



Clinical trial

Self-efficacy and self-care-related outcomes following Alexander Technique lessons for people with chronic neck pain in the ATLAS randomised, controlled trial[☆]

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ABSTRACT

Introduction: ATLAS was a pragmatic randomised (1:1:1 ratio), controlled trial recruiting patients with chronic neck pain (N = 517) and evaluating one-to-one Alexander Technique lessons, or acupuncture, each plus usual care, compared with usual care alone. The primary outcome (12-month Northwick Park Neck Pain Questionnaire [NPQ]) demonstrated significant and clinically meaningful reductions in neck pain and associated disability for both interventions compared with usual care alone. Here we describe pre-specified, self-efficacy and other self-care-related outcomes for the Alexander group compared with usual care.

Methods: Participants reported on 11 self-efficacy/self-care-related outcome measures at 6 and 12 months. Linear or logistic regression models evaluated changes in parameters and impact on NPQ. Alexander teachers reported on lesson content.

Results: Lesson content reflected standard UK practice. The Alexander group (n = 172) reported significantly greater improvements, compared with usual care alone (n = 172), in most of the self-efficacy/self-care measures (9/11 measures at 6 months, and 8/11 at 12 months), including the ability to reduce pain in daily life. At 6 months, 81% (106/131) of Alexander participants reported significant improvement in the way they lived and cared for themselves (versus 23% for usual care), increasing to 87% (117/135) at 12 months (usual care: 25%). NPQ scores at both 6 and 12 months were related to improvement in self-efficacy and ability to reduce pain during daily life.

Conclusions: Alexander Technique lessons led to long-term improvements in the way participants lived their daily lives and managed their neck pain. Alexander lessons promote self-efficacy and self-care, with consequent reductions in chronic neck pain.

1. Introduction

Neck and back pain together now represent the leading cause of disability in all high income countries, and globally for the 25–64 year age group [1]. Chronic neck pain is regarded as often complex in origin and nature and particularly difficult to manage [2]. Furthermore, the challenge of chronic neck pain is likely to grow due to increasing computer and mobile technology use, with recognised consequences such as ‘text neck’ [3–5].

One approach to the solution of this growing problem that warrants investigation, is to explore ways of encouraging better self-efficacy and self-care. In this research, self-efficacy is defined as confidence in one’s

ability to execute a behaviour to produce a desired outcome [6,7]. We define self-care broadly as a certain positive attitude and form of attention towards the self, in respect of any necessary function that is under individual conscious control and is self-initiated [8,9]. Greater self-efficacy and self-care could enable individuals to recognise and reduce some of the underlying causes of musculoskeletal pain, such as mal-coordinated postural and movement habits, excessive muscular tension, and associated psychological distress [3,10–12]. The Alexander Technique is an effective long established but often under-utilised way of bringing about such constructive self-change. It is an embodied reflective practice that enables individuals to improve the way they go about their daily activities, through increased awareness, intentional

Abbreviations: NPQ, Northwick Park Neck Pain Questionnaire; SF-12, short-form quality of life survey

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inhibition of unwanted reaction and unnecessary action, and with more effective direction of thought; all leading to improved overall muscle tone and postural support with less stiffness [13–16]. The Technique is usually taught in one-to-one lessons, using integrated spoken and hands-on guidance [17,18]. Such lessons have led to diverse health and performance-related benefits [19,20]. Training in the Alexander Technique has been shown to increase dynamic postural muscle tone [21], and improve movement coordination and balance [22–24]. These movement and balance changes are thought to result from the altered postural tone [25]. Research studies, often using qualitative methods, have reported improvements in psychological well-being, mood and confidence, as well as reduction in performance-related anxiety following one-to-one Alexander lessons [20,26–28].

The ATLAS (Alexander Technique Lessons or Acupuncture Sessions) trial is the second large randomised controlled study to evaluate the effectiveness of Alexander lessons in a chronic musculoskeletal pain population. The earlier ATEAM trial demonstrated that, compared with usual care alone, one-to-one Alexander lessons led to significant long-term reduction in chronic or recurrent back pain and associated disability, [18]. ATLAS compared usual care alone with either Alexander lessons or acupuncture (both plus usual care) for primary care patients with chronic (median 6 years) non-specific neck pain [16,29]. The ATLAS trial clinical findings have already been reported, with the primary outcome of the Northwick Park Neck Pain Questionnaire demonstrating statistically significant and clinically meaningful reductions in pain and associated disability for both Alexander lessons and for acupuncture sessions compared with usual care alone, with the benefit maintained to at least 12 months [16]. The trial design encompassed a range of additional participant-reported outcomes that were pre-specified in the protocol, mostly relating to self-efficacy and the ability to improve self-care [29]. In addition to the outcome data collected from participants, data were also collected from the practitioners regarding delivery of Alexander lessons and acupuncture. Findings from the acupuncture group have been published separately [16,30]. Here we report the results for the self-efficacy and other self-care-related outcomes in the Alexander group.

The main aims of the current analysis are: to evaluate the extent of change in self-efficacy and self-care ability during and following a series of one-to-one lessons in the Alexander Technique; to compare the extent of any such changes with those in the group receiving usual care alone; and to identify any relationships between such changes and the long-term clinical outcome already reported in this chronic neck pain population. The ATLAS trial was not designed for direct comparison of Alexander lessons and acupuncture; however, based on descriptive analyses, we report similarities and differences between the outcomes for the two interventions [30], as a means of gaining insight into their distinctive natures. An additional objective is to report on the content of the Alexander lessons delivered in the trial.

2. Methods

The design and methodology for the ATLAS trial (Current Controlled Trials, ISRCTN15186354) have been described in full elsewhere and are briefly summarised here [16,29].

2.1. Study design and participants

ATLAS (Alexander Technique Lessons or Acupuncture Sessions) was a pragmatic, three-arm randomised controlled trial that recruited people who had consulted their primary care practitioner (GP) for chronic, non-specific neck pain. GP surgery databases were searched for potential participants who were invited to complete a baseline questionnaire, screened later for eligibility. Inclusion criteria were: age ≥ 18 years, neck pain duration ≥ 3 months, and a Northwick Park neck pain and associated disability Questionnaire (NPQ) score of $\geq 28\%$ [31,32]. Exclusion criteria included serious underlying pathology. Eligible

participants were randomised in a 1:1:1 ratio to Alexander lessons plus usual care, acupuncture plus usual care, or usual care alone. In total, 517 patients were recruited and randomised between March 2012 and April 2013.

Written informed consent was obtained from all participants and ethical approval from Leeds West Research Ethics Committee (REC ref 11/YH/0402).

2.2. Alexander Technique teachers

All participating Alexander teachers were members of the Society of Teachers of the Alexander Technique (STAT) with at least 3 years' teaching experience and a declared commitment to their continuing professional development. Teaching methods involved verbal and hands-on guidance in line with usual practice and UK-based National Occupational Standards Skills-for-Health guidelines [33].

2.3. Interventions

Participants randomised to the Alexander group were offered a total of 20 one-to-one lessons, each 30-minutes' duration (600 minutes total) plus continued usual medical care. Lessons were typically weekly, with the option of being twice-weekly initially and later fortnightly, with the intention of completion within 5 months. Participants randomised to the acupuncture group were offered an equivalent intervention duration of traditional Chinese acupuncture plus continued usual medical care. All participants received usual care which consisted of treatment routinely provided to primary care patients (both general and neck pain-specific), such as prescribed medications and visits to other healthcare professionals, for example physiotherapists.

2.4. Participant-reported outcomes

The primary outcome measure for the trial was the Northwick Park Neck Pain and associated Disability Questionnaire (NPQ), and these findings, together with secondary clinical outcome measures, have been reported elsewhere [16]. Additional outcome measures were included in the participant questionnaires that were completed at baseline, 6 and 12 months. Self-efficacy was determined by the five-question pain management sub-scale of the Chronic Pain Self-Efficacy Scale. In line with previous studies, we used the validated modified version in which the original 0–10 scale is replaced with 0–8 and 'certain' replaced with 'confident' [6,7,34]. The questions in this scale, scored 0 (totally unconfident) to 8 (totally confident), were 'How confident are you that you can: i) decrease your pain quite a bit?; ii) continue most of your daily activities?; iii) keep pain from interfering with your sleep?; iv) make a small-to-moderate reduction in your pain by using methods other than taking extra medications?; v) make a large reduction in your pain by using methods other than taking extra medications?'. The four-item version of the Perceived Stress Scale was also used, and asked the following questions, scored 0 (never) to 4 (very often): 'In the last month, how often have you i) felt that you were unable to control the important things in your life?; ii) felt confident about your ability to handle your personal problems?; iii) felt that things were going your way?; iv) felt difficulties were piling up so high that you could not overcome them?' [35,36]. Other questions included in the participant questionnaire at 6 and 12 months were: 1. 'Can you use/apply the things you have learned from the care in everyday life situations to reduce pain?', a question modified from one that was used to assess self-management in a previous neck pain trial ('reduce' replacing 'cope with') [37]; 2. 'During the care you received in the last 6/12 months, did you learn to improve the way you live and care for yourself?'; 3. 'To what extent are you able to put into practice the advice or teaching you received?'; 4. 'To what extent are the changes you have been making helpful to you?'; 5. 'Did you make any changes related to a) diet, b) exercise, c) relaxation, d) rest, e) work?'

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