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Original Article

Work-related musculoskeletal injuries among Australian osteopaths: A preliminary investigation

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ABSTRACT

Background: Work-related musculoskeletal injury (WRMI) is a significant risk factor for registered manual therapists, including physiotherapists, occupational therapists and chiropractors. The physically demanding nature of manual therapy has been identified as the common factor in WRMIs among these professions. There is currently no available literature on the prevalence of WRMIs among osteopaths.

Objective: This research sought to collect preliminary data to establish the prevalence and characteristics of WRMIs among Australian osteopaths; including body area injured, risk factors and strategies used to manage injury.

Method: Registered osteopaths, who were members of the professional association Osteopathy Australia, were invited to participate via an online survey.

Results: A total of 160 surveys were completed. The incidence of WRMI was high, with 58% of respondents having sustained one or more injuries. Results indicated that the wrist and the fingers are the most frequently injured areas (41%), while the least injured body part was the knee (1.1%). Performing repetitive tasks accounted for 52% of injuries, followed by performing manipulative techniques (23%). Working too many hours per week (43%) and fatigue (38%) were the main factors contributing to injury.

Conclusions: The findings highlight the risk to osteopaths of sustaining musculoskeletal injuries while working in clinical practice.

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Introduction

Work-related musculoskeletal injuries (WRMIs) are reported to have a high incidence in registered health practitioners who engage in manual therapy [1–8]. Manual therapy refers to joint mobilisation and manipulation, passive range of motion, stretching and soft tissue techniques [3]. Although research concerning WRMIs in osteopaths is lacking, research from similar manual therapy professions—for example, chiropractic, occupational therapy (OT), and physiotherapy/physical therapy (PT)—suggests WRMIs are a growing problem that significantly affect the health and work situation of therapists who perform physical therapy as part of patient care. For these therapists, the deleterious consequences of injury at work can include taking time off work, modifying work habits, changing the work setting or leaving the profession altogether

[1,7,8]. These consequences can cause considerable financial and personal burdens for practitioners, which may affect future retention rates within the health professions.

The term WRMI encompasses a range of injurious effects to soft tissues (muscles, tendons and ligaments) and intra- and extra-articular elements as well as the psychological well-being of therapists who sustain these injuries. Pain, movement problems and depression are just a few of the symptoms experienced by workers affected by musculoskeletal injuries [9]. The physically demanding nature of manual therapy contributes to WRMIs in therapists and is associated with a variety of risk factors [3,7,10]. Factors predisposing therapists to injury include faulty mechanical loading to joints; unbalanced posture; repetitive strain and aggravation of previous injury [2,10]. Common therapeutic tasks associated with these predisposing factors involve (a) manual therapy that includes soft tissue work, joint mobilisation (including manipulation) and passive range of motion [1–3,11] and (b) patient handling, including repositioning and lifting patients. Continuous bending, unexpected abrupt movements by the patient, limited working space, age and gender have also been identified as risk factors [8,12]. The literature

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shows the reported lifetime prevalence of WRMIs for PTs as 55% in Australia, 68% in the United Kingdom, 85% in Turkey and 32% in the United States, with the low back the most commonly injured body area followed by hand and wrist, neck, shoulder and upper back [1,6,8,11–14]. For chiropractors working in the United States the prevalence of WRMIs has been reported as 40.1% [2].

Findings from a number of studies draw attention to the different approaches to patient care used in the manual therapy professions and the consequent differences in injuries sustained by practitioners. Campo et al. [11] undertook a prospective study to determine the 1-year incidence and prevalence rates of WRMIs in PTs in the United States. Of the 507 PTs studied, 57.5% reported a work-related injury with injuries to the low back most common, followed by the wrist and hand and the neck and shoulder. Activities that contributed to low back injury for the PTs involved assisting patients with mobility limitations—for example, transferring a patient from a bed to a wheelchair [11]. In contrast, a nationwide study of chiropractors in the United States undertaken by Holm and Rose [2] found fingers and wrists to be the most frequently reported area of injury followed by shoulder and low back. More recent research by Homach & Hedge [15] investigating WRMI in chiropractors working in New York State found that the very physically demanding nature of performing spinal manipulation was a risk factor for both low back pain and upper extremity injury.

Two studies of Australian PTs by Snodgrass et al. [10] and Wajon and Ada [16] revealed that therapists who perform manipulative therapy, especially spinal manipulation and the use of thumb pressure in joint glide manoeuvres had a higher incidence of WRMI related to hand and wrist pain, especially thumb pain. Wajon and Ada [16] found that of 192 PTs, 83% reported thumb pain from performing spinal manipulative therapy. Similar findings have been reported in the chiropractic profession [2,15].

There is currently no literature on the prevalence of WRMIs in Australian osteopaths. While osteopaths perform similar tasks to other healthcare manual therapists, it cannot be assumed that the WRMI trends in the existing data from other professions can be extrapolated to osteopaths. The purpose of this research was to determine the prevalence and characteristics of WRMI among Australian osteopaths.

Method

Design

An online cross-sectional survey, administered by Google Analytic Solutions [17], was used to investigate the prevalence of WRMIs in Australian osteopaths. The questionnaire design was based on previous questionnaires from work related injury studies [7,8] and comprised 20 items designed to capture demographic, work and injury related information (See appendix 1).

Participants

Registered osteopaths who were members of the osteopathic professional association Osteopathy Australia (OA) were invited to participate in this research. All OA members ($N = 1800$) received an email that contained a hyperlink to the online survey as well as information pertaining to the research, including the participant consent processes. Osteopathy Australia was the selected recruitment body as its membership comprises over 90% of Australian osteopaths [18]. To maximise response rate, an announcement of the research was also placed in the OA news bulletin distributed via email.

Data collection

The survey data was gathered over a two-week period in late August and early September 2015. Injury incidence was elicited with the question “Have you ever sustained a work-related injury from working as an osteopath?” If respondents indicated they had acquired a work-related injury, the survey then directed them to questions to uncover further information about their injury, work procedures and work setting. Participants who had sustained more than one injury were asked to provide details of the most serious injury. They were then asked to provide information about that particular injury: location, type, suspected cause, contributing factors, management of and effects on work practices. The time required to complete the survey was approximately 15 min.

Although the survey responses were anonymous, respondents who had sustained a work related injury were offered the opportunity to provide their email address if they wished to provide detailed contextual information about their injury at interview. A number of respondents indicated their willingness to be interviewed, and the results from the analysis of these interviews is reported separately [19].

Data analysis

All data were collated using an Excel spreadsheet (Microsoft Office Professional Plus 2013) and analysed using IBM SPSS Statistics V22. Responses were tabulated question by question. Nominal data was tallied and described as frequency and percentage, and continuous data was summarised as median (interquartile range). The characteristics of respondents who did and did not report having a work-related injury and who had and had not been exposed to training in work-related injury prevention were compared using the Chi-square or Fisher's exact test, as appropriate for categorical responses, and the Mann–Whitney U test for years in clinical practice. Associations between age group, hours worked per week, years in clinical practice and number of injuries were explored using Spearman's correlations.

Results

Participant demographics and background

One hundred and sixty (160) registered osteopaths completed the online survey giving a response rate of 9%. Missing data were identified for two items. One item, *body area injured*, was pair-wise deleted in three instances. The subset sample for this variable after pair-wise deletion was therefore $n = 90$. Another item, *years in clinical practice*, was modified in a single case by imputation of the mean calculated from all entries from the age group relevant to the respondent.

Of the total respondents, 61% were female ($n = 98$). The majority of respondents (68%) were under 41 years of age and the age range was 25–71 years. The number of years in clinical practice ranged from less than one to more than 50, with 78% ($n = 125$) of respondents having been in practice for 15 or less years. A summary of the basic demographic information of the respondents is shown in Table 1.

The number of hours worked in clinical practice (direct patient care), during a single week ranged from less than 15 to more than 50. Forty-four percent ($n = 71$) of the respondents worked between 30 and 50 h per week. Only 4% of the respondents worked more than 50 h per week. (Fig. 1 provides a breakdown of hours worked per week).

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