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Title: Autogenic Training for chronic health conditions: A service evaluation

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Abstract:

Background: Autogenic Training (AT) is a structured meditative-style practice, consisting of a sequence of simple mental exercises intended to induce a relaxed state in patients. There is some emerging evidence to suggest that AT can be effective in treating certain chronic conditions, however further evidence is required. A service evaluation of AT services at the Royal London Hospital for Integrated Medicine was conducted to evaluate the impact of AT on patients with chronic conditions.

Methods: The service evaluation consisted of the completion of validated quantitative outcome measures pre and post treatment to explore the impact of treatment. AT patients were asked to complete the Measure You Medical Outcome Profile (MYMOP) and Perceived Stress Scale (PSS) at their first hospital appointment (baseline), and then again 8 weeks later following completion of their AT sessions. Pre and post treatment scores for each outcome measure were analysed in SPSS using the Wilcoxon signed rank test.

Results: 199 patients completed both initial and follow-up MYMOP forms and were included in the evaluation. The most common presenting complaints for MYMOP symptom 1 were prolonged anxiety/stress and depression (*n*= 70, 35.2%), chronic pain and migraine headache (*n*= 44, 22.1%), chronic insomnia and sleep problems (*n*= 42, 21.1%) and, long-term exhaustion and fatigue (*n*= 18, 9%). The change in median score pre and post-treatment for all MYMOP categories (symptoms, activity and wellbeing) were statistically highly significant $p < 0.001$. Anxiety, stress, depression, pain, and insomnia were the symptoms which had the largest statistically significant difference between the median score pre and post-treatment. 55 patients completed the PSS questionnaire at two time points (pre and post-treatment). It showed a highly statistically significant change in PSS median score in patients experiencing stress (p <0.001).

Discussion: The findings of the evaluation indicate that eight-weeks of AT appears to be effective in improving symptoms of concern to patients and enhancing patients' overall quality of life. In particular, AT was found to be beneficial for patients with symptoms of anxiety, stress, depression, pain, and insomnia.

Introduction

Global prevalence rates for chronic health conditions continue to rise, with current UK figures for the adult population estimated to be approximately 15 million.[1] Although conventional pharmaceutical approaches are known to be effective at assisting in the management of many long term chronic conditions, side effects are common and polypharmacy a major health issue.[2] Effective non-pharmacological interventions are therefore required to safely manage patients with long term chronic conditions.

Autogenic Training (AT) is a structured meditative-style practice, consisting of a sequence of simple 'mental exercises' (thought-repetitions linked with relaxation) which have an easy-to-follow structure.[3] AT exercises aim to shift the body from an active or stressed state to a state of repair and recovery which re-establishes the body's homeostasis.[4] There is some emerging evidence to suggest that AT can be effective in treating certain chronic conditions, particularly stress and sleep related problems. A cohort study examined the effectiveness of autogenic training as a non-drug approach to sleep-related problems associated with chronic ill health. Study participants had to complete three types of questionnaires before and after AT. The study found significant improvement in sleep after the AT sessions and personal practice at home. Additionally, the participants noticed an improvement in anxiety, depression, and overall wellbeing.[5] A randomised controlled trial found AT to haver a significant effect on stress, with those taught AT having lower stress responses than those in the control group.[6] While a pilot study which measured the benefits of AT in a stress management programme found AT led to a decrease in stress, and improvement to participants quality of life and work motivation.[7]

The Royal London Hospital for Integrated Medicine (RLHIM) is located within University College London Hospitals (UCLH) National Health Service (NHS) Trust and is one of the largest public sector providers of Integrated Medicine in Europe. The hospital has an extensive psychological therapies service, which includes evidence based interventions such as mindfulness, Cognitive Behavioural Therapy (CBT), hypnosis, and AT. The present paper reports on a service evaluation of AT for patients with various chronic conditions at the hospital.

Methods

The service evaluation consisted of the completion of validated quantitative outcome measures pre and post treatment to explore the impact of treatment. All patients who were new to the AT service at RLHIM and were coming in for their first outpatient session were included in this evaluation. AT patients were asked to complete validated outcome measures

at their first hospital appointment (baseline), and then again 8 weeks later following completion of their AT sessions. The outcome measures employed in the evaluation included:

-Measure Your Medical Outcome Profile (MYMOP).[8] MYMOP is an individualised questionnaire which allows patients to select the symptoms of most concern to them. Patients identify and rate two concerns of importance to them, an activity of daily living which is impacted by the symptoms, and their overall wellbeing for the previous week using a seven point likert scale between 0 (as good as it could be) to 6 (as bad as it could be). MYMOP has been shown to be validated and highly sensitive outcome measure in health care.[9]
-Perceived Stress Scale (PSS).[10] Perceived Stress Scale is used to measure the patients' perception of stress. It is a measure of the degree to which situations in one's life are qualified as stressful. The questions ask about feelings and thoughts during the last month, with items which patients rate on a 5 point likert scale from 0 (never) to 4 (very often). PSS has been validated with good psychometric properties. The PSS outcome measure was only used by those patients specifically identifying stress as a problem, with completion rates for PSS therefore lower than that of MYMOP.

An excel dataset was constructed using anonymised data from the AT service including all completed outcome measures. Pre and post treatment scores for each outcome measure were analysed. The change in score was calculated for each outcome measure by subtracting each patient's pre treatment score from their post treatment score. As we were assessing the same patient population at two time points (pre and post treatment) we used the Wilcoxon signed rank test to calculate whether any changes in outcome measure scores were statistically significant. SPSS version 24 was used to conduct the Wilcoxon signed rank tests.

Data collection took place at RLHIM between January 2017 and August 2020. The data were collected anonymously. As the project is a service evaluation, research ethics approval was not required.

RLHIM AT Service
Patients received two-hour sessions once a week for eight weeks. They were taught in groups of 6-8 patients, by an experienced professional practitioner who has been trained and qualified to practice AT by the British Autogenic Society. The sessions involved teaching the patients multiple sub vocalised 'formulae' over the eight weeks and used guided imagery, self-talk and comfortable body postures to induce a state of relaxation. Autogenic standard exercise is done by repeating words many times, mentioning all body parts. The six-standard sessions of AT used in the hospital AT sessions are shown in (Table 1).

Table 1. The six standard exercise used in Autogenic training

Exercise	Example of self-statement	Effect on the body
Heaviness	"My right arm is heavy." "My left arm is heavy." …..	Creates a relaxation for the muscles.
Warmth	"My right arm is heavy and warm." "My left arm is heavy and warm."	Broaden the blood vessels and creates warmth.
Heart	"My heartbeat is calm." "My heartbeat is calm and regular."	Creates calmer and reduce pulse rate.
Breathing	"My breathing is calm." "My breathing is calm and regular."	Creates slow, calm, regular breathing.
Solar plexus	"The area around my solar plexus is warming up."	Creates relaxation in the abdomen organs.
Forehead cooling	"my forehead is cool." "my forehead is comfortably cool."	Creates a clear mind.

Results

MYMOP questionnaires were collected from 236 patients who completed the eight week AT course between January 2017 and August 2020. Thirty-six patients were excluded from the evaluation due to no follow-up data, and one patient did not complete all the categories in MYMOP follow-up from. Therefore, only 199 patients who completed both initial and follow-up MYMOP from and were included in the evaluation. 55 patients completed the PSS questionnaire at two time points (pre and post-treatment). The gender distribution for the 199 patients who completed the MYMOP questionnaire was 157 (78.9%) female, 42 (21.1%) male. The mean age was 52.4 (range 21-81 years). Of these, 55 patients also completed the PSS questionnaire because the main purpose to attend the program was stress, of which, 41 were females (74.5%) and 14 males (25.5%) with a mean age of 52.25 years (range 20-80 years).

Symptoms and wellbeing

The most common presenting complaints for MYMOP symptom 1 were prolonged anxiety/stress and depression (*n*= 70, 35.2%), chronic pain and migraine headache (*n*= 44, 22.1%), chronic insomnia and sleep problems (*n*= 42, 21.1%), long-term exhaustion and fatigue (*n*= 18, 9%), digestive problems such as IBS (*n*= 8, 4%), and other symptoms including hormonal problems, nightmares, numbness and skin rash (*n*= 17, 8.5%). Similar symptoms were labelled as symptom 2 depending on their primary symptom. One hundred eighty-two

patients included a second symptom in MYMOP, with 17 patients not identifying a second symptom.

A Wilcoxon signed-rank test was used to analyse the difference between pre and post-treatment median scores, and whether there was a significant median change. The results indicated an improvement in patients' health (Table 3) which shows the median for each MYMOP category pre and post-treatment and the difference between them. The change in median score pre and post-treatment for all MYMOP categories (symptoms, activity and wellbeing) were statistically highly significant $p < 0.001$.

Table 3. Change in MYMOP scores pre and post treatment

MYMOP Categories	MYMOP Baseline (median, SD)	MYMOP Follow-up (median, SD)	Change in score	*P* value
Symptom 1	5.00 (1.064)	3.00 (1.516)	2.00	P <0.001
Symptom 2	4.00 (1.132)	3.00 (1.481)	1.00	P <0.001
Activity	4.00 (1.186)	3.00 (1.459)	1.00	P <0.001
Wellbeing	4.00 (1.145)	2.00 (1.407)	2.00	P <0.001
MYMOP Profile Score	4.25 (0.876)	2.75 (1.188)	1.50	P <0.001

A Wilcoxon signed-rank score was also completed for each symptom alone by using *if* condition from the data (see Table 4). Anxiety, stress, depression, pain, and insomnia were the symptoms which had the largest statistically significant difference between the median score pre and post-treatment. However, digestive system problems and other symptoms did not improve to a statistically significant level, though it should be noted that fewer patients were in these categories.

Table 4. Change in specific MYMOP symptoms

SYMPTOM	Frequency (n)	MYMOP Baseline (median, SD)	MYMOP Follow-up (median, SD)	Change in score	*P* value
Anxiety, stress and depression	70	4.00 (1.00)	2.00 (1.64)	2.00	P <0.001
Pain and headache	44	5.00 (0.97)	3.00 (1.30)	2.00	P <0.001

Insomnia and sleep	42	5.00 (1.00)	3.00 (1.30)	2.00	P <0.001
Exhaustion and fatigue	18	5.00 (0.92)	4.00 (1.04)	1.00	P <0.001
Digestive problems	8	4.00 (1.83)	1.50 (1.51)	2.50	P= 0.068
Other	17	4.00 (1.09)	4.00 (1.01)	0.00	P= 0.334

Perceived Stress Scale (PSS)

Fifty-five patients completed the PSS before and after their course of AT. Of these 55 patients, 40 showed improvements in PSS scorers at follow-up. Median baseline scores for the PSS were 24, suggesting patients were attending with moderate levels of stress. A Wilcoxon signed-rank test was conducted to detect the difference between the pre and post-treatment median PSS scores. It showed a highly statistically significant change in PSS median score in patients (p <0.001) (see Table 5).

Table 5. Change in PSS scores pre and post treatment

PSS Baseline (median, SD)	PSS Follow-up (median, SD)	Change in score	*P* value
24.00 (6.67)	20.00 (7.51)	4.00	P<0.001

Discussion

This study was conducted to evaluate the effects of AT on the symptoms of chronic health conditions, in an outpatient NHS clinical population. A large clinical population of 199 patients with chronic conditions provided data using validated outcome measures. The findings from the evaluation suggest that eight-weeks of AT was effective in improving symptoms of concern to patients in this sample population, and enhancing the patients' overall quality of life. In particular, AT was found to be beneficial for patients presenting with symptoms of anxiety, stress, depression, pain, headache, and insomnia. The findings from this study are consistent with the findings of previously published studies. A systematic review with meta-analysis from 35 randomized controlled trials and 25 non-randomized controlled trials found positive effects of AT on disease-specific symptoms and psychological distress in people living with several chronic health problems, including tension headaches/migraine, pain, anxiety, mild-to-moderate depression, and sleep disorders.[11] Studies published since this systematic review continue to suggest that AT has a positive impact on improving symptoms, including

improvements in stress, anxiety and depression, as well as insomnia and sleep problems.[5-7, 12]

There is a limited evidence base for AT, and further research is warranted to evaluate the effectiveness and efficacy of the intervention. This study aimed to add to the evidence base, and evaluate the effectiveness of the intervention in a real life NHS clinical population. The findings indicating that eight-weekly sessions of AT can be effective in improving a number of chronic symptoms and overall patient wellbeing. Given the continuing global rise of chronic health conditions, and problems with the side effects of conventional medications and polypharmacy, it is important to study and evaluate the use of potentially safe and effective non-pharmacological approaches. The findings of the present evaluation, in combination with previously published research, suggest AT can be considered to be an effective therapy in reducing the severity of certain chronic conditions.

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