



Networks of fatigue, pain, and biopsychosocial factors in people with Sjögren's disease

Visser, M., Gavilan-Carrera, B., Greenan, R., Hughes, C., Barbosa, L., McVeigh, J., Ferreira, R., Boschloo, L., & Estevez Lopez, F. (2024). *Networks of fatigue, pain, and biopsychosocial factors in people with Sjögren's disease*. Poster session presented at 16th International Symposium Sjorgen's Disease, Egmond aan Zee, Netherlands.

[Link to publication record in Ulster University Research Portal](#)

Publication Status:

Published (in print/issue): 22/04/2024

General rights

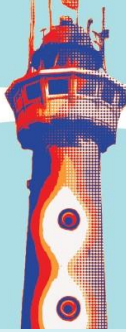
The copyright and moral rights to the output are retained by the output author(s), unless otherwise stated by the document licence.

Unless otherwise stated, users are permitted to download a copy of the output for personal study or non-commercial research and are permitted to freely distribute the URL of the output. They are not permitted to alter, reproduce, distribute or make any commercial use of the output without obtaining the permission of the author(s).

If the document is licenced under Creative Commons, the rights of users of the documents can be found at <https://creativecommons.org/share-your-work/licenses/>.

Take down policy

The Research Portal is Ulster University's institutional repository that provides access to Ulster's research outputs. Every effort has been made to ensure that content in the Research Portal does not infringe any person's rights, or applicable UK laws. If you discover content in the Research Portal that you believe breaches copyright or violates any law, please contact pure-support@ulster.ac.uk



ABSTRACT TEMPLATE

Max. 500 words (background-conclusion) | Font: Verdana - Font size: 10

Visser, M., Gavilán-Carrera, B., Geenen, R., Hughes, C., Barbosa, L., McVeigh, J., Ferreira, R. J. O., Boschloo, L., & Estévez-López, F.

Title

Networks of fatigue, pain, and biopsychosocial factors in people with Sjögren's disease

Background

Fatigue and pain are part of a complex network of co-occurring biological, psychological, and social factors [1]. Furthermore, the scores on these factors differ between people. An international project group examined this network as well as subgroups based on scores on all factors of the network.

Objectives

The twofold aim of this study in people with Sjögren's disease was 1) to estimate a network of relationships between fatigue, pain, and seven other biopsychosocial factors (i.e., sleep problems, disease activity, inactive lifestyle, lack of understanding, unhealthy diet, unhealthy body weight, and psychological problems), and 2) to describe subgroups of people based on their scores on all factors.

Methods

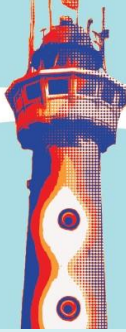
The protocol of the project has been published [2]. A patient research partner was involved in all stages of the project. People from patient associations collaborated in setting up the study, acquiring participants, and (in a later phase) interpretation of results. Participants with at least one rheumatic and musculoskeletal disease (RMD) were recruited in Ireland, the Netherlands, Portugal, Spain, and United Kingdom. Self-report measures of fatigue, pain and seven other biopsychosocial factors were assessed using numeric (0–10) rating scales. Factors had been derived from literature and interviews with patients and health professionals. Priority was given to factors that can be modified by self-management or interventions. Analyses consisted of network estimation techniques (objective 1) and cluster analysis (objective 2).

Results

Data of 186 people with Sjögren's disease without another RMD were analyzed: 176 women, 9 men, 1 other; mean age 50 (range 20-76) yrs.; highest education 3 primary, 23 secondary, 70 advanced, 90 higher; countries 57 Netherlands, 57 Spain, 53 Portugal, 19 other.

Mean(SD) levels on the nine biopsychosocial factors were: fatigue 6.9(1.9), pain 5.2(2.3), sleep problems 5.5(2.8), disease activity 5.3(2.2), inactive lifestyle 4.9(2.4), lack of understanding 5.6(2.9), unhealthy diet 3.5(2.4), unhealthy body weight 3.3(3.1), and psychological problems 4.3(2.6).

The estimated network (see figure) shows the connections of fatigue, pain and the other biopsychosocial factors. With exception of the association between pain and inactive



lifestyle, all associations were positive. Fatigue and pain were associated with each other and with sleep problems and disease activity. Fatigue was additionally associated with psychological problems, lack of understanding, and inactive lifestyle. Pain was additionally negatively associated with inactive lifestyle.

Cluster analysis yielded five subgroups (a score >6 denotes severe problems). The five groups were: 1) no severe problems, 2) severe fatigue and lack of understanding, 3) severe fatigue and sleep problems, 4) severe fatigue and overweight, 5) severe fatigue, sleep problems, lack of understanding, disease activity, pain, and psychological problems.

Conclusion

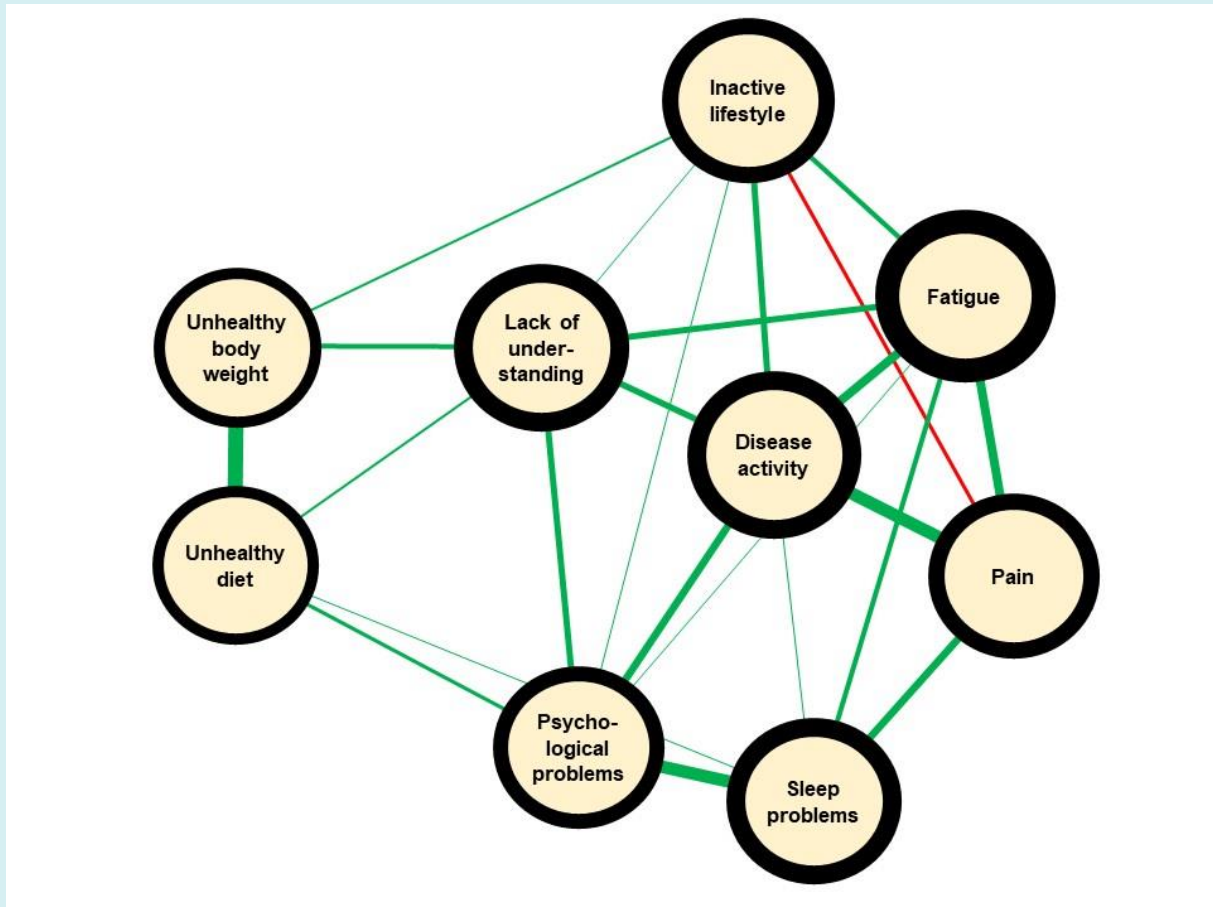
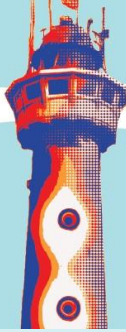
The network model confirms the multifactorial nature of fatigue and pain in Sjögren's disease, with pain being most clearly related to other physical symptoms and fatigue to both physical and psychosocial variables. Analyzing the severity of problems, distinct subgroups were found. The results suggest the usefulness of a network approach and urge to take account of individual differences at these multiple variables when managing fatigue and pain.

References

- [1] Geenen, R. & Dures, E. (2019). A biopsychosocial network model of fatigue in rheumatoid arthritis: a systematic review. *Rheumatology*, 58, v10-v21.
- [2] Gavilán-Carrera, B., Geenen, R., Hughes, C., Barbosa, L., Visser, M., McVeigh, J., Ferreira, R. J. O., Boschloo, L., & Estévez-López, F. (2022). NET-RMDs study: networks of fatigue and pain in rheumatic and musculoskeletal diseases – protocol for an international cross-sectional study. *BMJ Open*, 12(11), e061099. <https://doi.org/10.1136/bmjopen-2022-061099>.

Figure

Network model based on 186 people with Sjögren's disease. Thickness of circles reflect mean levels at the nine factors and thickness of connecting lines reflect the strength of partial correlations between these factors.



Acknowledgements

The authors gratefully acknowledge all participants, the collaborating representatives from patient associations, and the European alliance for associations of rheumatology (EULAR) for funding the project (HPR045).

Disclosures of interest

None