

## Original article

# Tension at the borders: perceptions of role overload, conflict, strain and facilitation in work, family and health roles among employed individuals with arthritis

Monique A. M. Gignac<sup>1,2</sup>, Catherine L. Backman<sup>3,4</sup>, Simone Kaptein<sup>1</sup>, Diane Lacaille<sup>4,5</sup>, Dorcas E. Beaton<sup>6,7,8</sup>, Catherine Hofstetter<sup>9</sup> and Elizabeth M. Badley<sup>1,2</sup>

## Abstract

**Objective.** To examine inter-relationships among arthritis (A), work (W) and personal life (P) roles and their reciprocal influences, especially experiences of role balance/imbalance among individuals with inflammatory arthritis (IA) and OA.

**Methods.** Eight focus groups were conducted with 24 women and 16 men (aged 29–72 years). A purposive sample was recruited from community advertising. Eligibility included current employment or having been employed within the previous year. Participants were asked about ways arthritis, work and personal life roles intersected and their impact. A standardized questionnaire collected demographic, symptom and employment data for descriptive purposes.

**Results.** Participants noted that having arthritis affected their identity and intersected with work and personal roles, creating role overload, role conflict, role strain and role facilitation. Role overload highlighted that arthritis both affected and was impacted by work and personal life ( $A \rightarrow W$ ;  $A \rightarrow P$ ;  $W \rightarrow A$ ;  $P \rightarrow A$ ). Role conflict focused on  $A \rightarrow W$  and  $A \rightarrow P$  difficulties, whereas role facilitation emphasized the positive impact of work and personal life roles on arthritis ( $W \rightarrow A$ ;  $P \rightarrow A$ ). Role strain was pervasive and arose from numerous sources. Personal strategies (e.g. positive framing) and contextual factors (e.g. support) were important in contributing to or ameliorating role balance/imbalance.

**Conclusions.** By comprehensively examining multiple types of role balance/imbalance and the context within which it occurs, this study identifies gaps in patient-oriented measurement of the impact of arthritis and areas of need in the development of arthritis intervention.

**Key words:** arthritis, employment, participation, work–family conflict, role overload, role conflict, role strain, role facilitation.

## Introduction

Health and psychological benefits of employment are recognized in addition to work's economic benefit. Work can be a source of self-esteem, power and identity [1, 2]. Generally, those holding multiple roles in their lives, including employment, report better well-being [3, 4], whereas employment loss is associated with reduced functioning, increased depression, anxiety and mortality, even after accounting for original health status [2, 5, 6]. This is important because considerable evidence links arthritis to job difficulties [7–9].

<sup>1</sup>Arthritis Community Research and Evaluation Unit, Toronto Western Research Institute, <sup>2</sup>Dalla Lana School of Public Health, University of Toronto, Toronto, ON, <sup>3</sup>Occupational Science & Occupational Therapy, University of British Columbia, <sup>4</sup>Arthritis Research Centre of Canada, <sup>5</sup>Department of Medicine, University of British Columbia, Vancouver, BC, <sup>6</sup>St Michael's Hospital, <sup>7</sup>Institute for Work and Health, <sup>8</sup>Health Policy, Management and Evaluation, University of Toronto, and <sup>9</sup>Canadian Arthritis Network, Toronto, ON, Canada.

Submitted 30 March 2011; revised version accepted 8 August 2011.

Correspondence to: Monique A. M. Gignac, The Arthritis Community Research and Evaluation Unit, Toronto Western Research Institute, Main Pavilion 10-316, 399 Bathurst Street, Toronto, ON M5T 2S8, Canada. E-mail: gignac@uhnres.utoronto.ca

Efforts to reduce arthritis-related work disability have emphasized ways that psychological, social and workplace circumstances contribute to maintaining or forgoing employment. Arthritis studies find that productivity and job loss are only partly attributable to clinical disease features and symptoms. Health factors combine with work context (e.g. job demands), the environment (e.g. workplace access), interpersonal relationships (e.g. support) and psychological factors (e.g. job stress) to predict outcomes such as absenteeism, reduced work hours, changing jobs and forgoing work [8–14].

Elsewhere, the general employment literature highlights that, to understand work, inter-relationships among work and other roles need examination. Research on work-family balance indicates that inter-role conflict and role overload are common in employed adults and are associated with reduced job satisfaction and performance, as well as with increased absenteeism, job turnover, depression and burnout [15–19]. Yet, research on arthritis typically has not examined work's inter-relationship with other roles or the direction of role impacts. Exceptions are studies finding that balancing work, health and one's personal life ranked as among the most stressful aspects of having arthritis [20] and that, in contrast to research with healthy adults [3, 21], occupying more roles was associated with lower well-being in women with RA [22]. A longitudinal study examining role conflict balancing work and arthritis found that greater conflict was associated with more job disruptions (e.g. lost work time), absenteeism and reduced hours, as well as with increased fatigue and health-care utilization [11, 22]. This suggests that inter-relationships among roles are important and that negative perceptions such as inter-role conflict and overload may act as indicators of poorer physical and psychological health, as well as decreased role participation. However, studies have not examined the potentially positive impact of work among those with arthritis; the interplay of work, health and personal life; the direction of role impacts; or personal and contextual factors that may contribute to role balance/imbalance.

This qualitative study investigates role perceptions of individuals with OA and inflammatory arthritis (IA). It draws on theoretical models of role conflict and role quality [15–19, 23]. Role conflict models emphasize negative role interactions such as role incompatibility; 'spillover', where demands of one role interfere with other roles; overload and role stress [15, 19]. Role quality models underscore positive aspects of role interplay, such as role balance and experiences that enhance identity [16, 17, 19, 24]. This study also examines the direction of perceived impacts. Previous research has focused on the negative impact of arthritis on other roles, be they work or home. Studies have not examined the reverse: whether individuals perceive that roles like work affect their arthritis. For example, employment may take time away from arthritis care (e.g. appointments, rest), contribute to an individual's self-worth and provide access to resources (e.g. health benefits) that contribute to better health. We also examine factors perceived as ameliorating

or undermining role balance. By comprehensively understanding multiple types of role balance and imbalance and the context within which they occur, we can identify gaps in understanding the impact of arthritis and inform patient-oriented measurement and intervention development.

## Participants and methods

### Participants

Eight focus groups were held with individuals diagnosed with OA or IA. Typically, groups contained five or six individuals. A purposive sample was recruited using community advertising, including free-of-charge public transit newspapers with a broad spectrum of socio-economic readership characteristics. Telephone-screening established eligibility. Criteria included current employment or employment within the previous year, a physician diagnosis of OA or IA (e.g. RA, PsA), no comorbid conditions or injuries within the previous year causing disability (e.g. multiple sclerosis) and fluency in English.

### Procedure

Focus groups provided information in an environment where individuals could disclose and share experiences [25]. Trained moderators facilitated groups using standard questions that asked what it was like to live and work with arthritis; whether aspects of work, home and personal life made it easier/harder to manage arthritis and how (or whether) arthritis and other roles affected each other. Responses were probed for detail. Groups varied in diagnosis, gender and age. Group discussions were transcribed and entered in N6, a software package for qualitative data [26]. Discussions lasted ~1.5 h, whereupon participants completed a short questionnaire with demographic and symptom information. A small honorarium (CAN\$20) was provided. Informed, written consent was obtained from all participants. Ethics approval for the study was obtained from the University Health Network (REB 09-0375-AE).

### Measures

*Demographics, arthritis type, duration and joints affected* Information included age, sex, marital status, education, household income and the type of arthritis and time since diagnosis. Arthritis type was coded into IA or OA.

#### *Health measures*

Disease activity was assessed with the five-item RA disease activity index (RADAI) [27, 28]. The profile of mood states (POMS) fatigue subscale asked the extent to which participants felt worn out, fatigued, exhausted, sluggish and weary in the past month (0 = not at all; 4 = extremely) [29].

#### *Employment*

Categories for employment status were full time, part time, leave of absence/short-term disability, long-term disability, unemployed (i.e. looking for work) and not employed (i.e. not looking for work). These were collapsed into three categories: full time, part time and not in the

labour force. Respondents were asked whether arthritis affected work tasks, if they changed jobs because of arthritis and whether they had disclosed their condition to their employer/supervisor (no/yes). They were also asked to what extent they had control over their work schedule (1 = not at all; 5 = a great deal).

### Analyses

Transcripts were analysed using qualitative content analysis, a method for systematically making inferences from text [30, 31], and used existing role models as general indicators of role conflict, role quality and the direction of role interplay [15–19, 23]. Transcripts were read by one of the authors (M.A.M.G.) to identify broad themes and to develop a preliminary coding scheme. To verify the credibility of codes, other team members reviewed different transcripts and the coding scheme. Transcripts were subsequently coded by two of four trained coders working independently. Coders met frequently to ensure consistency and transparency in coding. Discrepancies were resolved through discussion. Descriptive frequencies and means were calculated for questionnaire items.

### Results

The eight focus groups included 24 women and 16 men ranging from 29 to 72 years of age (Table 1). Two-thirds of the sample reported post-secondary education. There was a wide range of household incomes and job types reported. Fifty per cent of participants had OA, the average disease duration was 12 years and there was a range of pain and fatigue levels experienced. Most participants were employed ( $n=35$ ; unemployed  $n=4$ ). Over half the sample reported arthritis-affected workplace tasks, 52.3% had disclosed their condition to their employer and 25.6% changed jobs because of arthritis.

Participants reported numerous roles: worker, spouse, parent, friend and leisure roles (e.g. golfer). They noted that arthritis affected their identity and necessitated they take on a new role—‘I am a person with arthritis’. Results focus on this new role managing arthritis (A), the work role (W), and combine other roles into a personal role category (P). Findings are described using two overarching themes: (i) types of role balance and imbalance that describe interactions among roles; and (ii) personal strategies and contextual factors influencing role perceptions.

#### Types of role balance and imbalance

When discussing the intersection of arthritis (A), work (W) and personal (P) roles, participants highlighted the ways that roles in one sphere impacted roles elsewhere. These were categorized into four types of role balance/imbalance: role overload, role conflict, role strain and role facilitation. Within each type of role intersection there was discussion of the direction of impact [e.g. arthritis impacts personal roles ( $A \rightarrow P$ ); work impacts arthritis ( $W \rightarrow A$ )] (Table 2).

Role overload captured perceptions of too few hours being available to perform all roles adequately. Work

**TABLE 1** Sample characteristics ( $n=40$ )

Variables	<i>n</i> (%)	Mean (s.d.)
Age (range 29–72 years), years	40	55.8 (8.6)
Sex		
Male	16 (40.0)	
Female	24 (60.0)	
Marital status		
Married or living as married	14 (35.9)	
Divorced/separated/widowed	9 (23.1)	
Never married	16 (41.0)	
Education		
Some secondary or secondary	3 (7.9)	
Some post-secondary	10 (26.3)	
Post-secondary	25 (65.8)	
Household income (CAN\$)		
Less than 40 000	9 (23.1)	
40 000–59 999	7 (17.9)	
60 000–79 999	8 (20.5)	
≥80 000	11 (38.5)	
Decline to answer	5	
Arthritis type		
OA	20 (50.0)	
IA	16 (40.0)	
Both OA and IA	4 (10.0)	
Arthritis duration, years	40	12.3 (9.4)
Number of joints affected	40	6.1 (3.8)
Pain (0–10)	39	5.3 (3.0)
Fatigue (0–20)	40	8.65 (6.1)
Employment status		
Full-time	24 (61.5)	
Part-time	11 (28.2)	
Not in the labour force	4 (10.3)	
Control over work schedule		
Not at all/a little	18 (46.1)	
Somewhat	4 (10.3)	
Quite a bit/a great deal	17 (43.6)	
Arthritis affects workplace tasks		
No	19 (48.7)	
Yes	21 (51.3)	
Changed job because of arthritis		
No	29 (74.4)	
Yes	11 (25.6)	
Disclosed condition to employer		
No	17 (47.2)	
Yes	19 (52.3)	

Numbers may vary due to missing data.

and personal demands sometimes interfered with time needed to care for arthritis ( $W \rightarrow A$ ;  $P \rightarrow A$ ), including scheduling health-care appointments and getting rest: ‘I just don’t have enough time to look after myself properly... I have long [work] hours... And so it becomes difficult to get the benefit absolutely with medications and treatments’ (R.K.: Group 6). Yet, most commonly discussed was that living with arthritis, work or the two roles in combination interfered with time spent in personal life activities ( $A \rightarrow P$ ;  $W \rightarrow P$ ;  $A+W \rightarrow P$ ). Plans with family and friends were traded off, giving rise to role loss, ‘I haven’t visited with a friend in five years. That was

something I had to drop because there are only so many hours in the day' (C.C.: Group 2). In contrast, participants were protective of work, rarely noting that time spent managing arthritis detracted from time working ( $A \rightarrow W$ ). When arthritis did interfere, it was generally because of intermittent bouts of serious symptoms or treatment (e.g. surgery).

A second type of role intersection was role conflict where requirements in one area of life were at odds with other roles. Here, participants focused on the negative impact that arthritis had on work and personal roles ( $A \rightarrow W$ ;  $A \rightarrow P$ ) or the combination of arthritis and work on personal roles ( $A + W \rightarrow P$ ) (Table 2). When discussing  $A \rightarrow W$  role conflict, participants highlighted (i) how arthritis interfered with job tasks because of symptoms or medication side effects (e.g. nausea); (ii) the unpredictability of symptoms, making it hard to plan work activities or career development; (iii) fatigue interfering with concentration and productivity; and (iv) reduced motivation arising from difficulty accepting the disease impact, leaving respondents feeling unable to overcome difficulties. In contrast, comments about the impact of arthritis on one's personal life, as well as the combined impact of arthritis and work ( $A \rightarrow P$ ;  $A + W \rightarrow P$ ), emphasized fatigue that undermined personal activities and occasionally created interpersonal problems. This was true both for participants with IA and OA. One participant noted, 'My husband sometimes gets upset because we still go out sometimes, but we used to go out all the time... Now there are times when I say I can't go; I just can't. He says, "Well, make an effort - I mean, just try". Sometimes it's hard to make him understand that it's not my decision' (KL: Group 1).

Role strain, the perception of psychological stress created by conflicting role demands or trying to balance multiple roles was pervasive and came from multiple sources, including other types of role difficulties (Table 2). Arthritis made work particularly stressful ( $A \rightarrow W$ ) among individuals with IA if signs of the disease were visible (e.g. swollen joints). Individuals were concerned about not looking professional—'They don't want someone branding them that looks debilitated (BN: Group 3)—or that arthritis would result in discriminatory practices.  $W \rightarrow A$  role strain came in numerous forms, including distress that a lack of control over activities at work, long hours, a heavy workload and workplace policies resulted in poorer physical and mental well-being. Most frequently noted were interpersonal problems that created stress and that had a negative impact on one's disease ( $W \rightarrow A$ ;  $P \rightarrow A$ ). 'The times I had the worst [arthritis] attacks - usually there was tension, either personal or at work' (PR: Group 8) and 'The one thing in the workplace that I find doesn't help arthritis is stress... Office politics - I think that's been the worst' (DF: Group 5). Arthritis also created personal life problems ( $A \rightarrow P$ ). Participants noted sometimes feeling guilty, annoyed or moody in their interactions.

Not all comments were negative. Role facilitation or positive aspects of a role that enhance other roles was also discussed. Overwhelmingly, respondents discussed that employment had a positive impact on living with

arthritis ( $W \rightarrow A$ ) (Table 3). Work sometimes provided disability insurance or benefits enabling arthritis treatment (e.g. medication and physical therapy). The salary from employment could purchase furniture, assistive devices or help with household cleaning, making life with arthritis easier and conserving energy. Interactions and support from co-workers were also beneficial as was the opportunity to be productive and engage in activities that distracted one from arthritis. That is, participants felt that there were psychological benefits to employment, 'If you don't work then you have all this free time when you're thinking about, "Oh, poor me..." You get depressed and then I think the pain hurts more' (SC: Group 5). Work activities also provided movement and physical activity that could help reduce pain and stiffness. In summing up, one person stated:

Staying with the job has its benefits. You get to interact with people. You get to do something that you enjoy doing. Yes, there's a tradeoff - you have some discomfort. [But], you have access to benefits and you're doing something every day... The arthritis is there, take it as a fact of life, but maybe you can stop it in its tracks and it may become livable... You've now intervened with activity, with medication, with resources outside of your home... so I believe just staying in the game is important. (BN: Group 3)

#### Strategies and contextual factors ameliorating or contributing to role difficulties

For each type of role balance/imbalance, participants noted factors contributing to the role difficulties or ameliorating problems. Factors included coping strategies and adaptations, characteristics of the person and illness, work context, personal circumstances and the environment. Overall, comments were similar across women and men and age groups. Arthritis symptoms, especially pain and fatigue, were perceived as aggravating all types of role difficulties for individuals with OA and IA. Even with good pain management and treatment, fatigue was an ongoing problem for role balance. One respondent said, 'And it doesn't matter, you could feel like the best day ever [but] at 3:00 in the afternoon, I'm totally wiped out. Totally exhausted' (HP: Group 6).

#### Role overload

Two strategies were frequently discussed to manage role overload. The first was increasing instrumental support received to meet role demands; the second was making trade-offs or limiting time in roles. These strategies were only occasionally used at work because participants expressed reluctance or an inability to modify their jobs. They were most often noted for household tasks and leisure, 'I smartened up and thought, "This is ridiculous" and I cut back. Family stuff just doesn't get done [or] my family has done a lot of stuff for me' (MT: Group 2). In discussing leisure, participants stated, 'It's a tradeoff though - career versus having a life. And so it's moving up the career

**TABLE 2** Types of role conflict and balance and their perceived direction of impact

	Role overload	Role conflict	Role strain	Role facilitation
Definition	Perception that there are too few hours in a day to fulfil all role demands	The requirements of one role are perceived as being at odds with another role	Psychological stress is created by conflicting role demands or trying to balance multiple roles	Positive aspects of one role are perceived as enhancing other roles
A → W	Rarely discussed Arthritis symptoms sometimes resulted in work tasks taking longer; potentially affects productivity	Frequently discussed Arthritis created difficulty in multiple ways: (i) symptoms or medication side effects made work tasks difficult (e.g. pain, nausea); (ii) unpredictable symptoms made it difficult to plan at work; (iii) fatigue and lack of energy affected concentration and productivity; and (iv) difficulty accepting the disease and its impact on work sometimes resulted in reduced motivation for working	Frequently discussed Examples include: makes one look unprofessional; may prevent career development and undermine promotion opportunities; creates financial and other worries for future if unable to remain employed	Not discussed
W → A	Sometimes discussed Work demands can interfere with health appointments or can be exhausting and make it difficult to find time to care for arthritis	Not discussed	Frequently discussed Examples include: a heavy workload, lack of control over work tasks or problems with managers and co-workers can have a negative impact on physical and psychological health	Frequently discussed (see Table 3 for details)
A → P	Frequently discussed Arthritis noted as having a considerable impact on time spent in activities related to personal life	Frequently discussed Focus was on fatigue Fatigue can undermine personal life activities; can create interpersonal problems with family and friends	Frequently discussed Examples include: feeling guilty or being moody because of arthritis. This is detrimental to relationships with others	Not discussed
P → A	Role loss discussed Sometimes discussed Managing personal demands can be exhausting and make it difficult to find time to care for arthritis	Not discussed	Frequently discussed Interpersonal stress with family or friends is perceived as negatively affecting arthritis (e.g. contributing to pain) and to general health problems	Sometimes discussed (see Table 3 for details)
W → P	Frequently discussed The demands of work leave little time for personal life Participants felt forced to make 'trade-offs' or give up personal life activities to remain working	Not discussed	Not discussed	Not discussed
A + W → P	Frequently discussed Arthritis plus work did not leave enough time for one's personal life Role loss discussed	Frequently discussed Fatigue undermines personal activities Fatigue can create interpersonal problems with family and friends	Frequently discussed See comments for A → P Work role demands create stress in one's personal life	Not discussed

A → W: arthritis impacts work; W → A: work impacts arthritis; A → P: arthritis impacts personal life; P → A: personal life impacts arthritis; A + W → P: arthritis plus work impacts personal life. Personal life impacts work (P → W) not discussed by participants; work impacts personal life (W → P) was discussed as the combined impact of arthritis plus work on personal life (i.e. A + W → P).

TABLE 3 Dimensions of role facilitation

	Quotes
Work → arthritis (W → A)	
Access to benefits	'I [think] it's actually enhanced my ability to take care of my arthritis because I have a lot of flexibility in my job and I have health benefits that pay for the medication that I have to take' (SC: Group 5)
	'You're really glad you've got your disability insurance locked in... if I stop working for that company and move to another company, I maybe can't get any disability insurance' (FB: Group 2)
Financial resources	'I have an income that affords me the ability to buy custom furniture [and] to take taxis... if I'm not feeling up to walking, things that [I couldn't do] if I didn't have a job' (TS: Group 6)
Social interactions	'If you get out and you like the people you're working with... the social aspect of it is good' (WP: Group 8)
Opportunity to be productive	'Work gives you something to do so you're not just sitting around all the time' (AL: Group 2)
Psychological benefits	'If I don't work, I won't be healthy. I will be depressed, will suffer, and will have no reason even to walk or do things at home - So, [work] keeps me running. The work depends on my ability to work and my health depends on my work. It's a circle' (SC: Group 5)
	'They talk about working through the pain. Sometimes you have to. I guess there's a whole range of medical reasons and psychological reasons... I'm not thinking about the fact that I'm aching. And probably an hour later, I won't be aching' (JM: Group 8)
Opportunity for physical activity	'The fact that I have to get up every day to get out forces me, even if my knees are sore and stiff that day, to get up and get moving. And I know that an hour later they'll be all right. They won't hurt as much' (WP: Group 8)
	'I run all day. I'm on my feet the entire time... And actually that's helped me a lot... It's made my life a lot stronger than just sitting' (MT: Group 2)
Personal life → arthritis (P → A)	
Instrumental support	'I'm really tired but I'm lucky I have good support at home. When people cook, I usually clean up but I give them a 60-minute warning call when I'm leaving the office to get that supper going' (CB: Group 5)
Emotional support	'I get a lot of strength from him, too, because we were only married about six months and he had a pulmonary embolism... out of nowhere... And within a year that man had done a marathon' (JR: Group 4)

ladder' (TS: Group 6) and 'You can't do all the things you used to do. The things that are very important - you need to reserve that energy to do [those] things' (FW: Group 1).

#### Role conflict

As noted earlier, this role intersection centred on the impact of arthritis on work (A → W). However, self-management strategies to minimize A → W conflict came from all areas of life. They included adhering to treatment; modifying activities; lifestyle changes like diet, rest and exercise; and anticipating and avoiding difficulties in different domains to minimize pain and conserve energy for work. Fewer strategies were reported at work, although some participants talked about pacing activities, flex-time, breaks, stretching and ergonomic furniture and equipment.

Two factors highlighted the complexity in managing A → W conflict. The first was use of company policies and accommodations. Some participants reported accommodations that were helpful. For example, in talking about work-at-home arrangements, a respondent noted, 'I think I've never missed a day of work since I got it [RA], but if I had to drive myself to an office I would be off work a lot' (AL: Group 2). Yet, overall, few participants used

benefits or accommodations (with the exception of drug/health plans). They sometimes reported an absence of policies or a reluctance to draw attention to their needs. Several participants used vacation time rather than sick days for arthritis: 'It's too difficult to keep asking for doctor's appointments - I have so many... So I take vacation days... I don't want them thinking I'm sick... I don't consider myself [sick]' (R.K.: Group 6). Others reported difficulties accessing benefits: 'And so I'd talk to the union people and ask for accommodations and it was a struggle to get them' (EM: Group 8).

A second factor related to A → W role conflict was the decision whether to disclose arthritis to others at work. Nearly half of respondents had not told their employer about their disease and many remained ambivalent about discussing arthritis. For some, this was to preserve their self-image, 'I only tell people that I'm friends with... I don't want to be seen as weak' (C.C.: Group 2). Another commented, 'I would feel self-conscious about talking... it would be like trying to make excuses for yourself' (NK: Group 5). Others talked about disclosing only when necessary: 'You don't really tell [about] any kind of disabilities until it affects your job' (GS: Group 2). Few respondents reported concerns about discrimination,

although one person stated, 'There's two questions. There's one about, do you tell people around you and how would they handle that information? And there's also one about... could you lose your existing job and if you go out to get a new job, can you get it?' (OL: Group 2). Concerns about disclosure meant that individuals delayed or refrained from using accommodations that might have helped to reduce  $A \rightarrow W$  role conflict. Yet, many participants who had disclosed reported helpful accommodations, including job modifications, work at home arrangements and help from others: 'I always had great support. Seemed everybody I knew had some kind of arthritis' (WP: Group 8).

#### *Role strain*

Common coping strategies that the participants reported to minimize role stress were humour and positive framing. One person stated, 'If I were a horse they'd have taken me out behind the barn and shot me... But I have a sense of humour, thank goodness!' (AS: Group 3) Another said:

A friend of mine with multiple sclerosis wanted me to go to a group with her and they had a guest speaker. And one of the best things I ever took out of that was the fact that you're entitled to two self-pity days a year... And you mark it on your calendar and the whole world knows that this is your self-pity day... But after that, that's it. You're done (RF: Group 6).

Emotional support from others and social comparisons were also important strategies to reduce stress. Two participants noted:

DF: My brother and I call each other up and we ask about our aches and pains because we both know we have them (laughter).

SB: That's right. I have a few friends that when we get together we compare knees and feet (laughter) (Group 5).

#### *Role facilitation*

Opportunities for role facilitation were also enhanced by support. Absence of support, especially at work, undermined the benefits of work. In discussing her job in the fast food industry, one woman noted, 'You guys talked about going slower. I don't have that option. I'm not allowed to go slower. I have to go faster every single day and I have to compensate all the time. I'm forced to compensate for what I can't do by making up for doing everybody else's work' (OL: Group 2). This participant was particularly angry with colleagues and perceived their treatment contributed to work stress and to poorer arthritis health. Other job context variables, most notably control over work, facilitated the benefits of the work role. 'I have this really flexible job. If I have an appointment, I just go - it's not a big deal' (FB: Group 2).

## Discussion

Considerable research focuses on the negative impact of arthritis on work ( $A \rightarrow W$ ). This study adopted a broader perspective examining the interplay among arthritis,

employment and personal life roles ( $A \leftrightarrow W \leftrightarrow P \leftrightarrow A$ ). Findings highlight that not only does arthritis affect work and personal life, but also these latter roles affect arthritis and one another. Moreover, negative and positive impacts emerged among role inter-relationships. Numerous personal and contextual factors potentially aggravated or ameliorated these role difficulties.

Inter-role relationships emphasized time pressures, the fit or congruence of behaviours across roles and perceptions of strain or stress. They also highlighted benefits of roles for health related to resources, support and psychological well-being. This is in keeping with existing models of work-family conflict and quality that acknowledges the consequences engaging in one role has for other roles [15, 17-19, 22]. It is also similar to emerging literature that finds balancing arthritis, work and personal life stressful [13, 22]. This study adds to the literature by examining the intersection of diverse roles among people with arthritis and by examining positive aspects of role interplay.

Time constraints fulfilling role demands (role overload) were frequent, and this was one way that work and personal roles negatively impacted caring for arthritis. Individuals were protective of their work, sometimes not taking time to care for their health. A consequence of this was that reports of fatigue were pervasive for those with IA and OA. Ultimately, many respondents could not sustain involvement in all roles and reported role loss in their personal lives, especially in socializing and leisure. Future research needs to examine role overload and personal life role loss as potential early warning indicators of employment difficulties that might result in changes to work, including forgoing employment.

Role conflict focused almost exclusively on difficulties that arthritis created in other roles. Pain, fatigue, symptom unpredictability and disability interfered with work and personal roles. A wide range of self-management behaviours and job accommodations had the potential to improve the person-job fit and mitigate role conflict. Although the general workplace literature emphasizes the importance of person-organization fit, much of this research has examined the congruence between a worker's attitudes or personality and the organization's culture [32, 33]. Our study finds additional dimensions are relevant. Namely, health conditions such as arthritis have an intermittent and unpredictable course, and symptoms and disability can undermine the person-organization fit. This may be exacerbated by unwillingness to disclose arthritis or utilize job accommodations until absolutely necessary. Yet, delaying accommodations may have consequences for work and put employment retention at risk [34]. Person-organization fit will be of increasing importance as the workforce ages and individuals in their prime earning years develop chronic conditions, particularly OA.

Role strain created by balancing multiple roles was common. Role stress has been linked to numerous negative outcomes in the role conflict literature [11, 15-19, 22, 35]. It points to the need for increased attention to stress and referral for management in occupational, vocational and

community interventions. Recent intervention research in arthritis has been promising [36–38]. However, this study highlights that, even among individuals who want to be responsible self-managers of their disease, the challenges of balancing multiple roles is daunting and many people report role loss and guilt that may undermine well-being.

Although stress was common, reports of the positive impact of work on arthritis on health were equally frequent. This positive influence of work has been largely ignored in arthritis. Employment provided resources; it was important to people's identities and enabled them to be productive; it supported positive social interactions and provided opportunities for physical activity. Personal life roles also positively impacted arthritis, especially through support. These findings suggest new directions for outcome measurement. Current outcomes largely document varying degrees of negative impact and may misrepresent the inter-relationships among roles in employment. Additional attention is needed in assessing positive benefits of role interplay, such as role facilitation, balance and support [39].

Limitations to this research should be recognized. Although the mixed diagnosis and employment status groups enriched the breadth and depth of the discussion, our sample was small and may not have captured all the role interplay experiences of individuals. The sample size and focus group methodology also made it difficult to examine some contextual factors that were not discussed explicitly in the groups. For example, facilitators did not ask about and participants did not spontaneously comment upon gender, age or education as influencing role interplay, although these have been found to be important in work–family research. Moreover, discussing the interplay among roles and teasing out cause and effect relationships was not always easy to articulate. Additional research developing new measures and examining changes in role conflict and balance longitudinally is needed.

Nevertheless, this study underscores the importance of examining inter-relationships among multiple roles to better understand living and working with arthritis. Role conflict and overload may act as early warning indicators of workplace difficulties that could significantly change employment outcomes. Measurement of positive and negative role interplay might aid in early identification of individuals most at risk and inform intervention efforts to remain working.

#### Rheumatology key messages

- Patient-oriented outcome measurement needs to include assessments of work–health–personal life role balance and conflict.
- Work–health–personal life role conflict may predict negative workplace outcomes such as absenteeism and leaving work.
- The measurement of positive and negative role inter-relationships can inform work and self-management interventions.

## Acknowledgements

*Funding:* This work was supported by a grant from the Canadian Arthritis Network, a Networks of Centres of Excellence, Canada.

*Disclosure statement:* The authors have declared no conflicts of interest.

## References

- 1 Bloom DE, Canning D. The health and wealth of nations. *Science* 2000;287:1207–9.
- 2 Suhrcke M, McKee M, Stuckler D, Sauto AR, Tsovala S, Mortensen J. The contribution of health to the economy in the European Union. *Public Health* 2006;120:994–1001.
- 3 Baruch GK, Barnett RC. Role quality, multiple role involvement, and psychological well-being in midlife women. *J Pers Soc Psychol* 1986;51:578–85.
- 4 Plach SK, Heidrich SM, Waite RM. Relationship of social role quality to psychological well-being in women with rheumatoid arthritis. *Res Nurs Health* 2003;26:190–202.
- 5 Dooley D, Fielding J, Levi L. Health and unemployment. *Annu Rev Public Health* 1996;17:449–65.
- 6 Martikainen PT, Valkonen T. The effects of differential unemployment rate increases of occupation groups on changes in mortality. *Am J Public Health* 1998;88:1859–61.
- 7 Allaire SH, Wolfe F, Niu J, Lavalley MP. Contemporary prevalence and incidence of work disability associated with rheumatoid arthritis in the US. *Arthritis Rheum* 2008;59:474–80.
- 8 Theis KA, Murphy L, Hootman JM, Helmick CG, Yelin E. Prevalence and correlates of arthritis-attributable work limitation in the US population among persons ages 18–64: 2002 National Health Interview Survey Data. *Arthritis Rheum* 2007;57:355–63.
- 9 Verstappen SM, Bijlsma JW, Verkleij H *et al.* Overview of work disability in rheumatoid arthritis patients as observed in cross-sectional and longitudinal surveys. *Arthritis Rheum* 2004;51:488–97.
- 10 Gignac MA, Sutton D, Badley EM. Re-examining the arthritis–employment interface: perceptions of arthritis work spillover. *Arthritis Care Res* 2006;55:233–40.
- 11 Gignac MA, Cao X, Lacaille D, Anis AH, Badley EM. Arthritis-related work transitions: a prospective analysis of reported productivity losses, work changes, and leaving the labor force. *Arthritis Rheum* 2008;59:1805–13.
- 12 Gignac MAM, Cao X. “Should I tell my employer and co-workers I have arthritis?” A longitudinal examination of self-disclosure in the workplace. *Arthritis Care Res* 2009;61:1753–61.13.
- 13 Lacaille D, White MA, Backman CL, Gignac MA. Problems faced at work due to inflammatory arthritis: new insights gained from understanding patients' perspective. *Arthritis Rheum* 2007;57:1269–79.
- 14 Tang K, Escorpizo R, Beaton DE *et al.* Measuring the impact of arthritis on worker productivity: perspectives, methodologic issues, and contextual factors. *J Rheum* 2011;38:1776–90.

- 15 Barnett RC. Toward a review and conceptualization of the work/family literature. *Genet Soc Gen Psychol Monogr* 1998;124:125–80.
- 16 Clarke MC, Koch LC, Hill EJ. The work-family interface: differentiating balance and fit. *Fam Consum Sci Res J* 2004;33:121–40.
- 17 Eby LT, Casper LJ, Lockwood A, Bordeaux C, Brinley A. Work and family research in IO/OB: content analysis and review of the literature (1980–2002). *J Vocat Behav* 2005; 66:124.
- 18 Greenhaus JH, Beutell NJ. Sources of conflict between work and family roles. *Acad Manage Rev* 1985; 10:76.
- 19 Voydanoff P. Linkages between the work-family interface and work, family, and individual outcomes: an integrative model. *J Fam Issues* 2002;23:138–64.
- 20 Gignac MA, Sutton D, Badley EM. Arthritis symptoms, the work environment, and the future: measuring perceived job strain among employed persons with arthritis. *Arthritis Rheum* 2007;57:738–47.
- 21 Menaghan EG. Role changes and psychological well-being: variations in effects by gender and role repertoire. *Social Forces* 1989;67:693–714.
- 22 Coty M-B, Wallston KA. Roles and well-being among healthy women and women with rheumatoid arthritis. *J Adv Nurs* 2008;63:189–98.
- 23 Marks S, Macdermid S. Multiple roles and the self: a theory of role balance. *J Marriage Fam* 1996;58: 417–32.
- 24 Marks S, Huston T, Johnson E, Macdermid S. Role balance among white married couples. *J Marriage Fam* 2001; 63:1083–99.
- 25 Krueger RA. Focus groups: a practical guide for applied research. Thousand Oaks, CA: Sage, 1994.
- 26 N6. Victoria. Australia: QSR International, 2002.
- 27 Fransen J, Langenegger T, Michel BA, Stucki G, for the members of the Swiss Clinical Quality Management in Rheumatoid Arthritis. Feasibility and validity of the RADAI, a self-administered rheumatoid arthritis disease activity index. *Rheumatology* 2000;39: 321–7.
- 28 Leeb BF, Haindl PM, Maktari A, Nothnagl T, Rintelen B. Patient-centered rheumatoid arthritis disease activity assessment by a modified RADAI. *J Rheumatol* 2008;35: 1294–9.
- 29 McNair DM, Douglas M, Lorr M, Droppleman LF. Manual for the patient outcome in arthritis. San Diego, CA: Educational and Industrial Testing Service, 1971.
- 30 Neuendorf KA. The content analysis guidebook 2002. Thousand Oaks, CA: Sage, 2002.
- 31 Weber RP. Basic content analysis. 2nd edition. Newbury Park, CA: Sage, 1990.
- 32 Edwards JR. An examination of competing versions of the person-environment fit approach to stress. *Acad Manage J* 1996;39:292–340.
- 33 Kristof AL. Person-organization fit: an integrative review of its conceptualizations, measurement and implications. *Personnel Psychol* 1996;49:1–30.
- 34 Gignac MAM, Cao X, Tang K, Beaton DE. An examination of arthritis-related workplace activity limitations and intermittent disability over four and a half years and its relationship to job modifications and outcomes. *Arthritis Care Res* 2011;63:953–62.
- 35 Gignac MAM, Cao X, Beaton D *et al.* “Is working with arthritis bad for your health?” Outcomes associated with arthritis-work role overload. *Arthritis Rheum* 2009;59: S1853.
- 36 Allaire SH, Li W, Lavalley MP. Reduction of job loss in persons with rheumatic diseases receiving vocational rehabilitation: a randomized controlled trial. *Arthritis Rheum* 2003;48:3212–8.
- 37 Lacaille D, White MA, Rogers PA, Backman CL, Gignac MA, Esdaile JM. “Employment and Arthritis: Making it Work” - a proof of concept study. *Arthritis Rheum* 2008;59:1647–55.
- 38 Varekamp I, Krol B, van Dijk FJH. Empowering employees with chronic diseases: process evaluation of an intervention aimed at job retention. *Int Arch Occup Environ Health* 2011;84:35–43.
- 39 Anaby D, Backman CL, Jarus T. Measuring occupational balance: a theoretical exploration of two approaches. *Can J Occup Therapy* 2010;70:280–8.