The effectiveness of nurse-led care in people with rheumatoid arthritis: a systematic review

Ndosi M, Vinall K, Hale C, Bird H, Hill J

CRD summary
The authors concluded that there was insufficient evidence to support or refute the use of nurse-led care in patients with rheumatoid arthritis and that more research was needed. Despite some methodological concerns in the study selection and synthesis, the authors' conclusion for current lack of evidence to support or refute nurse-led care seems justified.

Authors' objectives
To evaluate the effectiveness of nurse-led care delivered to patients with rheumatoid arthritis.

Searching
MEDLINE, EMBASE, CINAHL, AMED, HMIC, PsycINFO, HTA, NHS EED, Cochrane Central Register of Controlled Trials (CENTRAL) (including conference proceedings) and Ovid Nursing were searched from 1988 to January 2010. There were no language restrictions. Search terms were reported and a MEDLINE strategy was presented. Articles were included if they were conducted from 1988 to December 2009.

Study selection
Eligible studies were randomised controlled trials (RCTs) that evaluated nurse-led care compared with usual care (any other model of care) delivered to adult patients with rheumatoid arthritis diagnosed using American College of Rheumatology criteria (revised 1988). The primary outcome of interest was disease activity. Secondary outcomes of interest were functional status (disability), quality of life, patient knowledge, patient satisfaction with care, coping with arthritis, pain, fatigue and stiffness. Nurse-led care was defined as that delivered by specialist nurses, nurse practitioners and other nurses practising in an extended role. Supplementation (nurses working alongside a doctor) and substitution (nurse working distinctly from a doctor) types of care were eligible for inclusion.

The mean age of included patients was 57 years. Mean disease duration was 8.3 years. There were three times more women than men. Interventions comprised follow-up or drug monitoring by rheumatology nurse practitioners/clinical nurse specialists. Comparators consisted of follow-up and monitoring carried out by rheumatology teams, junior doctors and through standard rheumatology care. Various outcome measures were used to assess disease activity, such as Disease Activity Score (DAS28), plasma viscosity and Ritchie Articular Index. Secondary outcomes measures varied and included the disability index of Stanford Health Assessment Questionnaire (HAQ-DI), Rheumatoid Arthritis Quality of Life Questionnaire (RAQoL) and the Research And Development (RAND) 36-item health survey. Studies were conducted in the UK and Holland.

It appeared that one reviewer selected the studies for inclusion.

Assessment of study quality
Trial quality was assessed using the Cochrane risk of bias tool for sequence generation, allocation concealment, blinding, incomplete outcome data, selective outcome reporting and other sources of bias. Authors were contacted for information, where necessary.

Two reviewers independently assessed the quality of included trials.

Data extraction
Data were extracted to enable calculation of risk ratios for dichotomous outcomes or ratios of means (RoM) for continuous outcomes, along with 95% confidence intervals.

Data were extracted by one reviewer and checked by a second reviewer.

Methods of synthesis
Where possible, effects sizes were pooled in a meta-analysis using a random-effects model (where significant
statistical heterogeneity was present assessed using the Χ² test). The remaining results were summarised in tabular form. Publication bias was not assessed.

**Results of the review**

Four RCTs were included in the review (431 patients, range 70 to 210). Follow-up ranged from 48 weeks to 104 weeks. Despite some reporting limitations, overall risk of bias was considered to be low.

Nurse-led care was favourable for disease activity measured by Ritchie Articular Index (RoM 0.89, 95% CI 0.84 to 0.95; two trials). Pooled results for other measures of disease activity (DAS28 in three trials and plasma viscosity in two trials) showed no significant differences between nurse-led care and comparator.

Nurse-led care was favourable for functional status measured by HAQ-DI (RoM 0.78, 95% CI 0.70 to 0.87; one trial). Other measures of functional status showed inconclusive results. Quality of life was significantly improved with nurse-led care using RAND items for physical health (RoM 1.21, 95% CI 1.05 to 1.37; one trial) and mental health (RoM 1.24, 95% CI 1.12 to 1.37; one trial) and when the RAQoL instrument was used (RoM 0.83, 95% CI 0.75 to 0.92; one trial).

Significant improvements were also noted for patient knowledge (RoM 4.39, 95% CI 3.36 to 5.72; two trials) and fatigue (median difference between study groups -330). Results for satisfaction appeared to favour nurse-led care but those for pain, helplessness and morning stiffness were inconclusive.

Substantial heterogeneity was reported in the analyses of disease activity (Ritchie Articular Index, Π²=93%) and morning stiffness (Π²=89%).

**Authors’ conclusions**

The estimates of disease activity and most secondary outcomes showed no significant difference between nurse-led care and usual care. There was insufficient evidence to support or refute the use of nurse-led care.

**CRD commentary**

The research question was clear. Inclusion criteria were sufficiently detailed to enable replication. A wide range of relevant data sources were accessed. Steps were taken to help locate unpublished material and minimise language bias. It appeared that one reviewer selected studies for inclusion and this opened up the possibility of error and bias. The rest of the review process was conducted appropriately.

A relevant quality assessment tool was applied to the included trials and the results were clearly presented. Trial details were provided. Statistical heterogeneity was assessed. High heterogeneity in the only statistically significant measure of disease activity may mean that statistical synthesis was not appropriate.

Despite some methodological concerns in the study selection and synthesis, the authors’ conclusion reflects the evidence presented. The reference to current lack of evidence to support or refute nurse-led care and the need for further trials seems justified.

**Implications of the review for practice and research**

**Practice:** The authors did not state any implications for practice.

**Research:** The authors stated a need for more good quality RCTs to evaluate the effectiveness of nurse-led care in patients with rheumatoid arthritis.

**Funding**

Arthritis Research UK; Burdett Trust for Nursing, UK.

**Bibliographic details**


**PubMedID**
Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.