Archives of Psychiatric Nursing xxx (2015) xxx–xxx

Contents lists available at ScienceDirect

Archives of Psychiatric Nursing

journal homepage: www.elsevier.com/locate/apnu

An Integrative Review of Correlates and Predictors of Depression in Patients with Rheumatoid Arthritis

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A B S T R A C T

Depression creates an additional burden for adults with rheumatoid arthritis (RA), negatively affecting disease outcomes and quality of life. An integrative literature review of twenty-three quantitative studies was conducted on correlates and factors predictive of depression in adults with RA. Methodological assessment tools were used to independently evaluate the data quality by two reviewers. Prevalence rates ranged from 6.6 to 66.25%. Correlates included pain, functional status, disease duration, and RA treatment. Predictors, including sociodemographics, pain, coping ability, support, functional status, and clinical factors, varied depending upon the sample, standardized measure, and geographic location. Understanding correlates/predictors could guide the development of comprehensive care.

Rheumatoid arthritis (RA) is a chronic, systemic, autoimmune disease primarily affecting the joints. The etiology is unknown, but genetics, infection, hormones, and environment may play a role in its development (Centers for Disease Control & Prevention [CDC], 2012). Inflammation affects the synovial lining and may result in erosions and joint destruction. The hands and feet are symmetrically affected, and the disease may progress to larger joints of the body. The manifestations of RA are not limited to joint stiffness and pain, but may also affect organs and cause systemic effects such as pulmonary fibrosis, neuropathy, and pericarditis (World Health Organization [WHO], 2000).

While RA affects people of all ages, the average age at diagnosis is 66.8 years, suggesting RA is becoming a disease of older adults (Arthritis Foundation, 2008; CDC, 2012). RA affects females 2–3 times more often than males (CDC, 2012). Approximately, 1.3 million people suffer from RA in the United States [U.S.] (Arthritis Foundation, 2008). Sources indicate that the global prevalence of RA is 1–3% (Ho, Fu, Chua, Cheak, & Mak, 2011; Lee, Tsai, Luo, & Tsay, 2010). Patients with RA experience an increased incidence of comorbidities such as cardiovascular disease, infection, cancer, and psychological difficulties. Further, RA accounts for 22% of the mortality in the rheumatologic and arthritis groups (Arthritis Foundation, 2008; CDC, 2012).

Several factors contribute to the development of psychological problems in patients with RA. The nature of the disease involves exacerbations and remissions leading to anger, grief, frustration, and depressed mood (Bagheri-Nesami, Mohseni-Bandpei, & Shayesteh-Azar, 2006). People worry about joint deformities, impaired function, and the inability to work, which has the potential to create socioeconomic losses (Sheehy, Murphy, & Barry, 2006). Patients with RA are more likely to change jobs, retire early, or reduce work hours (CDC, 2012). Other concerns include the side effects and potential long-term toxicity of medications (CDC, 2012). These concerns present major challenges increasing stress levels and decreasing feelings of well-being and quality of life (Bagheri-Nesami et al., 2006; Sheehy et al., 2006). The outcomes of RA, chronic pain, negative emotions, altered function, and repeat examinations may also contribute to the development of depression (Ang, Choi, Kroenke, & Wolfe, 2005; CDC, 2012; Mella, Bértolo, & Dalgalarrondo, 2010).

Although the physical and psychological impact of RA is well-documented, the connection between depression and RA is not clear. While the mechanisms and interactions between depression and RA are largely unknown, it has been suggested that the causal pathways are bidirectional, with depression impacting disease activity, and disease activity influencing the development of depression (Rathbun, Reed, & Harrold, 2013). Physical symptoms, like pain or fatigue, and decreased quality of life may result in depression (Irwin, 2002; Sheehy et al., 2006). Depression may also impact one's perception of pain, fatigue and quality of life (Rathbun et al., 2013). Comorbid depression may lead to a poorer clinical response to standard therapies or discontinuation of therapy for RA medications (Detweiler-Bedell, Friedman, Leventhal, Miller, & Leventhal, 2008; Krishnan et al., 2002; Mattey, Dawes, Hassell, Brownfield, & Packham, 2010). Another connection has been identified by the links between depression and inflammation. Research has focused on the relationship between biologic indicators, C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), and interleukin-17 (IL) with inconsistent results (Kojima et al., 2009; Lui, Ho, & Mak, 2012; Treharne et al., 2005).

Conflict of Interest and Funding Source: None.

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http://dx.doi.org/10.1016/j.apnu.2015.04.003
0883-9417/

Patients with RA and depression experience disproportionately worse outcomes including decreased function, decreased response to treatment (Hider, Tanveer, Brownfield, Mattey, & Packham, 2009), poor adherence to treatments, higher pain, and increased disease activity (CDC, 2012). Additionally, comorbid depression increases the relative risk of mortality (1.2 to 4.0) in patients with RA (Schultz, Drayer, & Rollman, 2002). RA with depression taxes the patient, provider, and health care system with increased visits and expenses (Sheehy et al., 2006).

Despite the significant consequences of depression on RA, depression is often under-recognized and inadequately managed with medication or psychotherapy (Dickens & Creed, 2001; Hider et al., 2009; Nicassio, 2008; Sheehy et al., 2006). Even when patients with RA are screened, depressive symptoms may be difficult to recognize given the presence of somatic symptoms similar to RA including fatigue, sleep difficulties, and appetite fluctuations. Experiencing a depressed mood, decreased pleasure, or irritability due to the direct effects of a general medical condition indicates depression (American Psychiatric Association [APA], 2000; APA, 2013). However, the definition of depression within the RA literature is variable ranging from depressive symptoms to clinical depression. Similarly, screening tools used to measure depression in this population vary along the same continuum.

Once depression is recognized, it is often inadequately treated (Dickens & Creed, 2001; Hider et al., 2009; Nicassio, 2008; Sheehy et al., 2006). Some providers may not feel qualified to manage depression or think it is a normal reaction to a chronic disease and do not screen for it (Ang et al., 2005; Sheehy et al., 2006). Patients may not be comfortable discussing their feelings of depression because of the negative stigma associated with a psychiatric diagnosis (Ang et al., 2005; Sheehy et al., 2006). In a Cochrane review (2011) of eight randomized clinical trials (RCTs) examining the efficacy and safety of antidepressants in pain management of patients with RA, the authors found "no evidence of an effect of antidepressants on pain intensity or depression in the short-term (less than one week), and conflicting evidence of medium (one to six weeks) or long-term (more than six weeks) benefit" (Richards, Whittle, & Buckbinder, 2011, p. 2). The authors noted that they were uncertain whether antidepressants affect mood because of the very low quality of evidence. In an earlier Cochrane review (Riemsma, Kirwan, Taal, & Rasker, 2003), patient education demonstrated a short-term benefit on depression but no evidence at final follow up (3–14 months).

Prevalence rates of co-existing depression and RA range from 6.6 to 66.25% depending upon the sample, geographic location, and depression scale utilized. A meta-analysis of 72 studies (Matcham, Rayner, Steer, & Hotop, 2013) identified that the mean depression prevalence was 16.8%, although differences in prevalence were acknowledged using various screening tools. A prevalence rate of 38.8% was found for patients screened with the Patient Health Questionnaire (PHQ)-9. In comparison, a rate of 14.8%, using a threshold of 11, was reported for the Hospital Anxiety and Depression Scale [HADS] (Matcham et al., 2013). While the mean prevalence is approximately 19–20%, self-reported depression rates are nearly 40% (CDC, 2012; Covic, Tyson, Spencer, & Howe, 2006; Mella et al., 2010). In one study, the depression rate was 2–3 times higher in patients with RA than for healthy individuals (Dickens, McGowan, Clark-Carter, & Creed, 2002). Another source indicates that 32–39% of patients with RA scored equal to or higher than the mean depression scores of psychiatric outpatients (Evers, Kraaimaat, Geenen, Jacobs, & Bijlsma, 2002).

Both correlates and predictors of depression in patients with RA have been studied. Sociodemographics such as age, sex, and marital status demonstrate varying results as predictors of depression (Ho et al., 2011; Rivero-Carrera, Serra-Bonett, Al Snih, Duque-Criollo, & Rodriguez, 2011; Wolfe & Michaud, 2009). Similarly, clinical factors such as disease duration, severity, and activity have also shown conflicting results (Irwin, 2002). Understanding the correlates and predictors of comorbid depression in the patient population of RA could target the screening of depression and lead to improvement in the quality of life and function of patients. Psychiatric nurse practitioners (NP) are in an excellent position to both screen for this high incident comorbidity and treat the depression.

The specific purposes of this study are two-fold.

- The primary aim of this study is to report the results of an integrative review of quantitative studies on factors correlated with and predictive of depression in adults patients with RA.
- The second aim is to identify instruments used to measure the continuum of depression in this population.

This report updates an earlier systematic review with meta-analysis undertaken in 2002 (Dickens et al., 2002) and expands the scope of a recent review (Rathbun et al., 2013) that addressed the temporal relationship between depression and rheumatoid arthritis, treatment persistence, and response. Knowledge gained from this review can provide a foundation for psychiatric NPs to develop interventions designed to identify and treat co-morbid depression in patients with RA.

METHOD

An integrative review of the quantitative literature was conducted by two independent reviewers based upon established criteria (Cooper, 1982; Polit & Beck, 2012). Analysis included all relevant articles defined by specific inclusion and exclusion criteria (Table 1). A search of electronic databases was executed in CINAHL, MEDLINE, Health and Psychosocial Instruments, PsycARTICLES, PsycCRITIQUES, PsycINFO, and Social Work Abstracts for quantitative research manuscripts published between 2001 and 2014. Key words included: 'rheumatoid arthritis', 'depression', 'predictors', 'correlates', 'nursing', and 'risk factors'. Delimiters included human subjects, peer-reviewed, adult-age, and English language.

Initially, 528 articles were retrieved. Adding "risk factors" and "predictors" to the initial keywords, depression and rheumatoid arthritis, resulted in 105 studies, which included two additional studies found using a descending strategy. No ascendancy strategies were used. Abstracts were reviewed, and 56 articles did not meet the inclusion criteria (Table 1). Forty-nine full-text articles were evaluated for relevance and potential contribution to this paper. Both reviewers independently evaluated the articles for inclusion. There were no conflicts regarding the inclusion of articles. Additional studies were excluded if the subject matter was depression related to chronic disease or disability, and not specifically RA. The result was 23 full-text, relevant articles, published between 2001 and 2014 (Fig. 1).

Methodological assessment tools (Tables 2 and 3) were adapted from the literature (Polit & Beck, 2012) to the specific aims of the study. The tools were used to extract information from the empirical literature for quality appraisal. No articles were excluded from the analysis based on quality. For ease of data abstraction, literature matrices and critical appraisal tables were utilized. Both the matrices and the tables were based on the aforementioned methodological assessment tools. As each article was reviewed, relevant data were entered into the appropriate matrix and table independently by the two

Table 1
Inclusion and Exclusion Criteria.

Inclusion criteria	Exclusion criteria
Human subjects	–
English language	Non-English language
Adults (18 years or older)	Children (less than 18 years old)
Definitive medical diagnosis of rheumatoid arthritis	Arthritic conditions or other chronic diseases of the joints other than rheumatoid arthritis
Quantitative methodology	Qualitative or mixed method methodologies
Peer-reviewed academic journals	Dissertations or grey literature
Correlates, risk factors, or predictors of depression related to rheumatoid arthritis	Depression related to chronic conditions but not rheumatoid arthritis

Please cite this article as: Iaquinta, M., & McCrone, S., An Integrative Review of Correlates and Predictors of Depression in Patients with Rheumatoid Arthritis, *Archives of Psychiatric Nursing* (2015), http://dx.doi.org/10.1016/j.apnu.2015.04.003