**THE IMPORTANCE OF WORK PARTICIPATION AS AN OUTCOME**

**IN RHEUMATOLOGY**

**Strap line: Work as a rheumatology outcome**

**Karen Walker-Bone1 and Carol Black2**

**1Director Arthritis Research UK/MRC Centre for Musculoskeletal Health and Work and Associate Professor in Occupational Rheumatology**

**2Principal of Newnham College Cambridge and Expert Adviser on Work and Health to the Department of Health and Public Health England, and Chair of the Nuffield Trust**

**Correspondence to:**

Karen Walker-Bone,

Director Arthritis Research UK/MRC Centre for Musculoskeletal Health and Work

Associate Professor & Honorary Consultant Occupational Rheumatology

MRC Lifecourse Epidemiology Unit, Southampton General Hospital, Tremona Road, Southampton, SO16 6YD, UK.

E-mail: [kwb@mrc.soton.ac.uk](mailto:kwb@mrc.soton.ac.uk)

Four years ago, *Rheumatology* published a themed issue on Rheumatology and work (1). In the opening editorial, Short and colleagues (2) challenged rheumatology clinicians asking are we taking the ability to work as seriously in our patients as we do a DAS-28 score or a high ESR? Despite their rallying cry, the evidence suggests that few of us can respond affirmatively. Indeed, in a recent snapshot of clinical practice in one UK centre, including 193 general rheumatology outpatients, 29% reported that they had given up working partly or mainly because of their rheumatological condition, amongst whom 17 (47%) reported that they had dropped out of work due to symptoms before having their condition diagnosed (Figure 1) (3). However, of those who were still in work (45% of the sample), only half reported ever having been asked about their job at a rheumatology appointment, one-third that they had ever been asked if they were experiencing difficulty in their work and less than 25% that they had been offered any advice/support to remain in work (3).

For most people, their work is a key determinant of self-worth, family esteem, identity and standing within the community, besides, of course, material progress and a means of social participation and fulfilment (4). Work, or at least good work, is associated with better health than worklessness and probably brings net health benefit both physically and mentally (5). Moreover, when parents are prevented from working because of a health condition, the risk is not just that their children may end up in poverty, but that those children may experience worse health outcomes and face an increased likelihood that they themselves will be workless in the future (4). As clinicians, we must be mindful of the impact of social and environmental factors on health and that when good health can best be restored by the provision of healthcare, the delivery of that healthcare needs to be sensitive to the patient’s circumstances in the home, at work and in society.

Biologic therapies have been determined to be cost-effective for patients with inflammatory arthritis when analysed according to quality-adjusted life years (a consensus, practical overall health outcome used in most countries) (6). Interestingly though, any cost benefit at a societal level, in terms of reduced welfare benefits, higher productivity, and increased economic contribution through taxation are not factored into such analyses. If we could properly take account of such measures, it is undeniable that considerably more expensive therapies would be cost effective if we could demonstrate the same improvement in employment outcomes as we do in pain, disease activity, radiographic progression and function. However, in addition to sickness absence and ill-health retirement, musculoskeletal disorders almost certainly have an even greater impact on presenteeism. Presenteeism is defined as reduced productivity or performance whilst attending work because of ill-health. As a concept, it is extremely difficult to measure. For one thing, its impact is highly variable depending upon the nature of the work. For example, a factory worker with hand dysaesthesia may assemble less components each hour, which might be measurable, but a neurosurgeon with the same symptoms might cause irreparable damage to healthy tissue surrounding a brain tumour whereas same symptoms in a soloist string musician might cause complaints and demands for refunds from concert-goers after a poor performance. Also, presenteeism is under-recognised because co-workers will often compensate for reduced performance or productivity of their colleague with a health condition, at least for some time, but this may have different impacts on the employing organisation through reduced team morale or increased staff turnover. Crucially, impaired productivity is the work outcome which is most important to the employer and overall national competitiveness of the economy and therefore, an ability to measure this accurately could incentivise employers and governments to invest more in accommodation of the needs of workers with long-term conditions, particularly as demographic changes necessitate employees to work to older ages.

In this issue, Leggett and colleagues from the OMERACT at-work productivity global measures working group report patient perspective from seven countries on five global measures, which are Work Productivity and Activity Impairment Questionnaire (WPAI), the Work Productivity Scale – Rheumatoid Arthritis (WPS-RA), Work Ability Index (WAI), the WHO Health Performance Questionnaire (HPQ) and the Quality and Quantity questionnaire (QQ) (7). Patients with inflammatory arthritis and osteoarthritis agreed that the construct of work productivity in the past seven days could accurately reflect the impact of their disease whilst at work. However, two productivity global measures (8,9) were rejected by patients as too ambiguous (8) or causing too much discomfort to complete because of requirement for comparison of performance with that of colleagues (9). The most favoured measure was the WPAI (10), but even this measure was reported most relevant by only 29% of the patients.

We urgently need research to develop new measures of presenteeism that more accurately reflect impairment of productivity due to musculoskeletal disorders. Such measures need to be reliable and sensitive to change, should be relevant across the range of musculoskeletal conditions and need to translate to different types of jobs. More research is also needed into the measurement of the economic impacts of presenteeism on employers and wider national economies as only then will there be incentive for employers and governments to invest resources in enabling workers with musculoskeletal disorders to remain in suitable work.

In the meantime, we as clinicians, should resolve to ask every patient we see with a musculoskeletal disorder – are you working? and what is preventing you from working? and should prepare ourselves to have knowledge of the relevant local employment resources if we uncover an unmet need in our patients. We owe it to our patients as individuals and to our society as taxpayers.

**Disclosure Statement**: The authors have no conflicts of interest to declare.

**Funding:** No specific funding was received from any bodies in the public, commercial or not-for-profit sectors to carry out the work described in this manuscript.

**References**

1. Jones AC, Kavanaugh A, Walker D. Themed issue on rheumatology and work. *Rheumatology* 2012;51(2).
2. Short P, Jones AC, Walker D, Kavanuagh A, Moots AJ. Working at arthritis. How much do we know? *Rheumatology* 2012;51(2):201-3.
3. Holmes C, Marks J, Uner A, Cooper C, Walker-Bone K. Answering Professor Black’s challenge: how many rheumatology patients are participating in work? *Rheumatology* 2015; 54 (Suppl 1): 117-8.
4. Black C. Working for a healthier tomorrow. Dame Carol Black’s Review of the Health of Britain’s Working Age Population, 2008. [www.dwp.gov.uk/docs/hwwb-working-for-a-healthier-tomorow.pdf (6](http://www.dwp.gov.uk/docs/hwwb-working-for-a-healthier-tomorow.pdf%20(6) January 2016, date last accessed).
5. Waddell G, Burton KA. Concepts of Rehabilitation for the management of Common health problems. Norwich, UK: The Stationery Office, 2004.
6. Kobelt G. Economic studies in rheumatology: data, perspectives, challenges: their role in decision making. *Rheumatology* 2012:51(2):208-209.
7. Leggett S, van der Zee-Neuen A, Boonen A, Beaton D, Bojinca M, Bosworth A, et al. Content validity of global measures for at work productivity in patients with rheumatic disease – An international qualitative study. *Rheumatology* 2016; 55 – [Production: please insert]*.*
8. Brouwer WB, Koopmanschap MA, Rutten FF. Productivity losses without absence: measurement validation and empirical evidence. *Health policy* 1991; 48(1), 13-27.
9. Kessler RC, Petukhova M, McInnes K. HPQ Short Form (absenteeism and presenteeism and scoring rules). Available from: <http://www.hcp.med.harvard.edu/hpq/ftpdir/absenteeism%20presenteeism%20scoring%20050107.pdf> (7 January 2016, date last accessed).
10. Reilly M, Zbozek AS, Dukes EM. The validity and reproducibility of a work productivity and activity impairment instrument. *Pharmacoeconomics* 1993; 4(5):353-365.