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Work rehabilitation for those with rheumatoid arthritis in the UK: A systematic review

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Introduction

Musculoskeletal conditions are a major cause of sickness absence and work loss in the United Kingdom (UK) (Black, 2008), with up to 40% of working people with rheumatoid arthritis (RA) stopping work within five years of diagnosis (Young et al., 2002). The effects of work disability for people with RA are well documented, along with the consequences of this for the individual and society as a whole, as inability to work and loss of productivity is a burden not just to the individual but also to society, giving rise to ever-growing healthcare costs. It is suggested that work status, health, well-being and income are strongly linked (Black, 2008; DoH & DWP 2008a; Waddell et al., 2008; Waddell and Burton, 2006) and loss of work is associated with reduced self-esteem, life satisfaction, perceived health status and higher levels of depression and pain in RA (Katz and Neugebauer 2001; Katz and Yelin, 1994). In the long-term, these are associated with worse functional status, disease outcome and increased health service use (Uhlig et al., 2000). Also, once people with RA discontinue work they are unlikely to recommence (Verstappen et al., 2004). Thus, it is important to support those with RA to retain their jobs. Work rehabilitation, which is also referred as ‘Vocational Rehabilitation’ is defined as “*Whatever helps someone with a health problem to stay at, return to and remain in work*” (Waddell et al., 2008). Provision of work rehabilitation before the work cessation occurs is particularly important for individuals with RA as, more often than not, they are at employment age at the onset (WHO, 2012; Allaire et al., 2011).

Rheumatology occupational therapists are best placed to help employed people with RA and work problems as they have an inherent understanding of occupation as a biopsychosocial construct, and have historically used therapeutic work activities in rehabilitation (Prior et al., 2013; Joss, 2002). In recent years, the College of Occupational Therapy (COT) (2008) set a number of strategic goals to steer the colleges' activities in the field of vocational rehabilitation. In 2009 they published a guide of current occupational therapy practice regarding work rehabilitation in the UK (COT, 2009). NICE guidelines (2009) also emphasise referral to occupational therapy for patients with RA who are experiencing activity limitations in any areas of daily life.

However, little is known of the effects of work rehabilitation provided by occupational therapists, or other healthcare professionals, for patients who are at risk of work disability due to RA in the UK. According to the National Audit Office, only 20% of people with RA consider they receive enough support from rheumatology departments with retaining employment (2009). Therefore, this study aimed to investigate and evaluate available evidence on work rehabilitation for those with RA in the UK.

Method

The review was conducted following the guidelines and reporting standards identified by PRISMA (Moher et al., 2009). Through an eliminatory literature search, keywords were identified to capture RA, inflammatory arthritis, work rehabilitation, job retention and productivity. Keywords with Medical Subject Headings (MeSH) and text words were used to retrieve the target literature. A systematic search of journal articles using major databases (AMED, CINAHL, Medline, PsychINFO, OTseeker and the Cochrane Library (1970-2013)) was conducted to seek evidence from interventional studies of work rehabilitation in people with RA in the UK. An example search strategy is available from the corresponding author on request.

Differences in methodological quality across studies can indicate the results of some studies are more likely to be affected by bias than others. Therefore, the Critical Appraisal Skills Programme (CASP) (University of Oxford, 2012) appraisal tool was used to critique the methodological quality of the articles identified. Two reviewers independently assessed the quality of identified studies using the CASP tool. A consensus meeting was held with a third reviewer to resolve any disagreements in scoring.

Results

The search yielded 3866 articles. Of these, 3821 were irrelevant titles and seven duplicates. The remaining 38 abstracts were read by two researchers, and four articles found to be relevant and extracted for full review. Following this a further three articles were eliminated

as not meeting the inclusion criteria (i.e. not an interventional study or not concerned with RA). Only one study met the inclusion criteria and was included (Fig 1).

This study was a prospective randomized control trial (RCT) comparing assessments of activity ability, work productivity, coping and disease activity in people with RA receiving occupational therapy versus usual care (Macedo et al., 2009). The interventions were delivered by rheumatology occupational therapists with work rehabilitation experience. The methodological quality was rated as medium to high using the CASP tool.

The intervention group received 6-8 sessions of OT, each lasting from 30 minutes to 2 hours, over 6 months, as well as usual rheumatology care. Usual care included routine reviews by the rheumatologist with early, aggressive medical management. Interventions were conducted in the rheumatology or occupational therapy department, home, or work place and included: education on RA, medications and rheumatology management, self-advocacy, assertive communication, work place rights and responsibilities, ergonomic assessment, liaison with employers regarding reasonable accommodations, posture advice, pacing, activities of daily living training, stress management, sleep posture and hygiene, exercise, footwear advice, and splinting. Patients were also signposted/ referred to other services as required. The control group received usual care only, with no OT.

The primary outcome was the Canadian Occupational Performance Measure (COPM) (Law et al., 1998). The COPM is a self-reported semi-structured interview tool designed for use by Occupational therapists to detect change in a patient's self-perception of occupational performance.

Secondary outcomes were:

- Work disability: the Rheumatoid Arthritis Work Instability Index (RA-WIS: Gilworth et al., 2003); a self-developed Modified Health Economics Questionnaire; and 100-mm visual analog scales (VAS) for work performance and work satisfaction affected by RA in the past week.
- Disability: the Health Assessment Questionnaire (HAQ: Fries et al., 1980).
- Health status: the Arthritis Impact Measurement Scales II (AIMS2: the subscales for pain, mood and tension were used; Meenan et al., 1992).
- Psychological status: The Arthritis Helplessness Index (AHI: Stein et al., 1988) measuring perceived control and helplessness;
- Self-reported health: the EuroQol (EQ-5D) Index (EuroQol group, 1990) with self-rated VAS of health between 0 and 100 (0=death ; 100=best imaginable health).
- Disease activity: including a 100-mm pain VAS in the past week; fatigue over the past week (0= none to 3= severe); duration of morning stiffness (VAS: 0 minutes to ≥ 2 hours over the past week), and DAS28 score (Preevo et al., 1995).

Changes in outcome scores over 6 months were compared between the OT and usual care groups using independent sample t-tests. Proportions of patients with clinically significant improvements in HAQ, COPM and DAS28 scores were compared using binomial probability

testing. Limited post-hoc analysis was performed using multiple linear regression to determine the influence of OT versus usual care on changes in COPM performance, COPM satisfaction, HAQ, RA-WIS, and DAS28 scores, taking into account changes in disease activity (DAS28 or ESR) and the baseline score (Macedo et al., 2009).

Of the 136 employed patients completing the RA-WIS at study screening (over a 14 month period at one teaching hospital), 67 scored ≥ 10 , indicating medium to high risk of work disability and were eligible for the study. Thirty-two patients (48%) fully met the inclusion criteria and consented to take part. The mean age of participants was 50.6 (SD 9.8) years. Most were women (98%) with an average disease duration of 10 (SD=8.3) years. There were no significant differences between the intervention and usual care only groups in terms of age, sex, disease duration, function, work performance, disability, psychological status, symptom severity or disease activity.

At 6 months, improvements in the occupational therapy group were significantly better than those in the usual care group for the primary outcome (mean COPM satisfaction 4.08 and 0.25 for the OT and usual care groups, respectively, $p=0.001$; mean COPM performance 3.10 and -0.28, respectively, $p=0.001$); for most work outcomes the OT group ($n=16$) did significantly better (reduced work instability ($P\leq 0.001$), greater work satisfaction and self-perceived work performance) than the usual care group ($n=16$), although there were no differences in work days missed (or percentage of days missed) per month.

The occupational therapy group showed significant improvements in function (HAQ) compared to the usual care group. No differences were observed in the proportion of occupational therapy patients compared to proportion of usual care patients with clinically meaningful improvements in DAS, nor were their differences in fatigue or early morning stiffness (Macedo et al., 2009). The authors stated there were also significant improvements in “coping” measures. However, they described the AIMS2 pain, mood and tension, AHI (perceived control) and health-related quality of life (EQ5-D) as coping measures, which is incorrect. There were however, significant improvements in AIMS2 pain, AHI and EQ5D scores in the OT group compared to usual care.

The post-hoc analysis (i.e. analysing the data after the experiment concluded) revealed occupational therapy was significantly better than usual care in all statistical models ($p\leq 0.01$) which were used to determine the influence of therapy on changes in outcome measures, with an exception of the RA-WIS ($p= 0.11$). Those who had worse baseline scores showed greater improvement for all measures but RA-WIS ($p= 0.27$) (Macedo et al., 2009).

Discussion

This study identified work rehabilitation provided by occupational therapists for employed people with RA helps those with work problems to reduce work instability (i.e. have fewer risk factors for losing their job in future) and have greater work satisfaction. This review only

identified one interventional study in the UK, meaning it is impossible to determine if these results are consistently achievable. There is a paucity of research testing the effectiveness of work rehabilitation provided by rheumatology occupational therapists in the UK.

However, the results of this study were comparable with an earlier study conducted in the United States by Allaire and colleagues (2003). This was an RCT examining work rehabilitation in 242 patients with a range of arthritis conditions over 2 years, most having RA (n=142), but also having knee osteoarthritis, systemic lupus, ankylosing spondylitis or psoriatic arthritis. The work rehabilitation group had an average HAQ score of 0.51 (SD 0.4). Participants received an average of two 1.5-hour sessions on job accommodations, vocational counselling, education, and self-advocacy delivered by rehabilitation counsellors, whilst the control group only received printed materials about disability employment issues. The results indicated that from 12 to 42 months following the intervention, a greater proportion of those in the intervention group continued to work compared to the control group. Timely, patient-centred work rehabilitation interventions assist in promoting work retention and reducing work disability (Allaire et al., 2003).

Comparatively, in the UK study (Macedo et al, 2009); participants had higher rates of disability (HAQ score 1.36 (SD 0.84) in the OT group), probably because the study sample all had RA, typically causing higher levels of disability than many other arthritic conditions. However, the sample was much smaller and most were women, reflecting the RA population. Only two men participated, thus there is a need for more research including more men and a wider range of occupations. Also, this study used a surrogate assessment of work ability (the RA-WIS; measuring risk factors for job loss) (Macedo et al., 2009), rather than measures of work (dis)ability, such as the Work Limitations Questionnaire (WLQ) (Lerner et al., 2001) or Workplace Activities Limitations Scale (WALS) (Gignac et al., 2004). There is a need for larger trials which consider wider concepts relating to work, such as job loss, absenteeism and presenteeism, to evaluate the benefits of work rehabilitation and occupational therapy compared to usual care in employed people with RA in the UK.

The limitations of this review were that only one study was identified. This was potentially due to the variety of terms used to describe work rehabilitation in the literature. The keywords used in this review may have not been exhaustive. The inclusion and exclusion criteria were strictly applied to identify only interventional studies. Therefore we may have missed observational or qualitative studies. The search included 6 bibliographic databases from 1970 until January 2013, but did not include grey literature or contact with experts regarding unpublished studies or theses. Further support for effectiveness of OT work rehabilitation in the UK may be obtainable from good-quality published audits or qualitative studies.

In summary, the trial evidence supporting that work rehabilitation is beneficial for people with RA in the UK comes from one small study conducted in one Rheumatology centre. There is a need for more interventional studies to evaluate work rehabilitation provided by occupational therapists for people with RA in the UK.

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Tables and Figures

Figure 1. The flow diagram of the systematic search results

