.09**	29.52	24.23	29.23	21.88
Home management	56.29 *	42.22	35.55 *	39.75 *	28.34	20.16	38.22	32.83	29.51 *	42.34**	30.04 *	34.80	29.27
Work	46.73	35.05	48.03	46.27	51.91	23.37	70.10	52.65	40.58 *	63.09	49.17	47.31	38.52
Recreation/ pastimes	57.26	45.08	43.50 *	38.99	39.81 ***	18.01	43.21	38.59 *	33.82	44.83**	33.43**	35.65	33.05
Eating	4.43	5.33	4.40	6.28	6.67**	2.87	1.43	3.45	4.71	6.38**	3.84	3.41	4.92
Usually work	None	None	16.7% (n = 2)	11.8% (n = 2)	33.3% (n = 1)	66.7% (n = 2)	None	16.0% (n = 4)	30.8% (n = 8)	None	15.4% (n = 2)	21.4% (n = 6)	23.5% (n = 4)
Retired	33.3% (n = 1)	50.0% (n = 2)	50.0% (n = 6)	58.8% (n =10)	33.3% (n = 1)	33.3% (n = 1)	33.3% (n = 1)	48.0% (n =12)	38.5% (n =10)	30.0%* (n = 3)	30.8% (n = 4)	39.3% (n =11)	35.3% (n = 6)
Health related retirement	None	None	33.3% (n = 4)	35.3% (n = 6)	33.3% (n = 1)	33.3% (n = 1)	33.3% (n = 1)	32.0% (n = 8)	19.2% (n = 5)	20.0% (n = 2)	23.1% (n = 3)	25.0% (n = 7)	17.7% (n = 3)
Not working/not ret. h/related	66.7% (n = 2)	50.0% (n = 2)	33.3% (n = 4)	29.4% (n = 5)	33.3% (n = 1)	None	66.7% (n = 2)	36.0% (n = 9)	30.8% (n = 8)	70.0%* (n = 7)	46.2%** (n=6)	35.7% (n =10)	35.3% (n = 6)

* Chi-square test suggests high statistical significance ($p \leq 0.005$) ** Chi-square test suggests statistical significance ($p < 0.05$)

*** Chi-square test suggests approaching statistical significance ($p \leq 0.057$)

Table 6.4. Summary of SIP overall, dimension and category scores and work retirement statements for sites of pain

7. FINDINGS FROM THE RESOURCES QUESTIONNAIRE

7.1. Introduction

The Resources Questionnaire is a survey tool, which profiles health and social care utilisation. Development of the questionnaire for the purposes of this study reflects problems highlighted in the literature from both patient and professional perspectives *(see 2.3.1, pages 18 - 19)*. The process of obtaining support for individuals, for example, can be arduous, complex and confusing, with conflicting and often inconsistent information being provided by relevant heath and social care agencies. Such problems would also appear to be compounded by the apparent lack of comprehensive, understandable and current literature on health and social care systems as a whole, particularly in relation to the financial benefits system. Outcomes of existing processes may therefore result in lack of appropriate assessment being undertaken and inappropriate and/or inadequate support systems being made available for individuals.

Acknowledging the potential for inaccuracy of retrospective data collection, the Resources Questionnaire provides a more informed structure to such complex issues. It is not intended as a measure of financial assessment, but as a tool to provide further insight into patterns of resource utilisation. A pilot of the questionnaire was undertaken prior to the main phase of the study *(see 3.4, pages 80 - 82)*. Whilst no changes were required in the format of the questionnaire after the pilot, the need for an interviewer to be present during administration became evident, in order to provide clarification to individuals about what particular resources entailed.

Due to the purposive sampling criteria for each group, it could again be anticipated that there should be no differences between Groups 1 and 2, because patients in these groups are ill and receiving treatment. However, differences could be anticipated between these two groups and Group 3 who are supposedly fit and well, whilst Group 4 should show similar results to Group 1. In order to ascertain if there is evidence of such anticipated similarities and differences, the text reflects comparisons between these four groups throughout. As previously described *(see 3.8, pages 88 - 89)*, tests of statistical significance for nonparametric data include the Kruskal-Wallis test as all four groups completed the Resources Questionnaire, and the chi-square test. Findings for each resource includes description of group, practice, demographic, diagnostic, SIP, and pain profiles. The Resources Questionnaire is therefore presented in the following format:

7.2. Findings from primary health care in the previous year
7.3. Findings from secondary health care in the previous year
7.4. Findings from social care in the previous year
7.5. Findings from the financial benefits system
7.6. Summary of findings from the Resources Questionnaire

7.2. Findings from primary health care in the previous year

7.2.1. Visits to the GP

Although purposive sampling explains some differences for GP visits by Groups 1 - 4, differences not attributable to sampling include a higher percentage of Group 1 reporting more visits than Group 2 (for example 7 - 12 visits: 30.0% vs. 2.5%, n = 12 and 1 respectively) *(see Figure 7.1)*. A quarter of Group 4 also report 7 - 12 visits to the GP (n = 4), whilst more than 24 visits by one Group 2 patient is for social problems. Similar patterns are evident for the Hastings and Lewisham practices, with the highest percentage in each practice reporting 2 - 3 visits to the GP (31.3% and 26.1%, n = 21 and 18 respectively). A slightly higher percentage of the Lewisham practice report visiting the GP 13 - 24 times than the Hastings practice (7.2% vs. 1.5%, n = 5 and 1 respectively).

More visits to the GP are reported by a higher percentage of women compared to men (for example 2 - 6 visits: 61.4% vs. 41.0%, n = 46 and 25 respectively), and the unemployed than the fully employed (for example: ≥ 7 visits = 31.3% vs. 10.5%, n = 10 and 4 respectively). A higher percentage with no dependants report more visits than those with one to three dependants (for example none vs. 3 dependants: ≥ 4 visits = 43.2% vs. 40.0%, n = 38 and 2 respectively), however, the highest percentage with four or more visits for themselves have four dependants (80.0%, n = 4).

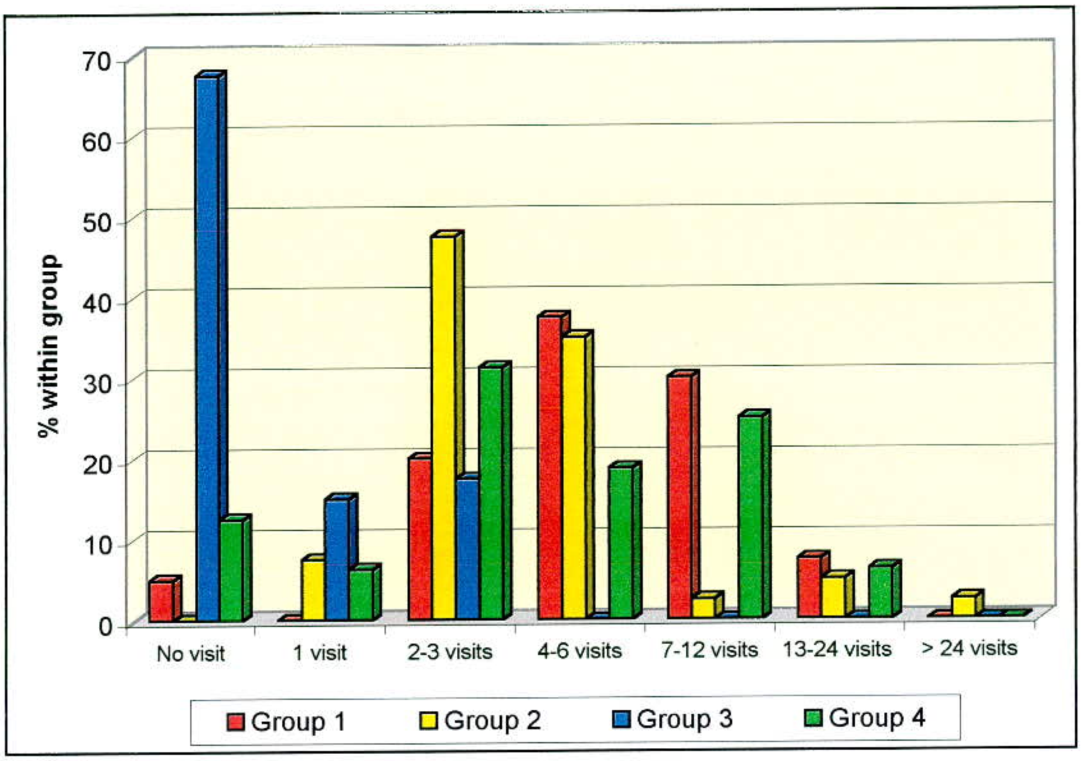


Figure 7.1. Visits to GP: % for groups

All gastro-intestinal, ENT/opthalmology and endocrine primary diagnoses, and half or more within all other diagnostic groups have 2 - 6 visits to the GP *(see Figure 7.2)*. More than six visits are found for seven diagnostic groups (for example ≥ 7 visits: dermatology = 40.0% and musculo-skeletal = 30.3%, n = 2 and 13 respectively), with only thoracic, cardio-vascular and musculo-skeletal diagnoses having less than two visits (0 - 1 visit = 20.0%, 18.2% and 14.0%, n = 2, 2, and 6 respectively). For all secondary diagnoses except mental health, 60 per cent or more have 2 - 6 visits to the GP (range: thoracic = 100% - gynaecology/urology /obstetrics = 60.0%, both n = 3) *(see Figure 7.3)*. More than six visits are found for five diagnostic groups (for example ≥ 7: mental health = 100%, musculo-skeletal = 35.3%; n = 2 and 6 respectively), with only gastro-intestinal/ biliary diagnoses having fewer than two visits (1 visit = 33.3%, n = 1).

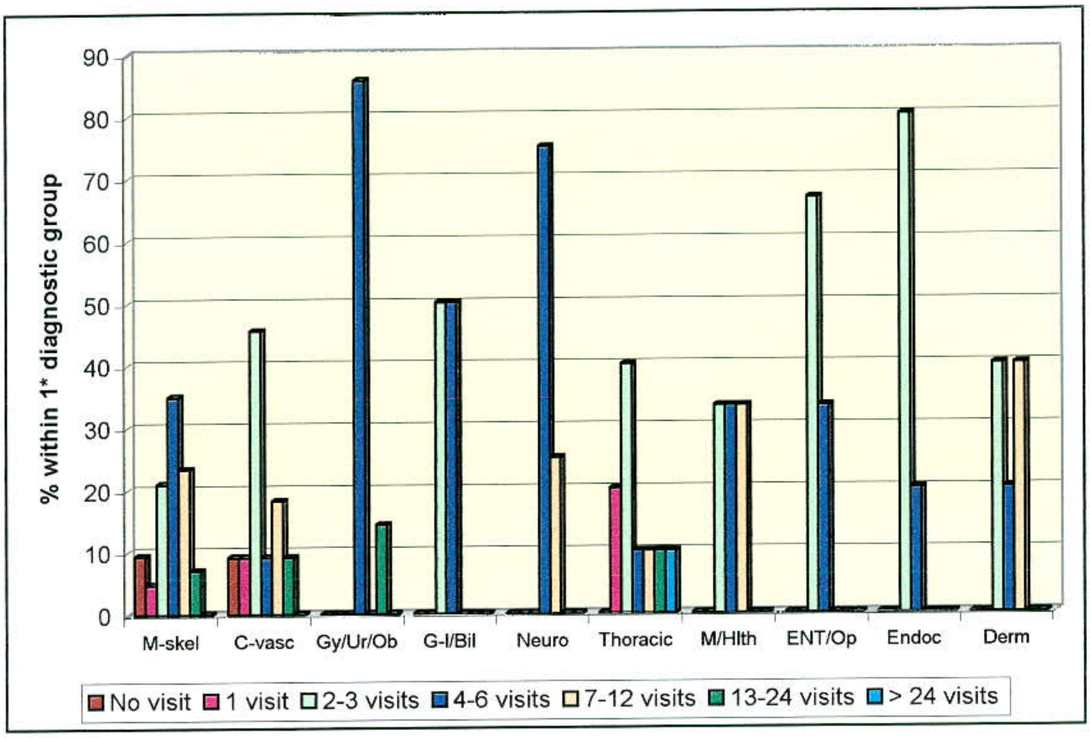


Figure 7.2. Visits to GP: % for 1° diagnoses

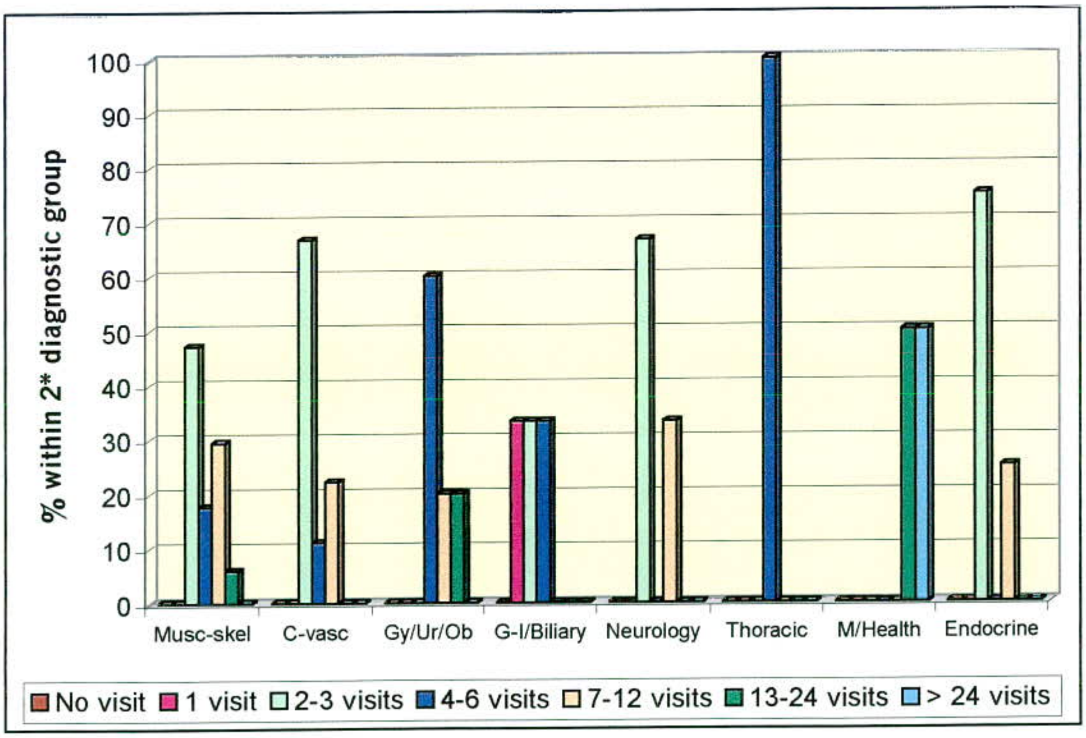


Figure 7.3. Visits to GP: % for 2° diagnoses

SIP overall total, physical and psychosocial dimension scores increase with more visits to the GP (for example overall total mean for visits: 1 = 3.70 vs. 4 - 6 = 13.23 vs. 13 - 24 = 22.84, n = 10, 32 and 6 respectively) *(see Figure 7.4)*. The one exception is the Group 2 patient with social problems (> 24 visits) who has diverse scores throughout the profile.

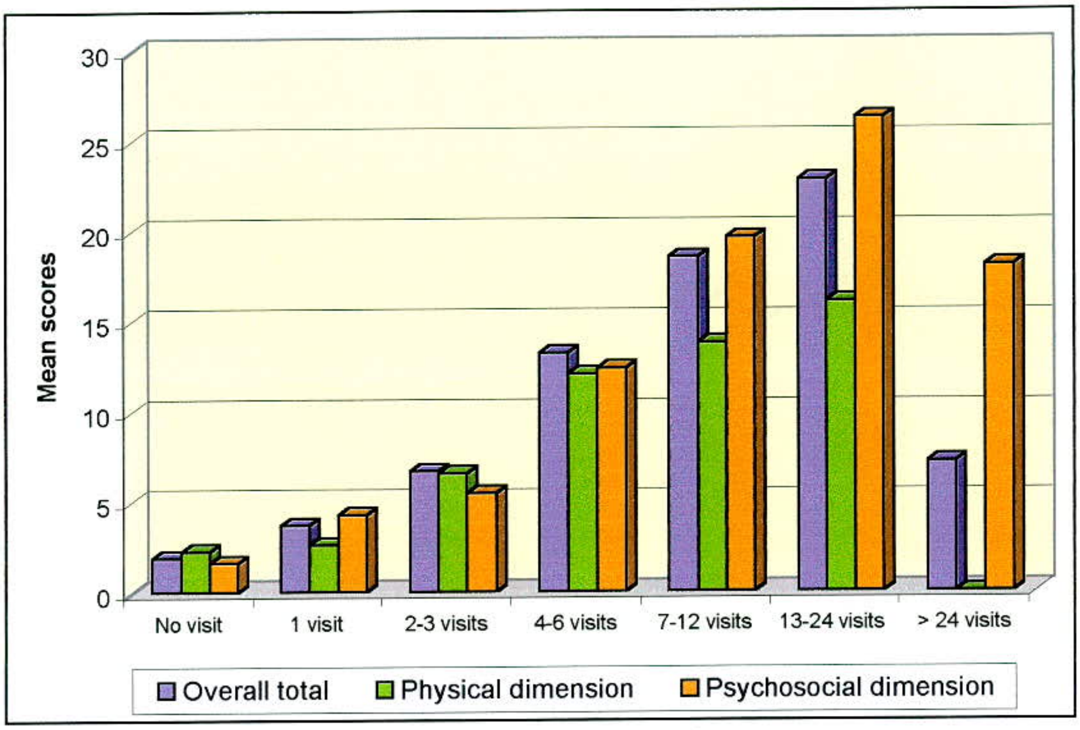


Figure 7.4. Visits to GP: SIP overall total/dimension scores

Similar physical dimension mobility scores are evident for 13 - 24 and 7 - 12 visits to the GP (mean = 11.22 and 11.34, n = 6 and 17 respectively) *(see Figure 7.5)*. However, 13 - 24 visits have lower ambulation scores than both 4 - 6 (n = 32) and 7 - 12 visits (mean = 13.92 vs. 16.53 vs. 17.58 respectively), and no visits have higher body care/movement scores than one visit (mean = 2.16 vs. 1.98, n = 31 and 10 respectively). Psychosocial dimension category scores increase with a greater number of visits to the GP, with the exception of alertness behaviour which is lower for 2 - 3 visits than one visit (mean = 6.17 vs. 8.28, n = 39 and 10 respectively) *(see Figure 7.6)*. A high alertness behaviour score (61.00), is also found for the one Group 2 patient with more than 24 visits to the GP.

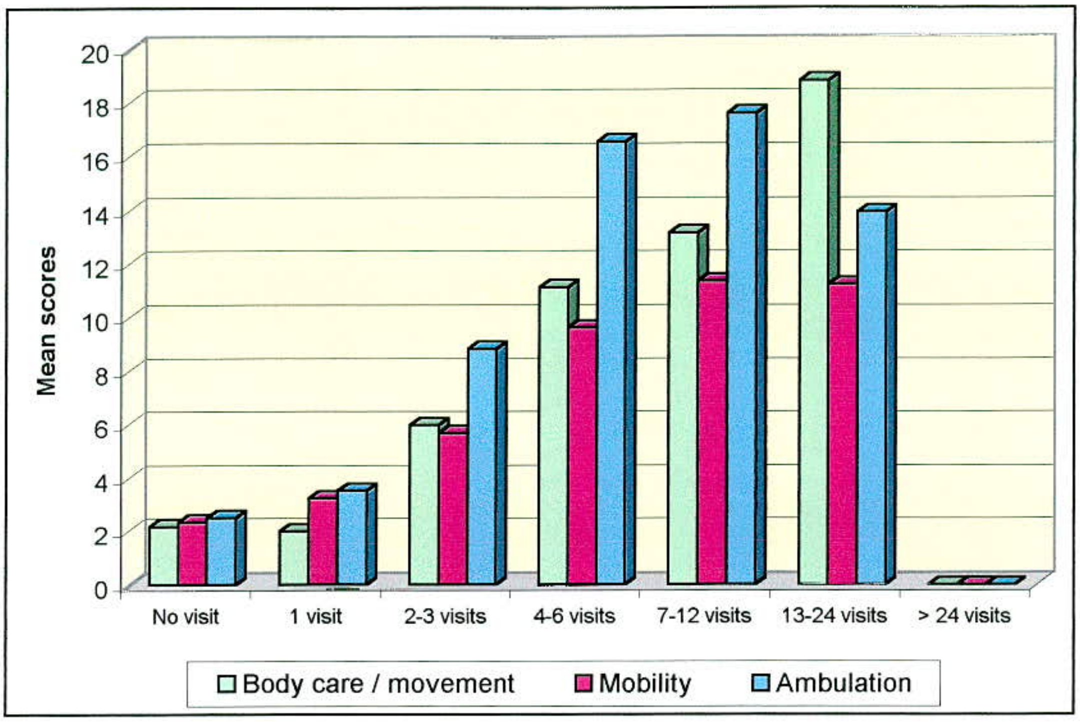


Figure 7.5. Visits to GP: SIP physical dimension category scores

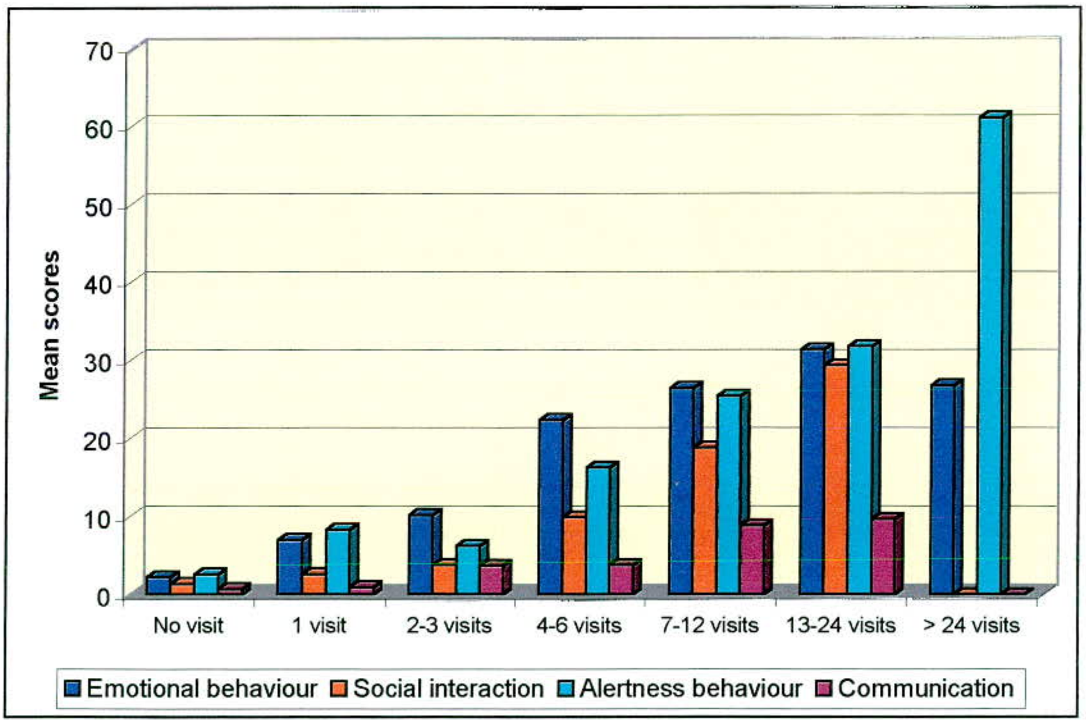


Figure 7.6. Visits to GP: SIP psychosocial dimension category scores

Independent category scores again generally increase with a greater number of visits to the GP. The lowest score for eating, however, is for 13

- 24 visits (eating mean score for visits: 13 - 24 = 2.05 vs. 2 - 3 = 2.08 vs. 4 - 6 = 2.94 vs. 7 - 12 = 4.92, n = 6, 39, 32 and 17 respectively). The sleep/rest score for one visit is also slightly lower than for no visits (2.44 vs. 2.81 respectively) *(see Figure 7.7)*.

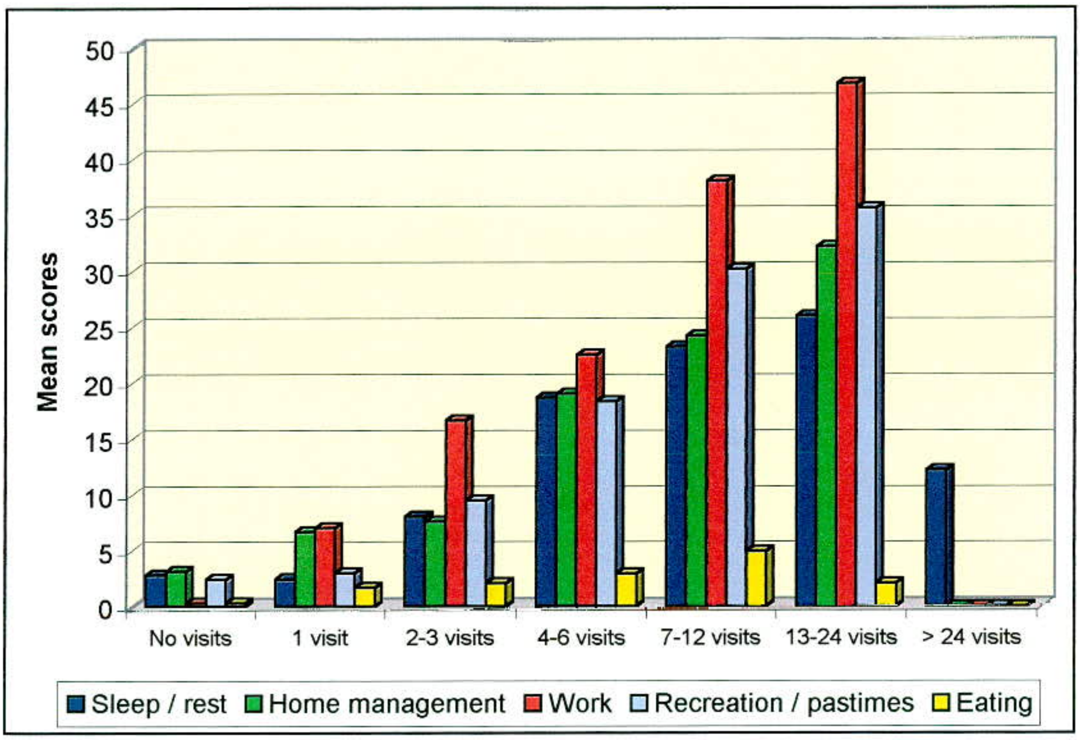


Figure 7.7. Visits to GP: SIP independent category scores

The only patient with three months to one year pain duration reports one visit to the GP, whilst a percentage with two or more years of pain report no visits to the GP (2 - 5 years = 17.6% and 10 - 15 years = 16.7%, n = 3 and 1 respectively) *(see Figure 7.8)*. Other patients with more than one year of pain report two or more visits, with the highest percentage of those with up to 10 years of pain reporting 4 - 6 visits (1 - 2 years = 50.0%, 2 - 5 years = 29.4%, 5 - 10 years = 42.9%, n = 4, 5 and 6 respectively). Slightly different patterns are found for 10 - 25 years of pain and visits to the GP (10 - 15 years = 4 - 6 and 7 - 12 visits, both = 33.3%, n = 2; 15 - 25 years = 2 - 3 and 7 - 12 visits, both = 42.9%, n = 3). Four patients with 2 - 15 years of pain report 13 - 24 visits, and the three patients with more than 25 years of pain each report a different number of visits.

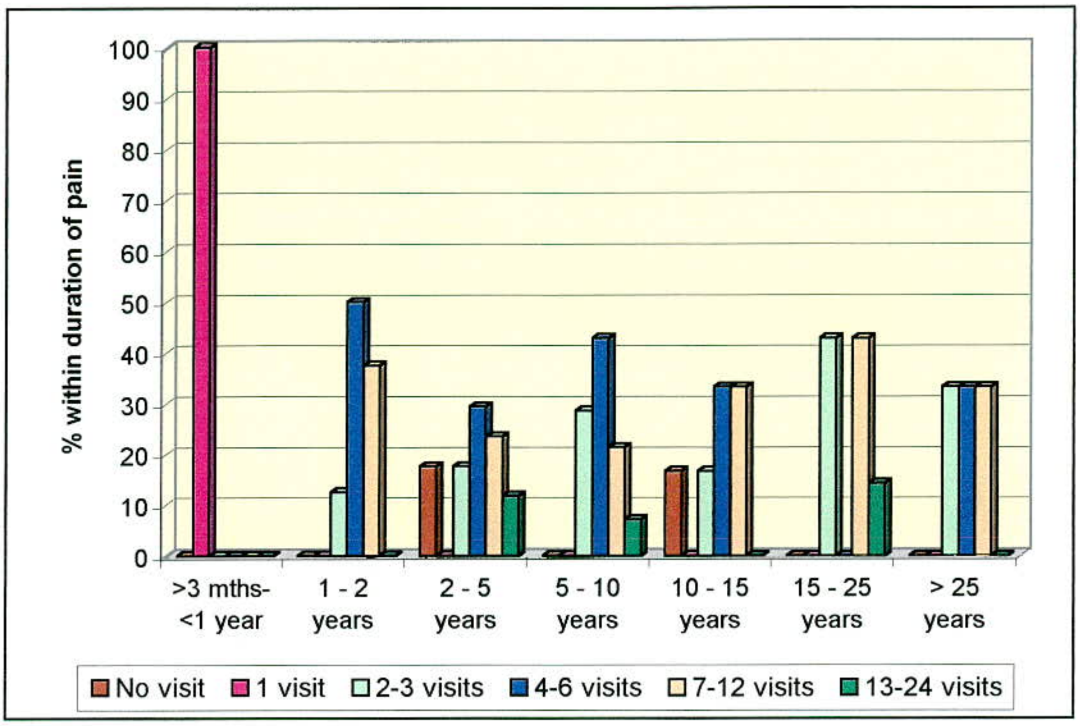


Figure 7.8. Visits to GP: % for pain duration

Over 30 per cent of those with one or more sites of pain report 7 - 24 visits to the GP (range: 3 - 5 sites = 30.8% - 2 sites and > 10 sites, both = 40.0%, n = 4, 4 and 2 respectively). A range of visits is evident for sites of pain, with the highest percentage for several sites being 4 - 6 visits (for example: head = 50.0%, feet = 41.2%, lower back = 40.7%, neck = 38.5%; n = 2, 7 and 11 and 5 respectively). Whilst the highest percentage of those with chest and upper back pain report more visits (7 - 12 visits: 100% and 66.7%, n = 3 and 2 respectively), those with shoulder pain report fewer visits (2 - 3 visits: 41.2%, n = 7).

All MPQ total and dimension scores are higher for no visits to the GP than one visit, and also 2 - 3 visits for the sensory dimension (for example sensory dimension mean: 11.85 vs. 3.72 vs. 11.43, n = 4, 1 and 13 respectively). MPQ scores otherwise increase with more visits to the GP, except for lower scores for 7 - 12 visits than 2 - 6 visits (for example total mean for visits: 2 - 3 = 20.49 vs. 4 - 6 = 30.44 vs. 7 - 12 = 19.63, n = 13, 18 and 16).

The chi-square test suggests differences for visits to the GP may only be highly statistically significant for groups, number of dependants, primary and secondary diagnoses, and duration of pain ($p = 0.000$), and statistically significant for neck pain ($p = 0.035$). However, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix U, 1 - 6)*. The Kruskal-Wallis test suggests high statistical significant for all SIP overall total, dimension and category scores (Asymp. Sig. ≤ 0.004) *(see Appendix V, 1 - 4)*, but finds no statistical significance for MPQ scores.

7.2.2. Home visits by the GP

A small number of GP home visits are reported for all but Group 3 (1 - 3 visits: Groups 1 and 2 = 15.0%, both n = 6; Group 4 = 12.6%, n = 2). The Hastings and Lewisham practices have similar numbers of visits (for example 1 - 3 visits: 9.0% vs. 11.5%, n = 6 and 8 respectively), with only two Hastings patients reporting more than three visits (Group 1 = 7 - 12 and Group 2 = 4 - 6). The highest SIP overall total, dimension and category scores are generally found for 7 - 12 GP home visits (for example overall total mean for visits: 1 = 12.48 vs. 2 - 3 = 30.97 vs. 7 - 12 = 40.16, n = 9, 5 and 1 respectively). However, emotional behaviour, social interaction and eating have higher scores for 2 - 3 visits than 7 - 12 (for example social interaction mean scores: 27.88 vs. 21.37 respectively), with no SIP score at all for the one patient with 4 - 6 visits.

No clear pattern is evident for pain duration, number and sites of pain for GP home visits, although the one patient reporting 7 - 12 home visits has six sites of pain and 10 - 15 years duration of pain. MPQ scores increase with more home visits by the GP, except for 7 - 12 visits which has lower scores than 2 - 3 visits (n = 4) for all but the sensory dimension (for example mean total scores: 31.39 vs. 36.54 respectively).

The chi-square test suggests differences for home visits by the GP may only be highly statistically significant for primary diagnoses ($p = 0.000$), and statistically significant for pelvis/hip pain (*p* = 0.036). However, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix U, 7 - 8)*. The Kruskal-Wallis test suggests statistical significant for SIP overall total, physical and psychosocial dimension scores, and body care/movement, alertness behaviour, communication, sleep/rest, home management, work and eating scores (Asymp. Sig. ≤ 0.040) *(see Appendix V, 5 - 7)*, but finds no statistical significance for MPQ scores.

7.2.3. Visits to the practice nurse

Over half the sample report visiting the practice nurse (58.1%, n = 79), with a higher percentage of Group 4 reporting four or more visits than both Groups 1 and 2 (for example 4 - 24 visits: 37.6% vs. 17.5% vs. 20.0%, n = 6, 7 and 8 respectively) *(see Figure 7.9)*.

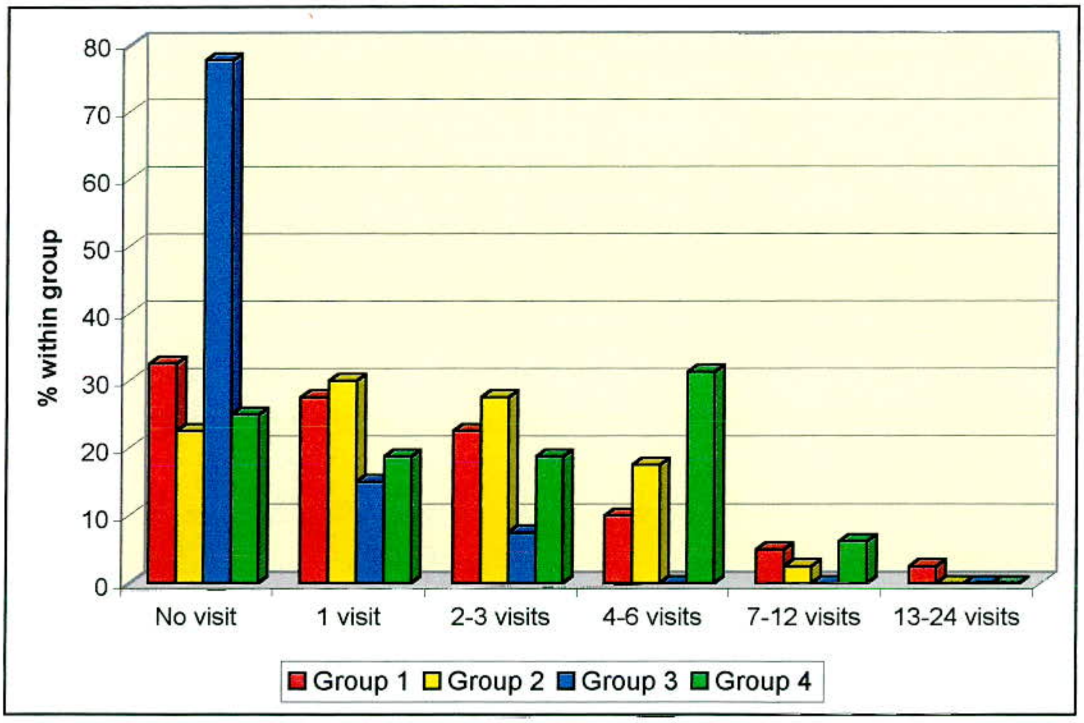


Figure 7.9. Visits to practice nurse: % for groups

The Lewisham practice also reports more visits than the Hastings practice (for example: 4 - 24 visits = 21.6% vs. 9.0%, n = 15 and 6 respectively). A higher percentage of the older age groups report more visits than younger age groups (for example 4 - 24 visits: 55 - 64 and > 64 years both = 20.6% vs. < 35 years = 4.3%, n = 7, 6 and 1 respectively). More visits to the practice nurse are reported by a higher percentage with no dependants than with one dependant (for example 4 - 24 visits: 21.5% vs. 7.1%, n = 19 and 2 respectively). However, those with four dependants have the highest percentage reporting 1 - 3 visits for themselves, with the next highest being for no dependants (80.0% and 45.4%, n = 4 and 40 respectively). The retired and unemployed also have a higher percentage reporting more visits than the fully employed (for example 4 - 24 visits: 20.0% vs. 18.8% vs. 7.9%, n = 9, 6 and 3 respectively).

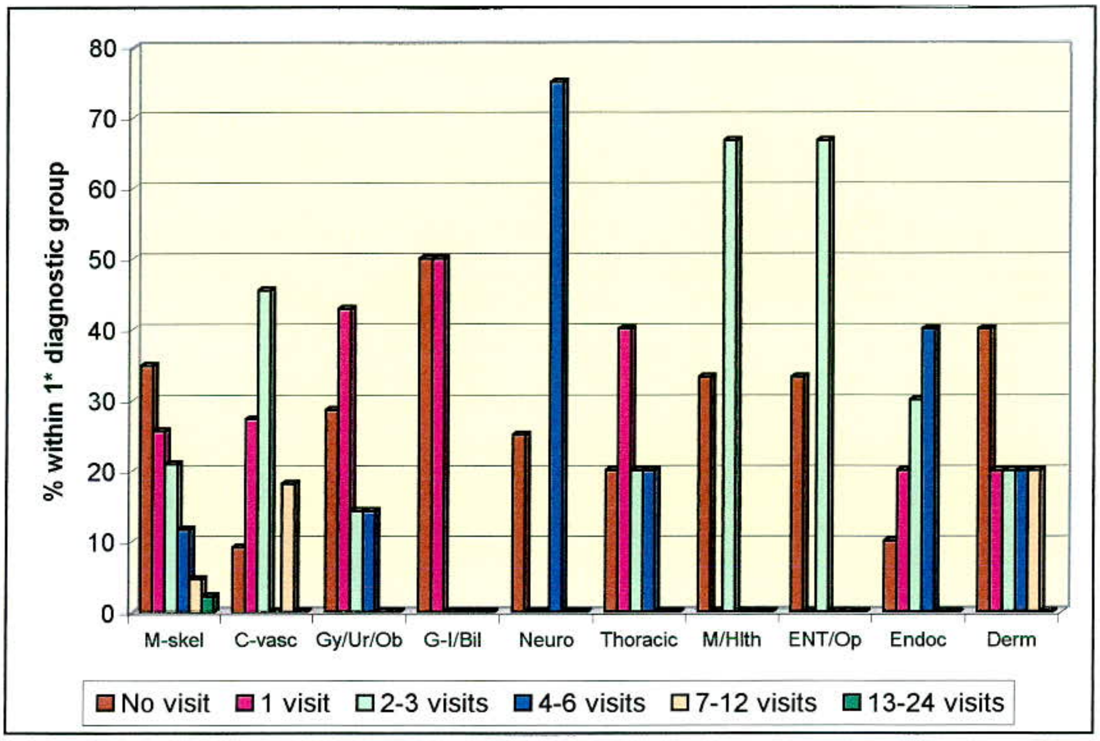


Figure 7.10. Visits to practice nurse: % for 1° diagnoses

For primary diagnoses, 40 per cent or more of all but the neurological group report 1 - 3 visits to the practice nurse (range: cardio-vascular = 72.8% - dermatology = 40.0%, n = 8 and 2 respectively) *(see Figure 7.10)*. Although 4 - 6 visits are reported by six diagnostic groups (for example: neurological = 75.0% and endocrine = 40.0%, n = 3 and 4 respectively), only two groups report 7 - 24 visits (cardio-vascular = 18.2% and musculo-skeletal = 7.0%, n = 2 and 3 respectively). All thoracic, mental health and endocrine secondary diagnoses and over half of the cardio-vascular and musculo-skeletal groups (55.5% and 52.9%, n = 5 and 9 respectively) have 1 - 3 visits to the practice nurse. More than four visits are reported for four diagnostic groups (6 - 12 visits: gynaecology/urology/obstetrics = 40.0%, gastro-intestinal/biliary = 33.3%, musculo-skeletal = 29.4%, cardio-vascular = 22.2%; n = 2, 1, 5 and 2 respectively).

SIP overall total scores generally increase with more visits to the practice nurse (for example overall total mean for visits: 1 = 9.32 vs. 4 - 6 = 10.03 vs. 7 - 12 = 22.53; n = 32, 16 and 4 respectively) *(see Figure 7.11)*. This pattern is reflected for both dimensions, although lower scores are evident for 2 - 3 visits (n = 26) in the physical dimension and 4 - 6 visits in the psychosocial dimension than for fewer visits (for example psychosocial dimension mean for visits: 2 - 3 = 10.23 vs. 4 - 6 = 9.10). The only Group 1 patient with 13 - 24 visits has diverse scores throughout the profile.

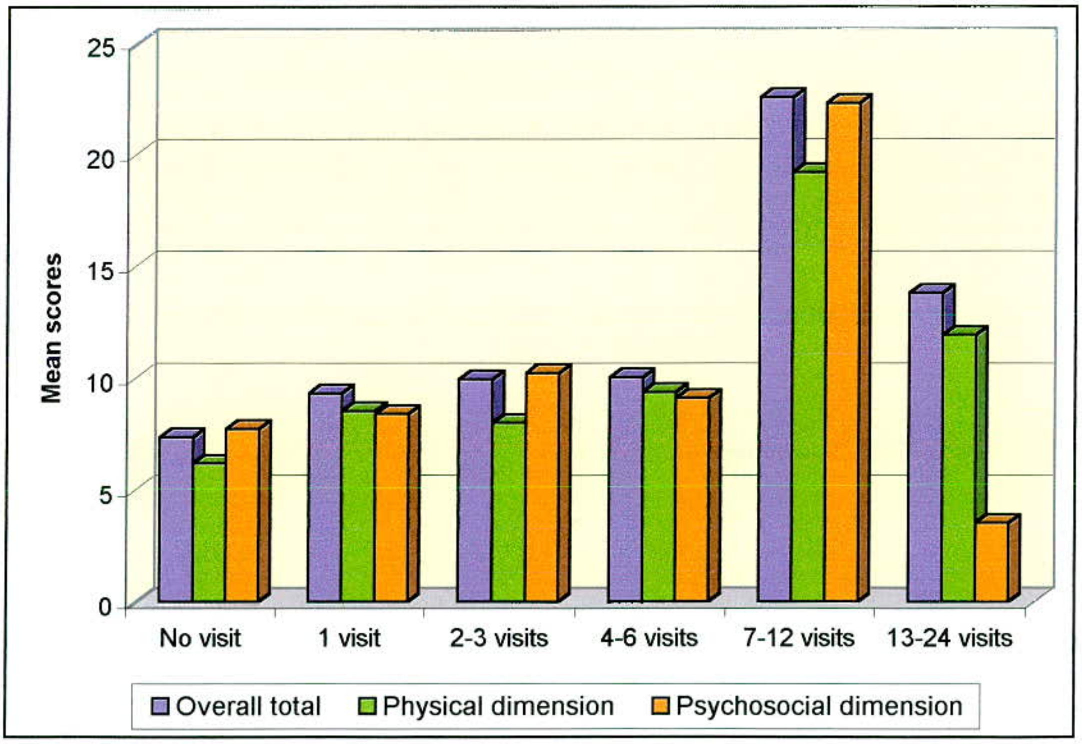


Figure 7.11. Visits to practice nurse: SIP overall total/dimension scores

Physical dimension mobility scores are higher for one visit to the practice nurse than 2 - 3 visits, with both these scores being higher than 4 - 6 visits (mean = 8.21 vs. 6.03 vs. 5.92, n = 32, 26 and 16 respectively) *(see Figure 7.12)*. Higher ambulation scores are also evident for one visit than 2 - 3 visits (mean = 12.49 vs. 8.46 respectively), with similar body care/ movement scores for 2 - 3 visits and 4 - 6 visits (mean = 8.50 and 8.40 respectively).

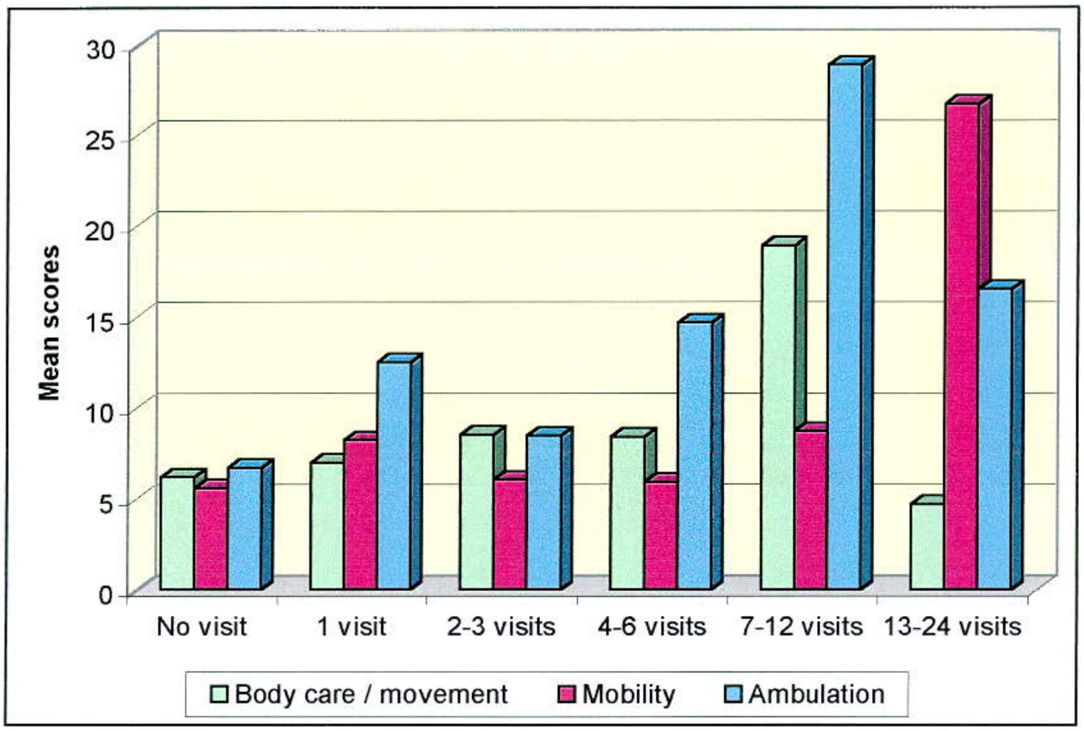


Figure 7.12. Visits to practice nurse: SIP physical dimension category scores

The highest psychosocial dimension category scores are consistently for 7 - 12 visits to the practice nurse (n = 4). The second highest emotional behaviour scores are for one visit (mean = 17.41, n = 32), whilst no visits have higher scores than one visit for alertness behaviour and communication (mean = 11.16 vs. 9.70 and 4.07 vs. 2.16, n = 57 and 32 respectively). Except for the one patient with 13 - 24 visits, the lowest social interaction scores are for 4 - 6 visits (mean = 5.37, n = 16 respectively).

With the exception of 7 - 12 visits (n = 4), which consistently has higher scores than up to six visits for all categories, different patterns are evident for independent categories and visits to the practice nurse *(see Figure 7.13)*. Whilst no clear pattern is evident for eating, other categories have higher scores for more visits to the practice nurse with one exception in each category (for example sleep/rest mean scores for visits: 4 - 6 = 12.47 vs. 2 - 3 = 13.74, n = 16 and 26 respectively). Work also has a higher score for one visit (n = 32) than both 2 - 3 and 4 - 6 visits (mean = 20.32 vs. 18.60 vs. 19.47 respectively). The one patient reporting 13 - 24 visits again has a diverse range of scores.

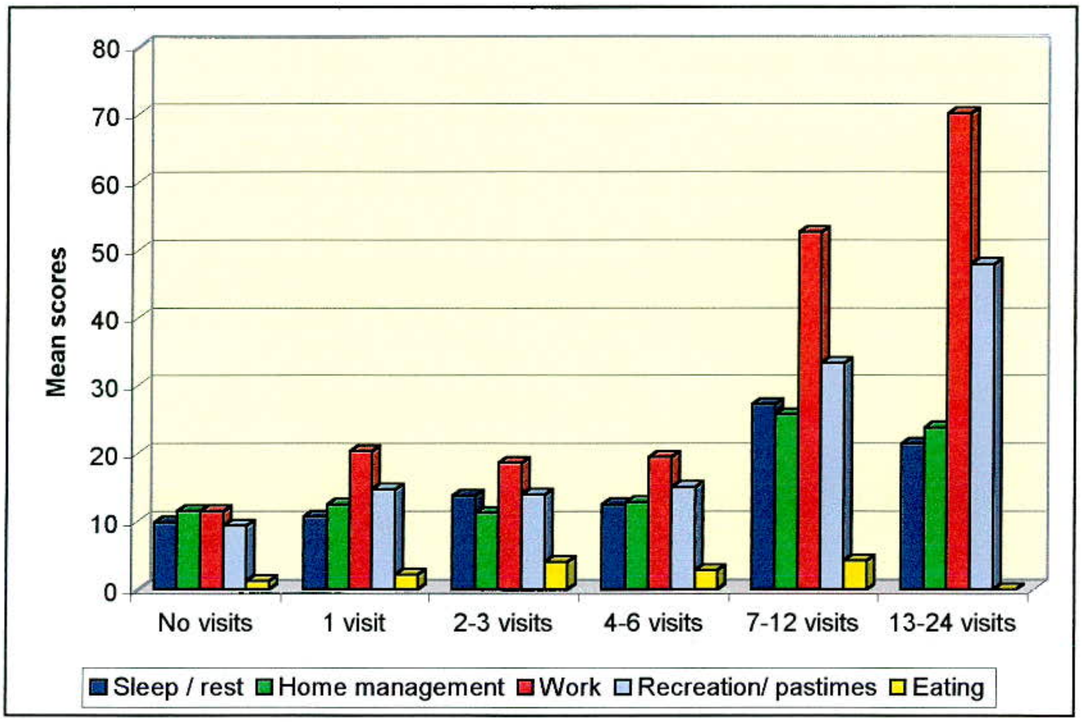


Figure 7.13. Visits to practice nurse: SIP independent category scores

Reports of 7 - 12 visits to the practice nurse are found for the longest duration of pain (> 25 years = 33.1% and 15 - 25 years = 28.6%, n = 1 and 2 respectively), whilst the only report of 13 - 24 visits is for 5 - 10 years pain duration. No clear patterns are generally evident for visits to the practice nurse for number and sites of pain, and MPQ total and dimension scores, however, those not visiting the practice nurse consistently have higher MPQ scores than who report visits.

The chi-square test suggests differences for visits to the practice nurse may only be highly statistically significant for groups and primary diagnoses ($p \leq 0.002$), and statistically significant for employment status ($p = 0.026$). However, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix U, 9 - 11)*. The Kruskal-Wallis test suggests statistical significance for SIP overall total, ambulation and eating scores (Asymp. Sig. ≤ 0.036), with work scores approaching statistical significance (Asymp. Sig. = 0.055) *(see Appendix V, 8)*. No statistical significance is found for MPQ scores.

7.2.4. Home visits by the district nurse

The three reports of home visits by the district nurse are for Group 1 (7.5%), with two in the Hastings practice (2 - 3 visits and > 24 visits) and one in the Lewisham practice (2 - 3 visits). All are male, in the 45 - 64 year age group with no dependants, and have primary musculo-skeletal diagnoses. The only patient with more than 24 visits is married and unemployed, whilst the two who report 2 - 3 visits are retired and either married or divorced. SIP scores are generally high, with 2 - 3 visits having higher overall total and psychosocial scores, than more than 24 visits (mean = 41.31 vs. 40.16, 38.73 vs. 34.86 respectively). This pattern is reflected for all physical dimension categories, the psychosocial social interaction category and the independent categories of recreation/ pastimes and eating (for example recreation/pastimes mean scores: 59.00 vs. 47.87 respectively), whilst physical dimension scores are similar (2 - 3 visits = 42.11 vs. > 24 visits = 42.81 respectively).

Those receiving home visits by the district nurse report a long pain duration and high numbers of pain sites (2 - 3 visits, both = 5 - 10 years and > 10 sites; > 24 visits = 10 - 15 years and 6 - 10 sites), while the commonest pain sites are shoulder, pelvis/hips, legs and feet. Higher MPQ total, affective and miscellaneous dimension scores are found for 2 - 3 visits than more than 24 visits (for example total mean scores: 39.88 vs.

31.39 respectively). Higher sensory dimension scores, however, are found for 24 visits than 2 - 3 visits (mean = 15.42 vs. 14.23 respectively)

The chi square test suggests differences for home visits by the district nurse may only be highly statistically significant for number of pain sites ($p = 0.005$), and statistically significant for pelvis/hip, shoulder and neck pain ($p \leq 0.049$). However, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix U, 12 - 15)*. The Kruskal-Wallis test suggests high statistical significance for SIP mobility scores (Asymp. Sig. = 0.002) and statistical significance for overall total, physical and psychosocial dimension scores, all independent category and body care/movement, ambulation, social interaction, alertness behaviour and communication scores (Asymp. Sig. ≤ 0.041) *(see Appendix V, 9 -12),* but finds no statistical significance for MPQ scores.

7.2.5. Visits to therapists

Visits to the physiotherapist or occupational therapist (physio/OT) are reported by 17 patients in the total sample (12.5%), with Group 1 having the highest percentage (30.0%, n = 12), and the other patients being from Groups 2 - 4 (5.0%, 2.5% and 12.5%, n = 2, 1 and 2 respectively). Four or more visits are reported by Group 1 (for example: 4 - 6, 7 - 12 and 13 - 24 visits, all = 5.0%, n = 2), and the one Group 3 patient (4 - 6 visits). Similar patterns are found for the Hastings practice and the Lewisham practice (all visits: 13.4%, n = 9 and 11.6%, n = 8 respectively). Less patients report visits to homeopaths/cyropractors, who are defined as other therapists for this study (7.4%, n = 10), with three patients for Groups 1, 2 and 4, and one for Group 3 (7.5%, 7.5%, 18.8% and 2.5% respectively). More patients in the Hastings practice report visits to other therapists than the Lewisham practice (13.5% vs. 1.4%, n = 9 and 1 respectively).

A similar number of men and women report visits to the physio/OT, with slightly more women than men reporting visits to other therapists (9.3% vs.

4.9%, n = 7 and 3 respectively). More visits to all therapists are reported by those with no dependants compared to those with dependants (for example physio/OT, none vs. 1: 13.6% vs. 7.2%, n = 12 and 2 respectively). The most visits to the physio/OT are for clerical/secretarial occupations, and skilled construction/engineering related occupations (SOC 4 and 5: 15.2% and 25.1% respectively, both n = 4), with those defined as junior non-manual workers also reporting the most visits (SEG 6 = 17.2%, n = 6). This pattern is also reflected in visits to other therapists. Musculo-skeletal diagnoses consistently have the most visits to the physio/OT and other therapists (musculo-skeletal 1° and 2° diagnoses: 25.8% and 29.5%, 11.9% and 17.7%, n = 11, 5, 5 and 3 respectively).

The highest SIP overall total, physical and psychosocial dimension scores are for 13 - 24 visits to the physio/OT. However, no clear pattern is found for fewer visits (for example overall total mean for visits: 1 = 22.47, 2 - 3 = 20.11, 4 - 6 = 16.54, 13 - 24 = 36.70, n = 6, 4, 3 and 2 respectively). Physical dimension categories of body care/movement and ambulation both have highest scores for 13 - 24 visits and second highest for one visit (for example ambulation mean for visits: 34.62 and 27.36 respectively). This pattern is reversed for mobility (mean = 25.31 and 27.28 respectively). Psychosocial dimension category scores are also highest for 13 - 24 visits for all but emotional behaviour, for which 2 - 3 visits is highest (mean = 30.18). One visit has the second highest scores for all but the social interaction category, for which 7 - 12 visits is second highest (mean = 25.59, n = 2). No clear pattern is evident for independent category scores.

Increasing SIP scores are found for up to 13 visits to other therapists, with the highest scores generally for 7 - 12 visits (for example overall total mean for visits: 2 - 3 = 2.93, 4 - 6 = 19.22, 7 - 12 = 38.19, 13 - 24 = 36.17, n = 3, 2, 4 and 1 respectively). The only exceptions are social interaction and home management, for which 13 - 24 visits have slightly higher scores (for example home management mean for visits: 7 - 12 = 33.08 vs. 13 - 24

= 34.28). Less visits to any therapist is evident for a longer duration of pain (for example physio/OT visits: 10 - > 25 years = 5.4% vs. 1 - 10 years = 19.6%, n = 3 and 11 respectively). No clear pattern is otherwise evident for visits to any therapist for the number and sites of pain and MPQ profiles.

The chi-square test suggests differences for physio/OT visits may only be highly statistically significant for SEG (p = 0.000) and statistically significant for SOC and neck pain ($p \leq 0.037$). Statistical significance is also suggested for visits to other therapists for groups, practices and secondary diagnoses ($p \leq 0.029$), with gender approaching statistical significance (p = 0.051). However, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix U, 16 - 22)*.

The Kruskal-Wallis test suggests only physio/OT visits may be highly statistically significant for SIP overall total, physical and psychosocial dimensions, all physical dimension categories, and social interaction, alertness behaviour, home management, and recreation/pastimes scores (Asymp. Sig. ≤ 0.004) and statistically significant for emotional behaviour, communication, sleep/rest and work scores (Asymp. Sig. ≤ 0.041) *(see Appendix V, 13 - 16)*, but finds no statistical significance for MPQ scores.

7.2.6. Visits to the pharmacist in the previous year

Overall in the total sample, 62.5 per cent (n = 85) report taking regular medication. Purposive sampling criteria accounts for all of Group 1 and a high percentage of Group 2 (72.5%, n = 29) taking medication for a range of diagnoses *(see 3.6, pages 84 - 85)*. However, over half of Group 4 with previously unidentified chronic pain and a small percentage of Group 3 who are supposedly fit and well also report taking regular medication (62.5% and 15.0%, n = 10 and 6 respectively). A higher percentage of the Lewisham practice report taking regular medication than the Hastings practice (66.7% vs. 58.2%, n = 46 and 39 respectively).

Specifically referring to medication to try and help pain, 37.5 per cent of the total sample (n = 51) report taking regular analgesic medication. Purposive sampling criteria again accounts for all of Group 1 taking regular analgesic medication, with the majority taking between one and three regular analgesics (1 and 2 - 3 analgesics: both = 47.5%, n = 19) and two patients (5.0%) taking more than three analgesics regularly *(see also 5.6.1, pages 134 - 140)*. Within Group 4, nearly a third (31.3%, n = 5) report taking regular analgesic medication obtained not by repeat analgesic prescriptions from their GP, but over the counter from pharmacists or supermarkets (1 = 25.0%, 2 - 3 = 6.3%, n = 4 and 1 respectively. One Group 3 patient reports taking 2 - 3 analgesics on a regular basis to try and help pain but denies having chronic pain.

A higher percentage in the Lewisham practice report taking regular analgesic medication than the Hastings practice (37.6% vs. 29.8%, n = 26 and 20 respectively). Whilst a higher percentage in the Lewisham practice than the Hastings practice report taking one regular analgesic (21.7% vs. 11.9%, n = 15 and 8 respectively), similar patterns are found for more than two analgesics (15.9% vs. 17.9%, n = 12 and 11 respectively). A higher percentage of the older age groups report taking more analgesics than the younger age groups (for example 2 - ≥ 3 analgesics: 45 - 54 and > 64 years = 25.0% and 20.7% vs. 35 - 44 years = 7.7%, n = 6, 6 and 2 respectively). A higher percentage of the unemployed and retired also report taking more analgesics than the fully employed (for example 2 - ≥ 3 analgesics: 28.1% vs. 22.2% vs. 7.9%, n = 9, 10 and 3 respectively).

No SOC or SEG are also reported by the highest percentage of those who take the most analgesics (for example 2 - ≥ 3 analgesics both = 35.7%, n = 5). Greater analgesic utilisation is otherwise found for skilled construction, engineering related, clerical/secretarial and personal/protective service occupations (SOC 5, 4 and 6) (for example 2 - ≥ 3 analgesics: 31.3%, 23.1% and 20.8%; n = 6, 5 and 5 respectively). Such patterns are reflected for SEG, with those defined as personal service workers, junior non-manual workers and skilled manual workers (SEG 7, 6 and 9) taking the most analgesics (for example 2 - ≥ 3 analgesics: 21.4%, 20.0%, 18.2%; n = 3, 7 and 4 respectively). Greatest utilisation of analgesic medication is consistently reported for primary and secondary musculo-skeletal diagnoses (2 - ≥ 3 analgesics = 46.6% and 29.4%, n = 20 and 5 respectively).

SIP overall total, physical and psychosocial dimension scores are found to increase with more analgesic medication (for example overall total mean: 2 - 3 = 27.78 vs. > 3 = 32.52, n = 21 and 2 respectively). This pattern is also generally found for physical and psychosocial dimension category scores. Exceptions are ambulation with higher scores for 2 - 3 analgesics than for more than three (29.98 vs. 26.84 respectively) and emotional behaviour, for which more than three analgesics has the lowest scores (emotional behaviour overall total mean: > 3 = 29.29 vs. 1 = 30.36 vs. 2 - 3 = 34.18). More than three analgesics has the highest independent sleep/rest, home management and eating scores, with particularly high scores for sleep/rest and eating (> 3 analgesics = 72.85 and 10.00 respectively). Work and recreation/pastimes scores are highest for 2 - 3 analgesics (for example work overall total mean for analgesics: 1 = 31.83 vs. > 3 = 42.82 vs. 2 - 3 = 48.59).

Regular utilisation of 2 - 3 analgesics is reported by all those with over 25 years pain duration (n = 3) and over half with 5 - 15 years of pain (5 - 10 years = 71.4% and 10 - 15 years = 66.7%; n = 10 and 3 respectively). Half or more with 15 - 25 years or less than five years pain duration take one analgesic regularly (15 - 25 years = 57.1% and 2 - 5 years = 52.9%, 1 - 2 years = 50.0%; n = 4, 9 and 4 respectively). None with less than two years pain report taking more than one analgesic regularly.

A higher percentage with more sites of pain report taking 2 - 3 analgesics (no. of sites for 2 - 3 analgesics: > 10 = 80.0% and 6 - 10 = 63.6% vs. 2 - 3 = 40.0% and 3 - 5 = 38.5%; n = 4, 6, 3 and 5 respectively). This pattern is reflected in a higher percentage of those with fewer sites of pain taking one analgesic medication (no. of sites for 1 analgesic: 6 - 10 = 18.2% and > 10 = 20.0% vs. 2 - 3 = 50.0% and 3 - 5 = 61.5%; n = 2, 1, 5 and 8 respectively). No clear pattern is evident for anatomical sites of pain, with regular utilisation of three or more analgesic medications reported for shoulder, chest, pelvis/hips, arms, hands, legs, and feet pain.

The highest MPQ total and dimension scores are consistently for utilisation of 2 - 3 analgesics (for example total mean for analgesics: 1 = 22.70, > 3 = 27.20, 2 - 3 = 33.07; n = 23, 2 and 20 respectively). Generally those with chronic pain who take no regular medication or only regular non-analgesic medication have scores for all MPQ total and dimension scores (for example total mean: 16.12 and 6.84 respectively). The only exception is the affective dimension for those who take regular non-analgesic medication, which has no score.

The chi-square test suggests regular utilisation of all medication is highly statistically significant for groups (p = 0.000), whilst analgesic medication is highly statistically significant only for groups, SEG, primary diagnoses and employment status ($p \leq 0.003$) and statistically significant for secondary diagnoses and pain duration ($p \leq 0.028$). However, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix U, 23 - 29)*. The Kruskal-Wallis test suggests high statistical significant for all SIP overall total, dimension and category scores (Asymp. Sig. = 0.000) *(see Appendix V, 17 - 20)*. It also suggests high statistical significance for MPQ total and affective dimension scores (Asymp. Sig. ≤ 0.005) and statistical significance for miscellaneous and sensory dimension scores (Asymp. Sig. ≤ 0.023) *(see Appendix V, 21)*.

7.2.7. Summary

Differences between groups, which may not be attributable to purposive sampling criteria, include Group 1 having a higher percentage than Group

2 reporting more visits to the GP. Importantly a quarter of Group 4 report 7 - 12 visits to the GP, and whilst over half the total sample report visiting the practice nurse, Group 4 has a higher percentage than both Groups 1 and 2 with four or more visits. Group 4 also has the same number of visits, but a higher percentage than Groups 1 and 2 reporting visits to other therapists. Nine patients in the Hastings practice and only one in the Lewisham practice report visits with other therapists. The chi-square test suggests differences for visits to the GP and practice nurse may be highly statistically significant for groups, and visits to other therapists may be statistically significant for groups *(see Table 7.2, page 254)*. Visits with other therapists may be the only statistically significant primary health care variable for practices.

Although purposive sampling criteria accounts for all of Group 1 and a high percentage of Group 2 taking regular medication, over half of Group 4 and a small percentage of Group 3 also report taking regular medication. Purposive sampling criteria again accounts for all of Group 1 regularly taking analgesic medication, with the majority taking 1 - 3 analgesics. Within Group 4, nearly a third report taking regular analgesic medication, but do not obtain repeat analgesic prescriptions from their GP. One Group 3 patient also reports taking 2 - 3 analgesics on a regular basis but denies having chronic pain. The chi-square test suggests differences for regular utilisation of any medication and analgesic medication may be highly statistically significant for groups *(see Table 7.2, page 254)*.

A higher percentage of those with no dependants than up to three dependants report more visits to the GP overall, whilst those with four dependants have the highest percentage with four or more visits to the GP for themselves. More visits to the practice nurse are reported by a higher percentage of the retired and unemployed than the employed, and a higher percentage of women than men report visits to other therapists. Clerical and secretarial, skilled construction, engineering and junior non-manual workers report the most visits to the physio/OT. Utilisation of more analgesics is found for a higher percentage of the unemployed and retired than the employed, and also those reporting no SOC or SEG. Greater analgesic utilisation is otherwise found for personal service, junior non-manual and skilled manual workers.

The chi-square test suggests differences for visits to the GP and physio/OT may be highly statistically significant for dependants and SEG respectively, and regular utilisation of analgesic medication may be highly statistically significant for employment status and SEG. The chi-square test also suggests differences for visits to the practice nurse and physio/OT may be statistically significant for employment status and SOC respectively, and visits to other therapists may be approaching statistical significance for gender.

Comparing primary diagnoses, all gastro-intestinal, ENT/opthalmology and endocrine groups and half or more of other diagnoses report 2 - 6 visits to the GP. More than six visits are reported for seven diagnostic groups, with fewer than two visits only reported for thoracic, cardio-vascular and musculo-skeletal diagnoses. Home visits by the GP are reported for a range of primary diagnoses, with more than three visits for gastro-intestinal /biliary and musculo-skeletal diagnoses. The chi-square test suggests differences for visits to the GP and home visits by the GP may be highly statistically significant for primary diagnoses.

With the exception of neurological diagnoses, 40 per cent or more of all other diagnoses report 1 - 3 visits to the practice nurse. Whilst six diagnostic groups have reports of 4 - 6 visits, only cardio-vascular and musculo-skeletal diagnoses have more than six visits. Musculo-skeletal diagnoses consistently report greatest utilisation of analgesic medication for all primary diagnoses. The chi-square test suggests differences for visits to the practice nurse and utilisation of regular analgesic medication may be highly statistically significant for primary diagnoses.

For all secondary diagnoses except mental health, 60 per cent or more have reports of 2 - 6 visits to the GP. More than six visits are also reported by five groups, however, fewer than two visits are reported only for the gastro-intestinal/biliary group. Musculo-skeletal diagnoses consistently have the most visits to all therapists and the greatest utilisation of analgesic medication. The chi-square test suggests differences for visits to the GP and visits to other therapists may be highly statistically significant, and regular utilisation of analgesic medication may be statistically significant for secondary diagnoses.

SIP overall total, physical and psychosocial dimension scores generally increase with more visits to the GP and physio/OT, and home visits by the GP. Overall total scores also increase with more visits to the practice nurse, although less clear patterns are evident for dimensions. High SIP scores are evident for all home visits by the district nurse, with 2 - 3 visits having higher overall total and psychosocial dimension scores, but slightly lower physical dimension scores than more than 24 visits. Overall total and dimension scores consistently increase with greater utilisation of analgesic medication, with higher scores for those who take regular analgesic medication than those who take other medication or no regular medication.

The Kruskal-Wallis test suggests differences for visits to the GP and physio/OT, and regular utilisation of analgesic medication may be highly statistically significant for overall total, physical and psychosocial dimension scores. Statistical significance is also suggested for home visits by the GP and district nurse for overall total, physical and psychosocial dimension scores, and visits to the practice nurse for overall total scores.

Physical dimension ambulation and mobility scores generally increase with more visits to the GP, with slightly higher body care/movement scores also evident for no visits than one visit. The highest physical dimension category scores are for 7 - 12 home visits by the GP. Ambulation scores are higher for one visit to the practice nurse than 2 - 3 visits, with mobility scores higher for up to four visits. Physical dimension category scores are higher for 2 - 3 home visits by the district nurse than 7 - 12 visits. Body care/movement and ambulation.have highest scores for 13 - 24 visits and second highest for one visit to the physio/OT, with this pattern reversed for mobility. Body care/movement and mobility scores increase with greater utilisation of analgesic medication, whilst ambulation scores are higher for 2 - 3 analgesics than more than three analgesics.

The Kruskal-Wallis test suggests differences for visits to the GP and physio/OT and utilisation of analgesic medication may be highly statistically significant for all physical dimension category scores, and home visits by the district nurse may be highly statistically significant for mobility scores. Statistical significance is also suggested for home visits by the district nurse for body care/movement and ambulation scores, home visits by the GP for body care/movement scores, and visits to the practice nurse for ambulation scores.

Psychosocial dimension category scores increase with more visits to the GP, except for alertness behaviour for 2 - 3 visits, which is lower than one visit. The highest alertness behaviour and communication scores are for 7 - 12 home visits by the GP, with 2 - 3 visits being highest for emotional behaviour and social interaction. The one patient reporting 7 - 12 home visits by the district nurse has the highest psychosocial dimension category scores for all but social interaction, whilst 13 - 24 visits to the physio/OT is highest for all but emotional behaviour. Psychosocial dimension category scores consistently increase with greater utilisation of analgesic medication, except for emotional behaviour, which has the lowest scores for more than three analgesics.

The Kruskal-Wallis test suggests differences for visits to the GP and regular utilisation of analgesic medication may be highly statistically significant for all psychosocial dimension category scores, and visits to the physio/OT may be highly statistically significant for social interaction and alertness behaviour scores. Statistical significance is suggested for home visits by the district nurse for social interaction, alertness behaviour, and communication scores and home visits by the GP for alertness behaviour and communication scores. Visits to the physio/OT for emotional behaviour and communication scores may also be statistically significant.

Independent category scores, with the exception of eating, increase with more visits to the GP and more home visits by the GP. Different patterns are evident for independent categories and visits to the practice nurse, although 7 - 12 visits consistently have higher scores than up to six visits. Highest independent category scores for home visits by the district nurse are equally divided between 2 - 3 and 7 - 12 visits, with no clear pattern for visits to the physio/OT. Those who utilise more than three analgesics have the highest scores for sleep/rest, home management and eating, with the highest work and recreation/pastimes scores for 2 - 3 analgesics.

The Kruskal-Wallis test suggests high statistical significance for differences for visits to the GP, home visits by the district nurse, and regular utilisation of analgesic medication for all independent category scores, and visits to the physio/OT for home management and recreation/pastimes scores. Statistical significance is also suggested for home visits by the GP for sleep/rest, home management, work and eating scores, visits to the physio/OT for sleep/rest and work scores and visits to the practice nurse for eating scores.

All patients with more than one year of pain report visiting the GP two or more times, with the highest percentage of those with up to 10 years of pain consistently reporting 4 - 6 visits. No clear pattern of visits is evident for those with 10 or more years of pain. All those with more than 25 years of pain, and half or more with 5 - 15 years of pain report regular utilisation of 2 - 3 analgesics, however, none with up to two years pain report taking more than one analgesic regularly. The chi-square test suggests differences for visits to the GP may be highly statistically significant, and regular utilisation of analgesic medication may be statistically significant for duration of pain.

Over 30 per cent with one or more sites of pain report 7 - 24 visits to the GP. A range of visits to the GP is evident for sites of pain, with the highest percentage for several sites being 4 - 6 visits. All three patients who receive visits from the district nurse have a long duration of pain and a high total number of pain sites, with shoulder, pelvis/hips, legs, and feet being the commonest sites. No clear picture is evident for specific pain profiles and home visits by the GP or visits to the physio/OT. The chi square test suggests differences for home visits by the district nurse may be highly statistically significant for the total number of pain sites and statistically significant for pelvis/hip, shoulder and neck pain. Statistical significance is also suggested for visits to the GP and physio/OT for neck pain and home visits by the GP for pelvis/hip pain.

The highest MPQ total and dimension scores are consistently for regular utilisation of 2 - 3 analgesic medications. The Kruskal-Wallis test suggests differences for regular utilisation of analgesic medication may be the only statistically significant primary health care variable for MPQ scores, with high statistical significance for total and affective dimension scores, and statistical significance for miscellaneous and sensory dimension scores.

7.3. Findings from secondary health care in the previous year

7.3.1. Visits to outpatients

Overall in the total sample, 32.4 per cent (n = 44) report outpatient visits, with Group 1 having the highest percentage (62.5%, n = 25) and Group 4 the second highest (31.2%, n = 5). Group 2 has only a slightly higher number of patients than Group 3 (20.0% vs. 15.0%, n = 8 and 6 respectively). This is reflected in the number of visits (for example 4 - 12: Group 1 = 37.5% vs. Group 4 = 18.8% vs. Group 2 = 7.5%, n = 11, 3 and 3 respectively). The Hastings practice has a higher percentage of patients visiting outpatients than the Lewisham practice (40.3% vs. 24.6%, 27 and 17 respectively), and more visits (for example 4 - 12: 15.0%, n = 10 vs. 10.1%, n = 7 respectively). A higher percentage of the unemployed and retired report more visits than the fully employed (for example 4 - 12 visits: 25.0% vs. 15.5% vs. 5.2%, n = 8, 7 and 2 respectively). For all diagnoses, musculo-skeletal diagnoses consistently have the most visits to outpatients (for example 1° diagnoses 4 - 12 visits: 25.6%, n = 11).

Overall total and psychosocial dimension scores increase with more visits to outpatients (for example overall total mean for visits: 1 = 8.47 vs. 2 - 3 = 15.66 vs. 4 - 6 = 23.02 vs. 7 - 12 = 25.80, n = 13, 14, 10 and 7 respectively). This pattern is generally found for the physical dimension, although 4 - 6 visits has slightly higher scores than 7 - 12 visits (mean = 20.38 vs. 20.35 respectively). Physical dimension category scores are highest for 7 - 12 visits for body care/movement and ambulation (mean = 19.73 and 26.04 respectively) and 4 - 6 visits for mobility (mean = 15.50). Such patterns are found for psychosocial dimension category scores, with social interaction and communication being highest for 7 - 12 outpatient visits (mean = 27.22 and 17.08 respectively) and emotional behaviour and alertness behaviour highest for 4 - 6 visits (33.90 and 34.85 respectively). For miscellaneous categories, 7 - 12 visits is highest for all but eating, for which 4 - 6 visits is the highest (mean = 4.12 vs. 6.28 respectively).

Similar profiles are evident for visits to outpatients and duration, total number and sites of pain. The highest percentage reporting most visits have 15 - 25 years of pain (7 - 12 visits: 42.9%, n = 3) and 6 - 10 pain sites (7 - 12 visits: 36.4%, n = 4). Although the highest MPQ total, affective and miscellaneous dimension scores are for 4 - 6 outpatient visits, no clear pattern is otherwise evident (for example total mean for visits: 1 = 26.15 vs. 4 - 6 = 27.31 vs. 7 - 12 = 25.10, all n = 7).

The chi-square test suggests differences for visits to outpatients may only be highly statistically significant for groups (*p* = 0.001), statistically significant for SEG and hand pain ($p \leq 0.031$), and approaching statistical significance for shoulder pain ($p = 0.055$). However, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix U, 30 - 33)*. The Kruskal-Wallis test suggests high statistical significance for all SIP overall total, dimension and category scores (Asymp. Sig. = 0.000) except for eating which may be statistically significant (Asymp. Sig. = 0.009) *(see Appendix V, 22 - 25)*, but finds statistical significance for MPQ scores.

7.3.2. Visits to accident and emergency

Overall in the total sample, 18.4 per cent (n = 25) report visiting accident and emergency (A & E). Group 1 has the highest percentage visiting A & E (22.5%, n = 9), with Groups 2 and 3 being second highest (both 17.5%, n = 7) and Group 4 reporting two visits (12.5%). Similar patterns are found for the Hastings practice and the Lewisham practice (for example: 1 visit = 14.9% and 14.5% respectively, both n = 10). Only those who are retired or unemployed with no dependants report more than one visit to accident and emergency ((2 - 6 visits = 6.6%, 6.3% and 5.6%, n = 3, 2 and 5 respectively). For all diagnoses, musculo-skeletal diagnoses consistently have the most visits to A & E (for example 1° musculo-skeletal diagnoses: 1 visit = 14.0%, n = 6).

The highest SIP overall total, dimension and category scores are generally found for 4 - 6 visits to A & E (for example overall total mean for visits: 1 = 8.92 vs. 2 - 3 = 19.39 vs. 4 - 6 = 27.64, n = 20, 4 and 1 respectively). Exceptions are body care/movement and alertness behaviour, for which 2 - 3 visits have higher scores than 4 - 6 visits (for example alertness behaviour mean: 34.68 vs. 28.44 respectively). All scores otherwise increase with the number of visits, with the exception of communication (1 visit = 3.08 vs. 2 - 3 visits = 2.41).

Similar profiles are evident for visits to A & E and duration, total number and sites of pain. The three patients reporting more than one visit have 2 -

10 years pain duration and up to 5 sites of pain, whilst the only patient with more than 10 sites of pain reports no visits. Although the highest MPQ total, affective and miscellaneous dimension scores are for 2 - 3 visits, no clear pattern is otherwise evident (for example total mean for visits: 1 = 27.25 vs. 2 - 3 = 46.68 vs. 4 - 6 = 17.53, n = 8, 2, and 1 respectively).

The chi-square test suggests differences for visits to A & E may only be approaching statistical significance only for lower back pain (p = 0.051), however, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix U, 34)*. The Kruskal-Wallis test suggests statistical significance only for SIP work category scores (Asymp. Sig. = 0.042) *(see Appendix V, 26)*, but finds no statistical significance for MPQ scores.

7.3.3. Inpatient admissions to hospital

Overall in the total sample, 13.2 per cent (n = 18) report being admitted to hospital. Group 1 has the highest percentage being admitted to hospital (27.5%, n = 11), with other patients from Groups 2 and 4 (10.0% and 18.8%, n = 4 and 3 respectively). Group 1 also reports a greater number of admissions than Groups 2 and 4 (for example 2 - 5 admissions: 10.0% vs. 2.5% vs. 0%, n = 4 and 1 respectively). When comparing the length of time in hospital, only Group 1 reports admission for one day and 1 - 2 months (17.5% and 2.5%, n = 7 and 1 respectively). All other admissions are for 2 - 7 days or 1 - 4 weeks (Groups 1, 2 and 4: 2 - 7 days = 2.5% vs. 5.0% vs. 18.8%, n = 1, 2 and 3 respectively; 1 - 4 weeks = 5.0% vs. 5.0% vs. 0%, both n = 2).

The Hastings practice has more patients reporting admission to hospital than the Lewisham practice (16.4% vs. 10.1%, n = 11 and 7 respectively), and also has a greater number of admissions (for example 2 - 5 admissions: 6.0% vs. 1.4%, n = 4 and 1 respectively). Comparing length of time in hospital, the Hastings practice has more admissions for one day, 1 - 4 weeks and 1 - 2 months than the Lewisham practice (9.0% vs. 1.4%, 4.5% vs. 1.4% and 1.5% vs. 0%; n = 6, 1, 3 1, 1 and 0 respectively). The Lewisham practice, however, has more admissions for 2 - 7 days than the Hastings practice (7.2% vs. 1.5%, n = 5 and 1 respectively).

More than one hospital admission is reported by those who are married or divorced, and the unemployed, retired and those with no dependants (2 - 5 admissions: 3.3%, 13.3%, 9.4%, 4.4%, and 5.7%; n = 3, 2, 3, 2 and 5 respectively). The highest number of admissions for one day are for the unemployed and those with no dependants (21.9% and 9.1%, n = 7 and 8 respectively). More than one week in hospital is reported by those who are married or divorced, and the unemployed, retired and those with no dependants (for example 1 - 4 weeks = 3.3%, 6.7%, 9.4%, 2.2% and 3.4%; n = 3, 1, 3, 1 and 3, respectively). Musculo-skeletal diagnoses consistently have the most reports of admissions to hospital for all primary diagnoses (1 = 16.3% and 2 - 5 = 7.0%, n = 7 and 3 respectively). Only those with musculo-skeletal diagnoses also report admission for one day and 1 - 2 months (16.3% and 2.3%, n = 7 and 1 respectively).

All SIP overall total, dimension and category scores consistently increase with a greater number of in-patient admissions (for example overall total mean for admissions: 1 = 23.69 vs. 2 - 5 = 33.53, n = 13 and 5 respectively). The highest scores are generally found for 1 - 2 months in hospital (for example overall total mean: 1 day = 24.25 vs. 2 - 7 days = 7.81 vs. 1 - 4 weeks = 19.30 vs. 1 - 2 months = 40.16, n = 7, 6, 4 and 1 respectively). Exceptions are emotional behaviour and eating with highest scores for one day in hospital (for example emotional behaviour mean: 1 - 2 months = 29.65 vs. 1 day = 30.58 respectively), and social interaction with slightly higher scores for 1 - 4 weeks. One day in hospital also has the second highest scores for all but the psychosocial dimension and alertness behaviour and social interaction.

Only the one patient with pain for less than a year and all three patients with more than 25 years duration of pain report no admissions to hospital.

A longer stay in hospital of 1 - 4 weeks or 1 - 2 months is only reported by those with 5 - 10 years and 10 -15 years duration of pain respectively (14.3% and 16.7%, n = 2 and 1). The only patient with 1 - 2 months in hospital also reports 6 - 10 sites of pain. The highest MPQ total, affective and miscellaneous scores are found for 2 - 5 hospital admissions (for example overall total mean for admissions: 1 = 24.66 vs. 2 - 5 = 26.70, n = 10 and 4 respectively). One admission, however, has higher sensory dimension scores than 2 - 5 (mean = 12.87 vs. 10.93 respectively).

The chi-square test suggests differences for admissions to hospital may be statistically significant for groups, marital and employment status and primary diagnoses ($p \leq 0.035$). Length of time in hospital is also suggested to be highly statistically significant for groups ($p = 0.001$) and statistically significant for marital status and primary diagnoses ($p \leq 0.029$). However, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix U, 35 - 41)*.

The Kruskal-Wallis test suggests differences for in-patient admissions may be highly statistically significant for SIP mobility and recreation/pastime scores (Asymp. Sig. ≤ 0.003) and statistically significant for overall total, physical and psychosocial dimension, all psychosocial dimension category and body care/movement, ambulation, home management and work scores (Asymp. Sig. ≤ 0.030), with sleep/rest scores also approaching statistical significance (Asymp. Sig. = 0.059) *(see Appendix V, 27 - 30)*. Length of stay in hospital may be highly statistically significant for physical dimension, all physical dimension category, work and recreation/pastime scores (Asymp. Sig. ≤ 0.005), and statistically significant for overall total, psychosocial dimension, all psychosocial dimension category, sleep/rest and home management scores (Asymp. Sig. ≤ 0.034) *(see Appendix V, 31 - 34)*. No statistical significance is found for MPQ scores.

7.3.4. Visits to a specialist pain clinic

Although all Group 1 have identifiable chronic pain, only three report visiting a pain clinic (4 - 6 visits = 5.0% and 2 - 3 visits = 2.5%, n = 2 and 1 respectively). One Group 4 patient (6.3%), who was not identified as having chronic pain prior to the study because of not receiving repeat analgesic prescriptions, also reports 2 - 3 visits to a pain clinic. This small number of pain clinic visits is equally distributed across both practices. All three Group 1 patients who report visiting a pain clinic are male, with the one Group 4 patient being female. All four patients are in the 35 - 64 year age group, married and with a primary musculo-skeletal diagnosis. Employment status is equally for full-time employment and unemployed, with two reporting skilled construction and engineering trades (SOC 5).

SIP overall total, physical and psychosocial dimension and physical dimension category scores all increase with more visits to a pain clinic (for example overall total mean for visits: 2 - 3 = 24.96 vs. 4 - 6 visits = 31.35). No clear pattern is evident for psychosocial dimension categories or independent categories, with 2 - 3 visits having higher scores for social interaction, alertness behaviour, work and recreation/pastimes (for example work mean for visits: 2 - 3 = 54.56 vs. 4 - 6 = 42.82).

Visits to a pain clinic are reported for those with 1 - 15 years duration of pain (duration in years: 1 - 2, 2 - 5, 5 - 10, 10 - 15; all n = 1), with two reporting 6 - 10 sites of pain. No visits, however, are reported for the one patient with three months to one year of pain and all those with more than 15 years pain duration (n = 7). MPQ profiles consistently increase with more visits to a pain clinic (for example total mean for visits: 2 - 3 = 14.69 vs. 4 - 6 = 27.52). Importantly, however, those Group 1 and 4 patients not visiting a pain clinic (n = 52) have higher sensory dimension scores than those reporting visits (mean for visits: 0 = 12.85 vs. 2 - 3 = 7. 79 vs. 4 - 6 = 12.26). Total, affective and miscellaneous dimension scores are also higher for those with no visits than those reporting 2 - 3 visits (for example affective dimension mean for visits: 0 = 5.25 vs. 2 - 3 = 0.87).

The chi-square test suggests differences for visits to a pain clinic may be highly statistically significant for SEG and pelvis/hip pain (p = 0.000). However, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix U, 42 - 43)*. The Kruskal-Wallis test suggests differences for visits to a pain clinic may be highly statistically significant for SIP communication scores (Asymp. Sig. = 0.005) and statistically significant for overall total, physical dimension, and body care/movement, ambulation, work, recreation/pastimes and eating scores (Asymp. Sig. ≤ 0.032) *(see Appendix V, 35 - 37)*, but finds no statistical significance for MPQ scores.

7.3.5. <u>Summary</u>

Group 1 has the highest percentage of patients reporting visits to outpatients, with Group 4 the second highest. Such patterns are reflected in the number of outpatient visits. Group 1 also has the highest percentage of patients being admitted to hospital and the greatest number of admissions. When comparing the length of time in hospital, only Group 1 reports admission for one day and 1 - 2 months, with Groups 1, 2 and 4 reporting other admissions for 2 - 7 days or 1 - 4 weeks. The chi-square test suggests differences for visits to outpatients and length of time in hospital may be highly statistically significant, and admissions to hospital may be statistically significant for groups *(see Table 7.2, page 254)*.

More visits to outpatients are reported by a higher percentage of the unemployed and retired than the fully employed. The married or divorced, unemployed or retired, and those with no dependants, report more than one admission and more than a week in hospital. The unemployed and those with no dependants also have the highest number of hospital admissions for one day. Musculo-skeletal diagnoses consistently have the most reports of admissions to hospital and also the only reports of admission for one day and 1 - 2 months. The four patients visiting a pain clinic are equally fully employed or unemployed, with two having skilled construction and engineering trades. The chi-square test suggests differences for visits to a pain clinic may be highly statistically significant for SEG. Statistical significance is suggested for visits to outpatients for SEG, hospital admissions for marital and employment status and primary diagnoses, and time in hospital for marital status and primary diagnoses.

All SIP overall total and dimension scores increase with a greater number of in-patient admissions and visits to a pain clinic, and increase with more visits to outpatients with the exception of the physical dimension, which has slightly higher scores for 4 - 6 visits than 7 - 12 visits. The highest overall total and dimension scores are consistently found for 1 - 2 months in hospital. The Kruskal-Wallis test suggests differences for visits to outpatients for all overall total and dimension scores, and length of stay in hospital for physical dimension scores may be highly statistically significant. In-patient admissions for all overall total and dimension scores, length of stay in hospital for overall total and psychosocial dimension scores, and visits to a pain clinic for overall total and physical dimension scores may also be statistically significant.

All physical dimension category scores increase with a greater number of in-patient admissions and more visits to a specialist pain clinic. Physical dimension category scores for body care/movement and ambulation are highest for 7 - 12 visits to outpatients, whilst 4 - 6 visits has the highest mobility scores. The highest and second highest physical dimension category scores are consistently for 1 - 2 months and one day in hospital respectively. The Kruskal-Wallis test suggests differences for visits to outpatients and length of stay in hospital for all physical dimension category scores, and in-patient admissions for mobility scores may be highly statistically significant. In-patient admissions and visits to a pain clinic may also be statistically significant for body care/movement and ambulation scores.

Social interaction and communication, and emotional behaviour and alertness behaviour psychosocial dimension category scores are highest for 7 - 12 and 4 - 6 outpatient visits respectively, with emotional behaviour and communication, and social interaction and alertness behaviour highest for 4 - 6 and 2 - 3 pain clinic visits respectively. Alertness behaviour and communication are highest for 1 - 2 months in hospital, whilst emotional behaviour and social interaction are highest for one day and 1 - 4 weeks respectively. The Kruskal-Wallis test suggests differences for visits to outpatients for all psychosocial dimension category scores, and visits to a specialist pain clinic for communication scores may be highly statistically significant. In-patient admissions and length of stay in hospital may also be statistically significant for all psychosocial dimension category scores.

Miscellaneous category scores are highest for 4 - 6 visits to A & E, and increase with a greater number of in-patient admissions. Category scores are highest for 7 - 12 visits to outpatients and 1 - 2 months in hospital, with the exception of eating for which 4 - 6 visits and one day respectively are highest. No clear pattern is generally evident for visits to a pain clinic. The Kruskal-Wallis test suggests differences for visits to outpatients for sleep/rest, home management, work and recreation/pastimes, in-patient admissions for recreation/pastimes, and length of stay in hospital for work and recreation/pastime scores may be highly statistically significant. Pain clinic visits for work, recreation/pastimes and eating, in-patient admissions for home management and work, length of stay in hospital for sleep/rest and home management, outpatient visits for eating, and A & E visits for work scores may be statistically significant. In-patient admissions may also be approaching statistical significance for sleep/rest scores.

The highest percentage of those who report the most visits to outpatients and half of those visiting a pain clinic have 6 - 10 sites of pain. The only patient with more than 10 sites of pain reports no visits to A & E. The chi-square test suggests differences for visits to a pain clinic may be highly statistically significant for pelvis/hip pain, visits to outpatients may be statistically significant for hand pain. Visits to A & E, may also be approaching statistical significance for lower back pain.

7.4. Findings from social care in the previous year

7.4.1. Visits with the social worker

Overall in the total sample, only 2.2 per cent (n = 3) report visits with the social worker (Group 1 = 1 and 2 - 3 visits; Group 2 = 4 - 6 visits), with two from the Hastings practice and one from the Lewisham practice. Two of the three patients are male, divorced, retired with no dependants and have primary musculo-skeletal diagnoses. The one patient reporting 2 - 3 visits has the highest SIP overall total, dimension and category scores for all but ambulation (for example overall total mean for visits: 4 - 6 = 7.21 vs. 1 = 28.15 vs. 2 - 3 = 54. 45). No clear pattern is otherwise evident for one visit or 4 - 6 visits. One patient with 2 - 5 years of pain and 3 - 5 pain sites reports one visit, and one patient with 5 - 10 years of pain and more than 10 pain sites reports 2 - 3 visits. MPQ scores are found to be consistently higher for 2 - 3 visits than one visit (for example total mean: 59.01 vs. 29.78 respectively).

The chi-square test suggests differences for visits with the social worker may be highly statistically significant for secondary diagnoses and pelvis/hip pain ($p = 0.000$) and statistically significant for dependants and neck pain ($p \leq 0.011$). However, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix U, 44 - 47)*. The Kruskal-Wallis test suggests statistical significance for SIP mobility and communication scores (Asymp. Sig. ≤ 0.045), whilst alertness behaviour scores may be approaching significance (Asymp. Sig. = 0.052) *(see Appendix V, 38)*, and no statistical significance is found for MPQ scores.

7.4.2. Visits with the social security benefits officer

Overall in the total sample, 15.4 per cent (n = 21) report visits with the social security benefits officer. Group 1 has the highest percentage reporting visits (47.1%, n = 10), with other visits for Groups 2 - 4 (12.5%, 10.0% and 12.5%; n = 5, 4 and 2 respectively). Group 1 also reports the highest number of visits (for example 2 - 6 visits: Group 1 = 12.5%, n = 5 vs. Groups 2 and 3 both = 2.5%, n = 1), with both Group 4 patients reporting one visit. The Hastings practice has more patients reporting visits than the Lewisham practice (19.4% vs. 11.6%, n = 13 and 8 respectively), and also has a slightly higher number of visits (for example 2 - 6 visits: 8.5% vs. 2.9%, n = 5 and 2 respectively). The highest percentage of those who report visits are under 35 years of age, divorced and unemployed (34.8%, 40.1% and 37.6%; n = 8, 6 and 12 respectively). Only primary musculo-skeletal and thoracic diagnoses have reports of more than one visit (for example 2 - 6 visits: 11.7% and 10.0%, n = 5 and 1 respectively).

The highest SIP overall total, dimension and category scores are generally for 2 - 3 visits (for example overall total mean for visits: 1 = 14.85 vs. 4 - 6 = 16.12 vs. 2 - 3 = 21.06, n = 14, 3 and 4 respectively). The only exceptions are alertness behaviour and communication, for which 2 - 3 visits have the lowest scores and one visit the highest scores (for example communication mean for visits: 2 - 3 = 18.28 vs. 4 - 6 = 6.44 vs. 5.28), with no clear pattern otherwise evident for visits. The one patient with pain for less than a year and all three patients with more than 25 years of pain report no visits. Only two patients with 5 - 10 years and 15 - 25 years duration of pain and 6 - 10 or more than 10 pain sites report 4 - 6 visits. However, these two patients consistently score lowest for all MPQ total and dimension scores (for example total mean for visits: 4 - 6 = 19.72 vs. 2 - 3 = 28.40 vs. 1 = 30.46, n = 2, 3 and 7 respectively), with no clear pattern otherwise evident.

The chi-square test suggests differences for visits with the social security benefits officer may be highly statistically significant for SEG, marital status and foot pain ($p \leq 0.005$) and statistically significant for employment status, secondary diagnoses and neck pain ($p \leq 0.011$). However, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix U, 48 - 53)*. The Kruskal-Wallis test suggests statistical significance for SIP overall total, psychosocial dimension, social interaction, alertness behaviour, communication and work scores (Asymp. Sig. ≤ 0.048), whilst body care/movement and home management scores may be approaching significance for (Asymp. Sig. ≤ 0.058) *(see Appendix V, 39 - 41)*, and no statistical significance is found for MPQ scores.

7.4.3. Summary

Two of the three patients reporting visits with the social worker have no dependants and musculo-skeletal diagnoses, whilst the highest percentage are under 35 years of age, divorced and unemployed. Only musculo-skeletal and thoracic diagnoses have reports of more than one visit. The chi-square test suggests differences for visits with the social security benefits officer for SEG and marital status, and visits with the social worker for secondary diagnoses may be highly statistically significant. Statistical significance is also suggested for visits with the social security benefits officer for employment status and secondary diagnoses and visits with the social worker for dependants.

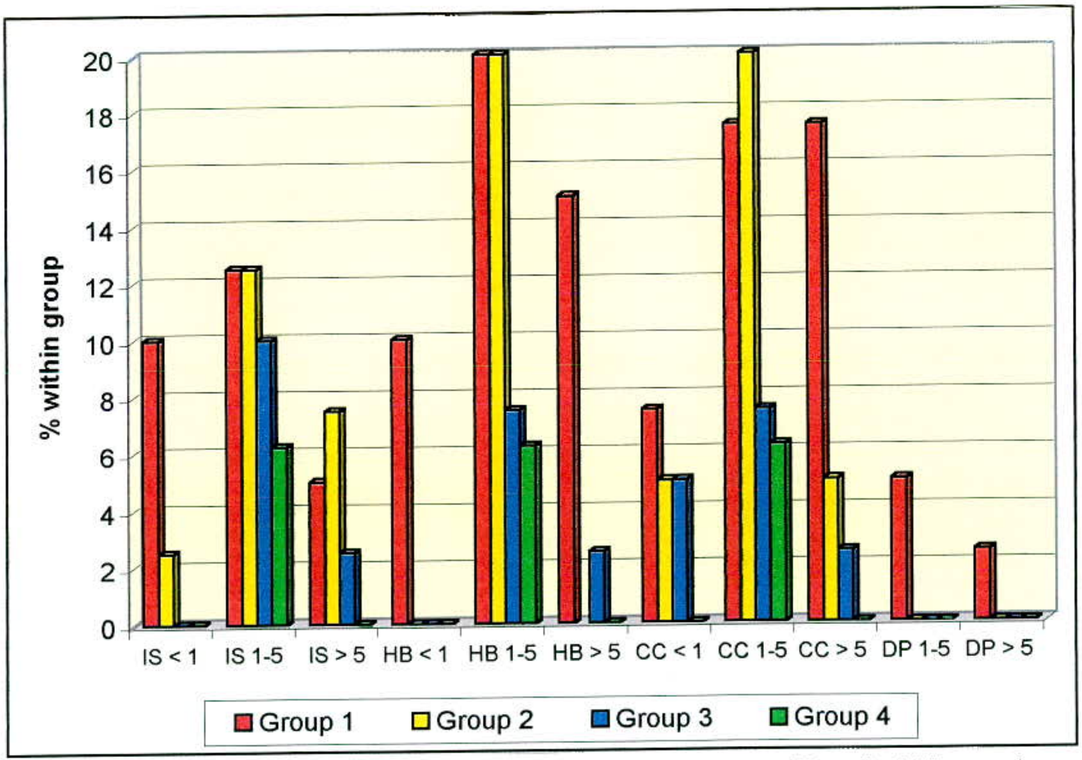
The one patient reporting 2 - 3 visits with the social worker has the highest SIP overall total, dimension and category scores for all but ambulation. Such patterns are generally found for visits with the social security benefits officer, with the exception of alertness behaviour and communication, for which 2 - 3 visits have the lowest scores and one visit the highest scores. No clear pattern is otherwise evident for visits with either the social worker or benefits officer. The Kruskal-Wallis test suggests differences for visits with the social security benefits officer may be statistically significant for overall total, psychosocial dimension, and social interaction, alertness behaviour, communication, and work scores. Statistical significance is also suggested for visits with the social worker for mobility and communication scores. Visits with the social security benefits officer for body care/movement and home management, and visits with the social worker for alertness behaviour scores may be approaching statistical significance.

Two patients with 3 - 5 or more than 10 sites of pain report visits with the social worker, whilst two patients with 6 - 10 or more than 10 pain sites report 4 - 6 visits with the social security benefits officer. The chi-square test suggests differences for visits with the social worker for pelvis/hip pain and visits with the social security benefits officer for foot pain may be highly statistically significant. Statistical significance is suggested for visits with the social worker and social security benefits officer for neck pain.

7.5. Findings from the financial benefits system in the previous year

7.5.1. Income support

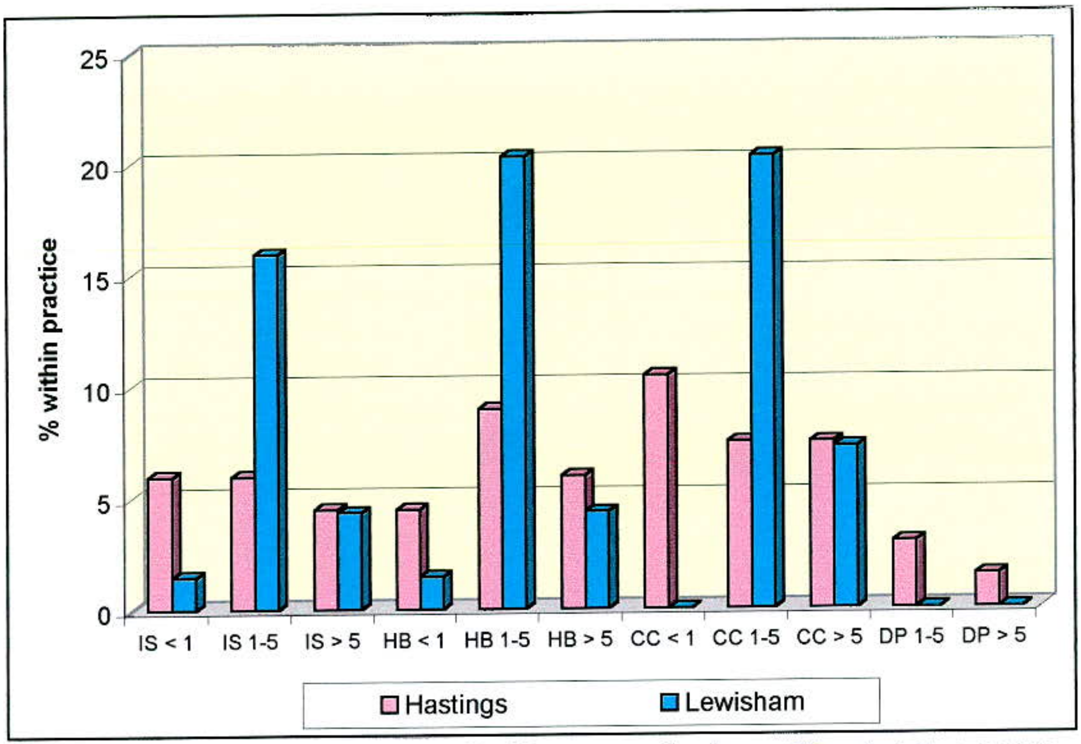
Overall in the total sample, 19.1 per cent (n = 26) report receiving income support. A similar number of Group 1 and 2 and less of Group 3 receive income support (27.5% vs. 22.5% vs. 12.5%, n = 11, 9 and 5 respectively), with one Group 4 patient *(see Figure 7.20)*.



IS = income support; HB = housing benefit; CC = community charge; DP = disability premium

Figure 7.20. Years means-tested benefits claimed: % for groups

Groups 1 and 2 also have similar patterns for the length of time income support has been received (for example: 1 - 5 years, both groups = 12.5%, n = 5; > 5 years = 5.0% vs. 7.5%, n = 2 and 3 respectively). A higher percentage in the Lewisham practice receive income support than the Hastings practice (21.7% vs. 16.4%, n = 15 and 11 respectively), with a higher percentage of the Lewisham practice receiving support for 1 - 5 years (15.9% vs. 6.0%, n = 11 and 4 respectively) *(see Figure 7.21)*.



IS = income support; HB = housing benefit; CC = community charge; DP = disability premium

Figure 7.21. Years means-tested benefits claimed: % for practices

For demographic findings, those who are divorced and unemployed have the highest percentage receiving income support (66.7% and 43.8%, n = 10 and 14 respectively). However, similar numbers for the time that income support has been received is found for other marital and employment status (for example > 5 years: divorced 20.0% vs. married 3.3%, both n = 3). All but two of those who receive income support have one or no dependants (32.2% and 17.0%, n = 9 and 15 respectively). Primary musculo-skeletal diagnoses have the greatest number receiving income support (28.0%, n = 12).

The highest SIP overall total, physical and psychosocial dimension scores are for those who have received income support for up to one year (for example overall total mean score for years: > 5 = 12.70 vs. 1 - 5 = 13.62 vs. < 1 = 16.58, n = 6, 15 and 5 respectively). However, less clear patterns are evident for category scores, with receipt of income support for 1 - 5 years and more than five years each having highest scores for three categories. Similar patterns are evident for duration and sites of pain and receipt of income support. Only two patients with 2 - 5 and 5 - 10 years pain duration and one with more than 10 sites of pain report receiving income support for more than five years. The highest MPQ total and dimension scores are consistently found for those who report receipt of income support for 1 - 5 years (for example total mean for years: < 1 = 18.29 vs. > 5 = 19.09 vs. 1 – 5 = 28.29, n = 4, 2 and 6 respectively).

The chi-square test suggests differences for receipt of income support may be highly statistically significant for marital and employment status, and shoulder pain ($p \leq 0.005$). However, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix U, 54 - 56)*. The Kruskal-Wallis test suggests statistical significance for SIP communication, home management, work and recreation/pastime category scores (Asymp. Sig. ≤ 0.037) *(see Appendix V, 42 - 43)*, but finds no statistical significance for MPQ scores.

7.5.2.Housing benefit

Overall in the total sample, 22.8 per cent (n = 31) report receiving housing benefit *(see Figure 7.20)*. Group 1 have the highest percentage (45.0%, n = 18), with other reports for Groups 2 - 4 (20.0% vs. 10.0% vs. 6.3%, n = 8, 4 and 1 respectively). The majority have received housing benefit for 1 - 5 years (64.5%, n = 20), with only Groups 1 and 4 reporting a longer period (> 5 years = 15.0% and 6.3% n = 6 and 1 respectively). A higher percentage of the Lewisham practice receive housing benefit than the Hastings practice (26.1% vs. 19.4%, n = 18 and 13 respectively), and have also received support for 1 - 5 years (20.3% vs. 9.0%, n = 14 and 6 respectively) *(see Figure 7.21)*.

For demographic profiles, those who are separated and divorced have the highest percentage receiving housing benefit (75.0% and 46.7%, n = 3 and 7 respectively). However, those who are divorced and married also have the same number receiving housing benefit for more than five years (20.0% vs. 3.3%, both n = 3). All but three in the total sample who receive housing benefit are unemployed or retired (46.9% and 28.9%, n = 15 and 13 respectively). Primary musculo-skeletal diagnoses have the highest percentage receiving housing benefit (34.2%, n = 19).

The highest SIP overall total and physical dimension scores are reported for those receiving more than five years housing benefit (for example overall total mean for years: 1 - 5 = 13.80 vs. > 1 = 19.73 vs. > 5 = 19.90, n = 20, 4 and 7 respectively). Those receiving housing benefit for up to one year, however, have the highest affective dimension scores (mean for years: 1 - 5 = 12.77 vs. > 5 = 17.23 vs. < 1 = 19.43). The highest category scores are generally found for those receiving housing benefit for more than five years (for example mobility mean for years: 1 - 5 = 10.07 vs. < 1 = 14.33 vs. > 5 = 16.07). Exceptions are ambulation, social interaction and work, for which up to one year of housing benefit has the highest scores (for example social interaction mean for years: 1 - 5 = 11.13 vs. > 5 = 12.32 vs. < 1 = 24.48).

Similar patterns are evident for duration and sites of pain and receipt of housing benefit, with receipt for more than five years reported by those with 2 - 10 years of pain (2 - 5 years = 17.6% and 5 - 10 years = 21.4%, both n = 3). The highest MPQ total and dimension scores are consistently found for those who receive housing benefit for more than five years (for example total mean for years: 1 - 5 = 25.71 vs. < 1 = 26.49 vs. > 5 = 33.22, n = 9, 4 and 6 respectively).

The chi-square test suggests differences for receipt of housing benefit may be highly statistically significant for groups, marital and employment status and SEG ($p \leq 0.003$). However, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix U, 57 - 60)*. The Kruskal-Wallis test suggests high statistical significance for SIP overall total, physical and psychosocial dimension, body care/movement, ambulation, emotional behaviour, home management and recreation/pastime scores (Asymp. Sig. ≤ 0.005) and statistical significance for mobility, sleep/rest, work and eating scores (Asymp. Sig. ≤ 0.009) *(see Appendix V, 44 - 47)*, but finds no statistical significance for MPQ scores.

7.5.3. Community charge benefit

Overall in the total sample, 26.5 per cent (n = 36) report receiving community charge benefit *(see Figure 7.20)*. Group 1 have the highest percentage (42.5%, n = 17), with other reports for Groups 2 - 4 (30.0% vs. 15.0% vs. 6.3%, n = 12, 6 and 1 respectively). The majority have received community charge benefit for 1 - 5 years (52.8%, n = 19), with more long-term benefit evident for Group 1 than Groups 2 - 4 (for example > 5 years: 17.5% vs. 5.0% vs. 2.5% vs. 0%, n = 7, 2 and 1 respectively). A similar number in the Lewisham practice and the Hastings practice receive community charge benefit (27.5% and 25.4%, n = 19 and 17 respectively) *(see Figure 7.21)*. Whilst a higher percentage of the Lewisham practice receive community charge benefit for 1 - 5 years (20.3% vs. 7.5%, n = 14 and 5 respectively), the same number in each practice have received benefit for more than five years (7.2% and 7.5%, both n = 5).

For demographic profiles, half or more of those who are widowed, divorced or separated receive community charge benefit (80.0%, 60.1% and 50.0%, n = 3, 9 and 2 respectively). However, those who are divorced and married have the same number receiving benefit for more than five years (26.7% vs. 4.3%, both n = 4). The unemployed or retired also have the highest percentage of those who receive community charge benefit

(46.9% and 35.6%, n = 15 and 16 respectively). Primary musculo-skeletal diagnoses also have the highest percentage receiving community charge benefit (41.9%, n = 18).

SIP overall total, dimension and category scores consistently increase with the length of time community charge benefit is received (for example overall total mean for years: < 1 = 7.27 vs. 1 - 5 = 13.12 vs. > 5 = 19.72). Similar patterns are evident for duration and sites of pain and receipt of benefit, with receipt for more than five years reported by those with 2 - 10 years of pain (2 - 5 years = 17.6% and 5 - 10 years = 28.6%, n = 3 and 4 respectively). MPQ total and dimension scores consistently increase with the length of time that community charge benefit is received (for example total mean for years: < 1 = 18.16 vs. 1 - 5 = 23.19 vs. > 5 = 36.90, n = 3, 8 and 7 respectively). However, those not in receipt of community charge benefit have higher scores than those receiving benefit for up to one year for total, sensory and affective dimensions (for example total mean for none = 22.90), and up to five years for the miscellaneous dimension.

The chi-square test suggests differences for receipt of community charge benefit may be highly statistically significant for marital status ($p \leq 0.002$) and statistically significant for practices and employment status ($p \leq 0.011$). However, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix U, 61 - 63)*. The Kruskal-Wallis test suggests statistical significance for SIP physical dimension, ambulation, sleep/rest, recreation/pastimes and eating scores (Asymp. Sig. ≤ 0.047) *(see Appendix V, 48 - 49)*, but finds no statistical significance for MPQ scores.

7.5.4. Disability premium

Overall in the total sample, only three Group 1 patients in the Hastings practice report receiving disability premium *(see Figures 7.20 and 7.21)*. All three patients have no dependants and primary musculo-skeletal diagnoses. Two are unemployed females in the 35 - 54 year age group, one single and one divorced who report receiving disability premium for 1 - 5 years. One is a retired, divorced male in the 55 - 64 year age group who reports receiving disability premium for more than 5 years.

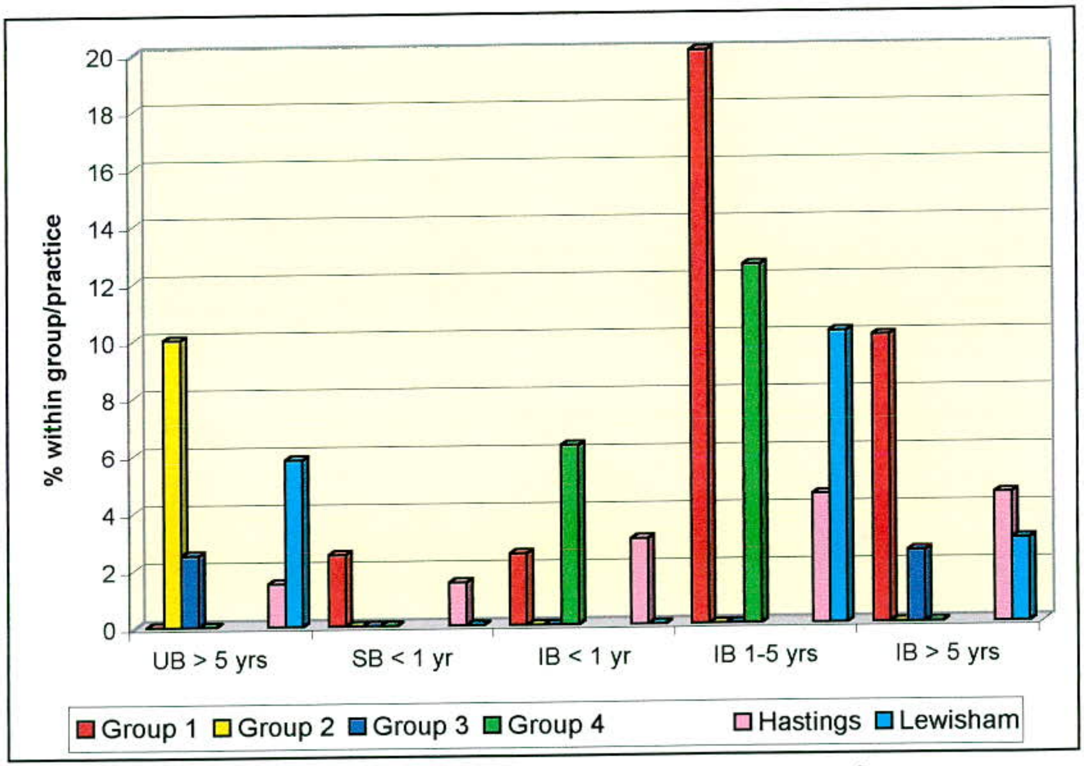
The two patients with 1 - 5 years receipt of disability premium report the highest SIP overall total, psychosocial dimension, psychosocial dimension category, and body care/movement, sleep/rest, home management, and recreation/pastimes scores (for example overall total mean: 43.76 vs. 28.18 respectively). They have 5 - 10 years and more than 25 years pain duration, and 6 - 10 and more than 10 pain sites. The patient receiving disability premium for more than five years has 5 - 10 years pain duration and more than 10 pain sites. MPQ scores are higher for those receiving disability premium for 1 - 5 years, and those not in receipt of disability premium have higher scores than the patient in receipt for more than five years (for example total mean for years: > 5 = 20.75 vs. 0 = 23.80).

Whilst the chi-square test suggests differences for receipt of disability premium may be highly statistically significant only for shoulder pain ($p = 0.001$), more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix U, 64)*. The Kruskal-Wallis test suggests high statistical significance for SIP mobility, communication and recreation/pastime scores (Asymp. Sig. ≤ 0.005) and statistical significance for overall total, physical and psychosocial dimension, body care/movement, ambulation, emotional behaviour, social interaction, alertness behaviour, sleep/rest, home management, work and eating scores (Asymp. Sig. ≤ 0.043) *(see Appendix V, 50 - 53)*, but finds no statistical significance for MPQ scores.

7.5.5. Unemployment benefit

Overall in the total sample, only 3.7 per cent (n = 5) from Groups 2 and 3 report receiving unemployment benefit for 7 - 12 months (10.0% and 2.5%, n = 4 and 1 respectively) *(see Figure 7.22)*. Four patients are in the Lewisham practice *(see Figure 7.22)*, male and unemployed, three are in the 35 - 44 year age group, two under 35 years of age, and three have one dependant. Two patients report primary thoracic diagnoses. Higher SIP scores are found for those who do not receive unemployment benefit than those who do (for example overall total mean: 9.44 vs. 0.77 respectively).

The chi-square test suggests differences for receipt of unemployment benefit may be statistically significant for age, dependants, employment status and primary diagnoses, ($p \leq 0.050$), and approaching statistical significance for SEG ($p = 0.056$). However, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix U, 65 - 69)*. The Kruskal Wallis test suggests statistical significance for SIP overall total scores, with sleep/rest scores approaching statistical significance (Asymp. Sig. = 0.053) *(see Appendix V, 54)*, but finds no statistical significance for MPQ scores.



UB = unemployment benefit; SB = sickness benefit; IB = invalidity benefit

Figure 7.22. Years contributory benefits claimed: % for groups & practices

7.5.6. Invalidity benefit

Overall in the total sample, 12.5 per cent (n = 17) report receiving invalidity benefit, with Group 1 having the highest percentage and Group 4 the next highest (32.5% vs. 18.8%, n = 13 and 3) *(see Figure 7.22)*. All but one patient in each group report receipt for more than one year. One Group 3 patient who has not visited the GP in the previous six months and is supposedly fit and well reports receipt for more than five years. Similar numbers receive invalidity benefit in the Hastings practice and the Lewisham practice (11.9% and 13.0%, n = 8 and 9 respectively), with slightly more of the Lewisham practice in receipt for longer (for example: 1 - 5 years = 4.5% vs. 10.1%, n = 3 and 7 respectively).

A higher percentage of males claim invalidity benefit than females (for example 1 - > 5 years: 19.7% vs. 4.0%, n = 12 and 3 respectively), with all claimants being unemployed or retired (25.0% vs. 20.0%, n = 8 and 9 respectively). The majority also have no dependants (dependants: none = 15.8% vs. 1 = 7.2% vs. 3 = 20.0% vs. 2 and 4 = 0%, n = 14, 2, 1 and 0 respectively). Musculo-skeletal and cardio-vascular diagnoses have the highest and second highest reports for receipt of invalidity benefit (for example 1° diagnoses: 32.5% and 18.2%, n = 14 and 2 respectively).

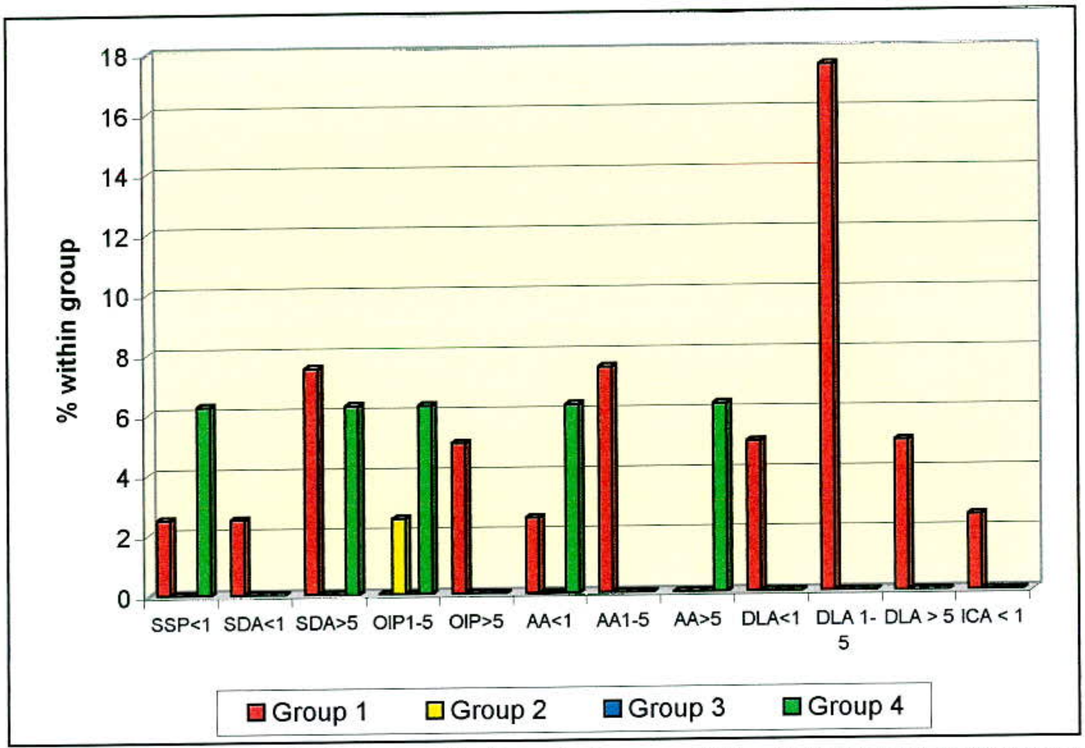
The highest SIP overall total and dimension scores are for those receiving invalidity benefit for 6 - 12 months (for example overall total mean: > 5 years = 20.69 vs. 1 - 5 years = 28.34 vs. 6 - 12 months = 30. 45, n = 5, 10 and 2 respectively). Clear patterns are not evident for category scores, with more than five years receipt only having the highest scores for ambulation. Those receiving invalidity benefit report diverse duration of pain, and number of pain sites (1 - 25 years and 1 - >10 sites). The highest MPQ total, affective and miscellaneous dimension scores are for those in receipt for 1 - 5 years (for example total mean: > 5 years = 19.95 vs. 6 - 12 months = 25.07 vs. 28.28, n = 4, 2 and 10 respectively), with the highest sensory dimension scores for 6 - 12 months. Those Group 1 and 4 patients who do not receive invalidity benefit (n = 40) consistently have higher MPQ scores than those in receipt for more than five years (for example sensory dimension mean: 11.53 vs. 12.49 respectively).

The chi-square test suggests differences for receipt of invalidity benefit may be highly statistically significant only for groups ($p = 0.001$), and statistically significant for gender, employment status, and primary and secondary diagnoses, ($p \leq 0.011$). However, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix U, 70 - 74)*. The Kruskal-Wallis test suggests high statistical significance for all SIP overall total, dimension and category scores ($p \leq 0.004$) with the exception of eating scores *(see Appendix V, 55 - 58)*, but finds no statistical significance for MPQ scores.

7.5.7. Severe disablement allowance

Overall in the total sample, only 3.7 per cent (n = 5) from Groups 1 and 4 report receiving severe disablement allowance (10.0% and 6.3%, n = 4 and 1 respectively) *(see Figure 7.23)*. Four patients report receipt for more than five years, with one Group 1 patient in receipt for 6 - 12 months. Similar patterns are found the Hastings practice and the Lewisham practice (4.5% and 2.9%, n = 3 and 2 respectively) *(see Figure 7.24)*. Four patients receiving severe disablement allowance are female and one male, with three being married, one single, one separated and none having dependants. A broad age range from under 35 years to over 64 years is evident. Four report being unemployed and having no SOC, with the other patient being retired, whilst four report primary musculo-skeletal diagnoses, and one a secondary musculo-skeletal diagnosis.

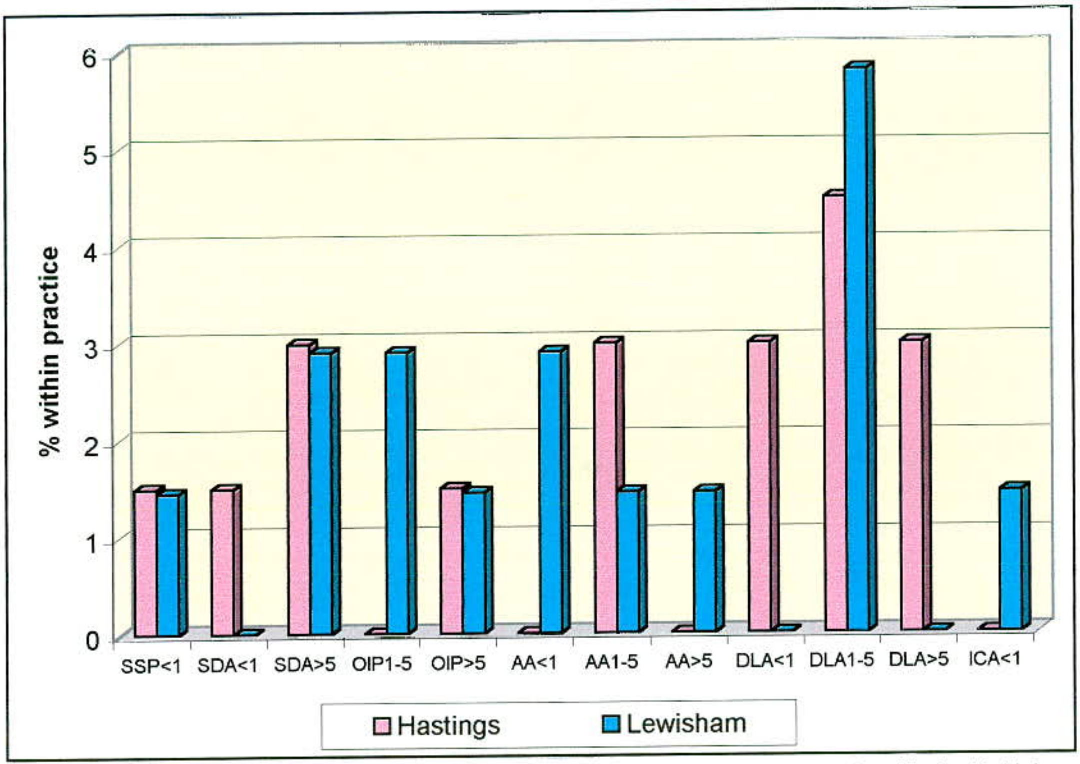
SIP overall total, dimension and category scores are consistently higher for the patient in receipt of severe disablement allowance for 6 - 12 months except for social interaction (for example overall total mean: > 5 years = 19.76 vs. 6 - 12 months = 37.83). All those receiving severe disablement allowance report more than five years pain duration and two or more sites of pain. More than 25 years of pain and 10 sites of pain are reported once, with two reports of 15 - 25 years of pain and 6 - 10 sites of pain. The highest MPQ scores are consistently for 6 - 12 months receipt, although those not receiving the allowance have higher scores than those in receipt for more than five years (for example total mean: > 5 years = 18.10 vs. none = 24.79 vs. 6 - 12 months = 32.03).



SSP = statutory sick pay; SDA = severe disablement allowance; OIP = occupational/industrial injury pension; AA = attendance allowance; DLA = disability living allowance; ICA = invalid care allowance

Figure 7.23. Years non-contributory benefits claimed: % for groups

The chi-square test suggests differences for receipt of severe disablement allowance may be highly statistically significant for SEG and foot pain ($p \leq 0.004$) and statistically significant for SOC ($p = 0.048$). However, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix U, 75 - 77)*. The Kruskal-Wallis test suggests high statistical significance for SIP mobility and ambulation scores ($p \leq 0.003$) and statistical significance for overall total, physical dimension, body care/movement, communication, home management, work and recreation/pastime scores ($p \leq 0.028$) *(see Appendix V, 59 - 62)*, but finds no statistical significance for MPQ scores.



SSP = statutory sick pay; SDA = severe disablement allowance; OIP = occupational/industrial injury pension; AA = attendance allowance; DLA = disability living allowance; ICA = invalid care allowance

Figure 7.24. Years non-contributory benefits claimed: % within practices

7.5.8. Occupational/industrial injury pension

Overall in the total sample, only three per cent (n = 4) receive occupational/industrial injury pension. Two Group 1 patients report receipt for more than five years, whilst one patient in each of Groups 2 and 4 report receipt for 1 - 5 years. Three patients are in the Lewisham practice and one in the Hastings practice *(see Figures 7.23 and 7.24)*. Three patients are male and one female, with two being married, one single, one divorced, and none having dependants. A broad age range is evident (< 35 years - > 64 years), with three being retired and one unemployed. Primary musculo-skeletal diagnoses and cardio-vascular diagnoses are both reported by two patients, with secondary musculo-skeletal, neurological or endocrine diagnoses each being reported once.

SIP overall total, dimension and category scores are consistently higher for the two patients reporting receipt of occupational/industrial injury pension for more than five years (for example overall total mean: 1 - 5 years = 11.59 vs. > 5 years = 49.41) with the exception of eating. All three chronic pain patients in receipt of the pension have more than five years duration of pain, with two reporting 10 - 15 years or 15 - 25 years of pain. All three have two or more sites of pain, with two patients reporting 6 - 10 sites or more than 10 sites of pain. The patient receiving occupational/industrial injury pension for more than five years consistently has the highest MPQ total and dimension scores. However, those not receiving the pension consistently have higher scores than those in receipt for 1 - 5 years (for example total mean: 1 - 5 years = 5.80 vs. none = 24.10 vs. > 5 years = 42.90).

The chi-square test suggests differences for receipt of occupational/ industrial injury pension may be highly statistically significant for secondary diagnoses, neck and pelvis/hip pain ($p \leq 0.003$). However more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix U, 78 - 80)*. The Kruskal-Wallis test suggests high statistical significance for SIP communication scores ($p = 0.002$) and statistical significance for overall total, physical dimension, body care/movement, mobility, social interaction, alertness behaviour, home management, work and recreation/pastime scores ($p \leq 0.046$). Ambulation scores may be approaching statistical significance ($p = 0.056$) *(see Appendix V, 63 - 66)*. The Kruskal-Wallis test also suggests statistical significance for MPQ miscellaneous dimension scores *(see Appendix V, 67)*.

7.5.9. Disability living and attendance allowances

Overall in the total sample, 8.1 per cent (n = 11) receive disability living allowance, all of whom are from Group 1 (27.5%) *(see Figure 7.23)*. Whilst the same number report receipt for up to one year and more than five years (both = 5.0%, n = 2), the greatest number report receipt for 1 - 5 years (17.5%, n = 7). Overall in the total sample, six patients (4.4%) from Groups 1 and 4 receive attendance allowance (10.0% and 12.6%, n = 4 and 2 respectively) *(see Figure 7.23)*. One patient in each group reports receipt for up to a year, with three Group 1 and one Group 4 patient reporting receipt for 1 - 5 years and more than five years respectively. The Hastings practice has more patients receiving disability allowance than the Lewisham practice (11.5% vs. 5.8%, n = 7 and 4 respectively). However, the Lewisham practice has more patients receiving attendance allowance (5.7% vs. 3.0%, n = 4 and 2 respectively) *(see Figure 7.24)*.

A broad age range is evident for receipt of disability living allowance, for which eligibility is up to 65 years of age (< 35 - 64 years). The highest percentage in receipt report no SOC (28.6%, n = 4), with all others being unemployed or retired (21.9% vs. 8.8%, n = 7 and 4 respectively). A higher percentage of males receive disability living allowance than females (13.1% vs. 4.0%, n = 8 and 3), with the pattern reversed for attendance allowance (1.6% vs. 6.7%, n = 1 and 5 respectively). The greatest number receiving both allowances are married (7.6% and 4.4%, n = 7 and 4 respectively), and all but one patient receiving disability living allowance have no dependants. All those receiving disability living allowance and four receiving attendance allowance report primary musculo-skeletal diagnoses, whilst three patients receiving attendance allowance also report secondary musculo-skeletal diagnoses.

The highest SIP overall total, dimension and category scores are generally found for those receiving disability living allowance for up to one year (for example overall total mean for years: > 5 = 17.57 vs. 1 - 5 = 27.71 vs. ≤ 1 = 39.00, n = 2, 7 and 2 respectively). The only exceptions are social interaction, for which 1 - 5 years receipt has the highest scores, and work which has the same scores for up to one year and 1 - 5 years (both = 70.10). Different patterns are evident for attendance allowance, with the highest overall total, dimension and category scores generally found for 1 - 5 years receipt (for example overall total mean for years: > 5 = 17.42 vs. ≤

1 = 26.96 vs. 1 - 5 = 42.91, n = 1, 2 and 3 respectively). The only exceptions are emotional behaviour and eating, for which receipt for up to one year has the highest scores (for example emotional behaviour mean for years: > 5 = 29.50 vs. 1 - 5 = 43.50 vs. ≤ 1 = 45.74).

A broad range of pain duration and number of pain sites is evident for receipt of disability living allowance (1 - 25 years, 1 - > 10 sites). A higher percentage of those with more sites of pain also report receipt (6 - 10 sites = 36.4%, > 10 sites = 60.0%, n = 4 and 3 respectively). Only one patient receiving attendance allowance reports less than 10 years pain duration, with two patients reporting more than 25 years pain. The greatest number of patients receiving attendance allowance report 6 - 10 sites of pain (36.4%, n = 4).

The highest MPQ total and dimension scores are consistently for those receiving disability living allowance for up to a year, with those not in receipt having the second highest total and sensory dimension scores. The lowest scores are consistently for more than five years receipt (for example total mean for years: > 5 = 17.89 vs. 1 – 5 = 23.66 vs. none = 24.53 vs. ≤ 1 = 31.71, n = 2, 7, 45 and 2 respectively). The highest MPQ total, sensory and miscellaneous dimension scores are for those receiving attendance allowance for 1 - 5 years, with receipt for up to a year having the highest affective dimension scores. Those not in receipt also have the second highest total and miscellaneous dimension scores (for example total mean for years: ≤ 1 = 18.28 vs. > 5 = 23.80 vs. none = 24.14 vs. 1 - 5 = 33.80, n = 2, 1, 50 and 2 respectively).

The chi-square test suggests differences for receipt of disability living allowance may be highly statistically significant for groups, SEG and shoulder pain ($p \leq 0.004$) and statistically significant for employment and marital status ($p \leq 0.044$). Attendance allowance may be highly statistically significant for duration of pain and total number of pain sites ($p \leq 0.005$), statistically significant for groups and secondary diagnoses, and approaching statistical significance for leg pain (p = 0.057). However, more large scale studies would be required to confirm statistical significance due to some cells having less than the expected count *(see Appendix U, 81 - 90)*.

The Kruskal-Wallis test suggests differences for receipt of disability living allowance may be highly statistically significant for overall total, physical and psychosocial dimension, and all category scores ($p \leq 0.003$) except for emotional behaviour, which may be statistically significant ($p \leq 0.017$) and eating. Attendance allowance may be highly statistically significant for overall total, physical dimension, all physical dimension categories, social interaction, alertness behaviour, communication, home management and recreation/pastime scores ($p \leq 0.004$), and statistically significant for psychosocial dimension, emotional behaviour, sleep/rest and eating scores ($p \leq 0.037$) *(see Appendix V, 68 - 75)*. No statistical significance is found for MPQ scores.

7.5.10 Summary

All patients receiving disability living allowance and the highest percentage in receipt of housing benefit and invalidity benefit are from Group 1. All those receiving attendance allowance are from Groups 1 and 4, with Group 4 also having the next highest percentage for those in receipt of invalidity benefit *(see Table 7.2, page 254)*. The majority has received housing benefit and disability living allowance for 1 - 5 years, with only Groups 1 and 4 reporting receipt of both benefits for a longer period. All but one patient in each group report receipt of invalidity benefit for more than one year, and one Group 3 patient reports receipt for more than five years. The chi-square test suggests differences for receipt of housing benefit, invalidity benefit and disability living allowance may be highly statistically significant for groups, and attendance allowance may be statistically significant for groups.

A similar number in both practices receive community charge benefit, with the same number in each practice in receipt of the benefit for more than five years. However, a higher percentage of the Lewisham practice reports receipt for 1 - 5 years than the Hastings practice. The chi-square test suggests differences for receipt of community charge benefit may be the only statistically significant financial benefit variable for practices.

A higher percentage of males receive invalidity benefit than females, whilst all in receipt of unemployment benefit are under 45 years. The highest percentage receiving income support and housing benefit are respectively divorced, and divorced or separated. Half or more of those who are widowed, divorced or separated receive community charge benefit, whilst the greatest number receiving disability living allowance are married. The majority receiving unemployment benefit and income support has one dependant, and one dependant or no dependants respectively. All those receiving invalidity benefit and the highest percentage in receipt of housing benefit, community charge benefit and disability living allowance are unemployed or retired, whilst the unemployed also have the highest percentage receiving income support, unemployment benefit and severe disablement allowance. The highest percentage of those receiving severe disablement allowance and disability living allowance report no SOC.

The chi-square test suggests differences for receipt of housing benefit for marital status, SEG and employment status, income support for marital and employment status, disability living allowance for SEG, community charge benefit for marital status, and severe disablement allowance for SEG may be highly statistically significant. Receipt of unemployment benefit for employment status, dependants and age, disability living allowance for employment and marital status, and invalidity benefit for gender and employment status may be statistically significant. Receipt of community charge benefit for employment status and severe disablement allowance for SOC may also be statistically significant, and unemployment benefit may be approaching statistical significance for SEG.

Primary musculo-skeletal and cardio-vascular diagnoses have the most reports for invalidity benefit, whilst unemployment benefit has two reports of thoracic diagnoses. Secondary musculo-skeletal diagnoses are mostly reported for receipt of attendance allowance and occupational/industrial injury pension. The chi-square test suggests differences for receipt of unemployment benefit and invalidity benefit may be statistically significant for primary diagnoses. High statistical significance is suggested for occupational/industrial injury pension and invalidity benefit for secondary diagnoses, whilst attendance allowance may be statistically significant.

The highest SIP overall total, physical and psychosocial dimension scores are for up to one year receipt of income support, disability living allowance, invalidity benefit and severe disablement allowance, 1 - 5 years receipt of attendance allowance and more than five years of community charge benefit and occupational/industrial injury pension. More than five years receipt of housing benefit has the highest overall total and physical dimension scores, whilst the highest affective dimension scores are for up to one year. The two patients with 1 - 5 years receipt of disability premium report the highest overall total and psychosocial dimension scores.

The Kruskal-Wallis test suggests differences for receipt of housing benefit, invalidity benefit and disability living allowance for overall total, physical and psychosocial dimension, and attendance allowance for overall total and physical dimension scores may be highly statistically significant. Statistical significance is suggested for receipt of disability premium for overall total, physical and psychosocial dimension, severe disablement allowance and occupational/industrial injury pension for overall total and physical dimension, community charge benefit for physical dimension, and attendance allowance for psychosocial dimension scores.

The highest physical, psychosocial and independent category scores are for receipt of severe disablement allowance and disability living allowance for up to one year except for social interaction, and social interaction and work respectively. Receipt of attendance allowance for 1 - 5 years has the highest category scores except for emotional behaviour and eating. Community charge benefit, occupational/industrial injury pension except eating, and housing benefit except ambulation, social interaction and work is highest for more than five years receipt. No clear pattern is otherwise evident for category scores and benefits.

The Kruskal-Wallis test suggests differences for receipt of invalidity benefit may be highly statistically significant for all category scores except eating. High statistical significance is suggested for attendance and disability living allowances for all physical dimension category scores, housing benefit for body care/movement and ambulation, severe disablement allowance for mobility and ambulation, and disability premium for mobility scores. Statistical significance is suggested for disability premium for body care/movement and ambulation, occupational/industrial injury pension for body care/movement and mobility scores, housing benefit for mobility, severe disablement allowance for body care/movement, and community charge benefit for ambulation scores. Occupational/industrial injury pension may be approaching statistical significance for ambulation scores.

For psychosocial dimension categories, high statistical significance is suggested for attendance and disability living allowances for social interaction, alertness behaviour and communication, disability premium and occupational/industrial injury pension for communication, and housing benefit for emotional behaviour scores. Statistical significant is suggested for disability premium for emotional behaviour, social interaction and alertness behaviour, occupational/industrial injury pension for social interaction and alertness behaviour category, attendance and disability living allowances for emotional behaviour, and severe disablement allowance and income support for communication scores.

For independent categories, high statistical significance is suggested for disability living allowance for sleep/rest, home management, work and recreation/pastimes, attendance allowance and housing benefit for home management and recreation/pastimes, and disability premium for recreation/pastimes scores. Disability premium for sleep/rest, home management, work and eating, and occupational/industrial injury pension, severe disablement allowance and income support for home management, work and recreation/pastimes scores may be statistically significant. Housing benefit for sleep/rest, work and eating, community charge benefit for sleep/rest, recreation/pastimes and eating, and attendance allowance for sleep/rest and eating scores may also be statistically significant.

Receipt of income support for more than five years is found for 2 - 5 and 5 - 10 years pain duration, with more than five years receipt of disability premium being reported once for 5 - 10 years of pain. Only one patient receiving attendance allowance for up to one year reports less than 10 years pain duration, whilst more than 25 years of pain is reported for 1 - 5 and more than five years receipt. Receipt of disability premium for 1 - 5 years is reported for 5 - 10 years and more than 25 years pain duration.

Receipt of income support and disability premium for more than five years is found for more than 10 sites of pain, and 6 - 10 and more than 10 pain sites respectively. All those receiving severe disablement allowance and occupational/industrial injury pension have two or more sites of pain, with reports of both 6 - 10 and more than 10 pain sites. The greatest number receiving attendance allowance report 6 - 10 pain sites. Although there is a broad range for the number of pain sites and receipt of disability living allowance, a higher percentage with more sites of pain report receipt. Receipt of occupational/industrial injury pension for more than five years consistently has the highest MPQ scores, whilst those not in receipt have higher scores than those in receipt of the pension for 1 - 5 years.

The chi-square test suggests differences for receipt of attendance allowance for pain duration and number of sites, occupational/industrial injury pension for neck and pelvis/hip pain, income support, disability premium and disability living allowance for shoulder pain, and severe disablement allowance for feet pain may be highly statistically significant. Attendance allowance may be approaching statistical significance for leg pain. The Kruskal-Wallis test suggests only differences for receipt of occupational/industrial injury pension may be statistically significant only for the MPQ miscellaneous dimension.

7.6. Summary of findings from the Resources Questionnaire

Findings from the Resources Questionnaire provide description and further insight into the utilisation of health care, social care and financial benefit resources, which are utilised by general practice patients in the community. *Table 7.1* provides a summary of those resources, which have not been included in this chapter for analysis. This lack of inclusion may be attributed to either too few patients utilising the resource (n < 2), or the population who utilise the resource comprising those not eligible to take part in the study because of exclusion criteria such as mental impairment.

Category of resource	**Resource descriptor**	**Comments**
Primary health care	Health visitor	N = 1 from Lewisham Group 2, < 1 yr. old baby
Social care	Residential care	N = 3 from Hastings excluded due to mental impairment
	Social services	N = 2, 1 from each practice / Groups 1 & 4
	Voluntary agencies	N = 2 from Group 2 1 from each practice
Financial benefits	Severe disability premium	No reports of receipt
	Sickness benefit	N = 1 from Hastings Group 1 *(see Table 7....)*
	Statutory sick pay	N = 2, 1 from each practice / Groups 1 & 4 *(see Table 7....)*
	Invalid care allowance	N = 1 from Lewisham Group 1 *(see Table 7....)*

Figure 7.1. Resources not included in the data analysis of Chapter 7

These findings particularly provide further insight into the similarities and differences between the four patient groups, with the pattern generally that of high utilisation for those with chronic pain compared to other 'non pain' patients. A summary of resource utilisation for Groups 1 - 4 is provided in *Figure 7.2.* Findings of the Resources Questionnaire develop the description of the multi-dimensional impact that chronic pain has on patients in the community, with evidence complementing that obtained from the Demographic Front Sheet, MPQ and SIP. However, as with the findings from the other questionnaires, these findings also support for the need for further more large-scale research in relation to the impact of chronic pain, for all dimensions of lifestyle and resource utilisation in the community. Taken together, the data described supports and informs the proposed model of primary/secondary care described in Chapter 8.

Resource	Group 1	Group 2	Group 3	Group 4
Visits to GP *	95.0% (n=38)	100% (n=40)	32.5% (n=13)	87.5% (n=14)
GP home visits	17.5% (n=7)	17.5% (n=7)	0%	12.5% (n=2)
Practice nurse *	67.5% (n=27)	77.5% (n=31)	22.5% (n=9)	75.0% (n=12)
District nurse	7.5% (n=3)	0%	0%	0%
Health visitor	0%	0%	0%	6.3% (n=1)
Physio / OT	30.0% (n=12)	5.0% (n=2)	2.5% (n=1)	12.5% (n=2)
Other therapy **	7.5% (n=3)	7.5% (n=3)	2.5% (n=1)	18.8% (n=3)
Any reg. med. *	100% (n=40)	72.5% (n=29)	15.0% (n=6)	62.5% (n=10)
Analgesic med *	100% (n=40)	2.5% (n=1)	0%	31.3% (n=5)
Outpatients *	62.5% (n=25)	20.0% (n=8)	15.0% (n=6)	31.3% (n=5)
A & E	22.5% (n=9)	17.5% (n=7)	17.5% (n=7)	12.5% (n=2)
Inpt admission**	27.5% (n=11)	10.0% (n=4)	0%	18.8% (n=3)
Pain clinic	7.5% (n=3)	0%	0%	6.3% (n=1)
Social worker	5.0% (n=2)	2.5% (n=1)	0%	0%
Social services	2.5% (n=1)	0%	0%	6.3% (n=1)
Benefits officer	25.0% (n=10)	12.5% (n=5)	10.0% (n=4)	12.5% (n=2)
Vol. agency	0%	5.0% (n=2)	0%	0%
Income support	27.5% (n=11)	22.5% (n=9)	12.5% (n=5)	6.3% (n=1)
Housing ben. *	45.0% (n=18)	20.0% (n=8)	10.0% (n=4)	6.3% (n=1)
Com ch/ge ben.	42.5% (n=13)	30.0% (n=12)	15.0% (n=6)	6.3% (n=1)
Disability prem.	7.5% (n=3)	0%	0%	0%
Unemployment	0%	10.0% (n=4)	2.5% (n=1)	0%
Sickness ben.	2.5% (n=1)	0%	0%	0%
Invalidity ben. *	32.5% (n=13)	0%	2.5% (n=1)	18.8% (n=3)
Stat. sick pay	2.5% (n=1)	0%	0%	6.3% (n=1)
Sev dis/ment all	10.0% (n=4)	0%	0%	6.3% (n=1)
Occ/ind injury	5.0% (n=2)	2.5% (n=1)	0%	6.3% (n=1)
Dis. living all. *	27.5% (n=11)	0%	0%	0%
Attendance all**	10.0% (n=4)	0%	0%	6.3% (n=1)
Invalid care all.	2.5% (n=1)	0%	0%	0%

* Chi-square test suggests high statistical significance ($p < 0.005$)

** Chi-square test suggests statistical significance ($p < 0.05$)

Figure 7.2. Summary of the Resources Questionnaire for Groups 1 - 4

8. IMPLICATIONS FOR MODELS OF CARE

8.1. Introduction

Looking at the findings from this study, it is evident that there are clear implications for models of care provided in the community. As highlighted throughout Chapters 4 - 7, this was a small exploratory study, but the data analysis does indicate that statistical significance may be achieved for several variables with a larger sample size. Key issues have implications for chronic pain patients, health/social care professionals and society, and there are potential developments for the care of chronic pain patients in the community. Drawing together key findings and implications, a model of primary/secondary care for chronic pain patients in the community can be proposed. The following framework is therefore used to present key findings, implications of these findings, and development of a proposed model of care.

8.2. Chronic pain profiles in the community
8.3. Impact of chronic pain on lifestyle
8.4. Impact of chronic pain on health and social care services
8.5. Impact of chronic pain on financial resources
8.6. Proposed model of primary/secondary care for chronic pain

8.2. Chronic pain profiles in the community

There is evidence of ambivalence surrounding pain prevalence, both overall and in relation to sub-definitions (Von Korff et al 1992, Birse and Lander 1998, Verhaak et al 1998), with the majority of studies focusing on unique sample groups such as specific diagnoses or pain clinic patients. Although Crombie (1993) suggests pain prevalence studies in general practice should provide a better indication of the magnitude of pain as a public health problem, the potential for underestimation of chronic pain in general practice is supported in this study. For example, 16 previously unrecognised chronic pain patients from Groups 2 and 3 confirm at interview that they have chronic pain. Although a relatively small scale study, these 16 patients cannot be ignored, and extrapolate to a potential underestimation of 11.8% for chronic pain of three or more months duration in general practice. This was an unexpected finding, and supports the need for further research into pain prevalence in general practice.

The definition utilised in this study to describe the prevalence of chronic pain as opposed to other types of pain, is that of the International Association for the Study of Pain (IASP 1986). The findings from this study support the literature suggesting that different or unclear definitions of pain duration contribute towards ambiguity in reported pain prevalence rates (Verhaak et al 1998). It also suggests that other variables such as pain-related disability and days in pain rather than overall duration may be more meaningful than pain duration (Von Korff et al 1993, Miedema et al 1998). The findings also highlight the importance of assessing pain duration between different chronic pain sub-groups themselves. Approximately two thirds of Group 1, for example, report 2 - 10 years, and one third more than 10 years pain duration. Whilst Group 4 generally report less duration of pain, importantly a quarter report more than 15 years pain duration, but would not have been identified through general practice databases.

As was evident in this study, key reasons for such underestimation of chronic pain prevalence include inadequacy of general practice database software facilities, a lack of processes to screen chronic pain, and little recognition of chronic pain in education and training programmes for community health/social care professionals. The only method of identifying chronic pain patients through general practice databases, for example, is through the identification of those receiving repeat analgesic prescriptions. This study confirms that this excludes all chronic pain patients who do not have repeat analgesic prescriptions from their GP, and those who visit other practitioners or try to manage their pain without professional advice.

The influence that different population samples may have on interpretation of data is evident in the literature, with authors such as Bassols et al

(1999) advocating caution in extrapolating data to other societies and groups. The two general practices sampled in this study appear to have few significant differences and the generality of pain in terms of geographical situation is evident. This supports suggestions of variation in consultation rates to GPs rather than in prevalence, and the potential influence of available local services on presentation rates (Bowsher et al 1991, Davies et al 1992).

This study arose from a paucity of research based within general practice, which could provide important data to inform public health agendas. Such research would require clear definitions of chronic pain, inclusion of all diagnoses, and database systems that would more readily identify the chronic pain population. A larger scale study is therefore required to confirm or refute the findings of this study that has implications for the public health agenda and provision of services for chronic pain patients in the community.

There is evidence about the influence of demographic characteristics such as gender, age, family, education, and occupational status in relation to chronic pain (Walsh et al 1992, Unrah 1996, Brattberg et al 1996, Bassols et al 1999). Several studies, for example, suggest that women consistently report a greater number of pain symptoms than men (Crook et al 1984, Magni et al 1990, Chrubasik et al 1998, Gureje et al 1998). However, Unrah (1996) highlights the potential limitations of such studies, and authors such as Bassols et al (1999) report that men report more symptoms for specific disorders such as cardiovascular disease. The nature of this study was such that it was difficult to focus on gender, however, differences are found between the two pain groups, with Group 4 comprising a higher than average percentage of females, a finding that is not reflected in Group 1.

There are reports of different patterns in the relationship between age and chronic pain (Deyo and Tsui-Wu 1987a, Brattberg et al 1989 and 1996, Magni et al 1990, Birse and Landers 1998). In this study some differences may be explained by purposive sampling criteria and socio-biological factors, however other differences may not. Group 4, for example, has a higher percentage of younger chronic pain patients than Group 1. All those over 70 years are also excluded from this study because of the potential problems that increasing multiple pathology can have on evaluating cause and effect. Such problems may contribute towards the lack of clarity in previous research in relation to patterns of age and pain in older chronic pain patients and support the need for more focused, age-related pain research in general practice populations.

There has been extensive research about the complex dynamics between significant others and chronic pain patients, with evidence of debate about the influences of familial reactions, marital satisfaction levels and familial role models (Feuerstein et al 1985, Rowat and Knafl 1985, Koutantji et al 1998, Affleck et al 1999). This study again finds differences between chronic pain sub-groups, with Groups 3 and 4 having the highest percentage of those who are married, and Groups 1 and 2 the highest percentage who are divorced. Chronic pain does, however, appear to impact on marital status, with a higher percentage of Group 1 patients reporting impact than Group 4. The number and age of dependants is also suggested as statistically significant for groups, with Group 1 chronic pain patients having the lowest number of dependants of the four groups.

Employment status for groups is suggested to be highly statistically significant in this study, with a higher percentage of unemployed or retired Group 1 chronic pain patients compared to the other groups, including Group 4. The findings suggest that chronic pain does appear to impact on employment status, with a higher percentage of Group 1 patients than Group 4 reporting impact. Generally, previous research suggests that chronic pain is more prevalent in those from lower social class groups with lower educational attainment (Deyo and Tsui-Wu 1987a, Walsh et al 1992 and Bassols et al 1999). However, authors such as Magni et al (1990) and

Rekola et al (1993) also highlight that occupation appears to influence prevalence of specific symptoms such as musculo-skeletal pain.

Differences are found across the four groups in this study for SOC, for example, personal/protective services are highest for Group 1, whilst clerical/secretarial occupations are highest for Group 2. Group 4 chronic pain patients also report a more diverse range of occupations overall. Although clerical/secretarial occupations are most common for both practices, there is evidence that SOC and SEG may be statistically significant for practices. A higher percentage of the Hastings practice, for example, report no occupation, professional, and associate professional/technical occupations, whilst the Lewisham practice report a higher percentage of craft/related occupations and other elementary occupations such as unskilled labour.

Diagnostic profiles for the four groups in this study can to some extent be explained by purposive sampling criteria. The majority of Group 3, for example, report no primary diagnosis, whilst Group 2 identify a range of diagnoses. Evidence from the literature (Crook et al 1984 and Bowsher et al 1991) finds that patients with pain are most frequently associated with musculo-skeletal, headache and abdominal diagnoses, and musculo-skeletal and circulatory diagnoses are most closely associated with severe pain in disabled adults (Astin et al 1996). Although a range of diagnoses are evident for both groups of pain patients, the majority of Group 1 and nearly a third of Group 4 have primary musculo-skeletal diagnoses. Group 4 also has the highest percentage reporting secondary diagnoses, with musculo-skeletal diagnoses again being the most common, whilst Group 1 has a range of secondary diagnoses.

Andersson et al (1993) point out that despite methodological differences such as population source, certain common characteristics for patients with pain have been identified. The most frequently reported problems, for example, are back, joint and extremity pains (Crook et al 1984, Gureje et al 1998, Bassols et al 1999). This study supports such findings with lower back, legs, pelvis/hips and hands/feet being the most commonly reported pain sites. However, the need to understand how demographic and diagnostic variables may influence patterns of reported pain sites is also confirmed in this study. Comparing sites of pain and age, for example, the highest percentage with neck pain are 45 - 54 years, whilst the highest percentage with low back, hand, leg and pelvis/hip pain are 55 - 64 years.

It is essential to identify the anatomical distribution and extent of pain sites (Andersson et al 1996, Hagen et al 1997, Hunt et al 1999). In this study the importance of ascertaining the number and priority of pain sites is suggested to be potentially statistically significant, with differences found between chronic pain sub-groups. The number of pain sites for Groups 1 and 4 cover a broad range, however, the majority of Group 4 report one site of pain, whilst the majority of Group 1 report more than one site. Group 1 also has a higher percentage with more than one primary site of pain and secondary sites of pain, and is the only group reporting any other additional sites of pain. Primary sites of pain differ, with most commonly reported sites being lower back and legs for Group 1 and pelvis/hips for Group 4. Although both groups report the most common secondary site as legs, Group 4 reports this equally with shoulder, hands and feet.

The potential influence that different patterns of pain over time may have on chronic pain presentation and outcome is widely debated (Von Korff et al 1993, Chrubasik et al 1998, Miedema et al 1998). The importance of assessing such patterns is supported in this study, with statistical significance suggested for differences between the chronic pain sub-groups for some patterns. Group 1, for example, reports greater worst and least ever pain intensity levels than Group 4 and uses the descriptor 'continuous' most frequently. A higher percentage of Group 1 also describe their pain as 'steady' and 'constant', whilst Group 4 most frequently describe pain as 'intermittent'.

This study provides further insight into differences between groups of patients who present to their GP with a broad range of diagnoses, with or without pain. Although demographic differences are evident between both groups and practices, the generality of pain in terms of variables such as gender, age, family, occupation and diagnosis is highlighted. Whilst some similar characteristics are found between the two pain groups, differences which may contribute towards further understanding of chronic pain sub-groups have also been identified. Some differences are suggested to be highly statistically significant for MPQ total descriptor scores and sensory, affective and miscellaneous dimension scores for Groups 1 and 4.

Studies within the general practice setting would therefore be helpful in further describing demographic and clinical characteristics of patients with pain in the community. This study, however, demonstrates that pain is a very common symptom, which warrants automatic enquiry on any form of routine health-status assessment. The findings provide information on factors that could be developed in practice to help provide further insight into the presentation of pain to community practitioners and potential treatment options. The range of reported pain sites, for example, could be further defined into functional groups as part of a routine assessment of chronic pain in general practice.

8.3. Impact of chronic pain on lifestyle

8.3.1. Lifestyle disability

Research highlights that lower levels of perceived health status are evident for those reporting pain compared to those who do not have pain (Von Korff et al 1988, Birse and Lander 1998, Gureje et al 1998). Utilising the SIP as a broad measure of health outcome this study supports such findings, with Group 1 chronic pain patients consistently reporting higher levels of overall lifestyle disability than the other three groups. Group 4 chronic pain patients also consistently have higher levels than Group 2, with Group 3 reporting the least disability.

This study also finds that for all primary diagnoses, musculo-skeletal diagnoses have the highest overall lifestyle disability, with the second highest being for neurological diagnoses. This supports limited evidence in the literature that certain clinical groups such as musculo-skeletal diagnoses may report lower levels of health-related quality of life (Hagen et al 1997). However, the influence of secondary diagnoses is also suggested to be highly statistically significant in this study, with neurological diagnoses having the highest overall lifestyle disability and thoracic diagnoses the second highest.

Anatomical sites of pain are not found to be significant for overall lifestyle disability or for physical and psychosocial dimensions, although the highest levels of lifestyle disability are consistently for facial pain. Statistical significance is suggested, however, for anatomical sites and specific components of dimensions for lifestyle disability, which highlights the need for more detailed assessment of such factors in general practice. In contrast to previous research, the number of pain sites is not a significant factor in lifestyle disability in this study, with ambivalent findings for all dimensions and also for all specific components within those dimensions. Acknowledging this finding is crucial, as it refutes the suggestion that multiple pain sites and the amount of distress caused by such symptoms determines whether a patient visits their GP (Ingham and Miller 1979, Peach 1989, Ballina Garcia et al 1994, Chrubasik et al 1998).

Chronic pain has been highlighted as having a major impact on both the prevalence and severity of disability, with evidence that those severely disabled with pain are more likely to report that they are disabled than those without pain (Mudrick 1988). However, much of the evidence focuses on specific patient groups such as those with musculo-skeletal pain or pain clinic samples, and not general practice populations with a broad range of diagnoses who have generally not been referred to specialist pain services (Crombie 1993). In this general practice study, Group 1 chronic pain patients do consistently have higher levels of disability for all the physical dimensions of life than the other three groups. Group 4 chronic pain patients also consistently have higher levels than Group 2, with Group 3 reporting the least disability with the exception of mobility, for which Group 2 has the lowest disability levels.

Secondary diagnoses in this study are suggested to be highly statistically significant for the physical dimension overall and for body care/movement lifestyle disability. For the patients interviewed, thoracic diagnoses consistently had the highest levels of disability for the physical dimension overall, body care/movement and ambulation, with the second highest being for neurological diagnoses. This pattern is reversed for mobility. Although primary diagnoses are not found to be statistically significant, musculo-skeletal diagnoses consistently have the highest levels of lifestyle disability for all physical dimensions, with the second highest being for neurological diagnoses.

The highest levels of lifestyle disability for sites of pain are found to be similar for arms, face and upper back for body care/movement, with the face and arms also having the highest levels of disability for mobility and ambulation respectively. The neck and face have second highest scores for mobility and ambulation respectively. However, the potential for underestimating the importance of other reported levels of lifestyle disability when only considering the highest levels for a variable is highlighted in this study.

Although statistical significance is not found for all sites of pain with the highest levels of disability for lifestyle components, it is suggested for other sites. For example, high statistical significance is suggested for disability regarding mobility for lower back and face, and ambulation for neck and lower back. Statistical significance is also suggested for disability regarding body care/movement for pelvis/hips, legs, shoulder and neck, mobility for legs, arms, neck, shoulder, pelvis/hips and hands, and ambulation for pelvis/hips and chest.

The complex relationships, which may occur between society as a whole, the family, and patients reporting chronic pain has been highlighted. Debate is evident about the relative importance of factors such as the home and work environment, support and coping mechanisms, familial pain models, health-related disturbance, and levels of stress and marital satisfaction (Feuerstein et al 1985, Rowat and Knafl 1985, Koutantji et al 1998, Affleck et al 1999). However, much of the evidence is obtained from pain clinic studies, which intrinsically implies a unique population (Crombie 1993), with methodological limitations identified in many such studies (Rodgers et al 1996). For the purposes of this discussion therefore, the psychosocial and independent categories of the SIP have both been included in this section.

Previous studies suggest that co-existence of disorders such as depression and anxiety would appear to be significantly higher for those with pain (Von Korff et al 1988, Magni et al 1990, Becker et al 1997, Gureje et al 1998). However, such symptoms may also be associated with higher levels of 'non-pain' somatic symptoms for patients with pain (Von Korff et al 1988). Such ambivalent findings highlight the need for further research to identify psychosocial and possible psychosomatic factors in general practice populations, which may potentially be important in the perceived health status of chronic pain patients in the community. In this study there is evidence of the influence that factors such as different diagnoses and anatomical sites of pain may potentially have on the psychosocial components of pain is confirmed. This study also provides evidence of information on issues not previously identified within chronic pain patients in the community.

Group 1 chronic pain patients consistently have higher levels of disability for all the psychosocial dimensions of life than the other three groups. Group 4 chronic pain patients also consistently have higher levels than Group 2, with Group 3 reporting the least disability. Specifically referring to work status, Group 1 has the highest percentage who report not working on a regular basis but being retired, not working and not being retired, and also health related status of not being retired and not working. Group 4, however, has similar patterns to Group 3 for not working on a regular basis. Such differences for groups are suggested to be highly statistically significant for work and retirement status, and health related not being retired and not working.

For all primary diagnoses high statistical significance is suggested only for work, and statistical significance only for alertness behaviour lifestyle disability, with mental health diagnoses having the highest levels of disability for both components. The psychosocial dimension overall is also suggested to be approaching statistical significance, with highest levels of disability for neurological diagnoses, which are also highest for emotional behaviour. Musculo-skeletal diagnoses have the highest, but not statistically significant levels for all components of lifestyle disability except eating, which is highest for endocrine diagnoses. Musculo-skeletal or neurological diagnoses also have the second highest disability scores for all but communication and recreation/pastimes, for which gastro-intestinal/ biliary and cardio-vascular diagnoses are respectively second highest.

This study confirms the influence of primary diagnoses on work status, retirement status, and health related status of not being retired and not working, which are all suggested to be highly statistically significant. Statistical significance is also suggested for health related status of retirement. Patients with mental health diagnoses and more than 70 per cent of those with musculo-skeletal, neurological and cardio-vascular diagnoses report not working on a regular basis. Whilst the highest percentage not working but being retired is for neurological diagnoses, the highest percentage not working and not being retired is for mental health diagnoses. The most health related retirement is reported for cardio-vascular and musculo-skeletal diagnoses, and only musculo-skeletal and mental health diagnoses report that not being retired and not working is health related.

The importance of assessing secondary diagnoses is again supported by this study, with high statistical significance suggested for the psychosocial dimension overall, social interaction and communication, which all have highest lifestyle disability levels for neurological diagnoses. High statistical significance is also suggested for emotional behaviour and alertness behaviour, and home management and recreation/pastime, with highest disability levels for mental health and thoracic diagnoses respectively. Whilst mental health diagnoses have the second highest level of lifestyle disability for the psychosocial dimension overall, neurological diagnoses have the second highest levels for five of the other psychosocial components. Disability levels for sleep/rest, work and eating are not found to be statistically significant for secondary diagnoses.

Secondary diagnoses are important in relation to work and retirement status, with statistical significance suggested for retirement status, health related status of retirement, and health related status of not being retired and not working. All secondary gastro-intestinal/biliary diagnoses and over 75 per cent of cardio-vascular diagnoses report not working but being retired, whilst all mental health diagnoses report not working and not being retired. The most health related retirement is reported for cardio-vascular and musculo-skeletal diagnoses. The potential implications of co-existence of secondary diagnoses is also evident in this study, with impact on health related status of not being retired and not working suggested.

The influence of anatomical sites of pain on psychosocial dimension components of lifestyle disability is again supported within this study. High statistical significance, for example, is suggested for home management disability for the neck, pelvis/hips, hands, shoulder and face, with the same components for alertness behaviour disability except for pelvis/hips. Highly statistically significant lifestyle disability is apparent for communication for the face, neck, pelvis/hips and arms, sleep/rest for the face and chest, recreation/pastimes for the neck and lower back, and work for the pelvis/hips. Statistical significance is also indicated for lifestyle disability for all components of the psychosocial dimension except for work, although several different combinations of sites are found for the eight components.

As with the physical dimension, statistical significance is not found for all sites of pain with the highest levels of disability for components of the dimension, but it is suggested for other sites. The one generally consistent site, however, would appear to be the face. For example, the highest lifestyle disability for communication, home management and recreation/ pastimes is the face, whilst social interaction, alertness behaviour and work disability is highest for the upper back. Sleep/rest and eating, and emotional behaviour, is highest for the chest and head respectively. The second highest disability levels for psychosocial components are only found for three sites of pain, which are the face, arms and head. These findings would support the grouping of anatomical sites to provide more clinically meaningful association with psychosocial components of the chronic pain experience.

Evidence that sites of pain may influence work and retirement status is ambivalent in this study. Retirement status and health related status of not being retired and not working, for example, are suggested to be highly statistically significant only for the arms, and health related status of not being retired and not working is suggested to be statistically significant only for the hands. However, none of those with face, head, upper back, and arm pain report usually working on a regular basis. The shoulder has the highest percentage of those not working but being retired, whilst the arms have the highest percentage not working and not being retired. Health related retirement is reported similarly for all sites of pain except the head and face, both of which report no health related retirement. All sites except the abdomen have reports that being retired and not working is health related, with the highest percentage again being for the arms.

8.3.2. Impact of chronic pain management strategies on lifestyle

Previous studies highlight not only the impact of chronic pain on lifestyle, but also the diverse range of strategies that may be employed by patients in an effort to relieve or minimise chronic pain. Such strategies include analgesic medication (Hitchcock et al 1994, Antonov and Isacson 1996, Becker et al 1997), non-analgesic medications (Hitchcock et al 1994), complementary therapies (Eisenberg et al 1993), and other therapeutic interventions (Cherkin et al 1988, Cherkin and MacCornack 1989). Adaptation of familial and work dynamics is also well documented in the literature (Swanson and Maruta 1980, Feuerstein et al 1985, Affleck et al 1992 and 1999, Schwartz et al 1996, Unrah 1996). This study provides evidence of the broad range of strategies utilised in the community, at best to try and relieve pain, or at worst to try and avoid exacerbating symptoms.

Groups 1 and 4 report a total of 24 different strategies for pain relief, which they prioritise into primary and additional factors. The highest percentage of both groups report analgesia and medication as the highly statistically significant primary pain relief strategy, with postural change the second or third most common. Other most common primary strategies are decreased activity for Group 1 and complementary therapies and topical/local therapy for Group 4. Statistical significance is apparent for secondary pain relief factors, with decreased activity, topical/local therapy and analgesia/ medication equally most common for Group 1, and analgesia/medication the only secondary factor for Group 4. Primary factors that exacerbate pain are also suggested to be statistically significant, with the highest percentage of both groups reporting increased activity as the primary factor and postural change as the second highest, which is also equal with gastro-intestinal factors for Group 4.

Specifically focusing on medication, whilst purposive sampling accounts for all Group 1 and a high percentage of Group 2 taking regular medication, over half of Group 4 and a small percentage of Group 3 also report taking regular medication. All of Group 1 report taking regular analgesia, with the majority taking 1 - 3 analgesics. However, nearly a third of Group 4 take regular analgesia without prescriptions from their GP and one Group 3 patient takes 2 - 3 analgesics on a regular basis but denies having chronic pain. Compound analgesics and NSAIDs are the most commonly utilised analgesics, however, prescribing patterns in the practices is suggested to be approaching statistical significance with a higher percentage of the Hastings practice utilising NSAIDs but a higher percentage of the Lewisham practice utilising compound analgesics.

Utilisation of analgesics is suggested to be highly statistically significant for employment status and SEG, with a higher percentage of the unemployed and retired than the employed, and also those reporting no SOC and SEG, utilising more regular analgesic medication. Greater analgesic utilisation is otherwise found for personal service, junior non-manual and skilled manual workers. High statistical significance is also suggested for primary diagnoses, and statistical significance for secondary diagnoses for utilisation of regular analgesics, with musculo-skeletal diagnoses consistently reporting greatest utilisation.

SIP and MPQ profiles confirm the influence of all dimensions of lifestyle on regular analgesic utilisation. SIP overall, dimension and component lifestyle disability generally increases with greater utilisation of analgesic medication, with high statistical significance suggested. The only exceptions are ambulation and recreation/pastimes, which are higher for 2 - 3 analgesics than more than three, and emotional behaviour which has the lowest levels for more than three analgesics. Higher disability levels are also evident for those who take regular analgesics compared to those who either take other medication or take no regular medication.

Regular utilisation of analgesics is suggested to be highly statistically significant for the MPQ total and affective dimension, and statistically significant for sensory and miscellaneous dimensions, with the highest scores consistently for 2 - 3 analgesics. The only other specific pain profile, which suggests statistical significance for utilisation of analgesic medication, is pain duration. All those with more than 25 years of pain, and half or more with 5 - 15 years of pain, for example, report regular utilisation of 2 - 3 analgesics, however, none of those with up to two years pain report taking more than one analgesic regularly.

This study demonstrates both the overall impact and the impact on the specific dimensions of life for those living with chronic pain. Further insight is gained into the complex, multifaceted impact of chronic pain, and also into strategies that chronic pain patients are utilising in the community to try and relieve their pain. The need for further research into the potential efficacy of strategies other than analgesic medication, and development of credible strategies of care for chronic pain in the community is highlighted.

8.4. Impact of chronic pain on health and social care services

8.4.1. Primary health care services

Despite chronic pain being one of the major sources of referral to GPs, there is limited evidence of chronic pain research in this setting (Smith et al 1996), and the lack of time for GPs to assess such complex biopsychosocial problems is highlighted (Cypress 1983, Deyo and Phillips 1996). This study would refute reports from the limited evidence available that referral to GPs is more likely to occur with factors such as multiple pain sites and levels of distress present. Lack of belief in GPs (Sternbach 1986, Ballina Garcia et al 1994), poor analgesic efficacy (Bowsher et al 1991, Becker et al 1997, Davies et al 1997) and cultural factors (Bates et al 1993 and 1997, Bates and Rankin-Hill 1994) are all reported, however, to influence non-referral to GPs.

This study would support the evidence that chronic pain patients are amongst those who frequently present to GPs (Browne et al 1982, Cypress 1983, Andersson et al 1995, Engel et al 1996). Visits to the GP are suggested to be highly statistically significant for groups, with Group 1 having a higher percentage who report more visits to the GP than Group 2 and a quarter of Group 4 reporting 7 - 12 visits to the GP in the previous year. Although a higher percentage of women than men and the unemployed than the employed report more visits to the GP, the only demographic variable which suggests high statistical significance is for dependants. A higher percentage of those with no dependants than one to three dependants, for example, report more visits to the GP overall, whilst those with four dependants have the highest percentage with four or more visits to the GP for themselves.

Previous studies focus on musculo-skeletal pain (Cypress 1983, Rekola et al 1993, Miedema et al 1998) which is reported to rank second only to respiratory disease in symptoms that present to GPs (McCormick et al 1995). However, there is limited evidence of studies across a range of diagnostic groups in general practice (Browne et al 1982, Crooke et al 1984). This study indicates the need for further research in general practice across a range of diagnostic groups, with high statistical significance suggested for visits to the GP for all diagnoses and home visits by the GP for primary diagnoses.

All primary gastro-intestinal, ENT/opthalmology and endocrine diagnoses and half or more of other diagnoses, for example, report 2 - 6 visits to the GP, with more than six visits also reported for seven diagnostic groups. For all secondary diagnoses except the mental health group, 60 per cent or more have reports of 2 - 6 visits to the GP, with more than six visits also reported by five diagnostic groups. Home visits by the GP are reported for a range of primary diagnoses, with more than three visits for gastro-intestinal/biliary and musculo-skeletal diagnoses.

SIP profiles confirm the influence of all dimensions of lifestyle on GP visits, with SIP lifestyle disability levels generally increasing with more visits to the GP and more home visits by the GP. Exceptions for visits to the GP are higher disability levels for body care/movement for no visits than one visit and alertness behaviour for one visit than 2 - 3 visits, and the lowest disability level for eating being 13 - 24 visits. Exceptions for home visits by the GP are higher disability lifestyle levels for emotional behaviour, social interaction and eating for 2 - 3 visits than 7 - 12 visits. High statistical significance is suggested for visits to the GP for all overall, dimension and component lifestyle disability. Home visits by the GP is also suggested to be statistically significant for overall total, dimension, and body care/ movement, alertness behaviour, communication, sleep/rest, home management, work and eating components.

Although there is evidence of debate about the relative importance of pain duration and, for example, pain-related disability (Von Korff et al 1993, Miedma et al 1998), this study suggests that duration of pain may be highly statistically significant for visits to the GP. All patients with more than one year of pain report visiting the GP two or more times, with the highest percentage of those with up to 10 years of pain consistently reporting 4 - 6 visits, however, no clear pattern is evident for those with 10 or more years of pain. A range of visits to the GP is evident for sites of pain, with statistical significance only suggested for visits to the GP for neck pain and home visits by the GP for neck pain. No clear picture is evident for specific pain profiles and home visits by the GP, and MPQ scores are not found to be statistically significant for any GP visits.

The broadening scope of practice, which nurses in all settings are being encouraged to undertake is highlighted in the literature (Poulton 1996), with evidence of early initiatives relating to pain management in community nursing (Greenfield et al 1975). In this study, although over half the total sample report visits to the practice nurse, pain management as a topic is not generally included in relevant post-registration education. Visits to the practice nurse are, however, suggested to be highly statistically significant for groups, with Group 4 who have previously unrecognised chronic pain having a higher percentage than both Groups 1 and 2 with four or more visits. Such findings support the potential benefits to the general practice population of practice nurses being educated in the screening and assessment of chronic pain, and also in pain management strategies that they may be ideally placed to undertake.

Slightly different patterns of access to the practice nurse are utilised in the two practices, and this is reflected in the finding that the Lewisham practice report more visits than the Hastings practice. The only demographic variable for which statistical significance is suggested is that of employment status, with more visits to the practice nurse by a higher percentage of the retired and unemployed than the employed. High statistical significance is also suggested for primary diagnoses, with 40 per cent or more of all diagnoses except the neurological group, reporting 1 - 3 visits to the practice nurse. Whilst six diagnostic groups have reports of 4 - 6 visits, only cardio-vascular and musculo-skeletal diagnoses report more than six visits.

SIP overall lifestyle disability is suggested to be statistically significant for visits to the practice nurse, with disability levels increasing with more visits. Less clear patterns are evident for dimensions and components of lifestyle disability, with statistical significance suggested for none of the psychosocial dimension and only ambulation and eating otherwise. Levels of disability for ambulation are higher for one visit than 2 - 3 visits, with mobility also higher for up to four visits. The only clear pattern for independent components of lifestyle disability is that 7 - 12 visits to the practice nurse have consistently higher levels of disability than up to six visits. In an exploratory and descriptive study of this nature, no statistically significant patterns were evident for any pain profiles, however, further research would be needed to support or refute these findings in practices where different pathways of patient care have evolved.

Although Tornkvist et al (1998) report the majority of district nurses in their study were in contact with patients suffering from chronic conditions at least once a week, in this study only three patients report visits from the district nurse. However, all patients report high lifestyle disability levels for SIP overall, physical and psychosocial dimensions, which suggest statistical significance. Higher overall and psychosocial dimension, but lower physical dimension levels are found for 2 - 3 visits than more than 24 visits. High statistical significance is also suggested for all independent components and mobility disability levels, with statistical significance suggested for body care/movement, ambulation, social interaction, alertness behaviour and communication. Physical components are higher for 2 - 3 visits than 7 - 12 visits, whilst the one patient with 7 - 12 visits has the highest psychosocial component levels for all but social interaction. No clear pattern is evident for independent components of lifestyle.

All three patients who receive visits from the district nurse in this study, have a long duration of pain and a high total number of pain sites, with shoulder, pelvis/hips, legs, and feet pain being the most common. High statistical significance is suggested for total number of pain sites, with statistical significance suggested for pelvis/hip, shoulder and neck pain. It is reported, however, that only a small percentage of nurses undertake individual assessment of chronic pain and record a comprehensive nursing pain history and treatment (Tornkvist et al 1998, Watt-Watson 1987). Specialist expertise and co-operation from other team members is also highlighted as limited. Such findings further support the need for pain assessment and pain management to be more formally recognised within relevant nurse specific and multi-professional education and training programmes, and planned pathways of care developed.

Therapists such as chiropractors are identified as having different beliefs and approaches from GPs to the treatment of back pain, which are reported to result in outcomes such as greater patient satisfaction and medication compliance (Cherkin et al 1988, Cherkin and MacCornack 1989). Although a third of the general population may utilise complementary therapies, there is also evidence of this information not being communicated to the GP for fear of disapproval (Eisenberg et al

1993). In the light of previous research, one of the factors that may contribute towards the failure of pain management strategies in primary care is lack of the physical exercise component included in more comprehensive programmes (McCarberg and Wolf 1999). It is important at this juncture to differentiate between overall groups and practices, and individual profiles.

In this study for the groups and practices, visits to other therapists, but not to the physio/OT, are suggested to be statistically significant. Although Group 1 has the highest percentage reporting visits to the physio/OT, a higher percentage of Group 4 report visits to other therapists, with nine patients in the Hastings practice and only one in the Lewisham practice. Gender may also be approaching statistical significance for visits to other therapists, with a higher percentage of women compared to men reporting visits. Visits to the physio/OT are suggested to be highly statistically significant for SEG and statistically significant for SOC, with most visits for clerical/secretarial, skilled construction, engineering and junior non-manual workers. Musculo-skeletal diagnoses consistently have the most visits to all therapists, however, only visits to other therapists for secondary diagnoses are suggested to be highly statistically significant.

At an individual level, SIP overall, physical and psychosocial dimension disability levels generally increase with more visits to the physio/OT, with less clear patterns for components. Mobility, and body care/movement and ambulation, have highest and second highest lifestyle disability levels respectively for one visit, whilst emotional behaviour is highest for 2 - 3 visits. High statistical significance is suggested for the physio/OT for overall, physical and psychosocial dimensions, all physical components, and social interaction, alertness behaviour, home management, and recreation/ pastimes. Visits to the physio/OT do also indicate statistical significance for emotional behaviour, communication, sleep/rest and work, whilst visits to other therapists did not. With the exception of those with a longer duration of pain, no clear pattern is evident for specific pain profiles and visits to either the physio/OT or other therapists, with statistical significance only suggested for visits to the physio/OT for neck pain.

This study therefore confirms the predominant role that GPs may undertake in the management of chronic pain patients in the community. The profiles of chronic pain patients seen by different community nurses is identified, with district nurses visiting fewer more severely disabled patients, but practice nurses have the greatest contact with chronic patients, a percentage of whom cannot be identified through the general practice databases. The potential benefits of therapeutic interventions by the physio/OT, and therapists such as homeopaths and chiropractors are highlighted. However, the need to develop both discipline specific and multi-professional education and training programmes for community staff is evident, in order to optimise the potential for more credible pathways of care for chronic pain patients in the community.

8.4.2. Secondary health care services

As few as 14 per cent of those who present to their GP with pain are referred to other services (Frolund and Frolund 1986), with reports of lack of communication between primary and secondary care, about the purpose of such referrals (Coulter et al 1991). In this study, however, the influence of chronic pain on secondary health care services is evident. High statistical significance is suggested for groups for visits to outpatients, for example, with Group 1 having the highest percentage of patients reporting visits and Group 4 the second highest. Such patterns are also reflected in the number of outpatient visits. Although a slightly higher percentage of the Hastings practice reports visits and musculo-skeletal diagnoses have the greatest number of visits to outpatients, the only other statistically significant variable may be SEG, which reflects more outpatient visits by a higher percentage of the unemployed and retired.

For individual patients, SIP profiles demonstrate the influence of lifestyle disability on outpatient visits, with high statistical significance suggested for overall, physical and psychosocial dimensions, and all components of lifestyle except eating, which may be statistically significant. The highest disability levels are for 4 - 6 or 7 - 12 visits, with the highest percentage of those who report the most visits to outpatients having a long duration of pain and greater number of pain sites. However, statistical significance is suggested only for hand pain, with shoulder pain approaching statistical significance. Group 1 patients with musculo-skeletal diagnoses generally have the highest percentage reporting the most visits to accident and emergency. Only those who are retired or unemployed with no dependants report more than one visit, with the highest lifestyle disability for 4 - 6 visits. Visits to accident and emergency may only be statistically significant for work status and approaching statistical significance for lower back pain.

This study supports Becker et al (1997), with reports that chronic pain patients spend more days in hospital in comparison to the general population. Group 1 has the highest percentage being admitted to hospital and the most admissions, whilst only Group 1 report admission for one day and 1 - 2 months. The married or divorced, unemployed or retired, and those with no dependants all have reports of more than one admission and more than a week in hospital, whilst the unemployed and those with no dependants have the highest number of hospital admissions for one day. Musculo-skeletal diagnoses have the most admissions to hospital and the only admissions for one day and 1 - 2 months. Length of time in hospital may be highly statistically significant for groups and statistically significant for marital status and primary diagnoses, whilst admissions to hospital may be statistically significant for groups, marital and employment status, and primary diagnoses.

Although no clear patterns are evident for pain profiles, all SIP profiles for lifestyle disability increase with more in-patient admissions. The highest overall, dimension, and component disability levels are generally for 1 - 2 months in hospital, with the exception of emotional behaviour and eating, and social interaction, which are highest for one day and 1 - 4 weeks respectively. Length of stay in hospital is suggested to be highly statistically significant for physical dimension, all physical and psychosocial components and work and recreation/ pastimes, with overall, psychosocial dimension, and sleep/rest and home management being statistically significant. In-patient admissions may be highly statistically significant for mobility and recreation/pastimes, and statistically significant for overall, physical and psychosocial dimensions, all psychosocial components, body care/movement, ambulation, home management and work, with sleep/rest approaching statistical significance.

Smith et al (1996) suggest that as few as one per cent of patients suffering chronic pain are referred to specialist pain clinics in the UK, although primary care is recognised as a major referral source to pain services (Bowsher et al 1987). In this study, although Group 1 are chronic pain patients specifically accessed through repeat analgesic prescriptions on the general practice databases, only three male patients (7.5%) report 2 - 6 pain clinic visits. Whilst Group 4 would not have been identified as having chronic pain through existing databases, one female patient (6.3%) also reports 2 - 3 pain clinic visits. All four patients are in the 35 - 64 year age group with musculo-skeletal diagnoses. Full time employment or unemployment is equally reported, with two having skilled construction and engineering trades. For all demographic and diagnostic variables, only SEG is suggested to be highly statistically significant for pain clinic visits.

There is evidence that psychosocial distress with greater impairment of all dimensions of lifestyle, rather than persistence of symptoms, may increase the probability of referral by a GP to a pain clinic (Crook and Tunks 1985, Crook et al 1986 and 1989). In this study, SIP lifestyle disability is generally high. Overall, physical and psychosocial dimension and physical components also increase with more of visits to a pain clinic, however, no clear patterns are evident for psychosocial or independent components. High statistical significance is only suggested for communication, whilst overall, physical dimension, body care/movement, ambulation, work, recreation/pastimes and eating may be statistically significant.

No pain clinic visits are reported for those with more than 15 years pain duration, whilst half of those who visit a pain clinic report 6 - 10 sites of pain. Although MPQ profiles increase with more visits to a pain clinic, all sensory dimension scores are higher for those in Groups 1 and 4 who have not visited a pain clinic, with all other dimensions scores also higher for no visits than 2 - 3 visits. The only highly statistically significant factor for pain profiles, however, is pelvis/hip pain.

This study therefore provides evidence that chronic pain patients generally utilise both inpatient and outpatient services to a greater extent than patients with 'non-pain' problems. There is also evidence of the influence that the different components of lifestyle disability may have on utilisation of secondary care services overall, and more specifically on referrals by GPs to pain clinics. However, there are relatively few statistically significant indicators for specific pain profiles that may influence GP referrals to secondary health care, which highlights the need for further research in this area. Such findings would support the need for a more cohesive pathway of care at the primary/secondary care interface, which would encompass the identification of informed assessment, referral and treatment strategies for both primary and secondary care practitioners.

8.4.3. Social care services

No one policy encompasses service or benefit provision for disabled people (Patrick and Scrivens 1989), with the outcome that obtaining social and financial support is often bewildering, complex, and unresponsive to individual needs (Locker 1989). This process may therefore result in the creation of stigma and inherently discourage positive rehabilitation (Locker 1989, Aronoff 1991, Walker et al 1999). Previous studies also suggest that systems have a lack of emphasis on social and psychological assessment, despite such components of chronic conditions being widely recognised (Feuerstein et al 1985, Charlton 1989a, Asmundson et al 1996).

In this study, only three patients in total (2.2%) report visits with a social worker. Two of the three are from Group 1, and are male, divorced and retired, with no dependants, musculo-skeletal diagnoses, and 3 - 5 or more than 10 sites of pain. The only clear pattern for SIP lifestyle disability is that those reporting 2 - 3 visits with a social worker have the highest overall, dimension and component disability levels for all but ambulation. Only secondary diagnoses and pelvis/hip pain may be highly statistically significant for visits with a social worker, whilst dependants, mobility, communication and neck pain is suggested to be statistically significant, and alertness behaviour may be approaching statistical significance.

More patients report visits with a social security benefits officer, with the highest percentage being Group 1, under 35 years of age, divorced and unemployed. More than one visit is only reported for those with musculo-skeletal and thoracic diagnoses, whilst two patients with 6 - 10 or more than 10 sites of pain report 4 - 6 visits. The only clear pattern for SIP lifestyle disability is that those reporting 2 - 3 visits with a social security benefits officer have the highest overall, dimension and component disability for all but alertness behaviour and communication. High statistical significance is suggested for SEG, marital status and foot pain for visits with a social security benefits officer, whilst employment status, secondary diagnoses, neck pain, and SIP overall, psychosocial dimension, and social interaction, alertness behaviour, communication scores may be statistically significant. Work, body care/movement and home management is also suggested to be approaching statistical significance.

Although the nature of chronic pain inherently encompasses social dimensions of lifestyle, findings of this study suggest a relative lack of social service involvement with chronic pain patients. The need to optimise the potential of social care services for chronic pain patients in the community is therefore supported, with developments ideally prioritising the inclusion of social services in a joint health and social care pathway.

8.5. Impact of chronic pain on financial resources

The magnitude of the cost of pain to individuals and society is well documented, however the majority of studies provide data from countries other than the UK. For example: America (Brena and Chapman 1983, Sternbach 1986, Eisenberg et al 1993), Canada (Crook et al 1984, White et al 1999), Scandinavia (Andersson et al 1993, Becker et al 1997) and the Netherlands (Borghouts et al 1999, Hutubessy et al 1999). Much of the literature also focuses on specific diagnoses such as back pain (for example: Aronoff 1991, Deyo et al 1991, Frymoyer and Cats-Baril 1991, Engel et al 1993, Van Tulder et al 1995, Watson et al 1998). Due to differences in social security and health care systems, caution is suggested if extrapolating data between countries and across diagnostic groups (Watson et al 1998, Hutubessy et al 1999). This general practice study therefore provides further description of financial resource utilisation for chronic pain patients in England.

Many of the general population are entirely dependent on means tested benefits, or claim them in addition to contributory benefits if their income is low enough. Income support is the main means tested benefit, which tops up any existing income to the amount deemed necessary to live on, whilst housing benefit assists with rent payments and community charge benefit assists with charges such as council tax. Income support is claimed if not in full time employment, whilst housing and community charge claimants can be in full time work. Some benefits such as attendance and disability living allowances are not included in calculations for income support, and receipt of these allowances helps qualification for additional premiums. Disability premium is calculated within income support or housing benefits if the patient (or their partner) has been certified off sick for six months, or receives benefits such as invalidity benefit, attendance or disability living allowances (Ennals 1992).

In this study, similar numbers of Groups 1 and 2 and less of Groups 3 and 4 receive income support. The highest percentage receiving housing and community charge benefits is Group 1, with only three Group 1 patients receiving disability premium. The majority has received housing and community charge benefits for 1 - 5 years, with only Groups 1 and 4 reporting receipt of such benefits for longer. Patterns for community charge benefit are similar for both practices, although the Lewisham practice have a higher percentage receiving income support and housing benefit than the Hastings practice. Only differences for groups may be highly statistically significant for receipt of housing benefit, whilst practices may be statistically significant for community charge benefit.

Demographic profiles reflect eligibility for means tested benefits, with the highest and second highest percentage receiving all benefits being the unemployed and retired respectively. Those who are divorced, separated or widowed generally have a higher percentage receiving all means tested benefits. High statistical significance is suggested for marital status for all but disability premium, employment status for income support and housing benefit, and SEG for housing benefit, whilst employment status may be statistically significant for community charge benefit. Although not statistically significant, primary musculo-skeletal diagnoses consistently have the highest percentage receiving such benefits. No clear patterns are evident for pain profiles and receipt of means tested benefits, although 1 - 5 years and more than five years receipt of benefits is reported by a number of those with 2 - 10 years of pain and a high number of pain sites.

Different patterns are found for receipt of income support, and receipt of community charge and housing benefits for SIP lifestyle disability. Such may reflect the impact of having to claim income support in order to obtain an amount deemed necessary to live on. Those receiving income support for up to one year, for example, have the highest disability levels for overall, physical and psychosocial dimensions, whilst those in receipt of community charge and housing benefits for more than five years have the highest overall and physical dimension disability levels. More than five years receipt of community charge and housing benefits also have reports of the highest disability levels for all components of lifestyle except eating, and all components except ambulation, social interaction and work respectively.

Overall, physical and psychosocial dimension lifestyle disability may be highly statistically significant for receipt of housing benefit and statistically significant for disability premium, whilst the physical dimension may be statistically significant for community charge benefit. High statistical significance is also suggested for mobility, communication and recreation/pastimes for disability premium, body care/movement, ambulation, home management and recreation/pastimes for housing benefit, home management, recreation/pastimes and emotional behaviour for housing benefit. Statistical significance is indicated for all other components of lifestyle for disability premium, communication, home management, work and recreation/pastimes for income support, mobility, sleep/rest, work and eating for housing benefit, and ambulation, sleep/rest, recreation/pastimes and eating for community charge benefit.

Contributory benefits may be claimed providing enough National Insurance contributions have been made. Unemployment benefit may be claimed for up to one year, whilst invalidity benefit may be claimed after sickness benefit or statutory sick pay have been received for six months due to ill health (Ennals 1992). In this study, although no chronic pain patients receive unemployment benefit, Group 1 has the highest percentage in receipt of invalidity benefit with Group 4 the second highest. All but one patient in each of Groups 1 and 4 report receipt of invalidity benefit for more than one year, with differences for groups suggested to be highly statistically significant for receipt of invalidity benefit.

All those in receipt of unemployment benefit are under 45 years of age, and the majority is male with one dependant. A higher percentage of males also claim invalidity benefit than females, but the majority has no dependants. Two patients receiving unemployment benefit report primary thoracic diagnoses, whilst primary musculo-skeletal and cardio-vascular diagnoses are most commonly reported for invalidity benefit. Gender, employment status, and primary and secondary diagnoses may be statistically significant for receipt of invalidity benefit, whilst employment status, dependants, age and primary diagnoses may be statistically significant, and SEG approaching statistical significance for unemployment benefit.

As with income support, those receiving invalidity benefit for up to one year have the highest SIP lifestyle disability levels for overall, physical and psychosocial dimensions, but no clear patterns are evident for components of lifestyle. Those not in receipt of unemployment benefit also have higher lifestyle disability levels than those in receipt of the benefit. Group 1 and 4 patients receiving invalidity benefit have a diverse pattern of pain profiles, whilst those not receiving invalidity benefit consistently have higher MPQ scores than those reporting receipt for more than five years. High statistical significance is suggested for overall lifestyle disability, physical and psychosocial dimensions, and all components except eating for receipt of invalidity benefit, whilst overall lifestyle disability may be statistically significant, and sleep/rest may be approaching statistical significance for unemployment benefit.

The positive and/or negative influences of compensation versus non-compensation are found to be ambivalent, with reports that compensation is a strong incentive to maintain disability status (Greenhough and Fraser 1988), and also that there is no significant difference between those receiving compensation or not (Gallagher et al 1995). As with referral patterns to GPs, it is suggested that the likelihood of receiving compensation is determined by the level of emotional distress, which supports the suggestion that physical and psychological morbidity and possible interactive affects should be taken into account when considering disability. Nevertheless, there is evidence of the high cost of compensation for chronic pain and disability (for example: Brena and Chapman 1983, Webster and Snook 1994, Frymoyer and Cats-Baril 1991, Van Tulder et al 1995, Engel et al 1996). Patterns for utilisation of non-contributory financial benefits in this study also provides further evidence of such cost.

Non-contributory benefits may be claimed without reference to means or National Insurance contributions. If unable to work, severe disablement allowance may be claimed after six-months if 80 per cent disablement is proved, whilst occupational/industrial injury pension may be claimed for work-related injury or ill health 15 weeks after an accident or onset of the disease. Disability living and attendance allowances can be received with any other benefit for those under 65 years and over 65 years of age respectively, and paid to those assessed as requiring attention because of disability, regardless of whether that attention is actually received. Most claimants use these allowances to help with additional costs of disability and general housekeeping, although with the exception of those who are terminally ill, the claimant must have satisfied the attendance conditions continuously for six months prior to claiming (Ennals 1992).

In this study, all reports for receipt of disability living allowance are for Group 1, with only Groups 1 and 4 receiving severe disablement allowance, attendance allowance, and except for one Group 2 patient, occupational/industrial injury pension. The majority has received severe disablement allowance for more than five years, with 1 - 5 years receipt most common for disability living allowance and attendance allowance. Occupational/industrial injury pension is equally distributed between the two time scales. High statistical significant is suggested for groups for disability living allowance, whilst groups may also be statistically significant for attendance allowance.

The majority receiving all non-contributory benefits are married, whilst only one patient receiving disability allowance has dependants. More women than men receive severe disablement allowance and disability living allowance, with the pattern reversed for occupational/industrial injury pension and attendance allowance. The highest percentage in receipt of severe disablement allowance and disability living allowance are unemployed and report having no SOC. Except for one patient receiving occupational/industrial pension, musculo-skeletal diagnoses are reported for all those receiving non-contributory benefits. High statistical significance is suggested for SEG for severe disablement and disability living allowances, and secondary diagnoses for occupational/industrial injury pension and attendance allowance, whilst SOC for severe disablement allowance, and employment and marital status for disability living allowance may be statistically significant.

Differences are evident in patterns of lifestyle disability and the time that each non-contributory benefit has been received, which highlights the need to assess the efficacy of resource utilisation on an individual basis. Receipt of severe disablement and disability living allowances for up to one year, for example, have reports of the highest SIP lifestyle disability for overall, physical and psychosocial dimensions, and all components except social interaction, and social interaction and work respectively. However, receipt of occupational/industrial injury pension for more than five years and attendance allowance for 1 - 5 years have the highest lifestyle disability for overall, physical and psychosocial dimensions, and all components except eating, and emotional behaviour and eating respectively.

High statistical significance is suggested for overall, physical and psychosocial dimensions and all components except emotional behaviour and eating for receipt of disability living allowance, and overall, physical dimension and all components except emotional behaviour, sleep/rest and eating for attendance allowance. All physical components, communication, home management, work, and recreation/pastimes for receipt of severe disablement allowance, and communication for occupational/industrial injury pension may also be highly statistically significant. Statistical significance is indicated for all other dimensions and components except eating and work for receipt of disability living and attendance allowances respectively, and psychosocial dimension, and all psychosocial components except communication and emotional behaviour, and sleep/rest and eating for severe disablement allowance and occupational/ industrial injury pension respectively.

All those receiving severe disablement allowance and occupational/ industrial injury pension have more than five years pain, with two or more sites. Only one patient in receipt of attendance allowance for up to a year has less than 10 years pain, with the most reports for 6 - 10 sites. The highest MPQ scores are for receipt of severe disablement allowance for 6 - 12 months, disability living allowance for 1 - 5 years, and occupational/ industrial injury pension for more than five years. Disability living allowance has a higher percentage reporting more sites of pain. High statistical significance is suggested for pain duration and number of sites for receipt of attendance allowance, feet pain for severe disablement allowance, neck and pelvis/hip pain for occupational/industrial injury pension, and shoulder pain for disability living allowance. MPQ miscellaneous dimension may be statistically significant for occupational/industrial injury pension, whilst leg pain may be approaching statistical significance for attendance allowance.

This study provides evidence that chronic pain patients generally utilise financial benefits to a greater extent than other groups of patients in general practice, with the generally high lifestyle disability associated with such utilisation also highlighted. Although some findings reflect the nature of the benefit being claimed, other factors such as musculo-skeletal diagnoses, for which a higher utilisation is evident, are particularly relevant to problems such as chronic pain. This study also suggests that the complex process involved in claiming many of these benefits may influence overall clinical presentation and lifestyle disability, with greater levels of disability being evident for a number of those who have received benefits for a shorter period than those in more long term receipt. The need for a more cohesive health and social care needs assessment for patients with chronic pain is therefore supported in this study.

8.6. Proposed model of primary/secondary care for chronic pain

8.6.1. Context of the proposed model

The majority of clinical and research agendas appear to be driven by secondary care clinicians, who may have little experience of the problems encountered in primary care, where the majority of chronic pain patients are seen (Hart et al 1995, Cherkin 1996). This study supports previous research, which suggests a lack of cohesive strategy for the management of chronic pain between the primary care and specialist pain management interface, with only a minority of chronic pain thought to reach specialist pain units in the UK (Smith et al 1996). Referral of chronic pain patients by GPs to specialist pain services also appears to have no clear criteria, with suggestion that factors such as psychosocial distress rather than clinical pain profiles may potentially be catalysts for referral (Crook and Tunks 1985, Crook et al 1986 and 1989).

Such findings therefore indicate the need for a clearer pathway of care between the primary/secondary care interface, and a fundamental shift in resources to primary care (Waddell 1996). The potential benefits of a primary/secondary model of care for chronic pain patients are evident, although such models have largely been described within the context of, for example, the American health care system (Caudill et al 1991, Gallagher 1999a and 1999b, Von Korff 1999). The need for development of such a model within the UK healthcare system is therefore highlighted and supported by the findings of this study.

The benefits of developing a multi-professional approach to chronic pain management in primary care are supported (Turner 1996, Le Fort et al 1998, McCarberg and Wolf 1999). However, there is also ambivalence as to the efficacy of such initiatives, particularly in relation to educational and cognitive-behavioural programmes (Roland and Dixon 1989, Cherkin et al 1996, Becker et al 2000). Evidence to date suggests that more positive outcomes may be obtained from earlier interventions for chronic pain in primary care (Linton et al 1993), with less positive outcomes found for more chronic and complex problems (Becker et al 2000). The need for credible research into, and evaluation of initiatives such as primary/ secondary care pathways and joint referral and outreach clinics is therefore supported, in order to ascertain the most appropriate and cost-effective health/social care strategies for chronic pain patients.

The proposed model of primary/secondary care for chronic pain, is underpinned by previous research, the exploratory and descriptive findings of this study, and current health and social care agendas. The Clinical Standards Advisory Group (CSAG) (2000), for example, report that GPs are concerned about the way in which chronic pain is managed, and that geographical inconsistencies in pain clinic availability, and a lack of guidance on referrals and/or access to direct referral routes are important considerations. CSAG highlight that 40 per cent of GPs report already providing services in their own practices such as physiotherapy, that are relevant to the management of chronic pain, whilst other community health care staff state that patients need to receive information about their condition and be taught coping strategies.

The Government agenda to support development of a seamless service across primary/secondary health and social care, and the development of new skills and roles for doctors, nurses and therapists across all health care settings is evident (Department of Health 1997 and 2000). The Chief Nursing Officer's 10 key roles for nurses, for example, would appear to ideally support the development of this primary/secondary care model of care for chronic pain patients *(see Figure 8.1)*. However, a lack of pain management education for community staff is also evident, although frameworks for lifelong learning in the NHS (Department of Health 2001), and recommendations for levels of practice (The Pain Society 2002, UKCC 2002) provide the potential to develop pain management education/training opportunities for community staff.

10 key roles for nurses

- to order diagnostic investigations such as pathology tests and X-rays
- to make and receive referrals direct, say to a therapist or a pain consultant
- to admit and discharge patients for specified conditions and within agreed protocols
- to manage patient caseloads, say for diabetes or rheumatology
- to run clinics, say, for opthalmology or dermatology
- to prescribe medicines and treatments
- to carry out a wide range of resuscitation procedures including defibrillation
- to perform minor surgery and outpatient procedures
- to triage patients using the latest IT to the most appropriate health professional
- to take a lead in the way local health services are organised and in the way that they are run

Figure 8.1. Chief Nursing Officer's 10 key roles for nurses (Department of Health 2000: 83-84)

Development of a pain link nurse system in primary care therefore optimises links across the primary/secondary care interface, and also provides a professional resource within the primary care team for pain management. Education and training for this role would be provided by the specialist pain management team, to facilitate primary care nurses with a particular interest in pain management to develop skills and competencies through from novice to intermediate level of practice in pain management. Potentially this role could provide the opportunity to work as a higher level practitioner in pain management (The Pain Society 2002, UKCC 2002).

8.6.2. Description of the proposed model

The proposed model of primary/secondary care for chronic pain is presented in five main stages, with the numbers in brackets and italics in this text referring to the numbers in the boxes of the flow chart diagram *(see Figure 8.2)*. A key problem identified both in previous research and in this study is actually being able to identify chronic pain through existing general practice databases, with repeat analgesic prescriptions currently being the only route of identifying such patients. However, there is evidence in this study of the impact of chronic pain on those not having regular GP prescriptions or pain-related appointments. Whilst this supports the need to review criteria included within general practice database systems to identify those with chronic pain more readily, it also highlights the importance of ascertaining the pain status of those attending appointments for problems supposedly unrelated to pain *(see 1(i))*.

Prior to developing locally operated care pathways, a consensus is required from the primary care team and their specialist pain service as to what is to be included within assessment and treatment schedules, with the resultant outcome of pain care pathway protocols. The first protocol is a checklist that prioritises diagnoses and symptoms into urgent or non-urgent problems, which could be described as, for example, 'red flag' and 'non-red' flag indicators *(see 1 (iv and v))*. The second protocol is a comprehensive pain assessment protocol utilised by, for example, the pain link nurse when assessing pain of three or more months duration *(see 2)*. To ascertain if a patient has suffered pain over a given period of time, initial screening requires only a simple question such as 'Have you suffered any pain in the last year?' *(see 1(ii))*, with no further action required if pain is not been perceived as a problem *(see 1(iii))*.

If the patient identifies that pain has been present in the last year and it is still perceived to be a problem, they are referred into one of three care pathways. Pain for less than three months with a red flag presentation, for example, requires an appointment with the GP for further assessment *(see*

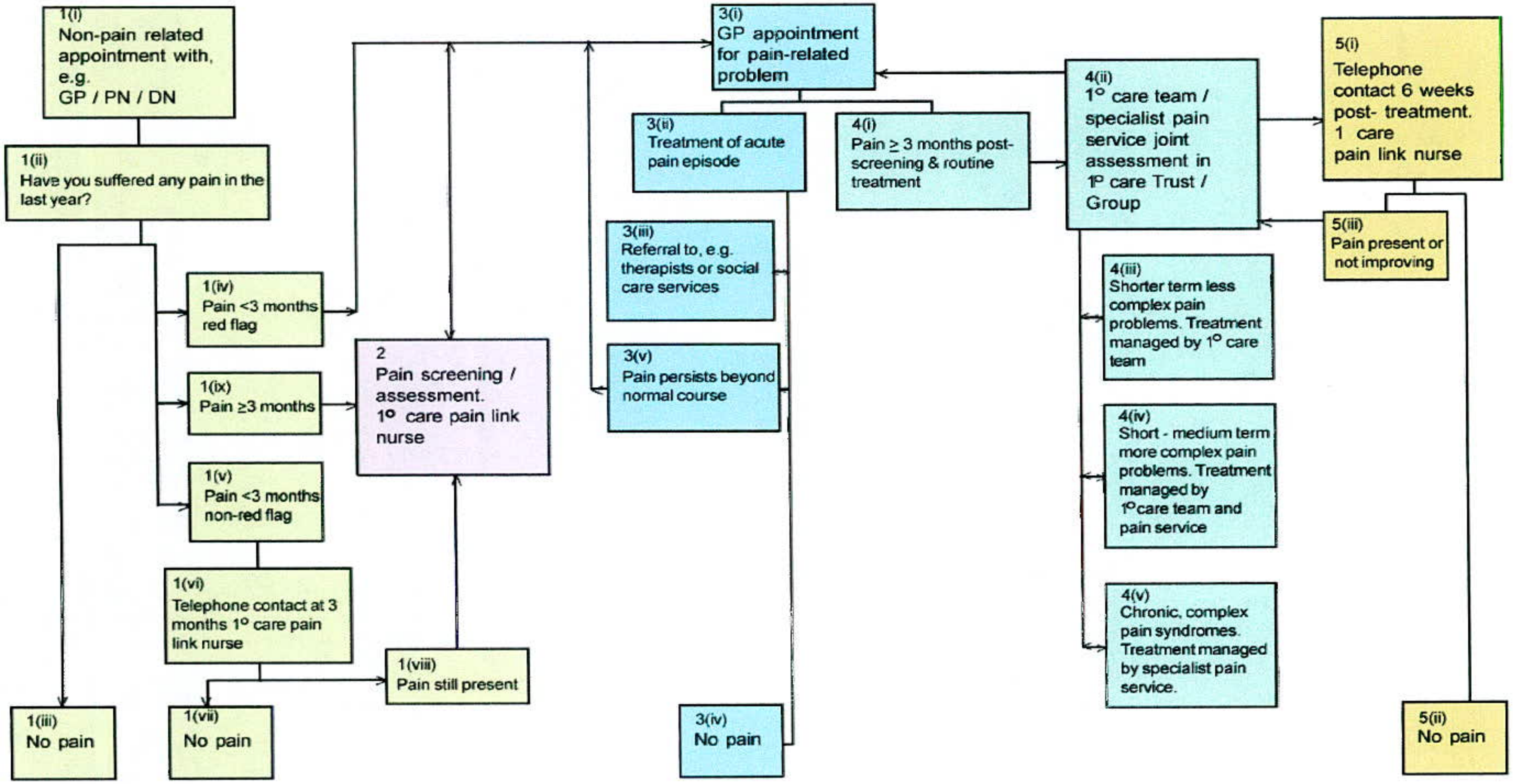


Figure 8.2. Proposed model of primary / secondary care for chronic pain.

1(iv) → 3(i)). However, pain for less than three months with a non-red flag presentation would be followed up three months after the onset of pain by telephone contact from the pain link nurse *(see 1(v) → 1(vi))*. At the three-month telephone follow-up, if pain has resolved then no further action is required *(see 1(vi) → 1(vii))*, but if pain is present, an appointment is made with the pain link nurse for further assessment *(see 1(viii) → 2)*. If pain has been present for three or more months, then an appointment is made directly with the pain link nurse for further assessment *(see 1(ix) → 2)*.

Following assessment by the pain link nurse, an appointment is made with the GP for the pain-related problem *(see 2 → 3(i))*. Also at this stage of the model, patients visiting their GP directly for a pain related problem enter the pathway, and if indicated, they may be referred to the pain link nurse for further assessment of the pain *(see 3(i) → 2)*. If an acute pain episode is diagnosed, the GP will prescribe a treatment plan according to the protocols agreed with the specialist pain service *(see 3(i) → 3(ii))*. This plan may also include referral to, for example, other therapists and/or social care services *(see 3(ii) → 3(iii))* and feedback on those referrals *(see 3(iii) → 3(ii))*. If no pain is present at the end of the treatment plan, then no further action is required *(see 3(iv))*. However, if pain persists beyond the normal course, then a further appointment will be made with the GP *(see 3(v) → 3(i))* to reassess whether referral should be made to the joint primary/secondary care pain assessment clinic *(see 4(i) → 4(ii))*.

All patients assessed at the joint clinic will be categorised into treatment groups, the criteria for which will have been developed from the consensus protocols. For those with shorter term less complex pain problems, the treatment will ultimately be managed by the primary care team *(see 4(ii) → 4(iii))*, with more of the care being undertaken by the primary care team as the pain service provides training in pain management skills. Short to medium term more complex pain problems may be managed by the primary care team and/or the pain service, depending on the treatments required *(see 4(ii) → 4(iv))*. For example, a patient may be admitted as a day case under the pain service for a more complex nerve blocking procedure, whilst follow-up at home and all other treatment is managed by the primary care team. For those with more chronic and complex pain syndromes, specialist multi-professional treatment may be required by the pain service on an outpatient or inpatient basis *(see 4(ii) → 4(v))*.

Feedback is provided to the joint clinic for patients referred for any of the three pain management strategies *(see 4(iii), 4(iv) and 4(v) → 4(ii))*. If the pain has not resolved after the planned treatment protocol, reassessment and decisions on future management are agreed by the primary care team/pain service joint clinic. However, if the pain has resolved or is improving, the primary care pain link nurse will make telephone contact with the patient six weeks post-treatment *(see 4(ii) → 5(i))*. If there is no pain, no further action is required, however, if there is a recurrence of the pain problem, patients are able to contact the pain link nurse for advice. If pain is still present or not improving, the patient is reassessed by the joint primary care/pain service clinic to decide on future treatment strategies *(see 5(i) → 4(ii))*.

8.6.3. Summary of future recommendations

Future recommendations are drawn from previous research, findings of this study, and the model of primary/secondary care for chronic pain, which is proposed as a basis for chronic pain management in the community. To inform wider public health agendas, the need for further pain prevalence studies in general practice, with clear definitions of chronic pain and including all diagnoses, is identified in order to more realistically evaluate the problem of chronic pain. However, this requires not only larger scale studies to build on this descriptive and exploratory study, but also the development of database systems within general practice, which have the ability to record symptoms such as pain that have specific implications for health and social care, and financial resources.

Although this study provides evidence that pain is a very common symptom that warrants automatic enquiry on any form of routine health status, further studies within the general practice setting are indicated to further describe demographic and clinical characteristic of patients with pain in the community. The impact of chronic pain on all dimensions of lifestyle disability, and pain presentation and factors which trigger referrals to community professionals are highlighted as particular areas for further research in order to continue to develop appropriate models of care. Such research should encompass evaluation of the efficacy of treatment protocols and care pathways for different groups of chronic pain patients in the community.

Despite the impact of chronic pain on the social dimensions of lifestyle, this study supports the relative lack of social care involvement with chronic pain patients, particularly in relation to financial resource utilisation. The potential to further develop the health and social care interface is therefore highlighted. The need for further research, which would include the development of more structured social care assessment protocols for chronic pain patients is also identified.

An intrinsic underpinning of the proposed model of care, is the recognition of credible discipline specific and multi-professional education and training programmes for community health/social care teams, to enable staff to develop skills and competencies required for pain management treatment strategies in the community. This would not only optimise the opportunity for chronic pain patients to be managed more effectively in the community, but also broaden opportunities for community staff with a particular interest in pain management to develop a higher level of professional practice for chronic pain patients. Particular areas for education and training in pain management would include, for example, the development of screening and assessment protocols, management of pharmaceutical regimes and specific therapeutic techniques, and behavioural lifestyle therapy.

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APPENDIX A

Sickness Impact Profile

MARILYN BERGNER

SIP-10030
SD I-03564
SD II-03657

(SR-0499)

PLEASE RESPOND TO (CHECK) ONLY THOSE STATEMENTS THAT YOU ARE SURE DESCRIBE YOU TODAY AND ARE RELATED TO YOUR STATE OF HEALTH.

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1. I spend much of the day lying down in order to rest ______ (070-083)

2. I sit during much of the day ______ (062-049)

3. I am sleeping or dozing most of the time - day and night ______ (063-104)

4. I lie down more often during the day in order to rest ______ (066-056)

5. I sit around half-asleep ______ (065-084)

6. I sleep less at night, for example, wake up too early, don't fall asleep for a long time, awaken frequently ______ (069-061)

7. I sleep or nap more during the day ______ (071-060)

CHECK HERE WHEN YOU HAVE READ ALL STATEMENTS ON THIS PAGE ☐

(EE-0705)

PLEASE RESPOND TO (CHECK) ONLY THOSE STATEMENTS THAT YOU ARE SURE DESCRIBE YOU TODAY AND ARE RELATED TO YOUR STATE OF HEALTH.

---

1. I say how bad or useless I am, for example, that I am a burden on others ______ (274-087)
2. I laugh or cry suddenly ______ (272-068)
3. I often moan and groan in pain or discomfort ______ (269-069)
4. I have attempted suicide ______ (281-132)
5. I act nervous or restless ______ (284-046)
6. I keep rubbing or holding areas of my body that hurt or are uncomfortable ______ (262-062)
7. I act irritable and impatient with myself, for example, talk badly about myself, swear at myself, blame myself for things that happen ______ (273-078)
8. I talk about the future in a hopeless way ______ (283-089)
9. I get sudden frights ______ (278-074)

CHECK HERE WHEN YOU HAVE READ ALL STATEMENTS ON THIS PAGE ☐

(BCM-2003)

PLEASE RESPOND TO (CHECK) ONLY THOSE STATEMENTS THAT YOU ARE SURE DESCRIBE YOU TODAY AND ARE RELATED TO YOUR STATE OF HEALTH.

---

1. I make difficult moves with help, for example, getting into or out of cars, bathtubs ______ (168-084)
2. I do not move into or out of bed or chair by myself but am moved by a person or mechanical aid ______ (170-121)
3. I stand only for short periods of time ______ (155-072)
4. I do not maintain balance ______ (146-098)
5. I move my hands or fingers with some limitation or difficulty ______ (152-064)
6. I stand up only with someone's help ______ (165-100)
7. I kneel, stoop, or bend down only by holding on to something ______ (171-064)
8. I am in a restricted position all the time ______ (158-125)
9. I am very clumsy in body movements ______ (148-058)
10. I get in and out of bed or chairs by grasping something for support or using a cane or walker ______ (169-082)
11. I stay lying down most of the time ______ (162-113)
12. I change position frequently ______ (147-030)
13. I hold on to something to move myself around in bed ______ (143-086)
14. I do not bathe myself completely, for example, require assistance with bathing ______ (310-089)
15. I do not bathe myself at all, but am bathed by someone else ______ (312-115)
16. I use bedpan with assistance ______ (292-114)
17. I have trouble getting shoes, socks, or stockings on ______ (305-057)
18. I do not have control of my bladder ______ (290-124)

(CONTINUED FROM PAGE 7)

19. I do not fasten my clothing, for example, require assistance with buttons, zippers, shoelaces _____ (256-074)

20. I spend most of the time partly undressed or in pajamas _____ (302-074)

21. I do not have control of my bowels _____ (295-128)

22. I dress myself, but do so very slowly _____ (300-043)

23. I get dressed only with someone's help _____ (297-088)

CHECK HERE WHEN YOU HAVE READ ALL STATEMENTS ON THIS PAGE ☐

(V)

(HM-0668)

THIS GROUP OF STATEMENTS HAS TO DO WITH ANY WORK YOU USUALLY DO IN CARING FOR YOUR HOME OR YARD. CONSIDERING JUST THOSE THINGS THAT YOU DO, PLEASE RESPOND TO (CHECK) ONLY THOSE STATEMENTS THAT YOU ARE <u>SURE</u> DESCRIBE YOU TODAY AND ARE RELATED TO YOUR STATE OF HEALTH

1. I do work around the house only for short periods of time or rest often ______ (117-054)
2. I am doing <u>less</u> of the regular daily work around the house than I would usually do ______ (119-044)
3. I am not doing <u>any</u> of the regular daily work around the house that I would usually do ______ (120-086)
4. I am not doing <u>any</u> of the maintenance or repair work that I would usually do in my home or yard ______ (001-062)
5. I am not doing <u>any</u> of the shopping that I would usually do ______ (106-071)
6. I am not doing <u>any</u> of the house cleaning that I would usually do ______ (116-077)
7. I have difficulty doing handwork, for example, turning faucets, using kitchen gadgets, sewing, carpentry ______ (107-069)
8. I am not doing <u>any</u> of the clothes washing that I would usually do ______ (111-077)
9. I am not doing heavy work around the house ______ (115-044)
10. I have given up taking care of personal or household business affairs, for example, paying bills, banking, working on budget ______ (105-064)

CHECK HERE WHEN YOU HAVE READ ALL STATEMENTS ON THIS PAGE ☐

(VI)

(M-0719)

PLEASE RESPOND TO (CHECK) ONLY THOSE STATEMENTS THAT YOU ARE SURE DESCRIBE YOU TODAY AND ARE RELATED TO YOUR STATE OF HEALTH.

---

1. I am getting around only within one building ______ (134-086)

2. I stay within one room ______ (128-106)

3. I am staying in bed more ______ (130-081)

4. I am staying in bed most of the time ______ (131-109)

5. I am not now using public transportation ______ (140-041)

6. I stay home most of the time ______ (133-066)

7. I am only going to places with restrooms nearby ______ (125-056)

8. I am not going into town ______ (124-048)

9. I stay away from home only for brief periods of time ______ (139-054)

10. I do not get around in the dark or in unlit places without someone's help ______ (121-072)

CHECK HERE WHEN YOU HAVE READ ALL STATEMENTS ON THIS PAGE ☐

(SI-1450)

PLEASE RESPOND TO (CHECK) ONLY THOSE STATEMENTS THAT YOU ARE SURE DESCRIBE YOU TODAY AND ARE RELATED TO YOUR STATE OF HEALTH.

---

1. I am going out less to visit people _____ (028-044)
2. I am not going out to visit people at all _____ (029-101)
3. I show less interest in other people's problems, for example, don't listen when they tell me about their problems, don't offer to help _____ (003-067)
4. I often act irritable toward those around me, for example, snap at people, give sharp answers, criticize easily _____ (015-084)
5. I show less affection _____ (007-052)
6. I am doing fewer social activities with groups of people _____ (012-036)
7. I am cutting down the length of visits with friends _____ (027-043)
8. I am avoiding social visits from others _____ (034-080)
9. My sexual activity is decreased _____ (039-051)
10. I often express concern over what might be happening to my health _____ (018-052)
11. I talk less with those around me _____ (002-056)
12. I make many demands, for example, insist that people do things for me, tell them how to do things _____ (038-088)
13. I stay alone much of the time _____ (023-086)
14. I act disagreeable to family members, for example, I act spiteful, I am stubborn _____ (249-066)
15. I have frequent outbursts of anger at family members, for example, strike at them, scream, throw things at them _____ (240-119)
16. I isolate myself as much as I can from the rest of the family _____ (237-102)

(CONTINUED FROM PAGE 11)

17. I am paying less attention to the children _____ (238-064)

18. I refuse contact with family members, for example, turn away from them _____ (256-115)

19. I am not doing the things I usually do to take care of my children or family _____ (242-079)

20. I am not joking with family members as I usually do _____ (255-043)

CHECK HERE WHEN YOU HAVE READ ALL STATEMENTS ON THIS PAGE ☐

(A-0842)

PLEASE RESPOND TO (CHECK) ONLY THOSE STATEMENTS THAT YOU ARE SURE DESCRIBE YOU TODAY AND ARE RELATED TO YOUR STATE OF HEALTH.

---

1. I walk shorter distances or stop to rest often ______ (050-048)
2. I do not walk up or down hills ______ (046-056)
3. I use stairs only with mechanical support, for example, handrail, cane, crutches ______ (042-067)
4. I walk up or down stairs only with assistance from someone else ______ (044-076)
5. I get around in a wheelchair ______ (057-096)
6. I do not walk at all ______ (052-105)
7. I walk by myself but with some difficulty, for example, limp, wobble, stumble, have stiff leg ______ (049-055)
8. I walk only with help from someone ______ (053-088)
9. I go up and down stairs more slowly, for example, one step at a time, stop often ______ (040-054)
10. I do not use stairs at all ______ (041-083)
11. I get around only by using a walker, crutches, cane, walls, or furniture ______ (047-079)
12. I walk more slowly ______ (051-035)

CHECK HERE WHEN YOU HAVE READ ALL STATEMENTS ON THIS PAGE ☐

(X)

(AB-0777)

PLEASE RESPOND TO (CHECK) ONLY THOSE STATEMENTS THAT YOU ARE SURE DESCRIBE YOU TODAY AND ARE RELATED TO YOUR STATE OF HEALTH.

---

1. I am confused and start several actions at a time _____ (223-090)
2. I have more minor accidents, for example, drop things, trip and fall, bump into things _____ (234-075)
3. I react slowly to things that are said or done _____ (228-059)
4. I do not finish things I start _____ (227-067)
5. I have difficulty reasoning and solving problems, for example, making plans, making decisions, learning new things _____ (224-084)
6. I sometimes behave as if I were confused or disoriented in place or time, for example, where I am, who is around, directions, what day it is _____ (231-113)
7. I forget a lot, for example, things that happened recently, where I put things, appointments _____ (222-078)
8. I do not keep my attention on any activity for long _____ (220-067)
9. I make more mistakes than usual _____ (225-064)
10. I have difficulty doing activities involving concentration and thinking _____ (217-080)

CHECK HERE WHEN YOU HAVE READ ALL STATEMENTS ON THIS PAGE ☐

(XI)

(C-0725)

PLEASE RESPOND TO (CHECK) ONLY THOSE STATEMENTS THAT YOU ARE SURE DESCRIBE YOU TODAY AND ARE RELATED TO YOUR STATE OF HEALTH.

---

1. I am having trouble writing or typing ______ (191-070)

2. I communicate mostly by gestures, for example, moving head, pointing, sign language ______ (177-102)

3. My speech is understood only by a few people who know me well ______ (179-093)

4. I often lose control of my voice when I talk, for example, my voice gets louder or softer, trembles, changes unexpectedly ______ (197-083)

5. I don't write except to sign my name ______ (188-083)

6. I carry on a conversation only when very close to the other person or looking at him ______ (178-067)

7. I have difficulty speaking, for example, get stuck, stutter, stammer, slur my words ______ (176-076)

8. I am understood with difficulty ______ (200-087)

9. I do not speak clearly when I am under stress ______ (201-064)

CHECK HERE WHEN YOU HAVE READ ALL STATEMENTS ON THIS PAGE ☐

THE NEXT GROUP OF STATEMENTS HAS TO DO WITH ANY WORK YOU USUALLY DO OTHER THAN MANAGING YOUR HOME. BY THIS WE MEAN ANYTHING THAT YOU REGARD AS WORK THAT YOU DO ON A REGULAR BASIS.

DO YOU USUALLY DO WORK OTHER THAN MANAGING YOUR HOME? ____ YES ____ NO

➡ IF YOU ANSWERED YES, GO ON TO THE NEXT PAGE.

➡ IF YOU ANSWERED NO:

ARE YOU RETIRED? ____ YES ____ NO

IF YOU ARE RETIRED, WAS YOUR RETIREMENT RELATED TO YOUR HEALTH? ____ YES ____ NO

IF YOU ARE NOT RETIRED, BUT ARE <u>NOT</u> WORKING, IS THIS RELATED TO YOUR HEALTH? ____ YES ____ NO

➡ NOW SKIP THE NEXT PAGE.

(W-0515)

IF YOU ARE NOT WORKING AND IT IS <u>NOT</u> BECAUSE OF YOUR HEALTH, PLEASE SKIP THIS PAGE.

NOW CONSIDER THE WORK YOU DO AND RESPOND TO (CHECK) <u>ONLY</u> THOSE STATEMENTS THAT YOU ARE <u>SURE</u> DESCRIBE YOU TODAY AND ARE RELATED TO YOUR STATE OF HEALTH. (IF TODAY IS A SATURDAY OR SUNDAY OR SOME OTHER DAY THAT YOU WOULD USUALLY HAVE OFF, PLEASE RESPOND AS IF TODAY WERE A WORKING DAY.)

---

1. I am not working at all _____ (100-361)

   (IF YOU CHECKED THIS STATEMENT, SKIP TO THE NEXT PAGE.)

2. I am doing part of my job at home _____ (094-037)
3. I am not accomplishing as much as usual at work _____ (096-055)
4. I often act irritable toward my work associates, for example, snap at them, give sharp answers, criticize easily _____ (088-080)
5. I am working shorter hours _____ (095-043)
6. I am doing only light work _____ (086-050)
7. I work only for short periods of time or take frequent rests _____ (090-061)
8. I am working at my usual job but with some changes, for example, using different tools or special aids, trading some tasks with other workers _____ (092-034)
9. I do not do my job as carefully and accurately as usual _____ (097-062)

CHECK HERE WHEN YOU HAVE READ ALL STATEMENTS ON THIS PAGE ☐

(RP-3422)

THIS GROUP OF STATEMENTS HAS TO DO WITH ACTIVITIES YOU USUALLY DO IN YOUR FREE TIME. THESE ACTIVITIES ARE THINGS THAT YOU MIGHT DO FOR RELAXATION, TO PASS THE TIME, OR FOR ENTERTAINMENT. PLEASE RESPOND TO (CHECK) ONLY THOSE STATEMENTS THAT YOU ARE SURE DESCRIBE YOU TODAY AND ARE RELATED TO YOUR STATE OF HEALTH.

---

1. I do my hobbies and recreation for shorter periods of time _____ (215-039)

2. I am going out for entertainment less often _____ (214-036)

3. I am cutting down on some of my usual inactive recreation and pastimes, for example, watching TV, playing cards, reading _____ (207-059)

4. I am not doing any of my usual inactive recreation and pastimes, for example, watching TV, playing cards, reading _____ (208-084)

5. I am doing more inactive pastimes in place of my other usual activities _____ (211-051)

6. I am doing fewer community activities _____ (216-033)

7. I am cutting down on some of my usual physical recreation or activities _____ (210-043)

8. I am not doing any of my usual physical recreation or activities _____ (209-077)

CHECK HERE WHEN YOU HAVE READ ALL STATEMENTS ON THIS PAGE ☐

(XV)

(E-0755)

PLEASE RESPOND TO (CHECK) ONLY THOSE STATEMENTS THAT YOU ARE SURE DESCRIBE YOU TODAY AND ARE RELATED TO YOUR STATE OF HEALTH.

---

1. I am eating much less than usual ______ (085-037)
2. I feed myself but only by using specially prepared food or utensils ______ (073-077)
3. I am eating special or different food, for example, soft food, bland diet, low-salt, low-fat, low-sugar ______ (081-043)
4. I eat no food at all but am taking fluids ______ (077-104)
5. I just pick or nibble at my food ______ (083-059)
6. I am drinking less fluids ______ (080-036)
7. I feed myself with help from someone else ______ (074-099)
8. I do not feed myself at all, but must be fed ______ (075-117)
9. I am eating no food at all, nutrition is taken through tubes or intravenous fluids ______ (076-133)

CHECK HERE WHEN YOU HAVE READ ALL STATEMENTS ON THIS PAGE ☐

(XVI)

Appendix B

The McGill Pain Questionnaire

Client's name: . . . . **Age:** . . . .

File no.: . . . . **Date:** . . . .

Clinical category (e.g. cardiac, neurological, etc.): . . . .

Diagnosis: . . . .

Analgesic (if already administered):

1. Type . . . .
2. Dosage . . . .
3. Time given in relation to this test . . . .

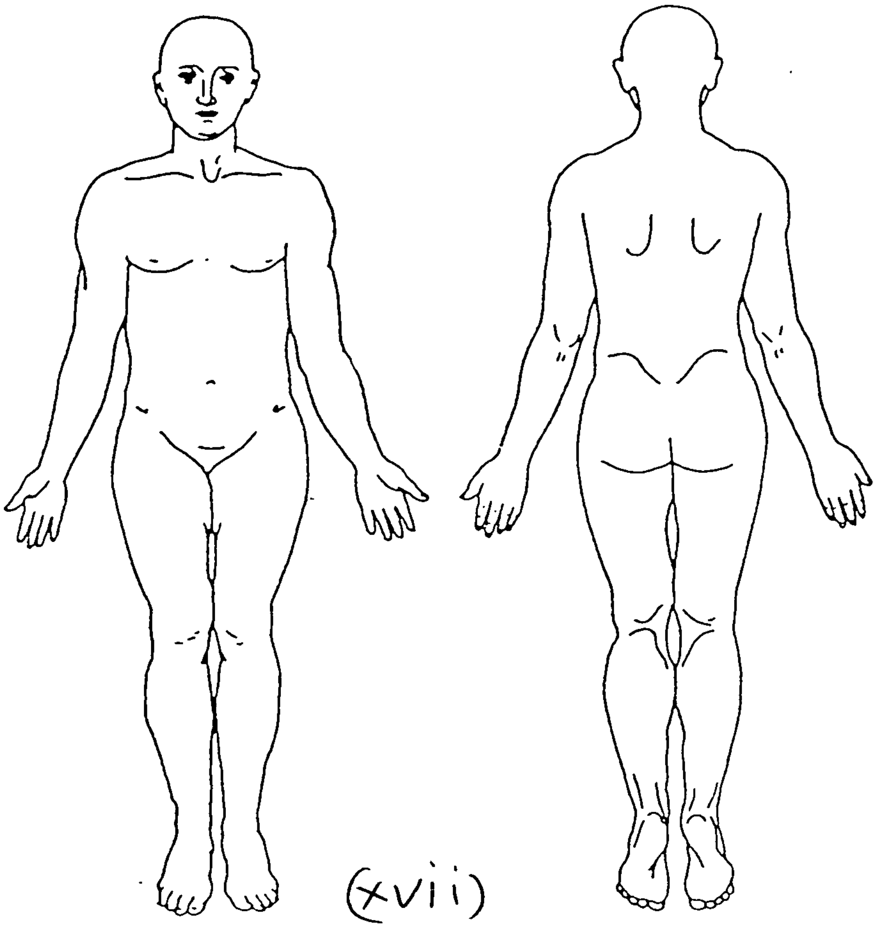
This questionnaire has been designed to tell us more about your pain. Four major questions we ask are:

1. Where is your pain?
2. What does it feel like?
3. How does it change with time?
4. How strong is it?

It is important that you tell us how your pain feels now. Please follow the instructions at the beginning of each part.

Part 1. Where is your pain?

Please mark, on the drawing below, the areas where you feel pain. Put E if external, or I if internal, near the areas which you mark. Put EI if both external and internal.



McGILL PAIN QUESTIONNAIRE

Part 2. What does your pain feel like?

Some of the words below describe your *present* pain. Circle *ONLY* those words that best describe it. Leave out any category that is not suitable. Use only a single word in each appropriate category – the one that applies best.

1
- Flickering
- Quivering
- Pulsing
- Throbbing
- Beating
- Pounding

2
- Jumping
- Flashing
- Shooting

3
- Pricking
- Boring
- Drilling
- Stabbing
- Lancinating

4
- Sharp
- Cutting
- Lacerating

5
- Pinching
- Pressing
- Gnawing
- Cramping
- Crushing

6
- Tugging
- Pulling
- Wrenching

7
- Hot
- Burning
- Scalding
- Searing

8
- Tingling
- Itchy
- Smarting
- Stinging

9
- Dull
- Sore
- Hurting
- Aching
- Heavy

10
- Tender
- Taut
- Rasping
- Splitting

11
- Tiring
- Exhausting

12
- Sickening
- Suffocating

13
- Fearful
- Frightful
- Terrifying

14
- Punishing
- Gruelling
- Cruel
- Vicious
- Killing

15
- Wretched
- Blinding

16
- Annoying
- Troublesome
- Miserable
- Intense
- Unbearable

17
- Spreading
- Radiating
- Penetrating
- Piercing

18
- Tight
- Numb
- Drawing
- Squeezing
- Tearing

19
- Cool
- Cold
- Freezing

20
- Nagging
- Nauseating
- Agonizing
- Dreadful
- Torturing

Part 3. How does your pain change with time?

1. Which word or words would you use to describe the *pattern* of your pain?

1
- Continuous
- Steady
- Constant

2
- Rhythmic
- Periodic
- Intermittent

3
- Brief
- Momentary
- Transient

2. What kind of things *relieve* your pain?

3. What kind of things *increase* your pain?

Part 4. How strong is your pain?

People agree that the following 5 words represent pain of increasing intensity. They are:

1	2	3	4	5
Mild	Discomforting	Distressing	Horrible	Excruciating

To answer each question below, write the number of the most appropriate word in the space beside the question.

1. Which word describes your pain right now? . . . .
2. Which word describes it at its worst? . . . .
3. Which word describes it when it is at its least? . . . .
4. Which word describes the worst toothache you ever had? . . . .
5. Which word describes the worst headache you ever had? . . . .
6. Which word describes the worst stomach-ache you ever had? . . . .

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APPENDIX C

Fax FAO: Professor Ronald Melzack
Dept. of Psychology, McGill University

Date: 6th April 2000

1. In your 1971 paper you highlight that patients had difficulty discriminating the higher levels of 5-7 in the original 7-point scale. Would it be possible for you to clarify the sample population and numbers involved?

2. In your 1975 paper when you describe the preliminary study, which identified that key descriptors were missing from the original 16 classes, could you possibly clarify how many subjects were in the sample, and from what population were they sampled?

3. In relation to the additional sub-classes of 17-20, I would be most grateful if you could clarify the scale values obtained for all four sub-classes, as they do not appear to be specified in any of the literature. Our NFER UK manual appears to have the incorrect scaling for sub-class 18 as it is not in the usual increasing intensity format (i.e. 2.25, 2.10, 2.53, 2.35, 3.68). I would also be grateful if you could clarify, if there are any scale and weighted rank values for sub-class 19, as I take it from the literature that there is only the rank value format.

4. Would you by any chance have any hard copies of the McGill Pain Questionnaire, which I could include in my thesis presentation? I obviously had permission from NFER to photocopy from the manual for the study.

McGill

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TELECOPIER TRANSMISSION SHEET

DATE: April 13, 2000

COMPANY / UNIVERSITY:

ATTENTION OF: Mrs. Jane Latham

MESSAGE Dear Mrs. Latham:

Thanks for your letter. Unfortunately, your questions deal with material in papers written long ago and I no longer have the raw data.

The chapters on the McGill Pain Questionnaire in the "Textbook of Pain" or the "Handbook of Pain Assessment" contain excellent illustrations and you can photocopy your hard copies of the Questionnaire from them. These are the questionnaires most people use, and most analyses are based on the rank values of the descriptors.

Sincerely,

for/Ronald Melzack
Professor

/cb

FROM: Dr. Ronald Melzack
TOTAL NUMBER OF PAGES, INCLUDING THIS COVER SHEET: 1

** TOTAL PAGE.001 **

(xx)

APPENDIX D

RESOURCES QUESTIONNAIRE

Please indicate which of the following apply to you by ticking the appropriate answer.

1. Have you visited your G.P. at the surgery in the last year ?

YES ____ NO ____

If yes, how many times have you visited in the last year ?

once ____ 2-3 ____ 4-6 ____

7-12 ____ 13-24 ____ more than 24 ____

2. Have you had a visit at home from your G.P. in the last year ?

YES ____ NO ____

If yes, how many times have you had a visit in the last year ?

once ____ 2-3 ____ 4-6 ____

7-12 ____ 13-24 ____ more than 24 ____

3. Have you had a visit at home from the District Nurse in the last year ?

YES ____ NO ____

If yes, how many times have you had a visit in the last year ?

once ____ 2-3 ____ 4-6 ____

7-12 ____ 13-24 ____ more than 24 ____

4. Have you had a visit at home from the Health Visitor in the last year ?

YES ____ NO ____

If yes, how many times have you had a visit in the last year ?

once ____ 2-3 ____ 4-6 ____

7-12 ____ 13-24 ____ more than 24 ____

5. Have you visited the Practice Nurse at the surgery in the last year ?

YES ____ NO ____

If yes, how many times have you visited in the last year ?

once ____ 2-3 ____ 4-6 ____

7-12 ____ 13-24 ____ more than 24 ____

6. Have you seen a physiotherapist or occupational therapist in the last year ?

YES ____ NO ____

If yes, how many times have you seen them in the last year ?

once ____ 2-3 ____ 4-6 ____

7-12 ____ 13-24 ____ more than 24 ____

7. Have you seen other therapists, e.g. homeopath, cyropractor in the last year ?

YES ____ NO ____

If yes, how many times have you seen them in the last year ?

once ____ 2-3 ____ 4-6 ____

7-12 ____ 13-24 ____ more than 24 ____

8. Have you taken any medicines regularly in the last year ?

YES ____ NO ____

If yes, how many of the medicines are to try and help pain ?

0 ____ 1 ____ 2-3 ____ more than 3 ____

9. Have you seen a Social Worker in the last year ?

YES ____ NO ____

If yes, how many times have you seen them in the last year ?

once ____ 2-3 ____ 4-6 ____

7-12 ____ 13-24 ____ more than 24 ____

10. Have you seen anyone about Social Security Benefits in the last year ?

YES ____ NO ____

If yes, how many times have you seen them in the last year ?

once ____ 2-3 ____ 4-6 ____

7-12 ____ 13-24 ____ more than 24 ____

11. Have you received help from a Voluntary Agency in the last year ?

YES ____ NO ____

If yes, how many times have you seen them in the last year ?

once ____ 2-3 ____ 4-6 ____

7-12 ____ 13-24 ____ more than 24 ____

12. Have you received help from Social Services, e.g. meals on wheels or a home help in the last year ?

YES ____ NO ____

If yes, how many times have you received help in the last year ?

once ____ 2-3 ____ 4-6 ____

7-12 ____ 13-24 ____ more than 24 ____

13. Are you in residential care, e.g. a nursing home or old peoples home ?

YES ____ NO ____

If yes, how long have you lived there ?

under 3 months ____ 3-6 months ____ 6-12 months ____

1-2 years ____ 2-5 years ____ more than 5 years ____

14. Have you visited a hospital Accident & Emergency Department in the last year?

YES ____ NO ____

If yes, how many times have you visited in the last year ?

once ____ 2-3 ____ 4-6 ____

7-12 ____ 13-24 ____ more than 24 ____

15. Have you seen a doctor in the hospital Out-Patient Department in the last year?

YES ____ NO ____

If yes, how many times you visited in the last year?

once ____ 2-3 ____ 4-6 ____

7-12 ____ 13-24 ____ more than 24 ____

16. Have you been admitted to hospital as an in-patient in the last year ?

YES ____ NO ____

If yes, how many admissions have you had in the last year ?

1 ____ 2-5 ____ 6-10 ____ more than 10 ____

If yes, how long have you been in hospital in total over the last year ?

1 day ____ 2-7 days ____ 1-4 weeks ____

1-2 months ____ 3 months ____ more than 3 months ____

17. Have you visited a specialist Pain Relief Unit or Pain Clinic in the last year ?

YES ____ NO ____

If yes, how many times have you visited in the last year ?

once ____ 2-3 ____ 4-6 ____

7-12 ____ 13-24 ____ more than 24 ____

Please indicate which, if any, of the following benefits you receive by ticking the appropriate answer and then indicating how long you have been receiving them.

18. Unemployment Benefit. YES ____ NO ____

Up to 3 months ____ 3-6 months ____ 7-12 months ____

19. Sickness Benefit. YES ____ NO ____

Up to 4 weeks ____ 1-3 months ____ 4-6 months ____

20. Invalidity Benefit. YES ____ NO ____

6-12 months ____ 1-5 years ____ more than 5 years ____

21. Occupational / Industrial Injury Pension. YES ____ NO ____

Up to 1 year ____ 1-5 years ____ more than 5 years ____

22. Attendance Allowance. YES ____ NO ____

Up to 1 year ____ 1-5 years ____ more than 5 years ____

23. Disability Living Allowance. YES ____ NO ____

Up to 1 year ____ 1-5 years ____ more than 5 years ____

24. Invalid Care Allowance. YES ____ NO ____

Up to 1 year ____ 1-5 years ____ more than 5 years ____

25. Severe Disablement Allowance. YES ____ NO ____

6-12 months ____ 1-5 years ____ more than 5 years ____

26. Statutory Sick Pay. YES ____ NO ____

Up to 4 weeks ____ 1-3 months ____ 3-6 months ____

27. Income Support (or previous equivalent). YES ____ NO ____

Up to 1 year ____ 1-5 years ____ more than 5 years ____

28. Disability Premium. YES ____ NO ____

Up to one year ____ 1-5 years ____ more than 5 years ____

29. Severe Disability Premium. YES ____ NO ____

Up to one year ____ 1-5 years ____ more than 5 years ____

30. Housing Benefit. YES ____ NO ____

Up to one year ____ 1-5 years ____ more than 5 years ____

31. Council Tax Benefit (or previous equivalent) YES ____ NO ____

Up to one year ____ 1-5 years ____ more than 5 years ____

APPENDIX E

FRONT SHEET

STUDY NUMBER :

GROUP NUMBER :

PRACTICE :

DISEASE CATEGORY :

AGE : **SEX :** Male ______ Female ______

MARITAL STATUS :

Married	______	Divorced	______
Single	______	Widowed	______
Separated	______		

EMPLOYMENT STATUS :

Full-time employment	______
Part-time employment	______
Unemployed	______
Retired	______

JOB TITLE (If in employment) :

NUMBER OF DEPENDANTS :

AGE OF DEPENDANTS :

HAVE YOU SUFFERED MORE THAN 3 MONTHS PAIN IN THE LAST YEAR ? :

YES ______ **NO** ______

IF YES, HAS IT ALTERED EITHER OF THE FOLLOWING :

Marital Status	YES ____	NO ____
Employment Status	YES ____	NO ____

APPENDIX F

EAST SUSSEX HEALTH
Authority

RECEIVED
[illegible] OCT 1994

Ethics (H) 9410031

3 October 1994

Dear Mrs Reddie

Research Proposal: The socio-economic impact of chronic pain

Thank you for your letter to Miss E Woodward of 31 August enclosing copies of this proposed study.

The Hastings Local Research Ethics Committee reviewed the study at their meeting on 28 September and gave it their approval.

The Committee thanks you for undertaking to send copies of the relevant publications on the study after its completion.

May I take this opportunity to let you know that I have been newly appointed to the post of Ethics Committee Administrator for all three East Sussex Local Research Ethics Committees and have therefore taken over the duties previously carried out by Miss Woodward. for the Hastings Local Research Ethics Committee. I am at present based in the Hove Locality Office, although protocols involving clinical research in Hastings area can still be sent to the Rother Locality Office, as in the past, pending my relocation to a permanent office base.

Yours sincerely

Elizabeth Pierce

Elizabeth Pierce (Mrs)
Ethics Committee Administrator

Ethics
Committee
Administrator
Tel: (01273) 735566

cc Dr J Latham
Dr R H Board

Rutherford Business Park, Marley Lane, Battle, East Sussex TN33 0EZ **Tel** 0424 772277 **Fax** 0424 774477

Securing Good Health for Hastings and Rother

APPENDIX G

UMDS
GUY'S AND ST THOMAS'S
MEDICAL AND DENTAL SCHOOL

Division of
Pharmacological Sciences
Department of Clinical Pharmacology
MEDICAL SCHOOL BUILDING
GUY'S HOSPITAL
LONDON BRIDGE
LONDON SE1 9RT
TELEPHONE: 071 955 4248
FAX: 071 407 5136

Head of Department
Professor J M Ritter MA DPhil FRCP

[redacted]

13 October 1994

Dear Miss Latham,

94/10/23: Socio-economic impact of chronic pain

Thank you for submitting this application. The Committee normally requires the use of our standard form and "*protocol attached*" in response to Question 6 is not normally acceptable. However, I note that the potential hazards and degree of discomfort are none although the interview will take about 1½ hours to perform. I understand that the work is being carried out in [redacted] practice with approval of Professor R H Jones. On this basis, I am prepared for you to proceed by Chairman's Action. This will be taken to the next meeting of the Committee on October 26 for ratification.

Permission is granted on the understanding that:

i) Any ethical problem arising in the course of the project will be reported to the Committee;

ii) Any change in the protocol will be reported to the Committee;

iii) A brief report will be submitted after completion.

The above project reference number must be quoted in all future correspondence.

Yours sincerely,

PROFESSOR J M RITTER MA DPhil FRCP
Chairman of the Lewisham and North Southwark
Committee on Ethical Practice

JMR:jma

UNITED MEDICAL AND DENTAL SCHOOLS
OF GUY'S AND ST THOMAS'S HOSPITALS
UNIVERSITY OF LONDON

APPENDIX H

Dear

The Surgery is involved in research, which is looking at the problems faced by patients with long-term pain. We want to interview two groups of patients, one group who suffer long-term pain, and a second group who do not. The interview would mean filling in four questionnaires, and is confidential.

The groups of patients have been selected at random from the Surgery computer, and your name has come up. (This is not a general circular). It is unlikely that you will get any direct benefit from taking part, but we believe this research could be used to help patients in the future. We would be grateful if you would agree to help us.

The interview will take approximately one hour. We would like to ring you soon to see if you wish to take part, and if so make an appointment, or you can ring the surgery on ______________________. We would be happy to give you further information to help you to decide if you wish to take part.

Thank you for your help,

With best wishes,

APPENDIX I

CONSENT FORM

I, ____,

consent to being included in the research study which is investigating the socio-economic impact of chronic pain, having had the implications fully explained.

Signature. ____

Date. _____________

APPENDIX J

CHI-SQUARE TESTS WHICH SUGGEST STATISTICAL SIGNIFICANCE FOR DEMOGRAPHIC PROFILE FINDINGS

1. Age for Groups 1 - 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23.685*	12	.022
Likelihood Ratio	24.322	12	.018
Linear-by-Linear Association	6.815	1	.009
N of Valid Cases	136		

* 5 cells (25.0%) have expected count less than 5. The minimum expected count is 2.59.

2. Number of dependants for Groups 1 - 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23.995*	12	.020
Likelihood Ratio	25.193	12	.014
Linear-by-Linear Association	2.912	1	.088
N of Valid Cases	136		

* 13 cells (65.0%) have expected count less than 5. The minimum expected count is .59.

3. Age of Dependant 1 for Groups 1 - 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.033*	9	.048
Likelihood Ratio	20.979	9	.013
Linear-by-Linear Association	4.927	1	.026
N of Valid Cases	136		

* 9 cells (56.3%) have expected count less than 5. The minimum expected count is .24.

4. Age of dependant 2 for Groups 1 - 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.531*	3	.009
Likelihood Ratio	11.207	3	.011
Linear-by-Linear Association	3.085	1	.079
N of Valid Cases	136		

* 1 cells (12.5%) have expected count less than 5. The minimum expected count is 2.35.

5. Employment status for Groups 1 - 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	31.867*	9	.000
Likelihood Ratio	34.397	9	.000
Linear-by-Linear Association	13.901	1	.000
N of Valid Cases	136		

* 3 cells (18.8%) have expected count less than 5. The minimum expected count is 2.47.

6. Occupational classification for practices

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.337*	9	.044
Likelihood Ratio	18.971	9	.025
Linear-by-Linear Association	7.844	1	.005
N of Valid Cases	136		

* 6 cells (30%) have expected count less than 5. The minimum expected count is .99.

7. Socio-economic classification for practices

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.521*	10	.047
Likelihood Ratio	20.646	10	.024
Linear-by-Linear Association	5.858	1	.016
N of Valid Cases	136		

* 11 cells (50%) have expected count less than 5. The minimum expected count is .49.

8. Duration of pain for Groups 1 and 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.122*	6	.013
Likelihood Ratio	20.967	6	.002
Linear-by-Linear Association	2.607	1	.106
N of Valid Cases	56		

* 10 cells (71.4%) have expected count less than 5. The minimum expected count is .29.

9. 1° diagnosis for Groups 1 - 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	243.366*	30	.000
Likelihood Ratio	257.343	30	.000
Linear-by-Linear Association	0.31	1	.859
N of Valid Cases	136		

* 37 cells (84.1%) have expected count less than 5. The minimum expected count is .24.

10. 2° diagnosis for Groups 1 - 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	53.213*	24	.001
Likelihood Ratio	60.390	24	.000
Linear-by-Linear Association	.671	1	.413
N of Valid Cases	136		

* 29 cells (80.6%) have expected count less than 5. The minimum expected count is .24.

APPENDIX K

STANDARD OCCUPATIONAL CLASSIFICATION
DEFINITION OF MAJOR AND SUB-MAJOR GROUPS

SOC Class	Major Group	Sub-major Groups *
1	Managers and Administrators	a) Corporate Managers and Administrators b) Managers / Proprietors in Agriculture and Services
2	Professional Occupations	a) Science and Engineering Professionals b) Health Professionals c) Teaching Professionals d) Other Professional Occupations
3	Associate Professional and Technical Occupations	a) Science and Engineering Associate Professionals b) Health Associate Professionals c) Other Associate Professional Occupations
4	Clerical and Secretarial Occupations	a) Clerical Occupations b) Secretarial Occupations
5	Craft and Related Occupations	a) Skilled Construction Trades b) Skilled Engineering Trades c) Other Skilled Trades
6	Personal and Protective Service Occupations	a) Protective Service Occupations b) Personal Service Occupations
7	Sales Occupations	a) Buyers, Brokers and Sales Reps. b) Other Sales Occupations
8	Plant and Machine Operatives	a) Industrial Plant and Machine Operators, Assemblers b) Drivers and Mobile Machine Operators
9	Other Occupations	a) Other Occupations in Agriculture, Forestry and Fishing b) Other Elementary Occupations

* Definitions of Constituent Minor Groups are described in the publication.

Adapted from: Office of Population Censuses and Surveys Employment Department Group (1990: 7).

APPENDIX L

STANDARD OCCUPATIONAL CLASSIFICATION
DEFINITION OF SOCIO-ECONOMIC GROUPS

SEG Group	Definition *
1	Employers and managers in central and local government, industry, commerce, etc, - large establishments employing 25 or more employees
2	Employers and managers in industry, commerce, etc. - small establishments employing fewer than 25 employees
3	Professional workers - self-employed
4	Professional workers - employees
5	Intermediate non-manual workers
6	Junior non-manual workers
7	Personal service workers
8	Foremen and supervisors - manual
9	Skilled manual workers
10	Semi-skilled manual workers
11	Unskilled manual workers
12	Own account workers (other than professional)
13	Farmers - employers and managers
14	Farmers - own account
15	Agricultural workers
16	Members of armed forces
17	Inadequately described and not stated occupations

* Detailed descriptors of Socio-economic Groups are described in the publication.

Adapted from: Office of Population Censuses and Surveys (1991: 13-14).

APPENDIX M

MAJOR DIAGNOSTIC GROUPS AND DIAGNOSES WITHIN GROUPS

Major Diagnostic Group	**Diagnoses Within Group**
Musculo-skeletal (19 diagnoses)	Rheumatoid arthritis Osteoarthritis Myofascial pain Floating rib syndrome Reflex sympathetic dystrophy Osteoporosis Low back pain: 2* laminectomy Osteomyelitis Congenital kyphoscoliosis Acute back pain: 2* RTA Gout *(+ endocrine)* Cervical spondylosis Recurrent joint dislocations Low back pain: 2* # coccyx Psoriotic arthropathy Back pain: 2* occupational injury Spondylothesis: L4-L5 Acute low back pain: ? cause # foot
Cardio-vascular (8 diagnoses)	Hypertension Angina Cardiac surgery Oedema Intermittent claudication CVA: 2* hypertension *(+ neuro)* Varicose veins Coronary
Gynaecology/Urology/Obstetrics (7 diagnoses)	Pelvic pain Menorrhagia Pregnancy Caesarean section Infertility Episiotomy Bladder prolapse
Gastro-intestinal/Biliary (5 diagnoses)	Bowel pain: 2* trauma Coeliac disease Gastric ulcer Gallstones Anal repairs

APPENDIX M (cont.) Major Diagnostic Groups

Major Diagnostic Group	Diagnoses Within Group
Neurological (5 diagnoses)	Migraine Episodes dizziness: ? cause Parkinson's disease Trigeminal neuralgia Epilepsy
Thoracic (5 diagnoses)	Asthma Chest infection Bronchitis Infected insect bite: breathlessness Emphysema
Mental Health (4 diagnoses)	Anxiety Withdrawing alcoholic Battered wife syndrome Depression
ENT/Opthalmology (3 diagnoses)	Ear infections Eye infections Pharyngitis
Endocrine (3 diagnoses)	Myxoedema Diabetes Thyrotoxicosis
Dermatology (1 diagnosis)	Eczma/Acne

APPENDIX N

MANN-WHITNEY TESTS WITH MEAN RANK SCORES WHICH SHOW STATISTICAL SIGNIFICANCE FOR MPQ FINDINGS

1. WRV, SV and RV total descriptor scores for Groups 1 and 4

	MCGWRVTO	MCGSVTOT	MCGRVTOT
Mann-Whitney U	82.000	92.500	82.500
Z	-4.317	-4.126	-4.310
Asymp. Sig. (2-tailed)	.000	.000	.000

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
WRV Total descriptor score	Group 1 = 34.45 Group 4 = 13.63	SV Total descriptor score	Group 1 = 34.19 Group 4 = 14.28	RV Total descriptor score	Group 1 = 34.44 Group 4 = 13.66

2. MCG WRV, SV and RV dimension scores for Groups 1 and 4

	MCGWRVS	MCGSVS	MCGRVS	MCGWRVA	MCGSVA	MCGRVA	MCGWRVM	MCGSVM	MCGRVM
Mann-Whitney U	114.000	118.500	107.000	72.500	70.500	74.000	148.000	152.500	144.500
Z	-3.737	-3.655	-3.870	-4.567	-4.604	-4.545	-3.137	-3.056	-3.215
Asymp. Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.002	.002	.001

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
WRV (S)	Group 1 = 33.65 Group 4 = 15.63	SV (S)	Group 1 = 33.54 Group 4 = 15.91	RV (S)	Group 1 = 33.83 Group 4 = 15.19
WRV (A)	Group 1 = 34.69 Group 4 = 13.03	SV (A)	Group 1 = 34.74 Group 4 = 12.91	RV (A)	Group 1 = 34.65 Group 4 = 13.13
WRV (M)	Group 1 = 32.80 Group 4 = 17.75	SV (M)	Group 1 = 32.69 Group 4 = 18.03	RV (M)	Group 1 = 32.89 Group 4 = 17.53

APPENDIX O

CHI-SQUARE TESTS WHICH SUGGEST STATISTICAL SIGNIFICANCE FOR MPQ FINDINGS

1. Number of pain sites for Groups 1 and 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.979*	5	.003
Likelihood Ratio	19.326	5	.002
Linear-by-Linear Association	12.681	1	.000
N of Valid Cases	56		

* 8 cells (66.7%) have expected count less than 5. The minimum expected count is .57.

2. Low back pain for Groups 1 and 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.369*	2	.001
Likelihood Ratio	15.749	2	.000
Linear-by-Linear Association	12.486	1	.000
N of Valid Cases	56		

* 2 cells (33.3%) have expected count less than 5. The minimum expected count is .29.

3. Leg pain for Groups 1 and 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.091*	3	.028
Likelihood Ratio	10.286	3	.016
Linear-by-Linear Association	6.632	1	.010
N of Valid Cases	56		

* 4 cells (50.0%) have expected count less than 5. The minimum expected count is .86.

4. Pelvis/hip pain for practices

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.661*	4	.002
Likelihood Ratio	18.621	4	.001
Linear-by-Linear Association	4.936	1	.026
N of Valid Cases	56		

* 6 cells (60.0%) have expected count less than 5. The minimum expected count is .48.

5. Foot pain for age

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23.422*	12	.024
Likelihood Ratio	15.593	12	.211
Linear-by-Linear Association	4.739	1	.029
N of Valid Cases	17		

* 20 cells (100.0%) have expected count less than 5. The minimum expected count is .06.

6. Least ever pain intensity for Groups 1 and 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.891*	3	.012
Likelihood Ratio	10.782	3	.013
Linear-by-Linear Association	8.947	1	.003
N of Valid Cases	54		

* 5 cells (62.5%) have expected count less than 5. The minimum expected count is .26.

7. 'Continuous' description of pain over time for Groups 1 and 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.171*	1	.013
Likelihood Ratio	6.471	1	.011
Linear-by-Linear Association	6.057	1	.014
N of Valid Cases	54		

* 0 cells (0%) have expected count less than 5. The minimum expected count is 7.00.

8. 1° therapeutic analgesia prior to interview for Groups 1 and 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.751*	5	.005
Likelihood Ratio	18.478	5	.002
Linear-by-Linear Association	14.922	1	.000
N of Valid Cases	56		

* 5 cells (62.5%) have expected count less than 5. The minimum expected count is .26.

9. 1° therapeutic analgesia to interview for practices

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.876*	5	.054
Likelihood Ratio	12.907	5	.024
Linear-by-Linear Association	2.194	1	.139
N of Valid Cases	56		

* 6 cells (50.0%) have expected count less than 5. The minimum expected count is .48.

10. 2° pain relief factors for Groups 1 and 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.063*	4	.039
Likelihood Ratio	14.149	4	.007
Linear-by-Linear Association	6.498	1	.011
N of Valid Cases	56		

* 7 cells (70.0%) have expected count less than 5. The minimum expected count is 1.14.

11. 1° factors that exacerbate pain for Groups 1 and 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.317*	10	.050
Likelihood Ratio	19.613	10	.033
Linear-by-Linear Association	0.318	1	.573
N of Valid Cases	56		

* 18 cells (81.8%) have expected count less than 5. The minimum expected count is .29.

APPENDIX P

THERAPIES UTILISED WITHIN EACH MAJOR THERAPEUTIC GROUP

Group code	Major therapeutic group	Therapies within group
1°: 1	Simple analgesics	Paracetamol tablets Soluble paracetamol
1°: 2	Compound analgesics	Co-dydramol Dihydrocodeine Panadol and codeine Co-proxamol
1°: 3	Non-steroidal anti-inflammatories (NSAIDs)	Tylex Diclofenac Naproxen Ibuprofen Brufen Voltarol Emugel
1°: 4	Miscellaneous	GTN Stemetil Aromatherapy oils
2°: 1	Compound analgesics	Co-proxamol
2°: 2	Non-steroidal anti-inflammatories (NSAIDs)	Ketoprofen Piroxicam Brufen

APPENDIX Q

FACTORS THAT RELIEVE PAIN

Group code	Group of factors: relieve pain	Factors within group
1°: 1, 2°: 1, 3°: 1	Postural change	Sitting down Posture Changing position Support affected area Lifting the leg
1°: 2, 2°: 2, 3°: 2	Decreased activity	Reducing activity Bed rest Rest
1°: 3, 2°: 3, 3°: 3, 4°: 1	Analgesia / medication	Taking analgesia Gold injections
1°: 4	Sleep	Good night's sleep
1°: 5, 4°: 2	Complementary therapy	Aromatherapy Acupuncture Cyropractor
1°: 6, 2°: 4, 3°: 4	Topical / local therapy	Heat Cold packs Topical preparations Pressure to area
1°: 7	Increased activity	Keeping going Movement Swimming
1°: 8	Psychological therapy	Meditation Relaxation 'Mind over matter'
1°: 9	Alcohol	Alcohol
1°: 10	Nothing	Nothing in particular

APPENDIX R

FACTORS THAT EXACERBATE PAIN

Group code	Group of factors: exacerbate pain	Factors within group
1°: 1, 2°: 1, 3°: 1, 4°: 1	Postural change	In same position too long Getting up from bed Twisting / turning Bending Lying down Standing Sitting
1°: 2, 2°: 3, 3°: 3	Increased activity	Increasing activity / movt. Walking Using the affected part
1°: 3, 3°: 4	Lifting / carrying	Lifting / carrying anything
1°: 4, 2°: 4	Local pressure	Pressure on affected area
1°: 5, 2°: 5	Psychological	Tension / stress When feeling worn out
1°: 6,	Coughing / sneezing	Coughing / sneezing
1°: 7, 3°: 5	Gastro-intestinal	Eating wrong foods Constipation
1°: 8	Alcohol	Alcohol
1°: 9	Weather	Changes in the weather
1°: 10, 2°: 6	Nothing	Nothing in particular
2°: 2, 3°: 2	Decreased activity	Less activity + weight gain Not doing what used to do

APPENDIX S

KRUSKAL-WALLIS TESTS WITH MEAN RANK SCORES WHICH SHOW STATISTICAL SIGNIFICANCE FOR SIP FINDINGS

1. SIP overall total, physical and psychosocial dimension scores for Groups 1 - 4

	Overall total	Physical	Psychosocial
Chi-Square	87.263	83.639	76.798
df	3	3	3
Asymp. Sig.	.000	.000	.000

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Overall total	Group 1 = 111.75	Physical dimension	Group 1 = 110.94	Psychosocial dimension	Group 1 = 107.71
	Group 4 = 78.59		Group 4 = 75.00		Group 4 = 79.63
	Group 2 = 55.70		Group 2 = 49.61		Group 2 = 55.56
	Group 4 = 34.01		Group 4 = 42.35		Group 4 = 37.78

2. SIP physical dimension category scores for Groups 1 - 4

	Body care/movement	Mobility	Ambulation
Chi-Square	77.552	67.985	78.949
df	3	3	3
Asymp. Sig.	.000	.000	.000

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Body care/movement	Group 1 = 107.95	Mobility	Group 1 = 102.70	Ambulation	Group 1 = 108.39
	Group 4 = 73.13		Group 4 = 64.75		Group 4 = 69.88
	Group 2 = 48.97		Group 2 = 52.60		Group 2 = 50.13
	Group 4 = 46.72		Group 4 = 51.63		Group 4 = 46.44

3. SIP psychosocial dimension category scores for Groups 1 - 4

	Emotional behaviour	Social interaction	Alertness behaviour	Communication
Chi-Square	77.120	67.186	43.659	30.535
df	3	3	3	3
Asymp. Sig.	.000	.000	.000	.000

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Emotional behaviour	Group 1 = 106.28 Group 4 = 85.25 Group 2 = 51.59 Group 4 = 40.94	Social interaction	Group 1 = 104.22 Group 4 = 74.16 Group 2 = 53.09 Group 4 = 45.92	Alertness behaviour	Group 1 = 96.36 Group 4 = 66.91 Group 2 = 60.15 Group 4 = 49.63
Profile descriptor	Mean rank score				
Communication	Group 1 = 86.69 Group 4 = 75.41 Group 2 = 59.63 Group 4 = 56.42				

4. SIP independent category scores for Groups 1 - 4

	Sleep/rest	Home management	Work	Recreation/pastimes	Eating
Chi-Square	68.498	71.824	47.264	86.271	25.817
df	3	3	3	3	3
Asymp. Sig.	.000	.000	.000	.000	.000

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Sleep/rest	Group 1 = 106.09 Group 4 = 69.53 Group 2 = 55.45 Group 4 = 43.53	Home management	Group 1 = 107.18 Group 4 = 68.22 Group 2 = 52.54 Group 4 = 45.90	Work	Group 1 = 95.71 Group 4 = 71.72 Group 2 = 56.96 Group 4 = 51.54

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Recreation/pastimes	Group 1 = 110.36 Group 4 = 68.25 Group 2 = 50.46 Group 4 = 44.78	Eating	Group 1 = 86.84 Group 4 = 70.16 Group 2 = 68.53 Group 4 = 49.47

APPENDIX T

CHI-SQUARE TESTS WHICH SUGGEST STATISTICAL SIGNIFICANCE FOR SIP FINDINGS

1. SIP overall total scores for 2° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	905.880*	688	.000
Likelihood Ratio	293.175	688	1.000
Linear-by-Linear Association	.082	1	.774
N of Valid Cases	136		

* 781 cells (99.7%) have expected count less than 5. The minimum expected count is .01.

2. SIP physical dimension scores for 2° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	600.629*	512	.004
Likelihood Ratio	196.103	512	1.000
Linear-by-Linear Association	.000	1	.997
N of Valid Cases	136		

* 583 cells (99.7%) have expected count less than 5. The minimum expected count is .01.

3. SIP psychosocial dimension scores for 2° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	745.040*	544	.000
Likelihood Ratio	231.193	544	1.000
Linear-by-Linear Association	.740	1	.390
N of Valid Cases	136		

* 619 cells (99.7%) have expected count less than 5. The minimum expected count is .01.

4. SIP overall total scores for 1° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	961.664*	860	.009
Likelihood Ratio	405.252	860	1.000
Linear-by-Linear Association	3.162	1	.075
N of Valid Cases	136		

* 955 cells (99.8%) have expected count less than 5. The minimum expected count is .01.

5. SIP psychosocial dimension scores for 1° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	740.445*	680	.054
Likelihood Ratio	319.520	680	1.000
Linear-by-Linear Association	.862	1	.353
N of Valid Cases	136		

* 756 cells (99.6%) have expected count less than 5. The minimum expected count is .01.

6. SIP body care/movement category scores for 2° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	462.200*	368	.001
Likelihood Ratio	159.440	368	1.000
Linear-by-Linear Association	.000	1	.866
N of Valid Cases	136		

* 420 cells (99.3%) have expected count less than 5. The minimum expected count is .01.

7. SIP mobility category scores for lower back pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	89.192*	46	.000
Likelihood Ratio	52.830	46	.227
Linear-by-Linear Association	2.544	1	.111
N of Valid Cases	56		

* 70 cells (97.2%) have expected count less than 5. The minimum expected count is .02.

8. SIP mobility category scores for face pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	78.101*	46	.002
Likelihood Ratio	20.624	46	1.000
Linear-by-Linear Association	5.068	1	.024
N of Valid Cases	56		

* 71 cells (98.6%) have expected count less than 5. The minimum expected count is .02.

9. SIP ambulation category scores for neck pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	129.873*	69	.000
Likelihood Ratio	39.268	69	.999
Linear-by-Linear Association	2.025	1	.155
N of Valid Cases	56		

* 94 cells (97.9%) have expected count less than 5. The minimum expected count is .02.

10. SIP ambulation category scores for lower back pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	87.457*	46	.000
Likelihood Ratio	49.130	46	.349
Linear-by-Linear Association	7.258	1	.007
N of Valid Cases	56		

* 94 cells (97.2%) have expected count less than 5. The minimum expected count is .02.

11. SIP body care/movement category scores for pelvis/hip pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	206.804*	164	.013
Likelihood Ratio	110.312	164	1.000
Linear-by-Linear Association	9.903	1	.002
N of Valid Cases	56		

* 209 cells (99.5%) have expected count less than 5. The minimum expected count is .02.

12. SIP body care/movement category scores for leg pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	158.932*	123	.016
Likelihood Ratio	121.843	123	.513
Linear-by-Linear Association	12.896	1	.000
N of Valid Cases	56		

* 167 cells (99.4%) have expected count less than 5. The minimum expected count is .05.

13. SIP body care/movement category scores for shoulder pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	156.320*	123	.023
Likelihood Ratio	88.814	123	.991
Linear-by-Linear Association	10.172	1	.001
N of Valid Cases	56		

* 167 cells (99.4%) have expected count less than 5. The minimum expected count is .02.

14. SIP body care/movement category scores for neck pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	153.317*	123	.033
Likelihood Ratio	58.575	123	1.000
Linear-by-Linear Association	7.549	1	.006
N of Valid Cases	56		

* 167 cells (99.4%) have expected count less than 5. The minimum expected count is .02.

15. SIP mobility category scores for leg pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	101.994*	69	.006
Likelihood Ratio	83.683	69	.110
Linear-by-Linear Association	14.065	1	.000
N of Valid Cases	56		

* 95 cells (99.0%) have expected count less than 5. The minimum expected count is .05.

16. SIP mobility category scores for arm pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	66.879*	46	.024
Likelihood Ratio	40.667	46	.695
Linear-by-Linear Association	2.964	1	.085
N of Valid Cases	56		

* 71 cells (98.6%) have expected count less than 5. The minimum expected count is .07.

17. SIP mobility category scores for neck pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	93.242*	69	.028
Likelihood Ratio	44.143	69	.991
Linear-by-Linear Association	5.015	1	.025
N of Valid Cases	56		

* 95 cells (99.0%) have expected count less than 5. The minimum expected count is .02.

18. SIP mobility category scores for shoulder pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	91.235*	69	.038
Likelihood Ratio	59.621	69	.782
Linear-by-Linear Association	14.510	1	.000
N of Valid Cases	56		

* 95 cells (99.0%) have expected count less than 5. The minimum expected count is .02.

19. SIP mobility category scores for pelvis/hip pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	117.321*	92	.039
Likelihood Ratio	63.806	92	.989
Linear-by-Linear Association	4.022	1	.045
N of Valid Cases	56		

* 118 cells (98.3%) have expected count less than 5. The minimum expected count is .02.

20. SIP mobility category scores for hand pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	89.835*	69	.047
Likelihood Ratio	50.061	69	.958
Linear-by-Linear Association	.075	1	.784
N of Valid Cases	56		

* 95 cells (99.0%) have expected count less than 5. The minimum expected count is .02.

21. SIP ambulation category scores for pelvis/hip pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	128.911*	92	.007
Likelihood Ratio	64.728	92	.986
Linear-by-Linear Association	2.129	1	.145
N of Valid Cases	56		

* 119 cells (99.2%) have expected count less than 5. The minimum expected count is .02.

22. SIP ambulation category scores for chest pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	41.208*	23	.011
Likelihood Ratio	18.898	23	.707
Linear-by-Linear Association	.020	1	.888
N of Valid Cases	56		

* 45 cells (93.8%) have expected count less than 5. The minimum expected count is .05.

23. SIP emotional behaviour category scores for 2° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	477.970*	328	.000
Likelihood Ratio	165.457	328	1.000
Linear-by-Linear Association	1.561	1	.211
N of Valid Cases	136		

* 376 cells (99.5%) have expected count less than 5. The minimum expected count is .01.

24. SIP alertness behaviour category scores for 2° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	375.201*	272	.000
Likelihood Ratio	109.232	328	1.000
Linear-by-Linear Association	.184	1	.668
N of Valid Cases	136		

* 312 cells (99.0%) have expected count less than 5. The minimum expected count is .01.

25. SIP social interaction category scores for 2° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	504.175*	360	.000
Likelihood Ratio	148.123	360	1.000
Linear-by-Linear Association	.187	1	.666
N of Valid Cases	136		

* 411 cells (99.3%) have expected count less than 5. The minimum expected count is .01.

26. SIP communication category scores for 2° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	203.107*	96	.000
Likelihood Ratio	63.005	96	.996
Linear-by-Linear Association	2.260	1	.133
N of Valid Cases	136		

*113 cells (96.6%) have expected count less than 5. The minimum expected count is .01.

27. SIP alertness behaviour category scores for shoulder pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	120.980*	78	.001
Likelihood Ratio	61.092	78	.921
Linear-by-Linear Association	2.375	1	.123
N of Valid Cases	56		

* 107 cells (99.1%) have expected count less than 5. The minimum expected count is .02.

28. SIP alertness behaviour category scores for face pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	87.094*	52	.002
Likelihood Ratio	21.474	52	1.000
Linear-by-Linear Association	3.356	1	.067
N of Valid Cases	56		

* 79 cells (97.5%) have expected count less than 5. The minimum expected count is .02.

29. SIP alertness behaviour category scores for hand pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	115.307*	78	.004
Likelihood Ratio	49.950	78	.994
Linear-by-Linear Association	.080	1	.777
N of Valid Cases	56		

* 106 cells (98.1%) have expected count less than 5. The minimum expected count is .02.

30. SIP alertness behaviour category scores for neck pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	113.673*	78	.005
Likelihood Ratio	44.649	78	.999
Linear-by-Linear Association	2.284	1	.131
N of Valid Cases	56		

* 106 cells (98.1%) have expected count less than 5. The minimum expected count is .02.

31. SIP communication category scores for face pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	57.057*	20	.000
Likelihood Ratio	17.741	20	.604
Linear-by-Linear Association	3.053	1	.081
N of Valid Cases	56		

* 31 cells (93.9%) have expected count less than 5. The minimum expected count is .02.

32. SIP communication category scores for neck pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	93.360*	30	.000
Likelihood Ratio	27.731	30	.585
Linear-by-Linear Association	4.505	1	.034
N of Valid Cases	56		

* 41 cells (93.2%) have expected count less than 5. The minimum expected count is .02.

33. SIP communication category scores for pelvis/hip pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	107.126*	40	.000
Likelihood Ratio	38.443	40	.540
Linear-by-Linear Association	6.607	1	.010
N of Valid Cases	56		

* 51 cells (92.7%) have expected count less than 5. The minimum expected count is .02.

34. SIP communication category scores for arm pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	53.913*	20	.000
Likelihood Ratio	31.441	20	.050
Linear-by-Linear Association	9.626	1	.002
N of Valid Cases	56		

* 31 cells (93.9%) have expected count less than 5. The minimum expected count is .07.

35. SIP alertness behaviour category scores for 1° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	397.592*	340	.017
Likelihood Ratio	172.093	340	1.000
Linear-by-Linear Association	.213	1	.645
N of Valid Cases	136		

* 380 cells (98.7%) have expected count less than 5. The minimum expected count is .01.

36. SIP emotional behaviour category scores for face pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	97.472*	74	.035
Likelihood Ratio	24.443	74	1.000
Linear-by-Linear Association	5.825	1	.016
N of Valid Cases	56		

* 114 cells (100.0%) have expected count less than 5. The minimum expected count is .02.

37. SIP social interaction category scores for pelvis/hip pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	196.670*	156	.015
Likelihood Ratio	101.610	156	1.000
Linear-by-Linear Association	7.318	1	.007
N of Valid Cases	56		

* 199 cells (99.5%) have expected count less than 5. The minimum expected count is .02.

38. SIP social interaction category scores for hand pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	152.865*	117	.015
Likelihood Ratio	74.550	117	.999
Linear-by-Linear Association	.000	1	.985
N of Valid Cases	56		

* 159 cells (99.4%) have expected count less than 5. The minimum expected count is .02.

39. SIP social interaction category scores for neck pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	149.497*	117	.023
Likelihood Ratio	55.071	117	1.000
Linear-by-Linear Association	2.551	1	.110
N of Valid Cases	56		

* 159 cells (99.4%) have expected count less than 5. The minimum expected count is .02.

40. SIP social interaction category scores for shoulder pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	146.493*	117	.034
Likelihood Ratio	81.581	117	.995
Linear-by-Linear Association	.923	1	.337
N of Valid Cases	56		

* 159 cells (99.4%) have expected count less than 5. The minimum expected count is .02.

41. SIP social interaction category scores for chest pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	56.000*	39	.038
Likelihood Ratio	23.397	39	.977
Linear-by-Linear Association	.270	1	.603
N of Valid Cases	56		

* 79 cells (98.8%) have expected count less than 5. The minimum expected count is .05.

42. SIP social interaction category scores for abdomen pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	56.000*	39	.038
Likelihood Ratio	23.397	39	.977
Linear-by-Linear Association	.072	1	.788
N of Valid Cases	56		

* 79 cells (98.8%) have expected count less than 5. The minimum expected count is .05.

43. SIP alertness behaviour category scores for chest pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	46.138*	26	.009
Likelihood Ratio	20.624	26	.761
Linear-by-Linear Association	.083	1	.773
N of Valid Cases	56		

* 52 cells (96.3%) have expected count less than 5. The minimum expected count is .05.

44. SIP alertness behaviour category scores for arm pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	79.304*	52	.009
Likelihood Ratio	49.861	52	.558
Linear-by-Linear Association	3.293	1	.070
N of Valid Cases	56		

*79 cells (97.5%) have expected count less than 5. The minimum expected count is .07.

45. SIP alertness behaviour category scores for pelvis/hip pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	136.696*	104	.017
Likelihood Ratio	68.834	104	.997
Linear-by-Linear Association	15.434	1	.000
N of Valid Cases	56		

* 133 cells (98.5%) have expected count less than 5. The minimum expected count is .02.

46. SIP communication category scores for hand pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	52.603*	30	.007
Likelihood Ratio	39.217	30	.121
Linear-by-Linear Association	1.971	1	.160
N of Valid Cases	56		

* 42 cells (95.5%) have expected count less than 5. The minimum expected count is .02.

47. SIP communication category scores for chest pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.944*	10	.041
Likelihood Ratio	7.732	10	.655
Linear-by-Linear Association	.051	1	.822
N of Valid Cases	56		

* 20 cells (90.9%) have expected count less than 5. The minimum expected count is .05.

48. SIP social interaction category scores for arm pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	99.116*	78	.054
Likelihood Ratio	60.468	78	.929
Linear-by-Linear Association	.978	1	.323
N of Valid Cases	56		

* 119 cells (99.2%) have expected count less than 5. The minimum expected count is .07.

49. SIP communication category scores for head pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	31.095*	20	.054
Likelihood Ratio	14.881	20	.738
Linear-by-Linear Association	.693	1	.405
N of Valid Cases	56		

* 31 cells (93.9%) have expected count less than 5. The minimum expected count is .02.

50. SIP work category scores for 1° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	106.290*	70	.003
Likelihood Ratio	85.554	70	.100
Linear-by-Linear Association	1.641	1	.200
N of Valid Cases	136		

* 81 cells (92.0%) have expected count less than 5. The minimum expected count is .01.

51. SIP home management category scores for 2° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	344.668*	256	.000
Likelihood Ratio	111.687	256	1.000
Linear-by-Linear Association	.092	1	.761
N of Valid Cases	136		

* 294 cells (99.0%) have expected count less than 5. The minimum expected count is .01.

52. SIP recreation/pastime category scores for 2° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	317.395*	232	.000
Likelihood Ratio	119.680	232	1.000
Linear-by-Linear Association	.004	1	.952
N of Valid Cases	136		

* 267 cells (98.9%) have expected count less than 5. The minimum expected count is .01.

53. SIP home management category scores for neck pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	135.927*	87	.001
Likelihood Ratio	43.963	87	1.000
Linear-by-Linear Association	3.184	1	.074
N of Valid Cases	56		

* 119 cells (99.2%) have expected count less than 5. The minimum expected count is .02.

54. SIP home management category scores for pelvis/hip pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	167.533*	116	.001
Likelihood Ratio	74.343	116	.999
Linear-by-Linear Association	5.861	1	.015
N of Valid Cases	56		

* 149 cells (99.3%) have expected count less than 5. The minimum expected count is .02.

55. SIP home management category scores for hand pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	131.661*	87	.001
Likelihood Ratio	62.719	87	.977
Linear-by-Linear Association	2.952	1	.086
N of Valid Cases	56		

* 119 cells (99.2%) have expected count less than 5. The minimum expected count is .02.

56. SIP home management category scores for shoulder pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	129.425*	87	.002
Likelihood Ratio	69.362	87	.917
Linear-by-Linear Association	6.990	1	.008
N of Valid Cases	56		

* 119 cells (99.2%) have expected count less than 5. The minimum expected count is .02.

57. SIP home management category scores for face pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	92.629*	58	.003
Likelihood Ratio	23.397	58	1.000
Linear-by-Linear Association	6.205	1	.013
N of Valid Cases	56		

* 88 cells (97.8%) have expected count less than 5. The minimum expected count is .02.

58. SIP sleep/rest category scores for face pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	86.575*	46	.000
Likelihood Ratio	21.188	46	.999
Linear-by-Linear Association	2.155	1	.142
N of Valid Cases	56		

* 68 cells (94.4%) have expected count less than 5. The minimum expected count is .02.

59. SIP sleep/rest category scores for chest pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	46.138*	23	.003
Likelihood Ratio	20.624	23	.604
Linear-by-Linear Association	3.951	1	.047
N of Valid Cases	56		

* 44 cells (91.7%) have expected count less than 5. The minimum expected count is .05.

60. SIP recreation/pastimes category scores for neck pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	141.863*	84	.000
Likelihood Ratio	49.211	84	.999
Linear-by-Linear Association	5.746	1	.017
N of Valid Cases	56		

* 115 cells (99.1%) have expected count less than 5. The minimum expected count is .02.

61. SIP recreation/pastimes category scores for lower back pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	89.056*	56	.003
Likelihood Ratio	52.178	56	.620
Linear-by-Linear Association	7.411	1	.006
N of Valid Cases	56		

* 86 cells (98.9%) have expected count less than 5. The minimum expected count is .02.

62. SIP work category scores for pelvis/hip pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	62.348*	20	.000
Likelihood Ratio	17.368	20	.629
Linear-by-Linear Association	1.646	1	.199
N of Valid Cases	56		

* 26 cells (86.7%) have expected count less than 5. The minimum expected count is .02.

63. SIP sleep/rest category scores for pelvis/hip pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	129.026*	92	.007
Likelihood Ratio	62.982	92	.991
Linear-by-Linear Association	1.816	1	.178
N of Valid Cases	56		

* 119 cells (99.2%) have expected count less than 5. The minimum expected count is .02.

64. SIP sleep/rest category scores for upper back pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	38.742*	23	.021
Likelihood Ratio	17.368	23	.791
Linear-by-Linear Association	.081	1	.776
N of Valid Cases	56		

* 44 cells (91.7%) have expected count less than 5. The minimum expected count is .05.

65. SIP sleep/rest category scores for neck pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	94.708*	69	.022
Likelihood Ratio	45.759	69	.986
Linear-by-Linear Association	1.235	1	.267
N of Valid Cases	56		

* 93 cells (96.9%) have expected count less than 5. The minimum expected count is .02.

66. SIP recreation/pastimes category scores for hand pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	117.656*	84	.009
Likelihood Ratio	57.115	84	.989
Linear-by-Linear Association	.425	1	.515
N of Valid Cases	56		

* 115 cells (99.1%) have expected count less than 5. The minimum expected count is .02.

67. SIP recreation/pastimes category scores for arm pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	81.917*	56	.014
Likelihood Ratio	51.645	56	.640
Linear-by-Linear Association	6.598	1	.010
N of Valid Cases	56		

* 86 cells (98.9%) have expected count less than 5. The minimum expected count is .07.

68. SIP eating category scores for arm pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	34.685*	18	.010
Likelihood Ratio	23.487	18	.173
Linear-by-Linear Association	4.672	1	.031
N of Valid Cases	56		

* 28 cells (93.3%) have expected count less than 5. The minimum expected count is .07.

69. SIP eating category scores for chest pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.749*	9	.020
Likelihood Ratio	8.814	9	.455
Linear-by-Linear Association	1.170	1	.279
N of Valid Cases	56		

* 17 cells (85.0%) have expected count less than 5. The minimum expected count is .05.

70. SIP home management category scores for arm pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	81.396*	58	.023
Likelihood Ratio	54.015	58	.624
Linear-by-Linear Association	4.513	1	.034
N of Valid Cases	56		

* 89 cells (98.9%) have expected count less than 5. The minimum expected count is .07.

71. SIP recreation/pastimes category scores for chest pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	41.208*	28	.051
Likelihood Ratio	18.898	28	.901
Linear-by-Linear Association	.761	1	.383
N of Valid Cases	56		

* 57 cells (98.3%) have expected count less than 5. The minimum expected count is .05.

72. SIP sleep/rest management category scores for arm pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	62.058*	46	.057
Likelihood Ratio	27.290	46	.987
Linear-by-Linear Association	2.233	1	.135
N of Valid Cases	56		

* 68 cells (94.4%) have expected count less than 5. The minimum expected count is .02.

73. Work status for Groups 1 - 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24.862*	3	.000
Likelihood Ratio	26.668	3	.000
Linear-by-Linear Association	21.321	1	.000
N of Valid Cases	136		

* 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.06.

74. Retirement status for Groups 1 - 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	26.375*	6	.000
Likelihood Ratio	28.890	6	.000
Linear-by-Linear Association	22.087	1	.000
N of Valid Cases	136		

* 1 cells (8.3%) have expected count less than 5. The minimum expected count is 3.76.

75. Work status for 1° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	30.301*	10	.001
Likelihood Ratio	32.519	10	.000
Linear-by-Linear Association	.034	1	.853
N of Valid Cases	136		

* 15 cells (68.2%) have expected count less than 5. The minimum expected count is .88.

76. Retirement status for 1° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	47.610*	20	.000
Likelihood Ratio	55.635	20	.000
Linear-by-Linear Association	.000	1	.995
N of Valid Cases	136		

* 27 cells (81.38%) have expected count less than 5. The minimum expected count is .47.

77. Retirement status for arm pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.761*	4	.005
Likelihood Ratio	16.437	4	.002
Linear-by-Linear Association	8.868	1	.003
N of Valid Cases	56		

* 6 cells (66.7%) have expected count less than 5. The minimum expected count is 1.14.

78. Retirement status for 2° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29.101*	16	.023
Likelihood Ratio	30.295	16	.017
Linear-by-Linear Association	1.930	1	.165
N of Valid Cases	136		

* 22 cells (81.5%) have expected count less than 5. The minimum expected count is .47.

79. Health related not retired/not working for Groups 1 - 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	39.533*	6	.000
Likelihood Ratio	41.112	6	.000
Linear-by-Linear Association	5.840	1	.016
N of Valid Cases	136		

* 8 cells (66.7%) have expected count less than 5. The minimum expected count is 1.88.

80. Health related not retired/not working for 1° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	49.934*	20	.000
Likelihood Ratio	53.442	20	.000
Linear-by-Linear Association	.000	1	.984
N of Valid Cases	136		

*25 cells (75.8%) have expected count less than 5. The minimum expected count is .24.

81. Health related not retired/not working for arm pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.710*	4	.005
Likelihood Ratio	14.414	4	.006
Linear-by-Linear Association	11.343	1	.001
N of Valid Cases	56		

*7 cells (77.8%) have expected count less than 5. The minimum expected count is .07.

82. Health related not retired/not working for 2° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	27.581*	16	.035
Likelihood Ratio	23.255	16	.107
Linear-by-Linear Association	1.159	1	.282
N of Valid Cases	136		

*22 cells (81.5%) have expected count less than 5. The minimum expected count is .24.

83. Health related not retired/not working for hand pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.881*	6	.021
Likelihood Ratio	10.592	6	.102
Linear-by-Linear Association	2.426	1	.119
N of Valid Cases	56		

*10 cells (83.3%) have expected count less than 5. The minimum expected count is .02.

84. Health related retirement for 1° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	33. 026*	20	.034
Likelihood Ratio	40.322	20	.005
Linear-by-Linear Association	.362	1	.548
N of Valid Cases	136		

*26 cells (78.8%) have expected count less than 5. The minimum expected count is .22.

85. Health related retirement for 2° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	27.823*	16	.033
Likelihood Ratio	28.759	16	.026
Linear-by-Linear Association	1.136	1	.286
N of Valid Cases	136		

*22 cells (81.5%) have expected count less than 5. The minimum expected count is .22.

APPENDIX U

CHI-SQUARE TESTS WHICH SUGGEST STATISTICAL SIGNIFICANCE FOR THE RESOURCES QUESTIONNAIRE

1. Visits to GP in previous year for Groups 1 - 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	104.717*	18	.000
Likelihood Ratio	119.763	18	.000
Linear-by-Linear Association	26.383	1	.000
N of Valid Cases	136		

*16 cells (57.1%) have expected count less than 5. The minimum expected count is .12.

2. Visits to GP in previous year for number of dependants

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	56.100*	24	.000
Likelihood Ratio	35.522	24	.061
Linear-by-Linear Association	.164	1	.685
N of Valid Cases	136		

*27 cells (77.1%) have expected count less than 5. The minimum expected count is .04.

3. Visits to GP in previous year for 1° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	139.466*	60	.000
Likelihood Ratio	141.968	60	.000
Linear-by-Linear Association	13.676	1	.000
N of Valid Cases	136		

*70 cells (90.9%) have expected count less than 5. The minimum expected count is .01.

4. Visits to GP in previous year for 2° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	141.113*	48	.000
Likelihood Ratio	85.139	48	.001
Linear-by-Linear Association	12.264	1	.000
N of Valid Cases	136		

*58 cells (92.1%) have expected count less than 5. The minimum expected count is .01.

5. Visits to GP in previous year for pain duration

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	70.864*	30	.000
Likelihood Ratio	29.099	30	.512
Linear-by-Linear Association	.319	1	.572
N of Valid Cases	56		

*41 cells (97.6%) have expected count less than 5. The minimum expected count is .02.

6. Visits to GP in previous year for neck pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.545*	8	.035
Likelihood Ratio	10.116	8	.257
Linear-by-Linear Association	.148	1	.701
N of Valid Cases	13		

*15 cells (100%) have expected count less than 5. The minimum expected count is .08.

7. Home visits by GP in previous year for 1° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	96.662*	40	.000
Likelihood Ratio	37.393	40	.588
Linear-by-Linear Association	.044	1	.834
N of Valid Cases	136		

*49 cells (89.1%) have expected count less than 5. The minimum expected count is .01.

8. Home visits by GP in previous year for pelvis/hip pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.929*	9	.036
Likelihood Ratio	12.991	9	.163
Linear-by-Linear Association	1.446	1	.229
N of Valid Cases	27		

*14 cells (87.5%) have expected count less than 5. The minimum expected count is .04.

9. Visits to practice nurse in previous year for Groups 1 - 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	40.396*	15	.000
Likelihood Ratio	43.647	15	.000
Linear-by-Linear Association	2.432	1	.119
N of Valid Cases	136		

*14 cells (58.3%) have expected count less than 5. The minimum expected count is .12.

10. Visits to practice nurse in previous year for 1° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	83.114*	50	.002
Likelihood Ratio	77.898	50	.007
Linear-by-Linear Association	9.739	1	.002
N of Valid Cases	136		

*59 cells (89.4%) have expected count less than 5. The minimum expected count is .01.

11. Visits to practice nurse in previous year for employment status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	27.320*	15	.026
Likelihood Ratio	29.939	15	.012
Linear-by-Linear Association	6.549	1	.010
N of Valid Cases	136		

*13 cells (54.2%) have expected count less than 5. The minimum expected count is .15.

12. Visits by district nurse in previous year for number of pain sites

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	25.262*	10	.005
Likelihood Ratio	13.784	10	.183
Linear-by-Linear Association	4.119	1	.042
N of Valid Cases	56		

*14 cells (77.8%) have expected count less than 5. The minimum expected count is .04.

13. Visits by district nurse in previous year for pelvis/hip pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.289*	6	.018
Likelihood Ratio	8.896	6	.180
Linear-by-Linear Association	1.015	1	.314
N of Valid Cases	27		

*10 cells (83.3%) have expected count less than 5. The minimum expected count is .04.

14. Visits by district nurse in previous year for shoulder pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.408*	4	.034
Likelihood Ratio	8.515	4	.074
Linear-by-Linear Association	2.734	1	.098
N of Valid Cases	17		

*7 cells (77.8%) have expected count less than 5. The minimum expected count is .06.

15. Visits by district nurse in previous year for neck pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.017*	2	.049
Likelihood Ratio	4.460	2	.108
Linear-by-Linear Association	.477	1	.490
N of Valid Cases	13		

*5 cells (83.3%) have expected count less than 5. The minimum expected count is .15.

16. Visits with a PT or OT in previous year for SEG

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	120.049*	50	.000
Likelihood Ratio	39.248	50	.863
Linear-by-Linear Association	.196	1	.658
N of Valid Cases	136		

*59 cells (89.4%) have expected count less than 5. The minimum expected count is .01.

17. Visits with a PT or OT in previous year for SOC

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	64.864*	45	.028
Likelihood Ratio	38.716	45	.734
Linear-by-Linear Association	1.649	1	.199
N of Valid Cases	136		

*51 cells (85.0%) have expected count less than 5. The minimum expected count is .03.

18. Visits to a PT or OT in previous year for neck pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.394*	6	.037
Likelihood Ratio	7.656	6	.264
Linear-by-Linear Association	.713	1	.398
N of Valid Cases	13		

*11 cells (91.7%) have expected count less than 5. The minimum expected count is .08.

19. Visits with other therapists in previous year for Groups 1 - 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	27.301*	12	.007
Likelihood Ratio	21.990	12	.038
Linear-by-Linear Association	.093	1	.760
N of Valid Cases	136		

*16 cells (80.0%) have expected count less than 5. The minimum expected count is .12.

20. Visits with other therapists in previous year for practices

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.767*	4	.029
Likelihood Ratio	14.628	4	.006
Linear-by-Linear Association	4.934	1	.026
N of Valid Cases	136		

*8 cells (80.0%) have expected count less than 5. The minimum expected count is .49.

21. Visits with other therapists in previous year for 2° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	50.740*	32	.019
Likelihood Ratio	14.565	32	.996
Linear-by-Linear Association	.078	1	.780
N of Valid Cases	136		

*42 cells (85.0%) have expected count less than 5. The minimum expected count is .01.

22. Visits with other therapists in previous year for gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.453*	4	.051
Likelihood Ratio	13.214	4	.010
Linear-by-Linear Association	2.801	1	.094
N of Valid Cases	136		

*8 cells (80.0%) have expected count less than 5. The minimum expected count is .45.

23. Utilisation of regular medication in previous year for Groups 1 - 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	64.213*	3	.000
Likelihood Ratio	77.905	3	.000
Linear-by-Linear Association	35.876	1	.000
N of Valid Cases	136		

*0 cells (.0%) have expected count less than 5. The minimum expected count is 6.00.

24. Utilisation of analgesic medication in previous year for Groups 1 - 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	157.162*	12	.000
Likelihood Ratio	176.396	12	.000
Linear-by-Linear Association	59.128	1	.000
N of Valid Cases	136		

*7 cells (35.0%) have expected count less than 5. The minimum expected count is .24.

25. Utilisation of analgesic medication in previous year for SEG

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	96.791*	40	.000
Likelihood Ratio	39.422	40	.496
Linear-by-Linear Association	.572	1	.449
N of Valid Cases	136		

*45 cells (81.8%) have expected count less than 5. The minimum expected count is .01.

26. Utilisation of analgesic medication in previous year for 1° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	165.392*	40	.000
Likelihood Ratio	173.451	40	.000
Linear-by-Linear Association	.013	1	.908
N of Valid Cases	136		

*47 cells (85.5%) have expected count less than 5. The minimum expected count is .03.

27. Utilisation of analgesic medication in previous year for employment

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29.353*	12	.003
Likelihood Ratio	31.237	12	.002
Linear-by-Linear Association	16.456	1	.000
N of Valid Cases	136		

*7 cells (35.0%) have expected count less than 5. The minimum expected count is .31.

28. Utilisation of analgesic medication in previous year for 2° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	49.007*	32	.028
Likelihood Ratio	52.826	32	.012
Linear-by-Linear Association	1.397	1	.237
N of Valid Cases	136		

*40 cells (88.9%) have expected count less than 5. The minimum expected count is .03.

29. Utilisation of analgesic medication in previous year for pain duration

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	41.238*	24	.016
Likelihood Ratio	41.137	24	.016
Linear-by-Linear Association	6.446	1	.011
N of Valid Cases	56		

*31 cells (88.6%) have expected count less than 5. The minimum expected count is .04.

30. Visits to outpatients in previous year for Group 1 - 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	31.817*	12	.001
Likelihood Ratio	36.856	12	.000
Linear-by-Linear Association	11.122	1	.001
N of Valid Cases	136		

*16 cells (80.0%) have expected count less than 5. The minimum expected count is .82.

31. Visits to outpatients in previous year for SEG

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	58.338*	40	.031
Likelihood Ratio	43.646	40	.319
Linear-by-Linear Association	.000	1	.988
N of Valid Cases	136		

*48 cells (87.3%) have expected count less than 5. The minimum expected count is .05.

32. Visits to outpatients in previous year for hand pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.167*	8	.028
Likelihood Ratio	10.643	8	.223
Linear-by-Linear Association	.628	1	.428
N of Valid Cases	14		

*15 cells (100%) have expected count less than 5. The minimum expected count is .07.

33. Visits to outpatients in previous year for shoulder pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	15.201*	8	.055
Likelihood Ratio	13.947	8	.083
Linear-by-Linear Association	.628	1	.205
N of Valid Cases	17		

*15 cells (100%) have expected count less than 5. The minimum expected count is .06.

34. Visits to A & E in previous year for lower back pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.971*	2	.051
Likelihood Ratio	4.055	2	.132
Linear-by-Linear Association	1.388	1	.239
N of Valid Cases	27		

*5 cells (83.3%) have expected count less than 5. The minimum expected count is .07.

35. Admissions to hospital in previous year for Groups 1 - 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	16.464*	6	.011
Likelihood Ratio	20.156	6	.003
Linear-by-Linear Association	7.058	1	.008
N of Valid Cases	136		

*8 cells (66.7%) have expected count less than 5. The minimum expected count is .59.

36. Admissions to hospital in previous year for marital status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.334*	8	.009
Likelihood Ratio	15.762	8	.046
Linear-by-Linear Association	2.850	1	.091
N of Valid Cases	136		

*11cells (73.3%) have expected count less than 5. The minimum expected count is .15.

37. Admissions to hospital in previous year for employment status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.586*	6	.035
Likelihood Ratio	14.038	6	.029
Linear-by-Linear Association	1.422	1	.233
N of Valid Cases	136		

*8 cells (66.7%) have expected count less than 5. The minimum expected count is .77.

38. Admissions to hospital in previous year for 1° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	36.391*	20	.014
Likelihood Ratio	34.863	20	.021
Linear-by-Linear Association	.262	1	.609
N of Valid Cases	136		

*27 cells (81.8%) have expected count less than 5. The minimum expected count is .07.

39. Groups 1 - 4 for length of time in hospital in previous year

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	33.433*	12	.001
Likelihood Ratio	33.740	12	.001
Linear-by-Linear Association	3.103	1	.078
N of Valid Cases	136		

*16 cells (80.0%) have expected count less than 5. The minimum expected count is .12.

40. Length of time in hospital in previous year for marital status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	28.351*	16	.029
Likelihood Ratio	19.705	16	.234
Linear-by-Linear Association	.491	1	.483
N of Valid Cases	136		

*22 cells (88.0%) have expected count less than 5. The minimum expected count is .03.

41. Length of time in hospital in previous year for 1° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	64.236*	40	.009
Likelihood Ratio	48.448	40	.169
Linear-by-Linear Association	.003	1	.959
N of Valid Cases	136		

*49 cells (89.1%) have expected count less than 5. The minimum expected count is .01.

42. Visits to a specialist pain clinic in previous year for SEG

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	77.908*	20	.000
Likelihood Ratio	19.091	20	.516
Linear-by-Linear Association	.474	1	.491
N of Valid Cases	136		

*26 cells (78.8%) have expected count less than 5. The minimum expected count is .01.

43. Visits to a specialist pain clinic in previous year for pelvis/hip pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	27.675*	6	.000
Likelihood Ratio	9.550	6	.145
Linear-by-Linear Association	.474	1	.193
N of Valid Cases	27		

*10 cells (83.3%) have expected count less than 5. The minimum expected count is .04

44. Visits with a social worker in previous year for 2° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	112.640*	24	.000
Likelihood Ratio	17.829	24	.811
Linear-by-Linear Association	6.995	1	.008
N of Valid Cases	136		

*33 cells (91.7%) have expected count less than 5. The minimum expected count is .01

45. Visits with a social worker in previous year for pelvis/hip pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	27.000*	3	.000
Likelihood Ratio	8.554	3	.036
Linear-by-Linear Association	4.020	1	.045
N of Valid Cases	27		

*6 cells (75.0%) have expected count less than 5. The minimum expected count is .04

46. Visits with a social worker in previous year for dependants

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	27.474*	12	.007
Likelihood Ratio	8.542	12	.741
Linear-by-Linear Association	4.801	1	.028
N of Valid Cases	136		

*17 cells (85.0%) have expected count less than 5. The minimum expected count is .04

47. Visits with a social worker in previous year for neck pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.107*	4	.011
Likelihood Ratio	7.233	4	.124
Linear-by-Linear Association	1.106	1	.293
N of Valid Cases	13		

*8 cells (88.9%) have expected count less than 5. The minimum expected count is .08

48. Visits with benefits officer in previous year for SEG

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	70.191*	30	.000
Likelihood Ratio	33.631	30	.296
Linear-by-Linear Association	.001	1	.977
N of Valid Cases	136		

*37 cells (84.1%) have expected count less than 5. The minimum expected count is .02

49. Visits with benefits officer in previous year for marital status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29.863*	12	.003
Likelihood Ratio	21.156	12	.048
Linear-by-Linear Association	12.526	1	.000
N of Valid Cases	136		

*16 cells (80.0%) have expected count less than 5. The minimum expected count is .09

50. Visits with benefits officer in previous year for foot pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.653*	6	.005
Likelihood Ratio	9.609	6	.142
Linear-by-Linear Association	4.482	1	.034
N of Valid Cases	17		

*11 cells (91.7%) have expected count less than 5. The minimum expected count is .06

51. Visits with benefits officer in previous year for employment status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	22.498*	9	.007
Likelihood Ratio	21.794	9	.010
Linear-by-Linear Association	.842	1	.359
N of Valid Cases	136		

*12 cells (75.0%) have expected count less than 5. The minimum expected count is .46

52. Visits with benefits officer in previous year for 2° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	42.580*	24	.011
Likelihood Ratio	24.658	24	.425
Linear-by-Linear Association	1.013	1	.314
N of Valid Cases	136		

*32 cells (88.9%) have expected count less than 5. The minimum expected count is .04

53. Visits with benefits officer in previous year for neck pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.107*	4	.011
Likelihood Ratio	7.233	4	.124
Linear-by-Linear Association	1.106	1	.293
N of Valid Cases	13		

*8 cells (88.9%) have expected count less than 5. The minimum expected count is .08

54. Receipt of income support for marital status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	39.677*	12	.000
Likelihood Ratio	32.936	12	.001
Linear-by-Linear Association	6.309	1	.012
N of Valid Cases	136		

*16 cells (80.0%) have expected count less than 5. The minimum expected count is .15

55. Receipt of income support for employment status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	23.374*	9	.005
Likelihood Ratio	25.862	9	.002
Linear-by-Linear Association	4.079	1	.043
N of Valid Cases	136		

*12 cells (75.0%) have expected count less than 5. The minimum expected count is .77

56. Receipt of income support for shoulder pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21.407*	6	.002
Likelihood Ratio	13.236	6	.039
Linear-by-Linear Association	3.617	1	.057
N of Valid Cases	17		

*11 cells (91.7%) have expected count less than 5. The minimum expected count is .06

57. Receipt of housing benefit for Groups 1 - 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	28.297*	9	.001
Likelihood Ratio	29.487	9	.001
Linear-by-Linear Association	13.854	1	.000
N of Valid Cases	136		

*9 cells (56.3%) have expected count less than 5. The minimum expected count is .47

58. Receipt of housing benefit for marital status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	51.838*	12	.000
Likelihood Ratio	29.565	12	.003
Linear-by-Linear Association	8.624	1	.003
N of Valid Cases	136		

*16 cells (80.0%) have expected count less than 5. The minimum expected count is .12

59. Receipt of housing benefit for employment status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	25.027*	9	.003
Likelihood Ratio	30.896	9	.000
Linear-by-Linear Association	10.793	1	.001
N of Valid Cases	136		

*10 cells (62.5%) have expected count less than 5. The minimum expected count is .62

60. Receipt of housing benefit for SEG

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	61.202*	30	.001
Likelihood Ratio	35.950	30	.210
Linear-by-Linear Association	.880	1	.348
N of Valid Cases	136		

*36 cells (81.8%) have expected count less than 5. The minimum expected count is .03

61. Receipt of community charge benefit for marital status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.236*	12	.002
Likelihood Ratio	26.823	12	.008
Linear-by-Linear Association	15.639	1	.000
N of Valid Cases	136		

*15 cells (75.0%) have expected count less than 5. The minimum expected count is .21

62. Receipt of community charge benefit for practices

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	11.236*	3	.011
Likelihood Ratio	14.114	3	.003
Linear-by-Linear Association	.739	1	.390
N of Valid Cases	136		

*3 cells (37.5%) have expected count less than 5. The minimum expected count is 3.45

63. Receipt of community charge benefit for employment status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	22.961*	9	.006
Likelihood Ratio	29.963	9	.000
Linear-by-Linear Association	11.766	1	.001
N of Valid Cases	136		

*10 cells (62.5%) have expected count less than 5. The minimum expected count is 1.08

64. Receipt of disability premium for shoulder pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.881*	4	.001
Likelihood Ratio	8.809	4	.066
Linear-by-Linear Association	5.035	1	.025
N of Valid Cases	17		

*7 cells (77.8%) have expected count less than 5. The minimum expected count is .06

65. Receipt of unemployment benefit for age

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.495*	4	.050
Likelihood Ratio	10.659	4	.031
Linear-by-Linear Association	6.328	1	.012
N of Valid Cases	136		

*5 cells (50.0%) have expected count less than 5. The minimum expected count is .85

66. Receipt of unemployment benefit for dependants

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.854*	4	.043
Likelihood Ratio	7.831	4	.098
Linear-by-Linear Association	1.712	1	.191
N of Valid Cases	136		

*7 cells (70.0%) have expected count less than 5. The minimum expected count is .18

67. Receipt of unemployment benefit for employment status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.273*	3	.016
Likelihood Ratio	10.692	3	.014
Linear-by-Linear Association	.118	1	.732
N of Valid Cases	136		

*4 cells (50.0%) have expected count less than 5. The minimum expected count is .77

68. Receipt of unemployment benefit for 1° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.294*	10	.027
Likelihood Ratio	14.029	10	.172
Linear-by-Linear Association	1.616	1	.204
N of Valid Cases	136		

*16 cells (72.7%) have expected count less than 5. The minimum expected count is .07

69. Receipt of unemployment benefit for SEG

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.930*	10	.056
Likelihood Ratio	12.486	10	.254
Linear-by-Linear Association	.640	1	.424
N of Valid Cases	136		

*15 cells (68.2%) have expected count less than 5. The minimum expected count is .04

70. Receipt of invalidity benefit for Groups 1 - 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	28.741*	9	.001
Likelihood Ratio	32.504	9	.000
Linear-by-Linear Association	7.848	1	.005
N of Valid Cases	136		

*12 cells (68.2%) have expected count less than 5. The minimum expected count is .24

71. Receipt of invalidity benefit for gender

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.707*	3	.021
Likelihood Ratio	11.607	3	.009
Linear-by-Linear Association	9.373	1	.002
N of Valid Cases	136		

*5 cells (62.5%) have expected count less than 5. The minimum expected count is .90

72. Receipt of invalidity benefit for employment status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.207*	9	.023
Likelihood Ratio	23.727	9	.005
Linear-by-Linear Association	10.941	1	.001
N of Valid Cases	136		

*12 cells (75.0%) have expected count less than 5. The minimum expected count is .31

73. Receipt of invalidity benefit for 1° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	50.274*	30	.012
Likelihood Ratio	39.350	30	.118
Linear-by-Linear Association	3.223	1	.073
N of Valid Cases	136		

*38 cells (86.4%) have expected count less than 5. The minimum expected count is .03

74. Receipt of invalidity benefit for 2° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	42.751*	24	.011
Likelihood Ratio	29.172	24	.214
Linear-by-Linear Association	2.398	1	.121
N of Valid Cases	136		

*32 cells (88.9%) have expected count less than 5. The minimum expected count is .03

75. Receipt of severe disablement allowance for SEG

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	62.605*	20	.000
Likelihood Ratio	26.600	20	.147
Linear-by-Linear Association	5.374	1	.020
N of Valid Cases	136		

*26 cells (78.8%) have expected count less than 5. The minimum expected count is .01

76. Receipt of severe disablement allowance for foot pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.889*	6	.004
Likelihood Ratio	9.681	6	.139
Linear-by-Linear Association	9.008	1	.003
N of Valid Cases	17		

*10 cells (83.3%) have expected count less than 5. The minimum expected count is .06

77. Receipt of severe disablement allowance for SOC

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29.027*	18	.048
Likelihood Ratio	18.286	18	.437
Linear-by-Linear Association	9.682	1	.002
N of Valid Cases	136		

*21 cells (70.0%) have expected count less than 5. The minimum expected count is .01

78. Receipt of occupational/industrial injury pension for 2° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	40.974*	16	.001
Likelihood Ratio	14.725	16	.545
Linear-by-Linear Association	5.307	1	.021
N of Valid Cases	17		

*24 cells (88.9%) have expected count less than 5. The minimum expected count is .03

79. Receipt of occupational/industrial injury pension for neck pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13.000*	2	.002
Likelihood Ratio	7.051	2	.029
Linear-by-Linear Association	1.786	1	.181
N of Valid Cases	13		

*5 cells (83.3%) have expected count less than 5. The minimum expected count is .08

80. Receipt of occupational/industrial injury pension for pelvis/hip pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.040*	3	.003
Likelihood Ratio	7.980	3	.046
Linear-by-Linear Association	3.670	1	.055
N of Valid Cases	27		

*6 cells (75.0%) have expected count less than 5. The minimum expected count is .07

81. Receipt of disability living allowance for Groups 1 - 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	28.723*	9	.001
Likelihood Ratio	29.356	9	.001
Linear-by-Linear Association	16.440	1	.000
N of Valid Cases	136		

*12 cells (75.0%) have expected count less than 5. The minimum expected count is .24

82. Receipt of disability living allowance for SEG

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	54.430*	30	.004
Likelihood Ratio	35.738	30	.217
Linear-by-Linear Association	.237	1	.626
N of Valid Cases	136		

*37 cells (84.1%) have expected count less than 5. The minimum expected count is .01

83. Receipt of disability living allowance for shoulder pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	22.421*	6	.001
Likelihood Ratio	13.873	6	.031
Linear-by-Linear Association	9.042	1	.003
N of Valid Cases	17		

*11 cells (91.7%) have expected count less than 5. The minimum expected count is .06

84. Receipt of disability living allowance for marital status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21.426*	12	.044
Likelihood Ratio	14.265	12	.284
Linear-by-Linear Association	1.708	1	.191
N of Valid Cases	136		

*17 cells (85.0%) have expected count less than 5. The minimum expected count is .06

85. Receipt of disability living allowance for employment status

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21.535*	9	.010
Likelihood Ratio	21.838	9	.009
Linear-by-Linear Association	5.198	1	.023
N of Valid Cases	136		

*12 cells (75.0%) have expected count less than 5. The minimum expected count is .31

86. Receipt of attendance allowance for pain duration

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	38.726*	18	.003
Likelihood Ratio	19.072	18	.203
Linear-by-Linear Association	.541	1	.001
N of Valid Cases	56		

*23 cells (82.1%) have expected count less than 5. The minimum expected count is .02

87. Receipt of attendance allowance for number of pain sites

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	32.999*	15	.005
Likelihood Ratio	22.079	15	.106
Linear-by-Linear Association	.855	1	.355
N of Valid Cases	56		

*20 cells (83.3%) have expected count less than 5. The minimum expected count is .04

88. Receipt of attendance allowance for Groups 1 - 4

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	19.053*	9	.025
Likelihood Ratio	15.984	9	.067
Linear-by-Linear Association	.113	1	.737
N of Valid Cases	136		

*12 cells (75.0%) have expected count less than 5. The minimum expected count is .12

89. Receipt of attendance allowance for 2° diagnoses

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	38.728*	24	.029
Likelihood Ratio	19.072	24	.748
Linear-by-Linear Association	.541	1	.462
N of Valid Cases	136		

*33 cells (91.7%) have expected count less than 5. The minimum expected count is .01

90. Receipt of attendance allowance for leg pain

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.161*	4	.057
Likelihood Ratio	5.600	4	.231
Linear-by-Linear Association	.310	1	.578
N of Valid Cases	28		

*7 cells (77.8%) have expected count less than 5. The minimum expected count is .11

APPENDIX V

KRUSKAL-WALLIS TESTS WITH MEAN RANK SCORES WHICH SHOW STATISTICAL SIGNIFICANCE FOR FINDINGS FROM THE RESOURCES QUESTIONNAIRE

1. SIP overall total, physical and psychosocial dimension scores for visits to GP in previous year

	Overall total	Physical	Psychosocial
Chi-Square	46.928	33.451	46.364
df	6	6	6
Asymp. Sig.	.000	.000	.000

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Overall total	7-12 visits = 103.24 13-24 visits = 101.00 > 24 visits = 85.00 4- 6 visits = 82.75 2- 3 visits = 65.94 1 visit = 56.85 0 visit = 34.90	Physical dimension	7-12 visits = 95.41 13-24 visits = 95.00 4- 6 visits = 82.89 2- 3 visits = 64.14 1 visit = 59.75 0 visit = 43.18 > 24 visits = 34.00	Psychosocial dimension	> 24 visits = 111.00 13-24 visits = 105.75 7-12 visits = 105.09 4- 6 visits = 78.42 2- 3 visits = 64.47 1 visit = 59.75 0 visit = 39.29

2. SIP physical dimension category scores for visits to GP in previous year

	Body care/movement	Mobility	Ambulation
Chi-Square	25.576	19.771	27.279
df	6	6	6
Asymp. Sig.	.000	.003	.000

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Body care / movement	13-24 visits = 91.92	Mobility	7-12 visits = 87.79	Ambulation	7-12 visits = 91.24
	7-12 visits = 91.79		13-24 visits = 83.83		4- 6 visits = 83.77
	4- 6 visits = 79.97		4- 6 visits = 78.88		13-24 visits = 83.00
	2- 3 visits = 65.13		2- 3 visits = 63.94		1 visit = 64.47
	1 visit = 65.94		1 visit = 56.05		2- 3 visits = 63.05
	0 visit = 48.45		0 visit = 54.65		0 visit = 47.74
	> 24 visits = 40.00		> 24 visits = 48.50		> 24 visits = 41.00

3. SIP psychosocial dimension category scores for visits to GP in previous year

	Emotional behaviour	Social interaction	Alertness	Communication
Chi-Square	38.777	43.675	33.901	21.114
df	6	6	6	6
Asymp. Sig.	.000	.000	.000	.002

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Emotional behaviour	> 24 visits = 103.00	Social interaction	13-24 visits = 109.75	Alertness behaviour	> 24 visits = 127.00
	13-24 visits = 102.92		7-12 visits = 103.24		13-24 visits = 103.17
	7-12 visits = 97.09		4- 6 visits = 76.95		7-12 visits = 96.29
	4- 6 visits = 80.84		2- 3 visits = 62.32		4- 6 visits = 74.39
	2- 3 visits = 64.27		1 visit = 54.10		2- 3 visits = 61.64
	1 visit = 57.10		0 visit = 46.03		1 visit = 54.15
	0 visit = 41.31		> 24 visits = 41.50		0 visit = 51.84

Profile descriptor	Mean rank score
Communication	7-12 visits = 91.00 13-24 visits = 87.92 4- 6 visits = 70.05 2- 3 visits = 65.62 1 visit = 60.70 0 visit = 57.39 > 24 visits = 55.00

4. SIP independent category scores for visits to GP in previous year

	Sleep/rest	Home management	Work	Recreation/pastimes	Eating
Chi-Square	31.978	34.625	30.104	43.051	18.895
df	6	6	6	6	6
Asymp. Sig.	.000	.000	.000	.000	.004

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Sleep / rest	13-24 visits = 104.67 > 24 visits = 93.50 7-12 visits = 93.29 4- 6 visits = 78.27 2- 3 visits = 66.06 1 visit = 49.10 0 visit = 41.50	Home management	13-24 visits = 102.83 7-12 visits = 94.35 4- 6 visits = 82.75 2- 3 visits = 59.65 1 visit = 62.65 0 visit = 46.92 > 24 visits = 39.50	Work	13-24 visits = 96.50 7-12 visits = 94.91 4- 6 visits = 72.70 2- 3 visits = 67.65 1 visit = 55.70 0 visit = 50.10 > 24 visits = 48.50

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Recreation / pastimes	13-24 visits = 105.58 7-12 visits = 102.79 4- 6 visits = 79.80 2- 3 visits = 60.74 1 visit = 51.90 0 visit = 46.85 > 24 visits = 41.00	Eating	7-12 visits = 85.71 4- 6 visits = 77.27 13-24 visits = 75.08 2- 3 visits = 69.69 1 visit = 66.10 0 visit = 48.74 > 24 visits = 46.00

5. SIP overall total, physical and psychosocial dimension scores for home visits by GP in previous year

	Overall total	Physical	Psychosocial
Chi-Square	12.367	11.382	10.676
df	4	4	4
Asymp. Sig.	.015	.023	.040

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Overall total	7-12 visits = 131.00 2- 3 visits = 113.00 1 visit = 81.67 0 visit = 65.52 4- 6 visits = 23.00	Physical dimension	7-12 visits = 133.00 2- 3 visits = 110.80 1 visit = 75.78 0 visit = 65.94 4- 6 visits = 34.00	Psychosocial dimension	7-12 visits = 129.00 2- 3 visits = 103.30 1 visit = 83.67 0 visit = 65.72 4- 6 visits = 31.50

6. SIP physical and psychosocial dimension category scores for home visits by GP in previous year

	Body care/movement	Alertness behaviour	Communication
Chi-Square	10.676	13.098	14.563
df	4	4	4
Asymp. Sig.	.030	.011	.006

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Body care/movement	7-12 visits = 135.00 2- 3 visits = 104.00 1 visit = 77.61 0 visit = 65.99 4- 6 visits = 40.00	Alertness behaviour	7-12 visits = 128.00 2- 3 visits = 111.40 1 visit = 74.94 0 visit = 65.93 4- 6 visits = 45.50	Communication	7-12 visits = 131.50 2- 3 visits = 101.70 1 visit = 76.67 0 visit = 66.09 4- 6 visits = 55.00

7. SIP independent category scores for home visits by GP in previous year

	Sleep/rest	Home management	Work	Eating
Chi-Square	12.417	12.246	11.013	11.634
df	4	4	4	4
Asymp. Sig.	.015	.016	.026	.020

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Sleep/rest	7-12 visits = 127.50 2- 3 visits = 111.40 1 visit = 80.72 0 visit = 65.56 4- 6 visits = 38.00	Home management	7-12 visits = 129.00 2- 3 visits = 111.30 1 visit = 78.17 0 visit = 65.73 4- 6 visits = 39.50	Work	7-12 visits = 120.50 2- 3 visits = 106.10 1 visit = 72.50 0 visit = 66.37 4- 6 visits = 48.50

Profile descriptor	Mean rank score
Eating	7-12 visits = 108.00 2- 3 visits = 99.30 1 visit = 91.17 0 visit = 65.38 4- 6 visits = 46.00

8. SIP overall total, ambulation, work and eating category scores for visits to practice nurse in previous year

	Overall total	Ambulation	Work *	Eating
Chi-Square	11.919	13.279	10.807	13.375
df	5	5	5	5
Asymp. Sig.	.036	.021	.055	.020

* approaching statistical significance

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Overall total	7-12 visits = 107.00 13-24 visits = 101.00 4- 6 visits = 79.88 2- 3 visits = 74.19 1 visit = 72.64 0 visit = 57.11	Ambulation	7-12 visits = 111.38 13-24 visits = 98.50 4- 6 visits = 83.13 1 visit = 71.31 2- 3 visits = 67.31 0 visit = 59.82	Work	13-24 visits = 120.50 7-12 visits = 102.50 4- 6 visits = 73.06 2- 3 visits = 71.13 1 visit = 70.45 0 visit = 61.62

Profile descriptor	Mean rank score
Eating	7-12 visits = 96.25 2- 3 visits = 81.04 4- 6 visits = 78.13 1 visit = 67.95 0 visit = 58.83 13-24 visits = 46.00

9. SIP overall total, physical and psychosocial dimension scores for visits by district nurse in previous year

	Overall total	Physical	Psychosocial
Chi-Square	7.923	9.144	6.673
df	2	2	2
Asymp. Sig.	.019	.010	.036

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Overall total	> 24 visits = 131.00 2- 3 visits = 130.50 0 visit = 67.10	Physical dimension	> 24 visits = 133.00 2- 3 visits = 132.00 0 visit = 67.06	Psychosocial dimension	> 24 visits = 129.00 2- 3 visits = 121.00 0 visit = 67.26

10. SIP physical dimension category scores for visits by district nurse in previous year

	Body care/movement	Mobility	Ambulation
Chi-Square	8.944	12.754	8.577
df	2	2	2
Asymp. Sig.	.011	.002	.014

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Body care / movement	> 24 visits = 135.00 2- 3 visits = 125.50 0 visit = 67.14	Mobility	2- 3 visits = 134.25 > 24 visits = 131.00 0 visit = 67.04	Ambulation	2- 3 visits = 127.50 > 24 visits = 126.00 0 visit = 67.18

11. SIP psychosocial dimension category scores for visits by district nurse in previous year

	Social interaction	Alertness behaviour	Communication
Chi-Square	7.756	8.844	7.168
df	2	2	2
Asymp. Sig.	.021	.012	.028

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Social interaction	2- 3 visits = 127.00 > 24 visits = 117.00 0 visit = 67.26	Alertness behaviour	> 24 visits = 128.00 2- 3 visits = 123.25 0 visit = 67.23	Communication	> 24 visits = 131.50 2- 3 visits = 94.25 0 visit = 67.64

12. SIP independent category scores for visits by district nurse in previous year

	Sleep / rest	Home management	Work	Recreation/pastimes	Eating
Chi-Square	6.932	8.625	8.410	9.254	6.380
df	2	2	2	2	2
Asymp. Sig.	.031	.013	.015	.010	.041

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Sleep / rest	> 24 visits = 127.50 2- 3 visits = 119.75 0 visit = 67.29	Home management	> 24 visits = 129.00 2- 3 visits = 127.25 0 visit = 67.16	Work	> 24 visits = 120.50 2- 3 visits = 120.50 0 visit = 67.33
Profile descriptor	Mean rank score	Profile descriptor	Mean rank score		
Recreation / pastimes	2- 3 visits = 131.75 > 24 visits = 124.00 0 visit = 67.13	Eating	2- 3 visits = 129.50 > 24 visits = 108.00 0 visit = 67.44		

13. SIP overall total, physical and psychosocial dimension scores for visits to PT or OT in previous year

	Overall total	Physical	Psychosocial
Chi-Square	17.335	17.429	17.841
df	5	5	5
Asymp. Sig.	.004	.004	.003

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Overall total	13-24 visits = 122.50 7-12 visits = 120.00 2- 3 visits = 108.25 1 visit = 98.50 4- 6 visits = 78.00 0 visit = 63.64	Physical dimension	13-24 visits = 128.50 7-12 visits = 115.58 2- 3 visits = 101.25 1 visit = 97.33 4- 6 visits = 79.67 0 visit = 63.87	Psychosocial dimension	13-24 visits = 116.00 7-12 visits = 112.50 2- 3 visits = 111.25 1 visit = 99.92 4- 6 visits = 82.50 0 visit = 63.59

14. SIP physical dimension category scores for visits to PT or OT in previous year

	Body care/movement	Mobility	Ambulation
Chi-Square	18.022	19.950	18.159
df	5	5	5
Asymp. Sig.	.003	.001	.003

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Body care/movement	13-24 visits = 129.00	Mobility	13-24 visits = 120.25	Ambulation	13-24 visits = 123.50
	7-12 visits = 117.00		7-12 visits = 116.75		7-12 visits = 109.00
	1 visit = 97.83		1 visit = 102.58		1 visit = 100.50
	2- 3 visits = 92.75		2- 3 visits = 84.75		2- 3 visits = 98.13
	4- 6 visits = 82.33		4- 6 visits = 73.33		4- 6 visits = 84.00
	0 visit = 64.03		0 visit = 64.43		0 visit = 63.89

15. SIP psychosocial category scores for visits to PT or OT in previous year

	Emotional behaviour	Social interaction	Alertness behaviour	Communication
Chi-Square	11.585	21.970	20.252	16.425
df	5	5	5	5
Asymp. Sig.	.041	.001	.001	.006

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Emotional behaviour	7-12 visits = 102.75	Social interaction	13-24 visits = 123.00	Alertness behaviour	2- 3 visits = 112.50
	13-24 visits = 102.50		7-12 visits = 122.00		1 visit = 106.08
	2- 3 visits = 96.75		2- 3 visits = 116.88		7-12 visits = 105.00
	1 visit = 95.75		1 visit = 90.83		13-24 visits = 90.50
	4- 6 visits = 89.50		4- 6 visits = 72.00		4- 6 visits = 73.67
	0 visit = 64.50		0 visit = 63.84		0 visit = 64.01

Profile descriptor	Mean rank score
Communication	13-24 visits = 126.25 1 visit = 92.83 7-12 visits = 87.00 4- 6 visits = 81.17 2- 3 visits = 69.25 0 visit = 65.25

16. SIP independent category scores for visits to PT or OT in previous year

	Sleep/rest	Home management	Work	Recreation/pastimes
Chi-Square	13.535	17.756	15.805	21.887
df	5	5	5	5
Asymp. Sig.	.019	.003	.007	.001

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Sleep / rest	7-12 visits = 135.50 13-24 visits = 103.75 2- 3 visits = 100.75 1 visit = 78.08 4- 6 visits = 67.00 0 visit = 65.25	Home management	13-24 visits = 131.50 7-12 visits = 106.75 2- 3 visits = 106.00 1 visit = 93.58 4- 6 visits = 67.17 0 visit = 64.31	Work	7-12 visits = 110.75 2- 3 visits = 102.50 1 visit = 93.25 4- 6 visits = 90.00 13-24 visits = 84.50 0 visit = 64.59

Profile descriptor	Mean rank score
Recreation / pastimes	13-24 visits = 118.75 2- 3 visits = 116.25 7-12 visits = 113.25 1 visit = 93.67 4- 6 visits = 92.67 0 visit = 63.42

17. SIP overall total, physical and psychosocial dimension scores for regular utilisation of analgesics in previous year

	Overall total	Physical	Psychosocial
Chi-Square	83.319	81.773	74.618
df	4	4	4
Asymp. Sig.	.000	.000	.000

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Overall total	> 3 = 122.50 2 - 3 = 114.14 1 = 101.96 Other med. = 60.77 No med. = 38.31	Physical dimension	> 3 = 121.00 2 - 3 = 115.24 1 = 98.80 Other med. = 56.24 No med. = 42.90	Psychosocial dimension	> 3 = 125.00 2 - 3 = 108.74 1 = 101.54 Other med. = 59.19 No med. = 41.93

18. SIP physical dimension category scores for regular utilisation of analgesics in previous year

	Body care/movement	Mobility	Ambulation
Chi-Square	75.066	75.033	79.489
df	4	4	4
Asymp. Sig.	.000	.000	.000

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Body care/movement	> 3 = 124.50 2 - 3 = 111.79 1 = 95.39 Other med. = 55.09 No med. = 46.61	Mobility	> 3 = 119.25 2 - 3 = 110.33 1 = 89.11 Other med. = 54.60 No med. = 50.62	Ambulation	2 - 3 = 113.88 > 3 = 111.00 1 = 95.89 Other med. = 55.72 No med. = 45.57

19. SIP psychosocial category scores for regular utilisation of analgesics in previous year

	Emotional behaviour	Social interaction	Alertness behaviour	Communication
Chi-Square	74.789	67.043	49.313	34.888
df	4	4	4	4
Asymp. Sig.	.000	.000	.000	.000

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Emotional behaviour	> 3 = 108.25 2 - 3 = 106.12 1 = 104.96 Other med. = 57.53 No med. = 43.40	Social interaction	> 3 = 123.50 2 - 3 = 103.40 1 = 99.41 Other med. = 54.71 No med. = 48.58	Alertness behaviour	> 3 = 117.50 2 - 3 = 104.55 1 = 81.80 Other med. = 62.45 No med. = 50.36

Profile descriptor	Mean rank score
Communication	> 3 = 125.25 2 - 3 = 89.60 1 = 78.26 Other med. = 64.49 No med. = 56.25

20. SIP independent category scores for regular utilisation of analgesics in previous year

	Sleep/rest	Home management	Work	Recreation/pastimes	Eating
Chi-Square	69.256	73.834	44.009	85.122	2.841
df	4	4	4	4	4
Asymp. Sig.	.000	.000	.000	.000	.000

Profile descriptor	Mean rank score	Profile descriptor	Mean rank s[illegible]	Profile descriptor	Mean rank score
Sleep / rest	> 3 = 131.50 2 - 3 = 112.17 1 = 90.65 Other med. = 58.04 No med. = 46.06	Home management	> 3 = 11[illegible].50 2 - 3 = 1[illegible]4.21 1 = 92.26 Other med. = 56.60 No med. = 46.10	Work	> 3 = 110.75 2 - 3 = 99.14 1 = 84.37 Other med. = 60.27 No med. = 53.36

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Recreation / pastimes	> 3 = 117.25 2 - 3 = 111.95 1 = 101.13 Other med. = 52.54 No med. = 46.19	Eating	> 3 = 121.50 2 - 3 = 94.50 1 = 74.24 Other med. = 70.69 No med. = 51.45

21. MPQ WRV total and dimension scores for regular utilisation of analgesics in previous year

	WRV Total	WRV (S)	WRV (A)	WRV (M)
Chi-Square	14.980	11.330	16.957	13.827
df	4	4	4	4
Asymp. Sig.	.005	.023	.002	.008

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Overall total	2 - 3 = 37.50 > 3 = 33.00 1 = 26.74 No med. = 19.33 Other med. = 9.80	WRV (S)	2 - 3 = 35.80 > 3 = 30.50 1 = 27.91 No med. = 20.33 Other med. = 11.00	WRV (A)	> 3 = 37.50 2 - 3 = 37.25 1 = 27.22 No med. = 17.50 Other med. = 9.00

Profile descriptor	Mean rank score
WRV (M)	2 - 3 = 38.53 No med. = 26.75 > 3 = 26.50 1 = 23.54 Other med. = 19.33

22. SIP overall total, physical and psychosocial dimension scores for visits to outpatients in previous year

	Overall total	Physical	Psychosocial
Chi-Square	33.056	29.595	29.706
df	4	4	4
Asymp. Sig.	.000	.000	.000

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Overall total	7-12 visits = 115.71 4- 6 visits = 105.50 2- 3 visits = 92.21 1 visit = 70.69 0 visit = 56.97	Physical dimension	7-12 visits = 111.93 4- 6 visits = 103.90 2- 3 visits = 88.43 1 visit = 66.92 0 visit = 58.54	Psychosocial dimension	7-12 visits = 116.00 4- 6 visits = 105.55 2- 3 visits = 83.96 1 visit = 66.23 0 visit = 58.68

23. SIP physical dimension category scores for visits to outpatients in previous year

	Body care/movement	Mobility	Ambulation
Chi-Square	28.128	26.337	33.091
df	4	4	4
Asymp. Sig.	.000	.000	.000

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Body care / movement	7-12 visits = 111.29 4- 6 visits = 95.55 2- 3 visits = 89.18 1 visit = 71.81 0 visit = 58.69	Mobility	4- 6 visits = 98.70 7-12 visits = 97.64 2- 3 visits = 88.32 1 visit = 63.54 0 visit = 60.68	Ambulation	4- 6 visits = 105.80 7-12 visits = 105.14 1 visit = 91.18 2- 3 visits = 69.38 0 visit = 58.08

24. SIP psychosocial dimension category scores for visits to outpatients in previous year

	Emotional behaviour	Social interaction	Alertness	Communication
Chi-Square	22.739	33.094	20.219	27.520
df	4	4	4	4
Asymp. Sig.	.000	.000	.000	.000

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Emotional behaviour	7-12 visits = 109.50 4- 6 visits = 100.95 2- 3 visits = 79.36 1 visit = 69.38 0 visit = 60.08	Social interaction	7-12 visits = 120.64 4- 6 visits = 97.80 2- 3 visits = 85.21 1 visit = 68.27 0 visit = 58.84	Alertness behaviour	4- 6 visits = 99.00 7-12 visits = 97.79 2- 3 visits = 80.39 1 visit = 68.65 0 visit = 61.13

Profile descriptor	Mean rank score
Communication	7-12 visits = 123.79 4- 6 visits = 90.95 2- 3 visits = 73.36 1 visit = 65.69 0 visit = 61.51

25. SIP independent category scores for visits to outpatients in previous year

	Sleep/rest	Home management	Work	Recreation/pastimes	Eating
Chi-Square	20.180	28.522	27.520	34.328	13.438
df	4	4	4	4	4
Asymp. Sig.	.000	.000	.000	.000	.009

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Sleep / rest	7-12 visits = 112.43 4- 6 visits = 89.65 2- 3 visits = 83.14 1 visit = 62.81 0 visit = 61.43	Home management	7-12 visits = 115.86 4- 6 visits = 97.55 2- 3 visits = 83.54 1 visit = 72.23 0 visit = 58.92	Work	7-12 visits = 110.21 2- 3 visits = 83.32 4- 6 visits = 82.55 1 visit = 82.54 0 visit = 59.56

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Recreation / pastimes	7-12 visits = 110.43 4- 6 visits = 97.85 2- 3 visits = 92.04 1 visit = 78.77 0 visit = 57.09	Eating	7-12 visits = 94.57 4- 6 visits = 90.95 2- 3 visits = 79.54 1 visit = 61.23 0 visit = 63.42

26. SIP independent category scores for visits to accident and emergency in previous year

	Work
Chi-Square	8.198
df	3
Asymp. Sig.	.042

Profile descriptor	Mean rank score
Work	4- 6 visits = 120.50 2- 3 visits = 120.50 1 visit = 71.60 0 visit = 66.25

27. SIP overall total, physical and psychosocial dimension scores for in-patient admissions in previous year

	Overall total	Physical	Psychosocial
Chi-Square	8.744	9.361	10.124
df	2	2	2
Asymp. Sig.	.013	.009	.006

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Overall total	2 - 5 = 99.20 1 = 91.15 0 = 64.70	Physical dimension	2 - 5 = 102.40 1 = 88.96 0 = 64.81	Psychosocial dimension	2 - 5 = 100.30 1 = 92.23 0 = 64.54

28. SIP physical dimension category scores for in-patient admissions in previous year

	Body care/movement	Mobility	Ambulation
Chi-Square	10.056	17.723	9.292
df	2	2	2
Asymp. Sig.	.007	.000	.010

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Body care/movement	2 - 5 = 99.90 1 = 90.00 0 = 64.80	Mobility	2 - 5 = 108.40 1 = 92.73 0 = 64.14	Ambulation	2 - 5 = 99.10 1 = 88.58 0 = 64.99

29. SIP psychosocial dimension category scores for in-patient admissions in previous year

	Emotional behaviour	Social interaction	Alertness behaviour	Communication
Chi-Square	9.252	9.054	7.032	8.336
df	2	2	2	2
Asymp. Sig.	.010	.011	.030	.015

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Emotional behaviour	2 - 5 = 101.80 1 = 88.69 0 = 64.86	Social interaction	1 = 91.69 2 - 5 = 91.00 0 = 64.99	Alertness behaviour	2 - 5 = 94.10 1 = 84.88 0 = 65.61

Profile descriptor	Mean rank score
Communication	2 - 5 = 94.50 1 = 81.35 0 = 65.98

30. SIP independent category scores for in-patient admissions in previous year

	Sleep/rest *	Home management	Work	Recreation/pastimes
Chi-Square	5.646	7.837	10.039	11.967
df	2	2	2	2
Asymp. Sig.	.059	.020	.007	.003

* approaching statistical significance

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Sleep / rest	2 - 5 = 100.20 1 = 83.73 0 = 65.97	Home management	2 - 5 = 102.30 1 = 83.73 0 = 65.39	Work	2 - 5 = 91.70 1 = 89.81 0 = 65.17

Profile descriptor	Mean rank score
Recreation / pastimes	2 - 5 = 103.40 1 = 91.19 0 = 64.52

31. SIP overall total, physical and psychosocial dimension scores for length of stay in hospital in previous year

	Overall total	Physical	Psychosocial
Chi-Square	13.894	15.047	13.298
df	4	4	4
Asymp. Sig.	.008	.005	.010

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Overall total	1- 2 months = 131.00 1 day = 114.43 1- 4 weeks = 76.00 2- 7 days = 74.17 0 days = 64.70	Physical dimension	1- 2 months = 133.00 1 day = 113.86 1- 4 weeks = 78.00 2- 7 days = 71.08 0 days = 64.81	Psychosocial dimension	1- 2 months = 129.00 1 day = 109.43 2- 7 days = 80.75 1- 4 weeks = 80.25 0 days = 64.54

32. SIP physical dimension category scores for length of stay in hospital in previous year

	Body care/movement	Mobility	Ambulation
Chi-Square	15.391	21.908	17.304
df	4	4	4
Asymp. Sig.	.004	.000	.002

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Body care/movement	1- 2 months = 135.00 1 day = 110.86 1- 4 weeks = 79.25 2- 7 days = 73.58 0 days = 64.80	Mobility	1- 2 months = 131.00 1 day = 112.71 1- 4 weeks = 88.00 2- 7 days = 79.25 0 days = 64.14	Ambulation	1- 2 months = 126.00 1 day = 116.64 1- 4 weeks = 75.38 2- 7 days = 67.17 0 days = 64.99

33. SIP psychosocial category scores for length of stay in hospital in previous year

	Emotional behaviour	Social interaction	Alertness behaviour	Communication
Chi-Square	10.442	12.934	11.159	10.839
df	4	4	4	4
Asymp. Sig.	.034	.012	.025	.028

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Emotional behaviour	1- 2 months = 110.50 1 day = 103.79 2- 7 days = 82.67 1- 4 weeks = 82.25 0 days = 64.86	Social interaction	1- 2 months = 117.00 1 day = 107.64 1- 4 weeks = 84.50 2- 7 days = 73.08 0 days = 64.99	Alertness behaviour	1- 2 months = 128.00 1 day = 99.21 1- 4 weeks = 85.63 2- 7 days = 68.17 0 days = 65.61

Profile descriptor	Mean rank score
Communication	1- 2 months = 131.50 1- 4 weeks = 85.25 1 day = 84.71 2- 7 days = 77.42 0 days = 65.98

34. SIP independent category scores for length of stay in hospital in previous year

	Sleep/rest	Home management	Work	Recreation/pastimes
Chi-Square	12.053	11.538	23.065	19.063
df	4	4	4	4
Asymp. Sig.	.017	.021	.000	.001

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Sleep / rest	1- 2 months = 127.50 1 day = 105.21 1- 4 weeks = 83.25 0 days = 65.97 2- 7 days = 55.67	Home management	1- 2 months = 129.00 1 day = 103.86 1- 4 weeks = 84.13 2- 7 days = 67.92 0 days = 65.39	Work	1- 2 months = 120.50 1 day = 117.71 1- 4 weeks = 84.50 0 days = 65.17 2- 7 days = 57.25

Profile descriptor	Mean rank score
Recreation / pastimes	1- 2 months = 124.00 1 day = 118.07 1- 4 weeks = 85.75 2- 7 days = 68.17 0 days = 64.52

35. SIP overall total and physical dimension scores for visits to a specialist pain clinic in previous year

	Overall total	Physical
Chi-Square	6.952	7.257
df	2	2
Asymp. Sig.	.031	.027

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Overall total	4- 6 visits = 123.50 2- 3 visits = 113.50 0 visit = 66.98	Physical dimension	4- 6 visits = 120.00 2- 3 visits = 115.00 0 visit = 67.02

36. SIP physical and psychosocial dimension category scores for visits to a specialist pain clinic in previous year

	Body care/movement	Ambulation	Communication
Chi-Square	9.154	6.855	10.706
df	2	2	2
Asymp. Sig.	.010	.032	.005

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Body care / movement	4- 6 visits = 123.00 2- 3 visits = 119.25 0 visit = 66.91	Ambulation	4- 6 visits = 113.50 2- 3 visits = 113.75 0 visit = 67.13	Communication	4- 6 visits = 127.00 2- 3 visits = 91.00 0 visit = 67.27

37. SIP independent category scores for visits to a specialist pain clinic in previous year

	Work	Recreation/pastimes	Eating
Chi-Square	7.728	8.885	8.777
df	2	2	2
Asymp. Sig.	.021	.012	.012

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Work	2- 3 visits = 112.25 4- 6 visits = 110.75 0 visit = 67.20	Recreation / pastimes	2- 3 visits = 120.50 4- 6 visits = 119.25 0 visit = 66.94	Eating	4- 6 visits = 135.50 2- 3 visits = 81.50 0 visit = 67.29

38. SIP physical and psychosocial dimension category scores for visits with a social worker in previous year

	Mobility	Alertness behaviour *	Communication
Chi-Square	8.070	7.727	9.350
df	3	3	3
Asymp. Sig.	.045	.052	.025

* approaching statistical significance

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Mobility	2- 3 visits = 133.00 1 visit = 127.50 0 visit = 67.75 4- 6 visits = 48.50	Alertness behaviour	2- 3 visits = 135.50 4- 6 visits = 127.00 0 visit = 67.73 1 visit = 45.50	Communication	2- 3 visits = 133.50 1 visit = 119.00 0 visit = 67.73 4- 6 visits = 55.00

39. SIP overall total, psychosocial dimension and physical dimension category scores for visits with benefits officer in previous year

	Overall total	Psychosocial	Body care/movement*
Chi-Square	7.897	10.095	7.47
df	3	3	3
Asymp. Sig.	.048	.018	.058

* approaching statistical significance

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Overall total	2- 3 visits = 109.50 4- 6 visits = 102.67 1 visit = 74.57 0 visit = 65.44	Psychosocial dimension	4- 6 visits = 109.67 2- 3 visits = 108.00 1 visit = 78.29 0 visit = 64.86	Body care / movement	2- 3 visits = 109.38 4- 6 visits = 85.00 1 visit = 78.29 0 visit = 65.67

40. SIP psychosocial dimension category scores for visits with benefits officer in previous year

	Social interaction	Alertness behaviour	Communication
Chi-Square	8.718	8.919	9.654
df	3	3	3
Asymp. Sig.	.033	.030	.022

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Social interaction	2- 3 visits = 110.25 4- 6 visits = 95.50 1 visit = 74.29 0 visit = 65.64	Alertness behaviour	4- 6 visits = 105.00 2- 3 visits = 96.13 1 visit = 79.18 0 visit = 65.29	Communication	4- 6 visits = 97.67 1 visit = 84.61 2- 3 visits = 73.75 0 visit = 65.60

41. SIP independent category scores for visits with benefits officer in previous year

	Home management *	Work
Chi-Square	7.722	9.439
df	3	3
Asymp. Sig.	.052	.024

* approaching statistical significance

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Home management	2- 3 visits = 109.38 4- 6 visits = 85.17 1 visit = 77.71 0 visit = 65.52	Work	2- 3 visits = 102.50 4- 6 visits = 96.50 1 visit = 77.96 0 visit = 65.52

42. SIP psychosocial dimension category scores for receipt of income support

	Communication
Chi-Square	11.279
df	3
Asymp. Sig.	.010

Profile descriptor	Mean rank score
Communication	< 1 year = 106.60 1- 5 years = 73.75 > 5 years = 65.60 none = 66.04

43. SIP independent category scores for receipt of income support

	Home management	Work	Recreation/pastimes
Chi-Square	8.504	8.831	8.878
df	3	3	3
Asymp. Sig.	.037	.032	.031

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Home management	< 1 year = 104.30 1- 5 years = 90.17 > 5 years = 72.53 none = 65.14	Work	> 5 years = 96.50 < 1 year = 91.70 1- 5 years = 72.50 none = 65.37	Recreation / pastimes	< 1 year = 107.60 > 5 years = 78.50 1- 5 years = 77.57 none = 64.94

44. SIP overall total, physical and psychosocial dimension scores for receipt of housing benefit

	Overall total	Physical	Psychosocial
Chi-Square	14.958	17.937	13.414
df	3	3	3
Asymp. Sig.	.002	.000	.004

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Overall total	< 1 year = 108.50 > 5 years = 100.71 1- 5 years = 83.20 none = 62.03	Physical dimension	< 1 year = 109.50 > 5 years = 101.00 1- 5 years = 85.00 none = 61.63	Psychosocial dimension	< 1 year = 107.75 > 5 years = 98.07 1- 5 years = 80.80 none = 62.69

45. SIP physical dimension category scores for receipt of housing benefit

	Body care/movement	Mobility	Ambulation
Chi-Square	15.293	12.159	25.178
df	3	3	3
Asymp. Sig.	.002	.007	.000

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Body care/movement	< 1 year = 103.88 > 5 years = 97.57 1- 5 years = 83.15 none = 62.42	Mobility	< 1 year = 113.63 > 5 years = 81.93 1- 5 years = 75.97 none = 64.46	Ambulation	< 1 year = 113.38 > 5 years = 104.21 1- 5 years = 87.85 none = 60.72

46. SIP psychosocial category scores for receipt of housing benefit

	Emotional behaviour	Social interaction
Chi-Square	12.919	11.715
df	3	3
Asymp. Sig.	.005	.008

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Emotional behaviour	< 1 year = 102.75 > 5 years = 102.07 1- 5 years = 77.88 none = 63.17	Social interaction	< 1 year = 104.63 > 5 years = 97.57 1- 5 years = 75.10 none = 63.93

47. SIP independent category scores for receipt of housing benefit

	Sleep/rest	Home management	Work	Recreation/pastimes	Eating
Chi-Square	11.913	14.247	11.474	17.312	12.596
df	3	3	3	3	3
Asymp. Sig.	.017	.003	.009	.001	.006

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Sleep / rest	< 1 year = 103.63 > 5 years = 99.29 1- 5 years = 76.43 none = 63.60	Home management	< 1 year = 106.63 > 5 years = 103.50 1- 5 years = 75.13 none = 63.45	Work	< 1 year = 102.50 > 5 years = 89.64 1- 5 years = 77.30 none = 64.12

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Recreation / pastimes	< 1 year = 110.25 > 5 years = 107.14 1- 5 years = 74.70 none = 63.15	Eating	> 5 years = 106.71 1- 5 years = 74.03 none = 65.76 < 1 year = 46.00

48. SIP physical dimension and physical dimension category scores for receipt of community charge benefit

	Physical dimension	Ambulation
Chi-Square	7.973	12.611
df	3	3
Asymp. Sig.	.047	.006

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Physical dimension	> 5 years = 94.90 1- 5 years = 78.13 < 1 year = 70.64 none = 63.88	Ambulation	> 5 years = 97.65 1- 5 years = 82.11 < 1 year = 72.29 none = 62.74

49. SIP independent category scores for receipt of community charge benefit

	Sleep/rest	Recreation/pastimes	Eating
Chi-Square	11.051	8.754	8.643
df	3	3	3
Asymp. Sig.	.011	.033	.034

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Sleep / rest	> 5 years = 104.05 < 1 year = 72.43 1- 5 years = 68.66 none = 64.64	Recreation / pastimes	> 5 years = 96.50 1- 5 years = 76.03 < 1 year = 68.71 none = 64.25	Eating	> 5 years = 94.70 1- 5 years = 73.63 none = 65.86 < 1 year = 54.86

50. SIP overall total, physical and psychosocial dimension scores for receipt of disability premium

	Overall total	Physical	Psychosocial
Chi-Square	7.866	7.509	7.031
df	2	2	2
Asymp. Sig.	.020	.023	.030

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Overall total	1- 5 years = 133.00 > 5 years = 125.00 none = 67.11	Physical dimension	> 5 years = 128.00 1- 5 years = 125.50 none = 67.20	Psychosocial dimension	1- 5 years = 132.50 > 5 years = 107.00 none = 67.25

51. SIP physical dimension category scores for receipt of disability premium

	Body care/movement	Mobility	Ambulation
Chi-Square	7.000	11.279	8.230
df	2	2	2
Asymp. Sig.	.030	.004	.016

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Body care/movement	1- 5 years = 125.00 > 5 years = 115.00 none = 67.30	Mobility	> 5 years = 135.50 1- 5 years = 126.00 none = 67.13	Ambulation	> 5 years = 134.00 1- 5 years = 121.25 none = 67.21

52. SIP psychosocial category scores for receipt of disability premium

	Emotional behaviour	Social interaction	Alertness behaviour	Communication
Chi-Square	6.776	6.284	9.149	11.260
df	2	2	2	2
Asymp. Sig.	.034	.043	.010	.004

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Emotional behaviour	1- 5 years = 133.50 > 5 years = 90.00 none = 67.36	Social interaction	1- 5 years = 118.50 > 5 years = 118.00 none = 67.38	Alertness behaviour	1- 5 years = 132.00 > 5 years = 111.00 none = 67.23

Profile descriptor	Mean rank score
Communication	1- 5 years = 132.50 none = 67.64 > 5 years = 55.00

53. SIP independent category scores for receipt of disability premium

	Sleep/rest	Home management	Work	Recreation/pastimes	Eating
Chi-Square	7.017	7.854	8.410	10.708	6.892
df	2	2	2	2	2
Asymp. Sig.	.030	.020	.015	.005	.032

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Sleep / rest	1- 5 years = 128.00 > 5 years = 110.50 none = 67.29	Home management	1- 5 years = 127.75 > 5 years = 120.00 none = 67.22	Work	1- 5 years = 120.50 > 5 years = 120.50 none = 67.33

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Recreation / pastimes	1- 5 years = 135.50 > 5 years = 130.50 none = 67.03	Eating	> 5 years = 131.00 1- 5 years = 109.75 none = 67.41

54. SIP overall total and independent category scores for receipt of unemployment benefit

	Overall total	Sleep/rest
Chi-Square	4.322	3.748
df	1	1
Asymp. Sig.	.038	.053

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Overall total	none = 69.85 > 5 years = 33.20	Sleep / rest	none = 69.66 > 5 years = 38.00

55. SIP overall total, physical and psychosocial dimension scores for receipt of invalidity benefit

	Overall total	Physical	Psychosocial
Chi-Square	28.384	28.839	19.043
df	3	3	3
Asymp. Sig.	.000	.000	.000

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Overall total	6mth- 1year = 122.00 1- 5 years = 117.50 > 5 years = 107.20 none = 61.86	Physical dimension	1- 5 years = 115.20 6mth- 1year = 113.00 > 5 years = 110.30 none = 62.07	Psychosocial dimension	6mth- 1year = 126.50 1- 5 years = 105.95 > 5 years = 92.50 none = 63.37

56. SIP physical dimension category scores for receipt of invalidity benefit

	Body care/movement	Mobility	Ambulation
Chi-Square	26.020	13.390	32.098
df	3	3	3
Asymp. Sig.	.000	.004	.000

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Body care/movement	6mth- 1year = 117.00	Mobility	1- 5 years = 98.60	Ambulation	> 5 years = 115.30
	1- 5 years = 109.65		6mth- 1year = 89.75		1- 5 years = 113.35
	> 5 years = 105.40		> 5 years = 87.90		6mth- 1year = 109.25
	none = 62.68		none = 64.80		none = 64.80

57. SIP psychosocial category scores for receipt of invalidity benefit

	Emotional behaviour	Social interaction	Alertness behaviour	Communication
Chi-Square	18.453	16.340	17.893	23.752
df	3	3	3	3
Asymp. Sig.	.000	.001	.000	.000

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Emotional behaviour	6mth- 1year = 110.50	Social interaction	6mth- 1year = 112.50	Alertness behaviour	6mth- 1year = 128.50
	1- 5 years = 108.00		1- 5 years = 102.05		1- 5 years = 101.00
	> 5 years = 91.50		> 5 years = 90.50		> 5 years = 73.30
	none = 63.51		none = 64.04		none = 64.56

Profile descriptor	Mean rank score
Communication	6mth- 1year = 125.25 > 5 years = 98.10 1- 5 years = 91.00 none = 64.41

58. SIP independent category scores for receipt of invalidity benefit

	Sleep/rest	Home management	Work	Recreation/pastimes
Chi-Square	17.525	31.187	40.290	36.849
df	3	3	3	3
Asymp. Sig.	.001	.000	.000	.000

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Sleep / rest	6mth- 1year = 110.50 1- 5 years = 108.45 > 5 years = 79.80 none = 63.96	Home management	6mth- 1year = 120.75 > 5 years = 118.70 1- 5 years = 108.95 none = 62.11	Work	6mth- 1year = 120.50 1- 5 years = 120.50 > 5 years = 91.70 none = 62.28

Profile descriptor	Mean rank score
Recreation / pastimes	1- 5 years = 120.30 6mth- 1year = 112.00 > 5 years = 110.70 none = 61.64

59. SIP overall total and physical dimension scores for receipt of severe disablement allowance

	Overall total	Physical
Chi-Square	7.171	9.888
df	2	2
Asymp. Sig.	.028	.007

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Overall total	6mth- 1year = 128.00 > 5 years = 109.75 none = 66.79	Physical dimension	6mth- 1year = 131.00 > 5 years = 116.25 none = 66.56

60. SIP physical dimension category scores for receipt of severe disablement allowance

	Body care/movement	Mobility	Ambulation
Chi-Square	10.157	11.866	14.237
df	2	2	2
Asymp. Sig.	.006	.003	.001

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Body care/movement	6mth- 1year = 132.00 > 5 years = 113.75 none = 66.63	Mobility	6mth- 1year = 132.00 > 5 years = 111.75 none = 66.69	Ambulation	6mth- 1year = 131,00 > 5 years = 125.25 none = 66.29

61. SIP psychosocial category scores for receipt of severe disablement allowance

	Communication
Chi-Square	7.896
df	2
Asymp. Sig.	.019

Profile descriptor	Mean rank score
Communication	6mth- 1year = 135.00 > 5 years = 87.00 none = 67.43

62. SIP independent category scores for receipt of severe disablement allowance

	Home management	Work	Recreation/pastimes
Chi-Square	7.677	7.703	9.675
df	2	2	2
Asymp. Sig.	.022	.021	.008

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Home management	6mth- 1year = 121.00 > 5 years = 109.00 none = 66.86	Work	6mth- 1year = 120.50 > 5 years = 102.50 none = 67.06	Recreation / pastimes	6mth- 1year = 128.00 > 5 years = 112.88 none = 66.69

63. SIP overall total, physical and psychosocial dimension scores for receipt of occupational/industrial injury pension

	Overall total	Physical	Psychosocial
Chi-Square	6.506	6.576	6.932
df	2	2	2
Asymp. Sig.	.039	.037	.031

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Overall total	> 5 years = 134.50 1 - 5 years = 88.50 none = 67.20	Physical dimension	> 5 years = 135.00 1 - 5 years = 70.00 none = 67.47

64. SIP physical dimension category scores for receipt of occupational/industrial injury pension

	Body care/movement	Mobility	Ambulation *
Chi-Square	7.180	8.425	5.780
df	2	2	2
Asymp. Sig.	.028	.015	.056

* approaching statistical significance

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Body care/movement	> 5 years = 134.50 1 - 5 years = 75.25 none = 67.40	Mobility	> 5 years = 130.25 none = 67.87 1 - 5 years = 48.50	Ambulation	> 5 years = 127.50 1 - 5 years = 69.75 none = 67.59

65. SIP psychosocial category scores for receipt of occupational/industrial injury pension

	Social interaction	Alertness behaviour	Communication
Chi-Square	9.115	7.728	12.864
df	2	2	2
Asymp. Sig.	.010	.021	.002

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Social interaction	> 5 years = 132.50 1 - 5 years = 104.25 none = 66.99	Alertness behaviour	> 5 years = 133.25 1 - 5 years = 69.75 none = 67.50	Communication	> 5 years = 134.75 1 - 5 years = 87.00 none = 67.22

66. SIP independent category scores for receipt of occupational/industrial injury pension

	Home management	Work	Recreation/pastimes
Chi-Square	7.102	6.144	8.318
df	2	2	2
Asymp. Sig.	.029	.046	.016

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Home management	> 5 years = 133.50 1 - 5 years = 81.00 none = 67.33	Work	> 5 years = 120.50 1 - 5 years = 84.50 none = 67.47	Recreation / pastimes	> 5 years = 128.50 1 - 5 years = 105.25 none = 67.03

67. MPQ miscellaneous dimension scores for receipt of occupational/industrial injury pension

	Miscellaneous
Chi-Square	6.454
df	2
Asymp. Sig.	.040

Profile descriptor	Mean rank score
Miscellaneous dimension	> 5 years = 53.00 none = 67.33 1 - 5 years = 6.50

68. SIP overall total, physical and psychosocial dimension scores for receipt of disability living allowance

	Overall total	Physical	Psychosocial
Chi-Square	18.950	21.580	16.440
df	3	3	3
Asymp. Sig.	.000	.000	.001

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Overall total	≤ 1 year = 129.50 1 - 5 years = 116.43 > 5 years = 104.50 none = 64.26	Physical dimension	≤ 1 year = 132.00 1 - 5 years = 114.57 > 5 years = 114.50 none = 64.17	Psychosocial dimension	≤ 1 year = 127.00 1 - 5 years = 111.71 > 5 years = 95.00 none = 64.72

69. SIP physical dimension category scores for receipt of disability living allowance

	Body care/movement	Mobility	Ambulation
Chi-Square	19.014	27.439	25.200
df	3	3	3
Asymp. Sig.	.000	.000	.000

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Body care/movement	≤ 1 year = 133.50 1 - 5 years = 108.71 > 5 years = 101.25 none = 64.68	Mobility	≤ 1 year = 131.50 > 5 years = 121.50 1 - 5 years = 109.71 none = 64.34	Ambulation	≤ 1 year = 128.50 > 5 years = 121.50 1 - 5 years = 115.64 none = 64.05

70. SIP psychosocial category scores for receipt of disability living allowance

	Emotional behaviour	Social interaction	Alertness behaviour	Communication
Chi-Square	10.140	17.939	14.932	26.233
df	3	3	3	3
Asymp. Sig.	.017	.000	.002	.000

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Emotional behaviour	≤ 1 year = 119.75 > 5 years = 97.50 1 - 5 years = 96.86 none = 65.63	Social interaction	1 - 5 years = 117.00 ≤ 1 year = 110.00 > 5 years = 79.75 none = 64.94	Alertness behaviour	≤ 1 year = 126.50 1 - 5 years = 103.14 > 5 years = 78.25 none = 65.48

Profile descriptor	Mean rank score
Communication	≤ 1 year = 133.25 1 - 5 years = 106.14 none = 65.57 > 5 years = 55.00

71. SIP independent category scores for receipt of disability living allowance

	Sleep / rest	Home management	Work	Recreation/pastimes
Chi-Square	14.174	21.481	27.219	26.597
df	3	3	3	3
Asymp. Sig.	.003	.000	.000	.000

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Sleep / rest	≤ 1 year = 122.00 1 - 5 years = 105.86 > 5 years = 94.50 none = 65.14	Home management	≤ 1 year = 125.00 1 - 5 years = 116.57 > 5 years = 102.75 none = 64.36	Work	≤ 1 year = 120.50 1 - 5 years = 120.50 > 5 years = 84.50 none = 64.50

Profile descriptor	Mean rank score
Recreation / pastimes	≤ 1 year = 126.00 1 - 5 years = 121.64 > 5 years = 110.75 none = 63.93

72. SIP overall total, physical and psychosocial dimension scores for receipt of attendance allowance

	Overall total	Physical	Psychosocial
Chi-Square	13.366	16.527	12.547
df	3	3	3
Asymp. Sig.	.004	.001	.006

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Overall total	1 - 5 years = 132.33 ≤ 1 year = 121.00 > 5 years = 106.00 none = 65.93	Physical dimension	1 - 5 years = 131.67 ≤ 1 year = 128.00 > 5 years = 119.00 none = 65.74	Psychosocial dimension	1 - 5 years = 130.67 ≤ 1 year = 118.00 > 5 years = 89.00 none = 66.15

73. SIP physical dimension category scores for receipt of attendance allowance

	Body care/movement	Mobility	Ambulation
Chi-Square	17.621	21.052	18.299
df	3	3	3
Asymp. Sig.	.001	.000	.000

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Body care/movement	1 - 5 years = 131.00 ≤ 1 year = 127.00 > 5 years = 117.00 none = 65.78	Mobility	1 - 5 years = 128.67 ≤ 1 year = 127.00 > 5 years = 119.00 none = 65.82	Ambulation	> 5 years = 132.00 1 - 5 years = 128.67 ≤ 1 year = 128.00 none = 65.71

74. SIP psychosocial category scores for receipt of attendance allowance

	Emotional behaviour	Social interaction	Alertness behaviour	Communication
Chi-Square	12.299	14.372	13.863	18.508
df	3	3	3	3
Asymp. Sig.	.006	.002	.003	.000

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Emotional behaviour	≤ 1 year = 123.00 1 - 5 years = 121.00 > 5 years = 108.00 none = 66.15	Social interaction	1 - 5 years = 131.00 ≤ 1 year = 117.50 > 5 years = 83.00 none = 66.19	Alertness behaviour	1 - 5 years = 125.33 ≤ 1 year = 116.50 none = 66.63 > 5 years = 45.50

Profile descriptor	Mean rank score
Communication	1 - 5 years = 132.83 ≤ 1 year = 90.25 none = 66.78 > 5 years = 55.00

75. SIP independent category scores for receipt of attendance allowance

	Sleep / rest	Home management	Recreation/pastimes	Eating
Chi-Square	8.461	14.430	15.254	9.589
df	3	3	3	3
Asymp. Sig.	.037	.002	.002	.022

Profile descriptor	Mean rank score	Profile descriptor	Mean rank score	Profile descriptor	Mean rank score
Sleep / rest	1 - 5 years = 121.83 > 5 years = 110.50 ≤ 1 year = 79.00 none = 66.78	Home management	1 - 5 years = 129.50 > 5 years = 117.00 ≤ 1 year = 112.50 none = 66.04	Recreation / pastimes	1 - 5 years = 129.83 > 5 years = 121.00 ≤ 1 year = 112.25 none = 66.01

Profile descriptor	Mean rank score
Eating	> 5 years = 123.00 ≤ 1 year = 113.25 1 - 5 years = 100.00 none = 66.67