

REFLEXOLOGY TO MANAGE STRESS IN CHRONIC AND PALLIATIVE CARE

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INTRODUCTION

Coping with chronic or terminal diseases is a factor of permanent psychological stress, eventually leading to negative subsequent stress symptoms (1). Reflexology is a complementary medicine, based on the principle that specific areas of the feet, hands, and ears are related to corresponding organs, glands and muscles of the body and aims to improve relaxation and restore homeostasis. The clinical relevance of using reflexology as a tool to alleviate stress was thus put into question. This study aims to answer the question: what is the state of the art evidence that using reflexology as a complementary therapy can benefit the management of psychological stress symptoms of patients going through chronic or palliative care?

METHOD

The research will be conducted by means of a systematic literature review, using PubMed and Medline as databases. Articles are first selected using their titles according to the inclusion and exclusion criteria and duplicates excluded. The full text articles retained are then assessed with the Down and Black checklist for quantitative studies and RCTs, and with the

SEARCH STRING, INCLUSION AND EXCLUSION CRITERIA:

To obtain articles that include reflexology in their research, the search is fragmented and the search terms input using the Boolean operators:

(Reflexology AND (Stress OR anxiety))
(Reflexology AND (Stress OR "well-being"))
(Reflexology AND (Stress OR "quality of life"))
(Reflexology AND Stress AND Cancer)
(Reflexology AND Stress AND "Chronic care")

The types of studies included are quantitative, qualitative and RCT.

The studies must include one or more of the following outcome measures: cortisol level, salivary amylase level, blood pressure, heart rate and questionnaires or patient reports focusing on some stress symptoms (fatigue, anxiety, stress and depression). Articles with a method in which reflexology was self-performed or performed by a peer/non- professional are excluded.

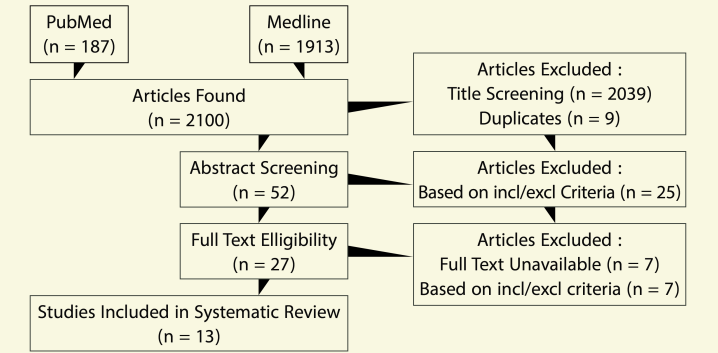
LEVEL OF EVIDENCE:

The level of evidence is used in nursing care guidelines and is effective in assessing medical related questions. Level I assesses for best evidence and requires r over three good quality RCTs that have similar results and level II, assessing for a good level of evidence requires one good quality RCT.

RESULTS:

After a title screen and the exclusion of duplicates, 52 abstracts of articles were assessed in order to narrow the search to 27 full texts to evaluate for eligibility. Eventually, after full text appraisal, 13 articles were selected for the systematic literature review. (Fig.1)

FIG.1 FLOWCHART OF THE SEARCH METHOD



5 articles were found to be of fair quality (2-6), all found significant improvement in stress symptoms post- reflexology except the RCT (2).

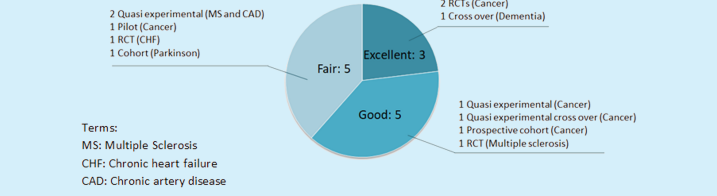
5 articles were of good quality (3-7), all found improvement in stress symptoms post-reflexology.

3 articles were of excellent quality (8-10), only one RCT found no improvement of stress symptoms (10), the other two excellent quality studies found significant improvement in stress and were an RCT and a cross-over study. (Table.1) (Fig.2)

TABLE.1 DATA EXTRACTION

Study	Population	Intervention	Measurement tools	Results of intervention	Quality
Soheili, M. et al. 2017, RCT	75 women with multiple sclerosis	40 min, 4x2/week	DASS-21	Decrease in anxiety, stress and depression	22 (good)
Hodgson et al. 2012 Experimental cross-over	18 patients >75 yr Cancer	20 min, 4x1/week	Saliva cortisol, AARS	↓in cortisol level, ↑in mood	21 (good)
Gambles, M. et al. 2002 Qualitative	34 patients, palliative unit, Cancer	Patient specific	Semi-structured questionnaire	91% related ↑relaxation/ ↓anxiety	10 (CASP checklist: good)
Lu et al. 2011, Quasi-experimental	20 patients with stenosis, 17 control group, CAD	60 min, once	Heart rate Blood pressure	↓heart rate, longer lasting effect with CAD group	19 (fair)
Wyatt et al., 2012, RCT	286 women, stage III or IV breast cancer	30 min, 4x1/week	Fact-B, BFI, CES-D, STAI	No significant evidence that reflexology improved anxiety/mood	28 (excellent)
Silverdale et al. 2019, Pilot	34 patients post cystectomy, bladder cancer	1 hour, day 1 and 3 post-op	MYCaW	↑well-being and sleep Viewed as positive and relaxing	19 (fair)
Hodgson et al. 2008, Cross-over	21 patients >75 yr, Dementia	30 min, 4x1/week	Salivary α-amylase Blood Pressure, AARS	↓α-amylase No change in blood pressure and observed mood	26 (excellent)
Jones, J et al.2013, RCT	12 patients, CHF	45 min, Once	Heart rate, SAI	No statistical difference	19 (fair)
Ozdelikara et al. 2018, Quasi-experimental	15 patients, multiple sclerosis	60 min, Once	FSS, STAI-S, STAI-T	Improvement in all measures	16 (fair)
Stephenson et al. 2000 Quasi-experimental cross-over	23 patients Breast or lung cancer	30 min, Once	VAS anxiety	↓anxiety	20 (good)
Sharp et al. 2010, RCT	183 women, early breast cancer	1 hour, 8x1/week	Fact-B, HADS, MRS SCID	Improvement in relaxation and quality of life	26 (excellent)
Kapila et al.2018, Prospective cohort	52 women, breast cancer	45 min x 6	MYCaW	↓stress and tension, ↑sleep	21 (good)
Johns et al. 2010 Cohort cross-over	16 patients, Parkinson	50 min, 4 at 2-weekly interval, 4 at 3-weekly interval	PDQ-39	↑emotional well-being	17 (fair)

FIG.2 DATA EXTRACTION TABLE



1.Woodroffe TD, Maddocks K, Andersen BL. The relation of illness perceptions to stress, depression, and fatigue in patients with chronic lymphocytic leukaemia. *Psychol Health*. 2016;31(17):891-902.
2.Liu WA, Chen G-Y, Kuan C-C. Foot reflexology can increase vagal modulation, decrease sympathetic modulation, and lower blood pressure in healthy subjects and patients with coronary artery disease. *Alternative Therapies in Health and Medicine*. 2011;17(4):8-14.
3.Ozdelikara A, Alban SA. The Effects of Reflexology on Fatigue and Anxiety in Patients With Multiple Sclerosis. *Alternative Therapies in Health & Medicine*. 2018;24(4):8-13.
4.Johns C, Blake D, Sinclair A. Can reflexology maintain or improve the well-being of people with Parkinson's Disease? *Complement Ther Clin Pract*. 2010;16(2):96-100.
5.Silverdale N, Wherry M, Roodhouse A. Massage and reflexology for post-operative cancer: cyclophosphamide patients: Evaluation of a pilot service. *Complementary Therapies in Clinical Practice*. 2019;34:109-12.
6.Jones J, Thomson P, Laidler W, Howie K, Leslie S. Reflexology has no immediate haemodynamic effect in patients with chronic heart failure: a double blind randomised controlled trial. *Complement Ther Clin Pract*. 2013;19(3):13-8.
7.Stephenson NJM, Wessniff SP, Travalas AS. The effects of foot reflexology on anxiety and pain in patients with breast and lung cancer. *Oncology Nursing Forum*. 2000;27(1):62-72.
8.Kapila AC, Hird A, Krole N, Chaplin P, Patel A. A Prospective Cohort Study on the Impact of Reflexology in Patients With Breast Cancer Using the MYCaW Scale. *Clinical breast cancer*. 2018;18(4):e1-6.
9.Gambles M, Crooke M, Wilkinson S. Evaluation of a hospice based reflexology service: a qualitative audit of patient perceptions. *European journal of oncology nursing: the official journal of European Oncology Nursing Society*. 2002;6(1):37-44.
10.Hodgson NA, Lafferty DJ. Reflexology versus Swedish Massage to Reduce Physiologic Stress and Pain and Improve Mood in Nursing Home Residents with Cancer: A Pilot Trial. *Evidence-based complementary and alternative medicine : eCAM*. 2012;2012:456897.
11.Soheli M, Nazari F, Sharghaddad V, Valami M. A comparison the effects of reflexology and relaxation on the psychological symptoms in women with multiple sclerosis. *Journal of education and health promotion*. 2017;16:1.
12.Hodgson NA, Andersen S. The clinical efficacy of reflexology in nursing home residents with dementia. *Journal of Alternative & Complementary Medicine*. 2006;14(3):269-75.
13.Sharp DM, Walker MB, Chaturvedi A, Upadhyay S, Hamid A, Walker AA, et al. A randomised, controlled trial of the psychological effects of reflexology in early breast cancer. *European journal of cancer (Oxford, England : 1990)*. 2018;46(2):312-22.
14.Wyatt G, Shoraki A, Rahnbar MH, Victorson D, You M. Health-related quality-of-life outcomes: a reflexology trial with patients with advanced-stage breast cancer. *Oncology Nursing Forum*. 2012;39(5):568-77.
15.Betty J, Ashley GBL, Beth Ann Swan, Sharon J. Evidence-based nursing care guidelines : medical-surgical interventions. 2008.
16.Liu WA, Chen G-Y, Kuan C-C. Foot Reflexology Can Increase Vagal Modulation, Decrease Sympathetic Modulation, and Lower Blood Pressure in Healthy Subjects and Patients With Coronary Artery Disease. 2010; 8-14 p.
17.Peterson C, Thomas K, Manasse A, Cooke H, Pearce G. Measure Yourself Concerns and Wellbeing (MYCaW): an individualised questionnaire for evaluating outcome in cancer support care that includes complementary therapies. *Complementary therapies in medicine*. 2007;15(1):38-45.
18.Voorhoef MJ, Levith G, Rittenbaugh C, Boon H, Fleischman S, Liss A. Complementary and alternative medicine whole systems research: beyond identification of inadequacy of the RCT. *Complementary therapies in medicine*. 2005;13(3):206-12.
19.Abbasadeh Y, Allahbakhshi A, Sayeghroudi A, Sarabakhsh S, Safaei N. Effects of foot reflexology on anxiety and physiological parameters in patients undergoing coronary artery bypass graft surgery: A clinical trial. *Complement Ther Clin Pract*. 2018;31:220-8.
20.Pym L, Bush TD, Skorska A, Walsberger R, Wyatt G. Understanding the role of stimulation in reflexology: development and testing of a robotic device. *European journal of cancer care*. 2011;20(5):586-96.

LEVEL OF EVIDENCE:

There is an overwhelming majority of studies, including an excellent quality RCT, assessing for significant decrease of at least one stress symptom, following reflexology. Thus, according to the selected level of evidence tool, this literature study indicates a positive effect of reflexology with a level II evidence of the nursing care guidelines (14). However, another excellent RCT study reported "no impact on physiological stress". This study was conducted on patients with late stage breast cancer, thus also showing a level II of evidence for no significant impact in the particular case of terminal phase patients. Minor issues include a wide range of designs using different measurement tools and protocols, (Fig.3), as well as differences when considering the improvement of several stress symptoms or physiological symptoms.(Fig.4)

FIG.3 PERCENTAGE OF STUDIES SHOWING A POSITIVE EFFECT OF REFLEXOLOGY on at least one stress symptom, based on the characteristics of reflexology sessions

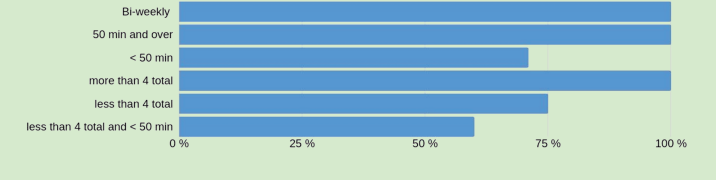
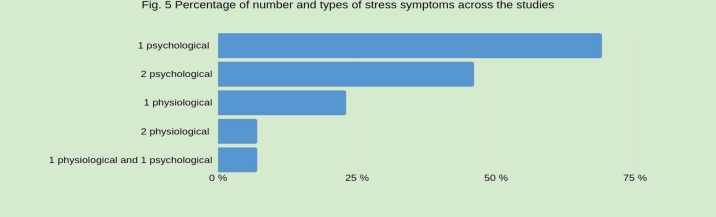


FIG.4 PERCENTAGE OF NUMBER AND TYPES OF STRESS SYMPTOMS ACROSS THE STUDIES



STRENGTH

Variety of designs and pathologies
Good quality articles

LIMITATION

≠ outcome measures and protocols
Lack of physiological measures

CONCLUSION:

The majority of articles found for this study showed significant decrease in some parameters of stress including one excellent RCT study pointing to a level II of evidence for benefits of reflexology treatment on psychological stress. A second RCT study of excellent quality ,however, show that there is no impact of reflexology in the case of severe illness. The present research seems to point to some clinical relevance to the implementation of reflexology in chronic care, although not in terminal stages of disease. However, more research with similar protocols are needed to evaluate the physiological and psychological impact of reflexology on stress. As a physiotherapist, it would be of particular interest to monitor the benefit of reflexology to help patients cope with chronic illnesses.