**Title: Men, rheumatoid arthritis, psychosocial impact and self-management: A narrative review**

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## Abstract

Rheumatoid arthritis (RA) is a chronic disease affecting fewer men than women. We systematically reviewed the literature on impact and self-management of RA men. Twenty eight papers were included, and grouped into two categories: Psychosocial impact of RA; and Coping and self-management. This review finds gender differences relating to quality of life; work; distress; self-management; coping; and support. We conclude there is a dearth of literature focussing on RA men only, and mixed gender studies include insufficient men to draw strong conclusions about men. Thus, further research is needed to understand the support needs of men with RA in depth.

## Introduction

Rheumatoid arthritis (RA) is a chronic, systemic autoimmune disease causing synovitis and pain in multiple joints with associated emotional, social financial and societal burden (Hill, 2006). RA affects approximately 0.04% of women and 0.01% of men in the UK (Symmons et al., 1994) and is thought to take a different course in men compared to women (Crowson et al., 2011; Forslind et al., 2007). Although RA-related severe clinical disease activity, structural damage and deformities have been reported equally in both genders (using both subjective and objective measures (Scott et al., 2005; Yelin, 1996)), women report more disability (Sherrer et al., 1987). Whilst this could be due to physiological differences (Østensen et al., 2011)

, scale psychometric bias (Leeb et al., 2007) or differences in symptom perception (Fearon et al., 1996), it is unlikely that disease severity alone contributes to this difference in reporting of RA between men and women.

There is evidence from several long term conditions that disease impacts differently on men compared to women (del Mar García-Calvente et al., 2012; McCaughan et al., 2011)

, which suggests that men need their own health strategy (White et al., 2011). If men experience the psychosocial impact of RA differently to women then it is likely that their coping and self-management styles would be different to women. Further, if men cope and manage differently, then the support required to aid coping would need to reflect these different coping strategies and needs. It is therefore of note that current self-management interventions in RA have been designed for and tested mainly in women, with randomised controlled trials of interventions reflecting the preponderance of women with RA (Symmons et al., 1994) (e.g. 84% female (Barlow et al., 2002); 90.2% female (Lorig et al., 2008); 87% female (Barlow et al., 2009); and 85.4% female (Hewlett et al., 2011). Thus, these interventions may not address the different needs of men.

The existing literature in RA regarding the psychosocial impact of RA on men and how they cope has not yet been consolidated. Thus the aim of this literature review is twofold: to assess what is known about the psychosocial impact of RA on men; and to assess what is known about the coping and self-management styles of men with RA. Further, where insufficient literature exists to focus solely on men, this literature review will aim to assess whether or not gender differences exist in these areas.

## Methods

This review involved a systematic search of the literature and a narrative review.

### *Search strategy*

In February 2014 a comprehensive literature search was conducted using the following databases: AMED, CINAHL Plus, Embase, Medline, PsychARTICLES, PsychINFO and SocINDEX. The search was conducted from the earliest year available for each database to the present day. Each search term was searched for independently and then combined. The search terms were under three broad categories: Disease (RA); impact and self-management; and masculinity or gender (See Table 1 for the full list of search terms used under each category). Terms under the category of impact and self-management and the majority of terms under masculinity were searched for in the field titles ‘all text’ ‘all fields’ and ‘full text’. The term gender and the terms under the ‘disease’ category were searched for in the field titles ‘abstract’, ‘keyword heading’, ‘keyword heading word’, ‘title’ ‘subject heading’ and ‘heading words’.

### *Eligibility criteria*

Inclusion criteria for this review were that the research was relevant to the main topic areas, whether qualitative or quantitative. Articles were also included if they reported differences between male and female patients, but did not include gender differences as one of their study aims. Articles were also included if they reported data on more than one conditionas long as the results were sperated by gender and by condition. However, only the RA-related

data were included in the review. Articles were excluded if they did not relate to impact and self-management of RA, if they did not include male patients in their sample, or if they did not report male and female data separately. Articles were also excluded if they contained only participants less than 18 years: children and teenagers may have very different psychosocial issues to adults and would require a separate review. Articles that included more than one medical condition (e.g. both osteoarthritis and rheumatoid arthritis) but did not separate the results relating to gender or condition were also excluded. Articles related to help-seeking behaviours were also excluded as this area would comprise a separate full literature review. Further, articles not available in English or not retrievable through e-journals, paper journals or the British Library were also excluded.

*Process*

To ascertain which papers were appropriate for this literature review, first the titles of all the papers produced by the literature searches were reviewed according to the inclusion and exclusion criteria, then the abstracts of the remaining papers were reviewed, and finally the remaining full papers were reviewed to determine their inclusion. Finally, the reference lists from all included manuscripts were checked to ensure that the literature review had not missed any crucial papers in this area. All titles were reviewed by the first author (CF) and 10% (randomly selected) of the titles returned by the search and 10% (randomly selected) of the papers reviewed in full were independently reviewed (JK) to ensure consistency in agreement. The findings were reviewed and interpreted by the research team, which included a patient research partner (RN) (Hewlett et al., 2006).

The analysis of the included studies focussed on the primary data presented in the papers rather than relying on the authors' interpretations. Thus, in the presentation of results in this paper andy interpretation of the results comes from the authors of this review rather than the authors of the original articles, unless expressly stated. The researchers did not request original data from the authors and so could only interpret the data that the authors presented in their paper.

## Results

The literature search of impact on and self-management of men with RA returned 896 results. Following exclusion of papers according to the inclusion and exclusion criteria and the removal of duplicates, 27 papers remained and a further one paper (Uhlig et al., 2007) was added following a review of the included manuscript reference lists, leaving 28 papers for review. Of these, 25 (89%) were quantitative and the remaining 3 were qualitative. No manuscripts containing mixed methods or literature reviews were returned by the search.

The manuscripts returned by the search could be described within two broad categories, (with one manuscript appearing in both categories (Affleck et al., 1999)): Psychosocial impact of RA (n=20); and Coping and self-management (n=9). These will be presented as a narrative report.

### *Psychosocial impact of RA*

To improve readability of this narrative review, the researchers made a judgement decision to divide the larger number of papers in this category (n=20) into subcategories. A qualitative assessment of the included papers provided four sub-categories (with some manuscripts appearing in more than one sub-category): Quality of life (n=7); Work disability (n=4); Sexuality (n=3); and Emotional distress (n=7). Table 2 provides a summary of the studies included in this section.

*Quality of life.* Men and women with RA experience different types of impact on their quality of life and over different time periods. One study using the generic World Health Organisation quality of life instrument (WHOQOL group, 1995) reported that gender did not differentially affect the quality of life of RA patients (Bedi et al., 2005). However, a study using the Arthritis Impact Measurement Scale (AIMS2) (Meenan et al., 1982; Meenan et al., 1992) found that gender differences do exist within the different domains relating to quality of life (Baczyk, 2005). Specifically, women reported lower quality of life in the area of

emotional state than men, whereas men reported lower quality of life in the area of social activity than women (Baczyk, 2005).

A longitudinal study from Sweden suggested that reporting of quality of life has changed over time (West and Wållberg-Jonsson, 2009; West and Jonsson, 2005)

. This study showed that in newly diagnosed patients, women reported significantly less role limitation due to physical problems, bodily pain and social functioning compared to men. At follow up (2 years after disease onset) women reported better physical functioning and less role limitation due to emotional problems than men (West and Jonsson, 2005). When followed up 6 years after disease onset both men and women had improved overall scores. However, the improvement over time was significantly higher for men than women, so much so that 6 years after disease onset there were no significant gender differences relating to quality of life (West and Wållberg-Jonsson, 2009)

. Further, there were no significant gender differences found in the group of RA patients with long-standing RA (20-25 years) (West and Jonsson, 2005). These findings are supported in terms of RA patients' reports of life satisfaction. (Karlsson et al., 2006) found that newly diagnosed men reported lower levels of satisfaction with life as a whole and with 6/8 domains relating to life satisfaction (self-care activities; leisure; friends; sexual life; partnership relation; family life) compared with women. However, men were slightly (not significantly) more satisfied than women regarding their vocational and financial situation. Two years post-diagnosis men with RA were only more satisfied with their financial situation than women with RA, and scored worse on all other domains. However, of the men with long-standing disease, men were more satisfied than women on 5/8 domains (friends; sexual life; partnership relation; family life; vocational situation), although were still less satisfied with life as a whole. In summary, the findings from these studies (Karlsson et al., 2006; West and Wållberg-Jonsson, 2009; West and Jonsson, 2005)

indicate that men take longer to adjust and adapt to their RA than women do. Given this difference in adjustment and adaptation, it is therefore surprising to find that studies

comparing quality of life scores of RA patients to either osteoarthritis (OA) patients (Baczyk et al., 2007) or the general population (Uhlig et al., 2007) have found that women consistently scored worse on quality of life measures than men regardless of their diagnosis.

*Work disability.* Work disability refers to patients stopping work due to their RA (abstenteeism), and there is contradictory evidence regarding gender differences with reference to this. Further, none of the studies address gender differences in reduced performance whilst at work (presenteeism). One study conducted in Norway (Wallenius et al., 2009) reported that women experience more work disability than men (24.7% women compared to 8.1% men). However, this study assessed whether patients were receiving work disability benefits as a measure of work disability and did not include patients on long-term sick leave. It is possible that the small number of men receiving work disability benefits in comparison to women could be because it is socially less acceptable for men to stop work. However, the difference could also be explained by the study sample, as the women in this study had worse disease activity, reported more fatigue and bodily pain, and had longer disease duration than the men in the study.

In contrast, a study conducted in Morocco (Rkain et al., 2006) found that stopping work was significantly more common in men (91%) than among women (52%) in a random sample of 100 RA patients. This may be due to men having more physically strenuous jobs than women, as 100% of patients in this study with physically strenuous jobs had stopped working. This study is limited in terms of the sample as patients were recruited from one hospital and only 12% (12/100) were male.

A longitudinal study, which evaluated the effect of paid work on emotional distress (Fifield et al., 1996) found that for patients in paid work men reported significantly lower levels of negative affect and somatic complaints than women. However, men who had stopped working reported significantly higher distress scores than women who had stopped working. One third of the variance in depressive symptoms could be accounted for by social economic status, disease status, work demands and work autonomy. This difference in

distress may also be due to remaining in paid work being more important to men to retain their masculine identity. A qualitative interview study exploring the life stories of both men (n=4) and women (n=11) with RA (Stamm et al., 2010) reported that men talked more than women about the meaning and purpose of paid work and were less likely to reflect positively on the impact of RA. The men in this study focused on the difficulty of relinquishing their role as the 'bread-winner' and explained that the loss of paid work affected their social and economic status. However, this study was conducted in Austria, and the authors note that in the Austrian culture men are expected to be the 'bread-winners', further the men in this study had all retired early from work and thus loss of work may be particularly salient to this sample.

*Sexual activity.* The literature regarding gender differences and sexual activity is inconclusive. One study conducted in Morocco (Rkain et al., 2006) reported that women with RA were more likely to report 'sexual problems' than men (77% and 33%, respectively). In this study the term sexual problems related to fatigue, pain, decreased satisfaction or body image disturbances and difficulty with specific positions (Rkain et al., 2006). Another study conducted in Norway (Helland et al., 2008) reported than men with RA were more likely to report a large impact of health status on their sexual activity than women (40% and 27.8%, respectively). Finally, a study conducted in the Netherlands (Kraaimaat et al., 1996) found the level of 'intrusiveness of RA on sexuality' did not significantly differ between men and women (30% and 36%, respectively). However, this was measured using one item from the AIMS (Meenan et al., 1982; Meenan et al., 1992) ("In general, the rheumatic disease interferes with my sexuality" scored from 1 = 'almost never' to 4 = 'almost always') and the term sexuality was not specifically defined as sexual activity. These results may be influenced by the acceptability of reporting sexual problems in different cultures.

*Emotional distress.* One study conducted in Iran reported a correlation between the onset of depression (according to the Beck Depression Inventory,(Beck and Steer, 1987)) in RA and female gender (Behnam et al., 2013). However, 19/28 (68%) male patients were in

remission according to the American College of Rheumatology (ACR) criteria (Pinals et al., 1981) and therefore may not have experienced the same impact as those with active RA. Further, severe depression (a score of ≥19 and classified as clinical depression) was only observed in two patients. Thus it is possible that female gender is correlated with the onset of low mood in RA and the same gender differences may not be observed for clinical depression. The finding that women with RA experience more anxiety than men, but that there is no gender difference for depression scores would support this (Dirik and Karanci, 2010). It is also of note that men with RA have been found to be more likely to report an increase in their negative mood the day after a more painful day than women with RA (Affleck et al., 1999). However, the reasons for this have not been explored.

Women have been shown to report higher levels of distress and more negative feelings than men with RA (Dowdy et al., 1996; Persson et al., 2005). However, when factors associated with gender such as physical impairment, quality of emotional support and passive pain coping were controlled for, gender was no longer significantly related to negative psychological well-being (Dowdy et al., 1996). This indicates that it may be the coping strategies and support structures specific to men and women that moderate the psychological impact of RA. In fact male gender has been identified as a predictor in feelings of social isolation in RA patients (Bugajska et al., 2010). The differences in reports of negative feelings could also be due to gender differences in reporting. One study (van Middendorp et al., 2005) reported that women with RA valued emotions in daily life more than men with RA and reported the experience of emotions more intensely.

*Summary.* There is a general trend in the literature to suggest that men and women report RA as impacting on different areas of their quality of life, and that men's quality of life takes longer to improve than women's. The finding that women consistently score worse on quality of life measures suggests a propensity for women to be more sensitive to quality of life measures than men, whilst men may respond better to measures of satisfaction. This

highlights the need to consider gender appropriate measures to understand the psychological impact of disease.

Whilst some studies report that men are more work disabled than women, findings are not consistent. Nonetheless, the evidence suggests that maintaining paid work is more important to men than women and the loss of this causes men more distress. In general, women with RA seem to report more negative mood and distress than men with RA, but gender differences in clinical depression have not been explored. There is inconclusive evidence regarding gender difference on the impact of RA on sexuality.

Although the evidence is limited by the small number of studies and the small number of male patients in many of the studies, there does appear to be a difference between men and women in their experience of the psychosocial impact of RA. This difference would have consequences in terms of the types of coping and self-management styles employed by men to accommodate the different impact of disease.

### *Coping and self-management*

Table 3 provides a summary of the studies included in this section. In comparison to women with RA, men with RA report employing fewer strategies to manage their condition. Men have reported being less likely to use strategies such as cognitive reframing, active problem solving and emotional expression than women (Englbrecht et al., 2012). Even when disease category (OA or RA) and daily pain were controlled for, men were still less likely than women to use relaxation or distraction techniques or to seek spiritual comfort (Affleck et al., 1999). Further, a study found that men reported less intention than women to take part in a hypothetical exercise programme to improve their RA (Vervloesem et al., 2012). Although the quantitative literature would suggest that men do not use self-management strategies as extensively as women, a qualitative study exploring how male war veterans from the Veteran Administration cope with RA pain (Beaton et al., 2012) reported that men were aware of the need to keep moving and of remaining physically active to reduce their pain. They also valued work and retaining their male identity to reduce the psychological impact of pain.

However, this was an interview study with war veterans, who may have very different experiences of life and therefore have developed different coping strategies to the general population. Further, this study focused on coping with pain rather than exploring how participants coped with RA symptoms or the overall impact of RA.

Women have been reported as more likely than men to use assistive devices or to make home-adjustments (Lapsley et al., 2002; Põlluste et al., 2012)

. However, this has been measured using patients' expenditure and it may be that men are more likely to make their own assistive devices rather than buy them. Further, women receive more practical assistance from family and friends than men (65% and 25%, respectively) (Lapsley et al., 2002) and more positive social support than men (Walsh et al., 1999).

The literature also suggests that women with RA are better able to adapt their coping styles to their needs, with women using more problem- and emotion-focussed strategies every day than men (Affleck et al., 1999). Further, in a study that measured patients' stress and coping at two time points, 12 months apart, women were found to have adapted their coping strategies over time, whilst men remained consistent in the coping strategies and styles they used (Downe-Wamboldt and Melanson, 1998).

A qualitative interview study (Lack et al., 2011) explored the effect of masculinity on the experience of RA and found that men incorporated their RA into their identity to be able to adjust to their condition, but they would not ask for support as this signifies weakness. However, this qualitative study did not explore the method or style of delivery of support that men would find acceptable nor how men currently self-manage and cope with their RA despite rejecting current support.

*Summary.* The findings in this review indicate that men report using fewer and less diverse coping strategies and self-management techniques than women, and have less positive support networks than women. The qualitative literature suggests that it is important to men

to retain their masculine identity but they may have incorporate RA into their identity to be able to adapt and adjust to RA.

## Discussion

The published literature suggests that although men take longer to adjust and adapt to their RA, it is women who are more likely to report RA-related negative mood or distress; men and women report differences in the way in which RA impacts on their quality of life; men seem to value paid work more than women; and women report using a larger number and more diverse self-management strategies than men and have more positive social support.

Although the literature indicates that women are experiencing worse psychological health than men due to RA, men could be expressing their distress in ways that differ from women such as anger directed towards self or others (Branney and White, 2008; Brownhill et al., 2005), which may not be identified by the distress measures used. Despite more negative mood and RA disability reported in women (Sherrer et al., 1987), men are reporting poorer quality of life due to RA. This is supported by similar findings in multiple sclerosis (Casetta et al., 2009) and could potentially be explained by the Impact Triad (Sanderson et al., 2011), which claims that the impact of RA is moderated by severity, importance and self-management. Thus, one interpretation is that although men have less severe RA they place more importance on the impact it has on their lives and are less able to use effective self-management techniques, thus increasing the impact on their quality of life.

Although the literature does not provide conclusive evidence, it does suggest an overall pattern that men with RA seem to value paid work more than women and that maintaining their masculine identity is important to them, especially when faced with illness that threatens their sense of control and self-reliance (Calasanti et al., 2013; Canham, 2009; Tannenbaum and Frank, 2011). One potential explanation for these quantitative differences observed between men and women is that men accommodate non-masculine behaviours within their overall sense of self through building up ‘credit’ or ‘man-points’ (de Visser et al., 2009; de Visser and McDonnell, 2013) by engaging in behaviour (such as paid work), to

compensate for the threats to their masculine identity. It could also be that financial considerations, such as being the main or sole income earner result in men persisting in paid employment despite work related difficulties (Gignac et al., 2008). This is an area that needs further exploration in future research.

Women with RA were more likely to use self-management techniques than men, which has also been found in asthma (Naleway et al., 2006). This could be due to men using coping strategies that embody traditional assumptions of how a man should behave such as taking risks (Charmaz, 1994), which could involve drinking alcohol or increasing their medication. It could also be less socially acceptable for men to acknowledge the need to use self-management strategies (Mechanic, 1972). Further, women seem to be more flexible in their approach to coping and self-management, which could be explained in terms of men viewing chronic conditions as a normal aspect of ageing and therefore being more resigned to dealing with their condition through stoicism rather than active self-management (Clarke and Bennett, 2013). This is also an area that requires further exploration to improve understanding of gender differences in RA self-management. The finding that women have more positive social support networks than men (Walsh et al., 1999) supports the theory that men have poorer social capital in comparison to women (Charmaz, 1994; Conrad, 2010). Emotional intimacy for men often comes from sharing 'gendered activities' together rather than sitting and talking, and may therefore not be recognised as social support by the measures used in RA (Thompson and Whearty, 2004). However, it is also important to note that the opportunity to share 'gendered activities' may be reduced for men with RA due to reduced abilities to take part in certain activities, which may also explain this lack of social support. The type of social support desired by men with RA is an area for investigation in future research.

### *Conclusion*

This review has highlighted the dearth of literature relating to the impact and self-management of RA, on men; of the 28 studies included in this review only two (both

qualitative) solely focussed on men, and neither of these explored the support needs or coping styles of men in depth. In short, the findings across the studies addressing gender differences are inconsistent; not least because they rarely contained sufficient male participants to allow for gender differences to be assessed; neither were they able to use measures that were sensitive to the different needs and coping styles of men. Although there is no consensus as to whether gender impacts on a person's ability to cope with or self-manage their RA, it is clear that a gender difference in coping styles exists. It is therefore likely that men would have different support needs to suit their different coping styles. As a consequence, attempts to provide the same support for men and women with RA (e.g. group self-management interventions) are unlikely to be effective. Further research needs to explore in greater depth the impact of RA on men, their specific RA-related needs, and the specific coping strategies employed by men when managing their RA. Such novel research would identify whether men need tailored support for RA; and if so identify the most appropriate and effective method and style of delivery for this support.

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## Tables

**Table 1: Search strategy for narrative literature review**

| Search term 1 | Search term 2 | Search term 3 |
|---|---|---|
| Men or gender | Disease | Psychosocial aspects |
| Masculinity OR masculine OR masculinities OR masc*; men's health OR hegemonic OR gender | rheumatoid arthritis OR RA | Coping OR cope OR self-manage OR self-management OR self manage OR self management OR impact OR depressed OR depression OR low mood OR emotion OR quality of life OR QOL OR helplessness OR well-being OR adjustment OR adaptation OR identity OR self care OR self-care OR self belief OR self-belief OR self efficacy OR self-efficacy OR support OR psych* |

*Denotes stem word, ensuring that any words beginning with the stem are also picked up in the search

**Table 2: Summary of manuscripts included in the psychosocial impact section of this review**

| Sub-category | Paper | Study design | Number of male participants / study sample | Proportion (%) of male participants | Mean age (Yrs) | Mean disease duration (Yrs) | Country of study |
|---|---|---|---|---|---|---|---|
| **Quality of life** | (Baczyk, 2005) | Cross-sectional | 45/168 | 27% | 55.84 Male<br>51.34 Female | 11.33 Male<br>12.88 Female | Poland |
| | (Baczyk et al., 2007) | Cross-sectional | OA: 11/97<br>RA: 21/123 | OA: 11%<br>RA: 17% | OA:11.50<br>RA:11.10 | OA: 11.5<br>RA: 11.1 | Poland |
| | (Bedi et al., 2005) | Cross-sectional | 26/81 | 32% | 42 | 5 | India |
| | (Karlsson et al., 2006) | Longitudinal | 12/38 | 32% | 51.1 | Recruited at diagnosis | Sweden |
| | (Uhlig et al., 2007) | Cross-sectional | RA: 221/1052<br>General population (popn): 1138/2323 | RA: 21%<br>General popn: 49% | RA:61.3<br>Popn: 44.9 | RA:13.8<br>Popn: N/A | Norway |
| | (West and Jonsson, 2005) | Cross-sectional | RA <12 months: 12/46<br>RA 21-25yrs: 10/39<br>Healthy controls: 7/36 | RA <12 months: 26%<br>RA 21-25yrs: 26%<br>Healthy controls: 19% | RA <12 months: 51.7<br>RA 21-25yrs: 53.1<br>Healthy controls: 52.0 | Not reported | Sweden |
| | (West and Wållberg-Jonsson, 2009) | Longitudinal | 17/51 | 33% | 50.6<br>(55.5 Male<br>48.3 Female) | Patients recruited <12 months and followed up for 6 years | Sweden |
| **Work disability** | (Fifield et al., 1996) | Cross-sectional | 110/369 | 30% | 48 Male<br>47 Female | Recruited at diagnosis | USA |
| | (Rkain et al., 2006) | Cross-sectional | 12/100 | 12% | 43.5 | 12.8 | Morocco |
| | (Stamm et al., 2010) | Qualitative interviews | 4/15 | 27% | 51.8 Male<br>52.4 Female | 16.3 Male<br>13.3 Female | Austria |
| | (Wallenius et al., 2009) | Cross-sectional | 102/474 | 22% | 37.2 Male<br>36.1 Female | 4.8 Male<br>5.9 Female | Norway |
| **Sexuality** | (Helland et al., 2008) | Cross-sectional | 215/830 | 26% | 58.5 | 13.4 | Norway |
| | (Kraaimaat et al., 1996) | Cross-sectional | 102/220 | 46% | 60.8 Male<br>56.6 Female | 12.5 male<br>14.5 female | The Netherlands |
| | (Rkain et al., 2006) | Cross-sectional | 12/100 | 12% | 43.5 | 12.8 | Morocco |
| **Emotional Distress** | (Affleck et al., 1999) | Longitudinal | OA: 30 / 71<br>RA: 18 / 76 | OA: 42%<br>RA: 24% | OA: 62.11<br>RA: 63.46 | OA: 14.62<br>RA: 14.07 | USA |
| | (Behnam et al., 2013) | Cross-sectional | 28/140 | 20% | 46.4 | Active RA: 56.18*<br>Inactive RA: 63.11* | Iran |
| | (Bugajska et al., 2010) | Cross-sectional | 84/437 | 19% | Mean not reported. Majority (71%) are >50yrs | 11 | Poland Germany |
| | (Dirik and Karanci, 2010) | Cross-sectional | 18/117 | 15% | 48.5 | 9 | Turkey |
| | (Dowdy et al., 1996) | Longitudinal | Recruited 1983: 93/369<br>Recruited 1992: 60/207 | Recruited 1983: 25%<br>Recruited 1992: 29% | Recruited 1983: 52.7<br>Recruited 1992: 54.0 | Recruited 1983: 7yrs<br>Recruited 1992: 3yrs | USA |
| | (Persson et al., 2005) | Longitudinal | 57/158 | 36% | 52 | Median = 10 months | Sweden |
| | (van Middendorp et al., 2005) | Cross-sectional | 91/335 | 27% | 60.4 Male<br>56.8 Female | 11.0 Male<br>12.6 Female | The Netherlands |

*It is possible this data has been wrongly reported as this mean disease duration seems unlikely

**Table 3: Summary of manuscripts included in the self-management and coping section of this review**

| Paper | Study design | Number of male participants / study sample | Proportion (%) of male participants | Mean age (Yrs) | Mean dis dur (Yrs) | Country of study | Men report using fewer coping strategies | Men report less intention for self-management | Men report using fewer assistive devices | Men ask for and receive less practical and/or emotional support from family /friends | Men are less adaptive in their coping styles | Men value physical activity and work in reducing psychological impact |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (Affleck et al., 1999) | Longitudinal | OA: 30 / 71<br>RA: 18 / 76 | OA: 42%<br>RA: 24% | OA: 62.11<br>RA: 63.46 | OA: 14.62<br>RA: 14.07 | USA | X | | | | X | |
| (Beaton et al., 2012) | Qualitative interviews | 12 / 12 | 100% | 58 | 13 | USA | | | | | | X |
| (Downe-Wamboldt and Melanson, 1998) | Longitudinal | 15 / 78 | 19% | 75 | Not reported | Canada | | | | | X | |
| (Englbrecht et al., 2012) | Cross-sectional | 100 / 434 | 23% | 55.96 | 12.75 | 12 European countries | X | | | | | |
| (Lack et al., 2011) | Qualitative interviews | 12 / 12 | 100% | 57.8 | 16.5 | UK | | | | X | | |
| (Lapsley et al., 2002) | Longitudinal | 16 / 81 | 20% | 58.2 | 15.6 | Australia | | | X | X | | |
| (Põlluste et al., 2012) | Cross-sectional | 222 / 1259 | 18% | 59.2 | 11.6 | Estonia | | | X | | | |
| (Vervloesem et al., 2012) | Cross-sectional | 52 / 154 | 34% | 55.5 | 12.0 | Belgium | | X | | | | |
| (Walsh et al., 1999) | Cross-sectional | 16 / 43 | 37% | 57.0 | 14.2 | USA | | | | X | | |