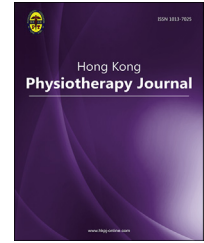




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RESEARCH REPORT

Relationship between self-efficacy, beliefs, and physical activity in inflammatory arthritis



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KEYWORDS

beliefs;
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physical activity;
self-efficacy

Abstract *Background:* The benefits of physical activity (PA) in inflammatory arthritis (IA) patients are well-established. However, levels of PA in the IA population are suboptimal and the psychological determinants of PA are poorly understood.

Objective: The study aimed to examine the self-reported PA levels and psychological determinants of PA for the IA population.

Methods: A cross-sectional study of people with rheumatoid arthritis (RA) and psoriatic arthritis (PsA) was conducted to explore the association between demographic and psychological variables such as self-efficacy and belief about PA, and levels of PA and energy expenditure (EE). PA was recorded using the Yale Physical Activity Survey (YPAS).

Results: A total of 102 participants were included in the study. Participants reported low levels of PA [mean \pm standard deviation (SD), 24.3 \pm 18.2]. Beliefs about PA, but not self-efficacy, correlated with levels of self-report PA over the past week ($r = 0.25$, $p = 0.01$), over the past month ($r = 0.21$, $p = 0.04$), and EE ($r = 0.31$, $p = 0.01$).

Conclusion: People with IA have decreased levels of PA. Beliefs about PA are associated with levels of self-report PA and EE in this population. These data provide a useful signpost for guiding and designing interventions to improve PA levels in IA populations by altering beliefs about PA. Copyright © 2016, Hong Kong Physiotherapy Association. Published by Elsevier (Singapore) Pte Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

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Introduction

Cardiovascular disease is the leading cause of death worldwide [1]. An increased risk of cardiovascular disease has been reported in both the rheumatoid arthritis (RA) and psoriatic arthritis (PsA) populations, with elevated inflammatory cytokines (C-reactive protein, interleukin-6) likely to be the underlying mechanisms [2]. Physical activity (PA) has been shown to contribute to decreasing this risk in a variety of ways, most notably by decreasing expression of these proinflammatory cytokines [3]. In fact, some have argued that due to the extensive evidence for the increased rate of cardiovascular disease in people with inflammatory arthritis (IA), increasing PA amongst people with RA and PsA should be a primary aim for health care professionals [4].

Aside from decreased cardiovascular risk, the benefits of PA reported in the current literature include improved aerobic fitness, increased muscle strength, and improved disease-related characteristics, including pain and stiffness, in the RA population [3,5]. This can lead to an improvement in ability to perform activities of daily life and also in health-related quality of life [5]. Despite these important benefits, decreased levels of PA have been reported for the RA population [6–9], with no published data available for the levels of PA for individuals with PsA.

PA levels are influenced by an extensive number of determinants in the healthy adult population, including sociodemographics, such as age, gender, and socioeconomic, as well as psychological and social factors, including self-efficacy, and social support [10]. Younger age, male gender, and social support consistently correlate with higher levels of PA in the healthy adult population, with self-efficacy and perceived health status being the main psychological variables consistently reported to correlate with PA in the same population [10,11]. The determinants of PA in the RA population are less established with no specific determinants yet identified, with further research being required to determine the health-related and psychological determinants of PA in this population [12].

Psychological factors, such as self-efficacy and beliefs about PA, have been consistently shown to influence PA levels in other populations. The concept of self-efficacy refers to people's judgements of their capabilities to organise and execute courses of action required to attain designated types of performances [13]. For example, people who are more confident in their ability to exercise and be more active and believe that they can do it tend to be more active in general [10,14]. In addition, the concept of perceived behavioural control has been postulated to influence behaviour [15]; however, it has been acknowledged that there may be some overlap in the concepts of self-efficacy and perceived behavioural control [16]. Crombie et al [14] demonstrated that PA levels in older adults were influenced more by beliefs about PA than factors such as gender and age. Studies which have explored barriers to PA in the RA population have also found that beliefs about PA, including fear, worry, and perceived negative outcomes such as pain and joint damage, are commonly cited reasons for not participating in regular PA [17,18]. Similarly subjective health status, i.e., the belief that you are in good health, rather than actual health status, was also found to be a

stronger predictor of PA [19]. Interestingly, self-rated health has also been found to be a reliable predictor of morbidity and functional limitations in other populations [20,21], implying that how one perceives their health may be an important determinant to explore, given the disease status of IA populations. Given the influence of self-efficacy and beliefs about PA on PA levels in other populations [10,14,19], the next logical step is to investigate the influence of these factors on PA in both the RA and PsA populations. More importantly, these factors, unlike age and gender, are amenable to intervention and provide a viable and practical point for health care professionals to alter behaviour [22,23]. Thus, the aim of this study was to determine if self-efficacy, self-rated health, and beliefs about PA were associated with PA in the RA and PsA populations.

Materials and methods

The study was a cross-sectional survey, using self-report questionnaires.

Recruitment

Potential participants were recruited from two rheumatology outpatient clinics, one urban and one rural, in the mid-western region of Ireland. Participants were English-speaking adults, aged >18 years, with a clinical diagnosis of RA, as per the American College of Rheumatology/European League against Rheumatism [24] criteria, or PsA, as per the Classification Criteria for Psoriatic Arthritis criteria [25], and without any type of cognitive impairment, e.g., dementia. Cognitive impairment was determined from the medical records of potential participants. Patients attending rheumatology outpatient clinics in the Health Service Executive (HSE) Mid-Western University Hospitals were approached by the primary investigator and a research assistant, informed about the study, and provided with a study information leaflet. Participants who agreed to participate signed a consent form to confirm their voluntary participation. Verification of the diagnosis of RA or PsA was made by checking patients' medical records. Recruitment was undertaken over a 7 week timeframe. The decision to include people with both RA and PsA was taken to determine if variations existed between IA type and self-report PA levels and also to create a self-report PA profile of people with PsA, as no literature exists for this patient group. One hundred and forty-seven participants were eligible for inclusion in the study.

Ethics approval

Ethics approval was received from the HSE Mid-Western Regional Hospital Research Ethics Committee (Limerick, Ireland) for the study.

Sociodemographic information

A customised questionnaire was designed to collect socio-demographic information, including age, sex, IA diagnosis,

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