



UWL REPOSITORY
repository.uwl.ac.uk

Barriers to attendance in diabetes education: a systematic review

Lawal, Muili ORCID: <https://orcid.org/0000-0002-1502-3884> (2014) Barriers to attendance in diabetes education: a systematic review. *Diabetes & Primary Care*, 16 (6). pp. 299-306. ISSN 1466-8955

This is the Accepted Version of the final output.

UWL repository link: <https://repository.uwl.ac.uk/id/eprint/2742/>

Alternative formats: If you require this document in an alternative format, please contact: open.research@uwl.ac.uk

Copyright:

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy: If you believe that this document breaches copyright, please contact us at open.research@uwl.ac.uk providing details, and we will remove access to the work immediately and investigate your claim.

BARRIERS TO ATTENDANCE IN DIABETES EDUCATION CENTRES: A SYSTEMATIC REVIEW OF LITERATURE.

Abstract

Background: The use of structured patient education is widely acknowledged as one of the strategies for diabetes management in the UK. Nevertheless, the delivery of education programmes such as DAFNE (Dose Adjustment for Normal Eating) and DESMOND (Diabetes Education and Self-Management for On-going and Newly Diagnosed) in the primary care settings is often challenged by the attrition rate.

Objective: The aim of this review was to identify barriers associated with attendance in diabetes education centres.

Research design and methods: This secondary research uses a systematic literature review approach to examine the empirical evidence relating to non-attendance in diabetes education centres.

Results: The findings of this study indicated various barriers ranging from personal problems and beliefs to lack of motivation and communication problems.

Conclusions: There is a continuous need for on-going education and support for patients affected by diabetes regardless of the challenges posed by non-attendance.

Background

Several studies have identified the beneficial effects of diabetes education in promoting self-care knowledge and care. Diabetes education programme improves patients knowledge of diabetes (Deakin et al 2006; Rygg et al 2012), it reduces complications and hospitals admissions (Karakurt and Kasiksci 2012; Cinar et al 2010). Tang et al (2006) stated that diabetes self-management education has a positive health outcome particularly in improving knowledge, blood glucose monitoring, attitude towards diet and exercise, glycaemic control, adherence to medication and coping abilities. Khunti et al (2012) study concluded that diabetes education led to improvements in some illness beliefs. The UK government National Institute for Health and Care Excellence (NICE 2003; 2009) guideline recommends structured patient education (SPE) for every newly diagnosed patient with an annual update. Similarly, the standard 3 of the National Service Framework for diabetes emphasise patient education and empowerment (DH 2001). Despite the evidence supporting the benefits of structured patient education and the government directive, uptake of structured education still varies across the country.

Methodology

The health related databases searched were CINAHL (Cumulative Index to Nursing and Allied Health Literature), MEDLINE, OVID, PUBMED, EMBASSE and the COCHRANE LIBRARY. In addition to using various electronic databases, hand searched references of key articles was also performed to retrieve the research papers (Table 1).

Table 1: Database search results

| Data base | Cinahl | Medline | Ovid | Cochrane | Embase | PubMed | Web host | Supplemen tary search |
|-----------------------------|-------------|-------------|------------|-------------|-------------|-------------------|-------------------|-----------------------|
| Date covered | 1984 - 2013 | 1948 – 2013 | 1946- 2013 | 2005 - 2013 | 1980 – 2013 | Inception to 2013 | Inception to 2013 | Reference sources |
| Number of selected articles | 1 | 2 | 1 | 0 | 2 | 0 | 4 | 4 |

The key words used were diabetes self-management education, attrition, drop-out, missed appointment, did not attend, barrier to attendance, non-attendance and diabetes education. The Boolean operators ‘and’ coupled with ‘or’ were used to join the key words such as ‘diabetes’ with ‘self-care management’, ‘attrition’ or ‘missed appointment’ to broaden the search while ‘not’ was used to narrow and exclude some resources.

The initial broad exploration of the topic identified hundreds of hits that were informative but were not appropriate for the review; therefore, the high proportion of papers was reduced through limiters. The selection of relevant quality papers included in the review was based on non-compliance in patients with diabetes, studies investigating barriers in educational settings, written in English language, world-wide research, peer review publications and primary research papers or systematic reviews (Table 2). Conversely, the exclusion criteria were studies written in other languages, research studies on non-attendance in relation to other disease conditions or settings and documents that were not peer reviewed.

Table 2: Eligibility criteria

| Inclusion criteria | Exclusion criteria |
|--|---|
| English language publications | Other languages |
| World-wide research | Documents that were not peer reviewed |
| Publications from inception to July 2013 | Non-attendance associated with other medical conditions |
| Systematic reviews | Studies related to non-educational settings |
| Primary research papers | Studies that are not research papers |
| Full text peer review articles | |
| Studies on non-attendance associated with diabetes education | |

Although non-attendance in clinical practice is an old problem and service delivery continues to evolve, reasons for non-attendance has always been less variable, hence, time limit was not considered. Therefore, a comprehensive search of key words from the earliest possible date to July 2013 was conducted. The first apparent reason for not meeting the inclusion criteria was studies that were not related to non-attendance in diabetes education centres.

Results

A total of 14 articles met the inclusion criteria described above and all the articles were either qualitative or quantitative research articles published in a peer review journal. The Critical Appraisal Skills Programme (CASP) tool (Public Health Resource Unit, 2008) was used as a framework to judge the validity and relevance of

the included articles. The key features of each piece of research that met the inclusion criteria are displayed in a table below (Table 3). The included studies were 8 survey studies, three retrospective studies, and finally two controlled experimental study and a systematic review. The majority of the studies adopted a descriptive approach and used various data collection methods ranging from questionnaires to interviews. Six of the 14 studies were conducted in Canada, five from the United States of America, one from Germany, one from Turkey and the only systematic review covered a wide geographical spread ranging from America to Europe. The geographical setting is a key issue in judging whether the findings can be translated to another locality (Ellis 2010), thus, applying the findings to another country need to be cautiously addressed.

All the studies explored the reasons for non-attendance in diabetes education centres, however, some of the research focused on the characteristics of the subjects as opposed to addressing the barriers in general. Only one American study (Sprague et al 1999) surveyed the perspectives of practitioners through a mail survey of a diabetes educators association. Similarly, Temple and Epp (2009) studied attrition from both diabetes and heart education programmes. The sample size varies widely and Rhee et al (2005) had the largest population in all the 14 studies while Uitewaal and Thomas (2003) had the lowest sample size of 45 patients. With the exception of a systematic review which was included in this review, a total of 3,926 patients constituted the sample. The sampling comprises 3,527 patients (89.8%) that attended the hospital, 256 non-attenders (6.5%) and 143 practitioners (3.6%) across various countries apart from the UK.

The majority of the selected articles 13 (93%) are primary research except Gucciardi (2008) which is a secondary research. Although, the systematic review of 14

research papers (Gucciardi 2008) included four UK studies conducted between 1983 and 1992. However, these studies did not meet the inclusion criteria for this review because the studies focused on hospital clinic attrition as opposed to diabetes education centre. Understandably, all these studies were conducted before the advent of key policy documents such as the National Service Framework for Diabetes (DH 2001) and NICE guidelines (NICE 2003; NICE 2009) which recommended SPE in England. In all, this review showed that studies on this phenomenon dated back to over two decades in America (Graber et al 1992) with limited documentation on this particular phenomenon in the UK.

Half of the articles (7) indicated that low perception of the seriousness of the disease constituted a barrier to attendance. Almost half of the research article (6) also found that low perception about the benefits of the session prevented the patients from attending the session. Six studies found transportation, distance and travel expenses as a hindrance to attendance. Almost half (6) of the studies identified work related problem as a factor contributing to attrition in diabetes education centre. Schafer et al (2013) reported negative feelings about education and group whilst only Gucciardi (2008) identified inability to contact the clinic as a barrier. Also some smokers defaulted probably because the session encouraged smoking cessation (Graber et al 1992 and Benoit et al 2004).

Rhee et al (2005) and Schafer (2013) both reported poor vision and hearing as a barrier to attendance. Two studies also stated that family problem (Gucciardi 2008 and Schafer et al 2013), forgetting (Temple and Epp 2009; Gucciardi 2008) and seeing a family physician (Gucciardi 2008 and Gucciardi et al 2008a) prevented some respondents from attending the education session. Other barriers reported by a single study are patients that are primarily speaking English language (Gucciardi et

al 2007), previous exposure to diabetes education (Gucciardi et al 2008a), inconvenient time and location, insensitive interaction with the professionals and long waiting list ((Gucciardi et al 2012).

The results of four studies indicated different types of insurance cover or cited the financial implications of the education as a problem while another three studies identified lack of adequate publicity as a barrier. Two of the 14 research articles reported preference for physicians to manage their medical condition while four studies found low level of education as a reason for non-attendance. Failure to attend the session due to ill-health or lack of interest was identified by four studies. Finally, some characteristics such as male gender and smoking (Gucciardi et al 2009; Graber et al 1992; Benoit et al 2004), age over 65 years (Gucciardi et al 2007; Gucciardi et al 2008b; Rhee et al 2005), inability to adhere to weight loss (Gucciardi et al 2009), and having diabetes for over 5 years (Uitewaal, Hoes and Thomas 2005) were reported as contributory factors to attrition behaviour.

Discussion of findings

Based on the results, the findings were conceptualised under this four broad areas: personal difficulties, perceptions and attitudes of patients, communication and motivation (Table 4).

Table 4: Emergent themes

| Themes | Articles |
|---------------------------------------|---|
| Personal difficulties | Temple and Epp 2009; Graziani et al 1999; Gucciardi et al 2007; Gucciardi et al 2012; Schafer et al 2013; Rhee et al 2005; Gucciardi et al 2008a; Gucciardi et al 2008b and Sprague et al 1999; Benoit et al 2004; Graber et al 1992. |
| Perceptions and attitudes of patients | Temple and Epp 2009; Schafer et al 2013; Graziani et al 1999; Gucciardi et al 2008b; Gucciardi et al 2012; Sprague et al 1999; Gucciardi 2008; Uitewal, Hoes and Thomas 2005. |
| Communication | Temple and Epp 2009; Graziani et al 1999; Gucciardi et al 2007; Gucciardi 2008. |
| Motivation | Temple and Epp 2009; Graziani et al 1999; Gucciardi 2008; Gucciardi et al 2008b; Schafer et al 2013. |

Theme 1: Personal difficulties

The majority of the findings (Table 4) reported barriers related to the effect of personal circumstances on attendance. Almost all the studies identified personal difficulties such as work related problems, family problems, illness, transportation, distance and travel expenses as a barrier. Other personal difficulties impacting on attendance identified by this study were poor vision and hearing coupled with inconvenient location and time. Several other authors have identified different

personal difficulties as a barrier to attendance in clinical practice (Hamilton et al 2002; Stones et al 1999; Zailnawati et al 2006).

Three US based studies (Graziani et al 1999, Benoit et al 2004 and Sprague et al 1999) identified the insurance status of the patients as one of the difficulties encountered by the patient. In contrast, the healthcare system in America is different to the UK (Kenny 2014). Although, the NHS is largely funded by national taxation in the UK (Baggott 2010), non-attendance in diabetes education centres has negative resource implications for clinical commissioning group and service providers. Lister (2005) and Baggott (2010) suggested that the NHS continues to face financial pressures and Saltman and Cahn (2013) argued that restructuring healthcare sectors in Europe is inevitable for the policymakers to reduce unsustainable cost.

Theme 2: Perceptions and attitudes of patients

Helman (2007) acknowledged the influence of perceptions and beliefs on people's choice of health intervention. In a similar way, perceptions and attitudes to education was identified by some studies. Some patients failed to attend the session owing to their personal perceptions and beliefs such as their perceptions about the nature of diabetes, their perceptions about the benefits of the session and their belief about the level of knowledge they possessed. Several other studies have identified the impact of these negative perceptions on attendance for a long time (Hammersley et al 1985; Glasgow 1997). Another perception and attitude that affected attendance is the perception that the physician need to manage their diabetes with little or no personal input from them. Metcafe (2005) stated that the traditional paternalistic approach of the NHS to care is outdated for patients with long-term conditions to

prevent unnecessary admissions and improve their quality of life and independence. Rana and Upton (2009) also stated that empowerment entails involving the patients in the management of their care.

Theme 3: Communication

The review found that some patients did not attend the education session because of poor communication. These issues included patient's inability to speak or read English language very well, inability to contact the clinic, not aware about the service and insensitive interactions with the professionals. Similarly, patients appeared to be absent when the appointment has been booked for over a long time. The benefit of prompt and effective communication between the patients and care providers is well documented in literature (Collin 2009; Webb 2011). While barriers to attendance relating to communication may vary, the onus is on the healthcare professionals to enhance effective communication to aid attendance.

Theme 4: Motivation

The review illustrated the impact of individual motivation on attendance as some patients forgot the appointments; certain people were too busy to attend or were simply not interested in the education. Others cited lack of time or lack of familiarity with the centre or the service as factors that prevented them from attending the sessions. A well-motivated learning experience may alter individual behaviour; however, Schafer et al (2013) emphasized the importance of motivation in diabetes education by saying that the success of the programme depends on the willingness

of the patients to engage with the education. Self-care management requires the patients' willpower to overcome some predicaments; therefore, motivation is crucial to this self-management intervention.

Limitations of the review

A key methodological weakness was that the majority of the participants studied were patients that attended the hospital as opposed to predominantly surveying the opinion of non-attenders. The limitations of the studies included low sample sizes and lack of probability (non-probability) selection methods. Therefore, the methodological limitations such as findings based on retrospective data and focusing on attendees make it difficult to make firm conclusions. Another major limitation was that most of the available studies were from other countries which had a different funding approach, mostly private health insurance, based on single practice and of short duration. Therefore, transferring the findings to the UK setting has its limitations.

Implications for practice and research

Although there are several international research studies on non-attendance in diabetes education unit, a significant amount of the studies target attenders while very few of the studies surveyed the views of non-attenders. Arguably, it is possible to explore the views of attenders to understand the reasons for missed appointment, nevertheless, the motivation for attendance in these two groups of patients may differ. The paucity of studies in this area might probably be due to the fact that these groups of patients that failed to attend hospital appointments are difficult to access.

According to a systematic review carried out by Ajay and Rubin (2003), investigating reasons for non-attendance in primary care setting presents some obvious methodological problems because this group of patients might not be willing to participate in research and may see it as being confrontational if not handled with care. This review has established the need for further studies to promote attendance in diabetes education centres; therefore, the topic is worth pursuing, particularly in the UK.

Conclusion

The shift in nature and pattern of disease that resulted from increased life span and lifestyle changes has consequently led to pressure on the NHS. Equally, the challenge to achieve good health for all has led to patient empowerment as a paradigm shift from the traditional approach of long-term condition management. Although, empowering patients through education is an integral part of long-term disease management, yet, it has been problematic. This piece of secondary research has drawn upon a range of primary research papers and presented a wide ranging account of reasons for non-attendance in diabetes education centres.

Article points

- Structured diabetes education is a useful strategy to achieve positive patient outcomes.
- There are numerous barriers such as personal circumstances and communication problems leading to non-attendance in diabetes education centres.

- Non-attendance in diabetes education centres has negative resource implications for clinical commissioning group and service providers.
- The instigation to sustain a healthy behaviour requires individual motivation.
- Although, there is limited documentation on the phenomenon of non-attendance in diabetes education centres in the UK, solving this problem remain a global challenge.

Key words

- Diabetes education
- Missed appointment
- Barrier to attendance
- Motivation
- Self-management

References

- Ajay, G. and Rubin, G. (2003) Non-attendance in general practice: a systematic review and its implications for access to primary health care. *Family Practice*, **20**: 178-184.
- Baggott, R. (2010) *Public Health: Policy and Politics*. 2nded. Palgrave Macmillan, New York.
- Benoit, S. R.; Ming, J.; Fleming, R.; Philis-Tsimikas, A. (2004) Predictors of dropouts from a San diego diabetes program: a case control study. *Public Health Research, Practice, and Policy*, **1** (4): 1-8
- Cinar, F.; Akbayrak, N., Cinar, M et al (2010) The effectiveness of nurse-led telephone follow-up in patients with type 2 diabetes mellitus. *Turkish Journal of Endocrinology and Metabolism*, **14** (91): 1-5.
- Collin, S. (2009) Good communication helps to build a therapeutic relationship. *Nursing Times*, **105** (24): 11.
- Deakin, A. T.; Cade, E.J.; Williams, R. D.; Greenwood, C. D. (2006) Structured patient education: the diabetes X-pert programme makes a difference. *Diabetic Medicine*, **23**: 944-954.
- Department of Health (2001) *National Service Frameworks for diabetes: standards*. Crown Press, London.
- Ellis, P. (2010) *Understanding research for nursing students*. Learning Matters limited, Exeter.
- Glasgow, R. E.; Hampson, S. E.; Strycker, L. A.; Ruggiero, L. (1997) Personal-model beliefs and socio-environmental barriers related to diabetes self-management. *Diabetes Care*, **20**: 556 – 561.
- Graber, A. L.; Davidson, P.; Brown, A et al (1992) Dropout and relapse during diabetes care. *Diabetes Care*, **15** (11): 1477-1483.
- Graziani, C.; Rosenthal, M. P.; Diamond, J. J. (1999) Diabetes Education Program use and patient – perceived barriers to attendance. *Family Medicine*, **31** (5): 358 – 363.
- Gucciardi, E.; Chan, V. W.; Chuen et al (2012) Patients perspectives on their use of diabetes education centres in Peel-Halton region in Ontario. *Canadian Journal of Diabetes*, **36**: 214 – 217.
- Gucciardi, E.; DeMelo, M.; Booth, G.; Stewart, D. E. (2009) Individual and contextual factors associated with follow-up use of diabetes self-management education programmes: a multisite perspective analysis. *Diabetes Medicine*, **26** (5): 510-517.

Gucciardi, E. (2008) A systematic review of attrition from diabetes education services: strategies to improve attrition and retention research. *Canadian Journal of Diabetes*, **32** (1): 53 – 65.

Gucciardi, E.; Wang, S. C.; DeMelo, M.; Amaral, L.; Stewart, D. (2008a) Characteristics of men and women with diabetes: observations during patients' initial visit to a diabetes education centre. *Canadian Family Physician*, **54**: 219 – 227.

Gucciardi, E.; DeMelo, M.; Offenheim, A.; Stewart, D. E. (2008b) Factors contributing to attrition behavior in diabetes self-management programs: A mixed method approach. *BMC Health Services Research*, **8** (3): 1 – 11.

Gucciardi, E.; DeMelo, M.; Booth, G.; Stewart, D. E. (2007) Patients factors associated with attrition from a self-management education programme. *Journal of Evaluation in Clinical Practice*, **13** (6): 913-919.

Gucciardi, E.; Smith, P. L.; DeMelo, M. (2006) Use of diabetes resources in adults attending a self-management education programme. *Patient Education Counselling*, **64** (1): 322-30.

Hammersley, M. (1995) *The politics of social research*. Sage publications, London.

Hamilton, W.; Luthra, M.; Smith, T.; Evans, P. (2002) Non-attendance in general practice: a questionnaire survey. *Primary Health Care Research and Development*, **3**: 226 – 230.

Helman, C.G. (2007) *Culture, Health and Illness*. 5th ed. Hodder Arnold publisher, London.

Karakurt, P. and Kasikci, K. M. (2012) The effect of education given to patients with type 2 diabetes mellitus on self-care. *International Journal of Nursing Practice*, **18**: 170-179.

Khunti, K.; Gray, L. J.; Skinner, T et al (2012) Effectiveness of a diabetes education and self-management programme (DESMOND) for people with newly diagnosed type 2 diabetes mellitus: three year follow-up of a cluster randomized controlled trial in primary care. *British Medical Journal*, **344**: 1-12.

Kenny, C. (2014) Information technology, education and diabetes. *Diabetes & Primary Care*, **16** (13): 111-112

Lister, J. (2005) *Health Policy Reform: driving the wrong way? A critical guide to the global 'Health Reform' industry*. Middlesex University Press, London.

Metcafe, J. (2005) The management of patients with long-term conditions. *Nursing Standard*, **19** (45): 53 – 60.

National Institute for Clinical Excellence (2009) *NICE clinical guideline 87 – Type 2 diabetes*.(Online) Available at www.nice.org.uk/CG87 (Accessed: 27 July 2009).

NICE (2003) *Guidance on the use of patient education models for diabetes. Technology Appraisal 60*.(Online). Available at <http://www.nice.org.uk/pdf/60patienteducationmodelsfullguidance> (Accessed: 10 March 2006).

Public Health Resource Unit (2008) *Critical appraisal skills programme*. Public Health Resource, Oxford.

Rana, D. and Upton, D. (2009) *Psychology for Nurses*. Pearson Education Limited, Essex.

Rhee, M. K.; Cook, C. B.; El-Kebbi, I et al (2005) Barriers to education in urban patients. *Diabetes Educator*, **31**: 410 -417.

Rygg, O. L.; Rise, B. M.; Gronning, K.; Steinsbelk, A. (2012) Efficacy of ongoing group based diabetes self-management education for patients with type 2 diabetes mellitus: a randomised controlled trial. *Patient Education & Counselling*, **86** (1): 98-105.

Saltman, R. B. and Cahn, Z. (2013) Restructuring health systems for an era of prolonged austerity: an essay by Richard and Zachary. Online. BMJ 346:f3972.doi:10.1136/bmj.f3972 <http://www.bmj.com/subscribe> (Accessed August 15, 2013).

Schafer, I.; Kuver, C.; Wiese, B.; Powels, M.; Bussche, H. V.; Kaduszkiewicz, H. (2013) Identifying groups of non-participants in type 2 diabetes mellitus education. *American Journal of Managed Care*, **19** (6): 499 – 506.

Sprague, M. A.; Schultz, J. A.; Branen, L. J.; Lambeth, S.; Hillers, V. N. (1999) Diabetes educators perspectives on barriers for patients and educators in diabetes education. *Diabetes educators*, **25** (6): 907 – 916.

Stone, C. A.; Palmer, J. H.; Saxby, P. J.; Devaraj, V. S. (1999) Reducing non-attendance at outpatient clinics. *Journal of Royal Society of Medicine*, **92** (3): 114 - 118.

Tang, T. S.; Funnell, M. M.; Anderson, R. M. (2006) Group education strategies for diabetes self-management. *Diabetes Spectrum*, **19** (2): 99-105.

Temple, B. and Epp, D. (2009) Evaluation of a diabetes education program's non-attendees: the program response. *Canadian Journal of Diabetes*, **33** (4): 375 – 380.

Uitewaal, P.; Hoes, A.; Thomas, S. (2005) Diabetes education on Turkish immigrants diabetics: predictors of compliance. *Patient Education and Counseling*, **57**: 158-161.

Webb, L. (2011) *Nursing: communication skills in Practice*. Oxford University Press, Oxford.

Zailinawati, A. H.; Ng, C. J.; Nik-Sherina, H. (2006) Why do patients with chronic illnesses fail to keep their appointments? A telephone interview. *Asia Pacific Journal of Public Health*, **18** (1): 10-15.