ACRM
AMERICAN CONGRESS OF REHABILITATION MEDICINE

Archives of Physical Medicine and Rehabilitation

journal homepage: www.archives-pmr.org

Archives of Physical Medicine and Rehabilitation 2016;97:26-36

ORIGINAL RESEARCH

Effects of Person-Centered Physical Therapy on Fatigue-Related Variables in Persons With Rheumatoid Arthritis: A Randomized Controlled Trial

Caroline Feldthusen, PhD,[a,b] Elizabeth Dean, PhD,[c,d] Helena Forsblad-d'Elia, PhD,[e] Kaisa Mannerkorpi, PhD[b,f]

From the [a]Department of Rheumatology and Inflammation Research, Institute of Medicine, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden; [b]The University of Gothenburg Centre for Person-centred Care, Gothenburg, Sweden; [c]Department of Physical Therapy, Faculty of Medicine, University of British Columbia, Vancouver, BC, Canada; [d]School of Health, Care and Social Welfare, Mälardalen University, Västerås, Sweden; [e]Department of Public Health and Clinical Medicine, Rheumatology, Umeå University, Umeå, Sweden; and [f]Section of Physiotherapy, Institute of Neuroscience and Physiology, Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden.

Abstract

Objective: To examine effects of person-centered physical therapy on fatigue and related variables in persons with rheumatoid arthritis (RA).

Design: Randomized controlled trial.

Setting: Hospital outpatient rheumatology clinic.

Participants: Persons with RA aged 20 to 65 years (N=70): intervention group (n=36) and reference group (n=34).

Interventions: The 12-week intervention, with 6-month follow-up, focused on partnership between participant and physical therapist and tailored health-enhancing physical activity and balancing life activities. The reference group continued with regular activities; both groups received usual health care.

Main Outcome Measures: Primary outcome was general fatigue (visual analog scale). Secondary outcomes included multidimensional fatigue (Bristol Rheumatoid Arthritis Fatigue Multi-Dimensional Questionnaire) and fatigue-related variables (ie, disease, health, function).

Results: At posttest, general fatigue improved more in the intervention group than the reference group ($P=.042$). Improvement in median general fatigue reached minimal clinically important differences between and within groups at posttest and follow-up. Improvement was also observed for anxiety ($P=.0099$), and trends toward improvements were observed for most multidimensional aspects of fatigue ($P=.023-.048$), leg strength/endurance ($P=.024$), and physical activity ($P=.023$). Compared with the reference group at follow-up, the intervention group improvement was observed for leg strength/endurance ($P=.001$), and the trends toward improvements persisted for physical ($P=.041$) and living-related ($P=.031$) aspects of fatigue, physical activity ($P=.019$), anxiety ($P=.015$), self-rated health ($P=.010$), and self-efficacy ($P=.046$).

Conclusions: Person-centered physical therapy focused on health-enhancing physical activity and balancing life activities showed significant benefits on fatigue in persons with RA.

Archives of Physical Medicine and Rehabilitation 2016;97:26-36

Fatigue, a prominent symptom in persons with rheumatoid arthritis (RA), greatly impacts their activities in daily life.[1-3] Although the pharmacologic treatment of RA has improved over recent decades,[4] 42% to 80% of persons with RA report fatigue.[1,2,5,6] From the patient's perspective, fatigue is one of the most important issues in rheumatology.[7] Persons with RA describe fatigue as overwhelming and unpredictable, affecting everyday tasks and social roles.[3,8,9] Fatigue contributes to imbalance in activities of daily life with a need for more rest and sleep.[9] This reduces time for self-care, including health-enhancing physical activity.

Fatigue in persons with RA comprises health-related quality of life[10]; however, reports are inconsistent about the contributors and consequences of fatigue.[11] Strong evidence does support

Supported by the University of Gothenburg Centre for Person-Centred Care, the Swedish Research Council, and the Medical Faculty of University of Gothenburg Sahlgrenska University Hospital, Gothenburg, Sweden.

Clinical Trial Registration No.: NCT02120963.

Disclosures: none.

0003-9993/15/$36 - see front matter © 2016 by the American Congress of Rehabilitation Medicine
http://dx.doi.org/10.1016/j.apmr.2015.09.022

associations among fatigue and pain, disability/function, and depression/depressive mood.[11]

Although fatigue is a common symptom of RA, few studies have focused on fatigue management.[12,13] Nonpharmacologic interventions (eg, physical activity/exercise,[12,14,15] cognitive behavioral therapy[16,17]) may reduce fatigue in persons with RA. Treatments involving activity however can be challenging for persons with RA who are experiencing fatigue.[18] Persons with RA are less physically active than a general healthy population, which may be explained by fatigue and physical limitations.[19]

Fatigue affects individuals differently because of personal and environmental factors; therefore, its management needs to be multipronged. The concept of person centeredness[20-23] refers to viewing each person individually in terms of psychological, social, and biologic functioning[21] and an existential integrated whole.[24] Person centeredness focuses on partnership between patient and health care provider and involves sharing information, deliberation, and decision-making.[20,23,25] A person-centered approach presupposes that persons with chronic conditions are capable of enhancing their health.[21]

A person-centered approach,[20] designed to encourage health-enhancing physical activity and improve balance among activities in life, is anticipated to strengthen a person's confidence and resources[20] to control fatigue and disease-related symptoms associated with fatigue (eg, health-related quality of life, pain, function/disability, depressed mood).

This study's aim was to examine the effects of a person-centered physical therapy intervention that focuses on health-enhancing physical activity and balancing life activities on fatigue and fatigue-related variables (eg, physical function, general health, mental health). Our primary hypothesis was that a person-centered physical therapy intervention reduces fatigue in persons with RA.

Methods

Design

A single-blind randomized controlled trial included an intervention group, assigned to a 12-week person-centered physical therapy intervention, and a reference group. Both groups continued to receive usual care, including usual visits with rheumatologists and rehabilitation as prescribed. The 2 groups differed only with respect to the intervention group receiving person-centered physical therapy. The reference group was advised to continue with usual physical and social activities. Three testing periods were built into the design: baseline, posttest evaluation after the 12-week intervention, and follow-up 6 months after baseline testing.

The study was approved by the regional ethical review board.

List of abbreviations:

BRAF-MDQ	**Bristol Rheumatoid Arthritis Fatigue Multi-Dimensional Questionnaire**
DAS-28	**disease activity score**
HADS	**Hospital Anxiety and Depression Scale**
RA	**rheumatoid arthritis**
VAS	**visual analog scale**

Participants

Participants were recruited from the Swedish Rheumatology Quality Register of the participating hospital. Inclusion criteria were RA (diagnostic code M05 or M06 according to the *International Classification of Diseases and Related Health Problems, 10th revision*),[26] age between 20 and 65 years, disease activity score (DAS-28) <3.8, fatigue >50 on the visual analog scale (VAS) (0−100), disease duration >3 years, and stable pharmacologic treatment for >6 months (ie, conventional disease-modifying antirheumatic drugs, biologic disease-modifying antirheumatic drugs, glucocorticosteroids). Exclusion criteria included other illnesses precluding study participation or inability to communicate in Swedish.

On initial recruitment, an invitation letter was sent to eligible persons (n=141). Expression of interest was received from 59 persons who were contacted by telephone and screened. Fifty-five persons met the study criteria and agreed to participate. To increase sample size, the next round of recruitment from the registry excluded the DAS-28 restriction, resulting in invitation letters to 34 eligible persons. A possible consequence of a broader criterion was the inclusion of persons with higher disease activity. Therefore, disease activity was followed through the study. Expression of interest was received from 12 persons who met the study criteria and agreed to participate. Three additional participants were recruited through notices in the waiting room of the clinic. All 3 met the second-round criteria and agreed to participate. In total, 70 persons were recruited. Participants were given written and oral information about the study. Informed written consent was obtained before participation.

Sample size

Sample size determination was based on previous work.[27] To detect a clinically important difference of 20 on the VAS in fatigue[28] between groups, with an estimated SD of 26, 80% power, and 5% significance level using the Mann-Whitney *U* test, 29 participants in each group were needed. To allow for non-completers, we aimed to recruit 35 participants per group.

Outcome measures

Demographic characteristics

Demographic characteristics included age, sex, work status, disease duration, medications, body mass index, and physical limitations (disability) using the Health Assessment Questionnaire-Swedish version. The response range was 0 to 3, where a score ≤1 indicates little activity limitations.[29,30]

Primary outcome

General fatigue over the previous week was rated on the VAS (0−100, from none to worst imaginable fatigue, respectively). The VAS shows good reliability and validity in persons with RA.[31-33] General fatigue measured with the VAS was selected as the primary outcome given that it is frequently used for measuring fatigue in RA.

Secondary outcomes

Given that fatigue is multidimensional, the Swedish version of the Bristol Rheumatoid Arthritis Fatigue Multi-Dimensional Questionnaire (BRAF-MDQ)[34,35] was also used. The BRAF-MDQ