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Protocol

The effectiveness of acupressure therapy on anxiety: a scoping review protocol

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ABSTRACT

Background: Anxiety disorders are highly prevalent and are considered the most common psychiatric condition globally. Acupressure is a non-invasive alternative to acupuncture and has demonstrated effectiveness in managing psychosomatic disorders. However, due to high disparities within existing clinical research, it is difficult to recommend the optimum acupressure practice for anxiety management. This manuscript details the protocol for scoping the available evidence, mapping key concepts, and identifying gaps for future research.
Methods: This protocol is designed following the preferred reporting items for systemic reviews and meta-analyses extension for scoping reviews (PRISMA-ScR) and the Joanna Briggs institute (JBI) manual for evidence synthesis guidelines. Six electronic databases (MEDLINE, CINAHL, AMED, PsycINFO, dentistry and oral science source, and Scopus) and two other search engines (Google and Google Scholar) will be searched for all relevant primary and secondary studies, grey literature, and other sources concerning the type of acupressure interventions and the effectiveness of acupressure on anxiety. The sources retrieved will be independently assessed by two reviewers utilising the eligibility criteria defined by the population concept and context (PCC) framework. A PRISMA-ScR flowchart will be applied to track the number of identified, included, and excluded sources. Extracted data and variables will be presented in a data extraction table. Narrative explanations will accompany the synthesised results.
Conclusions: The review's findings can assist in identifying priorities for future research and provide recommendations for optimal protocols for clinical implementation.

Keywords: Acupuncture, Acupoint, Anxiety disorders, Auricular acupressure, Pressure points, Psychophysiological disorders

INTRODUCTION

Mental health conditions such as anxiety and depression are considered the most common psychiatric disorders in the Western world.[1] Anxiety can be defined as a subjective experience of deleterious mood disturbance, persistent feeling of apprehension, and emotional distress with developing physical symptoms including but not limited to tachycardia, nervousness, excessive sweating, tension, fatigue, nausea, and vomiting.[2] The term 'anxiety disorders' is a generic term that can be subcategorised into panic disorder, social phobia, specific phobias, generalised anxiety disorders, post-traumatic stress disorders, and obsessive-compulsive disorders. These are the most prevalent mental disorders in adults compared to other psychiatric conditions.[3-6] Among these subcategories of anxiety, specific phobia includes but is not limited to the phobia of animals, natural environment, blood-injections-injury, or situational phobia that present the highest lifetime prevalence and are highly associated

with daily role impairments and decreased quality of life. Specific phobias are strong predictors for other anxiety disorders, and it is a leading cause of poor medical attendance, such as avoidance of the dentist or medical treatments, delayed healing, and deprived treatment outcomes.[3,5,7]

Anxiety disorders tend to have a prolonged course with symptoms fluctuating in severity and are often comorbid with other anxiety disorders, mental disorders, substance abuse, and other general medical conditions.[1,5,8-10] Despite the high prevalence, anxiety disorders are often underdiagnosed and under-treated in primary care.[11] Furthermore, anxiety disorders are major contributors to disabilities that can lead to severe mental and physical health outcomes and are associated with a high burden of illness.[3,5,6,8] In 2010, anxiety disorders contributed to approximately 26.8 million disability-adjusted life years as assessed in the global burden of disease study.[12] A high-quality systematic review and meta-analysis reported by Baxter suggested an estimated global average prevalence of 7.3% for people with any anxiety disorders, while another systematic review of reviews indicated the prevalence of anxiety disorders varied between 3.8% to 25% globally.[1] In 2019, the high prevalence of anxiety disorder was considered a serious global public health concern and one of the world's leading mental health-related causes of disability-adjusted life years.[13] For example, the New Zealand mental health survey showed that in 2006, approximately 24.9% of New Zealanders reported experiencing a lifetime prevalence of any anxiety disorder, while 14.8% had anxiety for at least twelve months and 9.3% were affected for up to a month.[14] Further reports estimated a total cost of 12 billion dollars, approximately 5% of gross domestic product, was spent on serious mental illness. A further 1.2 billion dollars of health and disability benefits were allocated to recipients whose primary barrier to work is mental illness.[15]

Several evidence-based treatment guidelines for anxiety disorders reported comparative effectiveness for pharmacological interventions and cognitive-behavioural therapy, which also mentioned that the prolonged use of antipsychotic drugs could lead to severe adverse effects and addictions.[4,16,17] In addition, the effectiveness of complementary and alternative medicines (CAMs) in managing anxiety disorders has also been investigated in the past few decades.[6,18] The term complementary refers to non-mainstream therapeutics and practices used in conjunction with conventional medicine. In contrast, alternative refers to remedies and approaches used instead of conventional medicine. Integrating CAMs in modern medicine has become more popular, especially with an increasing number of individuals self-selecting CAM as an adjunct or single treatment due to the benefit of minimal adverse effects for chronic illnesses.[19] Typical examples of CAMs include yoga, chiropractic, osteopathy, meditation, acupuncture, and relaxation techniques.[18]

Acupressure therapy is the practice of the direct application of pressure by body parts, non-piercing devices or pressure bands to stimulate acupoints.[20,21] It is a non-invasive alternative that shares common characteristics and mechanisms with traditional needle acupuncture. The therapeutic effect is delivered by stimulating acupoints with sustained pressure to induce sensations such as soreness, numbness, and distention without penetrating the skin.[21,22] The biochemical mechanism of acupressure involves the stimulation of acupoints that leads to complex neurohormonal responses in the hypothalamic-pituitary-adrenocortical axis, leading to the overproduction of cortisol and increasing endorphin and serotonin transmittance in the central nervous system that facilitates relaxation responses and improves physical performance.[23] In addition, studies confirmed that pressure stimulation on acupoints could regulate the sympathetic and parasympathetic nervous systems and promote relaxation.[24]

Several earlier studies have revealed the efficacy of acupressure therapy for symptom relief in insomnia, premenstrual syndrome, dysmenorrhoea, during and after labour, reduction of nausea and vomiting, and reducing fatigue prior to and post-treatment.[20,25-28] Findings from these studies also suggested that acupressure therapy can significantly reduce anxiety scores. For example, one study evaluated the effects of acupressure on six meridian acupoints to reduce the stress, fatigue and anxiety of shift-work nurses, demonstrating that stress ($p=0.043$), fatigue ($p<0.001$), and anxiety ($p=0.004$) decreased significantly in comparison to the control group.[27] These results are comparable with another study that examined the effects of applying acupressure at the EX-HN3 point on pre-operative anxiety.[29] Similarly, a double-blind, randomised controlled trial examined acupressure therapy's effects on anxiety management in cancer patients. A total of nine acupoints were used, and the result of the acupressure interventions group indicated a significant decreasing trend in the mean state anxiety score measured over time.[30]

Despite the high degree of clinical heterogeneity from past research in areas such as study populations, targeted types of anxiety, acupoints location and techniques used, treatment period, frequencies and durations for intervention and measurement time used, the review of past literature suggests that acupressure is an effective intervention to alleviate anxiety.[31] However, the differences between the types of acupressure interventions and the reported effectiveness of the subcategories of anxiety disorders have not been investigated. A scoping review will allow further investigation into all types of non-invasive acupressure therapy by examining the differences in the application of intervention and evaluating the effectiveness of acupressure therapy and acupoints used for various subcategories of anxiety.

METHODS

The protocol and scoping review will follow the PRISMA-ScR and JBI manual for evidence synthesis guidelines.[32,33]

A preliminary search of MEDLINE, the Cochrane database of systematic reviews, JBI evidence synthesis, cumulative index to nursing and allied health literature (CINAHL) and PubMed was conducted on the 30th March 2022, and no existing scoping review was located or is currently underway investigating the effectiveness of acupressure therapy on anxiety disorders.

Eligibility criteria

This scoping review will focus on studies evaluating the effectiveness of non-piercing acupressure used as a sole intervention for anxiety management to identify gaps of knowledge within existing evidence. The eligibility criteria for the existing literature are defined by the population, concept, and context (PCC) framework outlined by JBI.[33] The PRISMA flow diagram will present any excluded studies (Figure 1).[34]

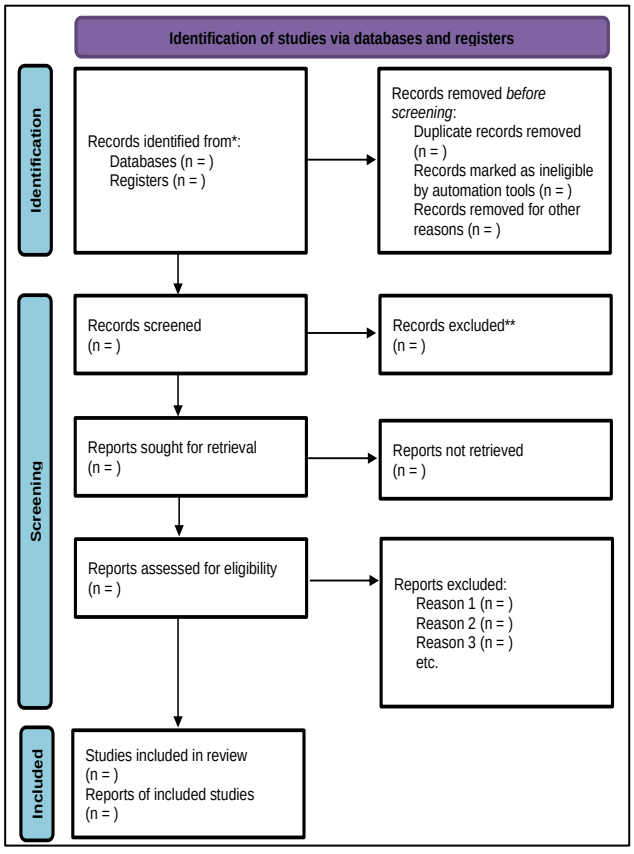

Figure 1: The PRISMA 2020 flow diagram for systematic reviews.

*Consider, if feasible, reporting the number of records identified from each database or register searched (rather than the total number across all databases/registers). **If automation tools were used, indicate how many records were excluded by a human and how many were excluded by automation tools.

Inclusion criteria

Population

The scoping review will focus on existing English literature that had human participants of all age groups, geographical locations, and settings with any anxiety disorders and treated with acupressure interventions, used as the sole intervention or single addition to conventional treatments, in any part of the body where the skin is not penetrated. Outcomes include measures of anxiety sore such as the state-trait anxiety inventory, visual analogue scale for anxiety, visual stress scale, beck anxiety inventory score, self-rated anxiety scale, or any other commonly recognised anxiety measurement to evaluate the effectiveness of acupressure-related therapy as there is no globally accepted standard. In addition, other common physiological indicators, including blood pressure, respiratory rate, heart rate and pain-related scores, are also to be evaluated.

Concept

Any non-invasive (skin is not pierced) acupressure interventions used to alleviate anxiety will be considered and evaluated in this review.

Context

The context of the review is not limited to any geographical location, settings, ethnicity, culture, age or gender factors.

Types of evidence sources

The review will focus on sources of information, including primary and secondary research studies, reviews (not limited to systematic reviews and meta-analyses), guidelines, and grey literature to include any unpublished and ongoing trials and reports pertaining to the effectiveness of acupressure interventions on anxiety until July 2022.

Exclusion criteria

Primary and secondary studies, guidelines, webpages, and reports that examined the effectiveness of acupressure in combination with other therapeutic interventions will not be included in the scoping review. Studies, letters, blogs, book reviews, editorials, commentaries, and brochures in languages other than English will be excluded from this study.

Search strategy

The three-step search strategy recommended by JBI will be applied for the scoping review. First, an initial limited search was conducted utilising the EBSCO health database to review the topic of interest. The retrieved articles provided an overview of relevant text words

included in the title, abstract, and index terms, which offered better insight and understanding of the keywords to be used in the systematic search. Before the second search commenced, an experienced librarian from the Auckland university of technology with expertise in health sciences assisted with the search. This allowed a complete search strategy to be developed with identified keywords and index terms that could be adapted to other databases.

The second search utilises the refined search strategy and is applied to each database (CINAHL, MEDLINE, dentistry and oral sciences source, AMED, PsycINFO, and Scopus). This is to ensure the numbers of identified sources remain consistent across all databases, which will be presented in a PRISMA-ScR flow chart in the final review (Figure 1).[34] A completed electronic search terms, keywords, and database search combinations are presented in Table 1.

Table 1: Search strategy for EBSCO health.

Search strategy	
#1	Acupressure or acupoint
#2	Anxiety or phobia or stress or anxious
#3	#1 and #2

The final search will involve identifying additional credible sources from the reference lists of all articles and sources included in the review. Additional searches will be conducted through Google and Google Scholar, and the first 100 sources from each search engine will be screened to identify eligible relevant sources.

Selection of sources of evidence

All sources identified from the search will be exported to EndNote and uploaded to Rayyan (a web-based collaboration and research tool), and exact duplicates will be removed.

The title and abstracts identified by the search strategy will be screened simultaneously by two reviewers, and eligibility will be assessed using inclusion and exclusion criteria for the review. In addition, full text and citation details of potentially relevant sources will be retrieved for further evaluation by both reviewers. Any disagreement that arises during the data selection and extraction process will be communicated and discussed between the two parties until a consensus is met. If an agreement can not be achieved, then a third party will adjudicate.

Once the review has been completed, the number of sources of evidence identified from the search, screened, assessed for eligibility, excluded, and included in the final review, will be presented in the PRISMA-ScR flowchart (Figure 1).[34] Brief explanations for full text excluded will also be recorded and reported in the scoping review.

Data extraction

A data extraction table (Table 2) designed by the reviewers will be used to record and assimilate extracted data from eligible sources. The first reviewer will extract all relevant information and variables using the data extraction table, and the second reviewer will confirm and verify the accuracy of the data collected. During the charting process, if unforeseen valuable data can be charted, the data extraction table may be revised in agreement with the reviewers. Amendments to the data extraction table will be recorded and reported in the scoping review. Any disagreements that arise during the data extracting process will be resolved by discussion between the two reviewers.

Table 2: Data extraction table.

S. no.	Data extraction
1.	Author(s)
2.	Year of publication
3.	Aim/purpose of the study
4.	Study population and sample size
5.	Methodology/method
6.	Diagnosis (method)
7.	Acupressure intervention (details of acupoints)
8.	Control
9.	Duration and frequency of intervention
10.	Outcome measure
11.	Adverse events
12.	Key findings
13.	Implications for practice
14.	Suggestions for future research

This scoping review will not critically evaluate the limitations and risk of bias in evidence sources. Instead, the authors intend to map key concepts, summarise existing research findings and evidence available, and provide a broad overview of existing literature to identify priorities for future research.

Data analysis and presentation

An overview of the concepts, themes, key findings, and recommendations will be organised and analysed by theme. Distributions of existing studies will be mapped out in tabular and diagrammatic form, and the results of identified sources will be synthesised and reviewed in a narrative format.

DISCUSSION

To our knowledge, there has not been a scoping review specifically investigating the types of acupressure intervention used and the effects on anxiety. The scoping review aims to provide a broad overview of existing literature on acupressure-related interventions, providing an insight into the differences in the application and

associated effectiveness in the management of anxiety. A limitation of this protocol is the inclusion of original published research articles in the English language only. Therefore, this scoping review may be affected by excluding the Chinese databases, where acupressure is widely applied in traditional Chinese medicine. Nevertheless, the results could further help identify gaps in knowledge and provide guidance and recommendations for future research.

CONCLUSION

Although acupressure interventions have been widely adopted as an alternative therapy for many health conditions, there is no consensus on the types and effectiveness of acupressure interventions on anxiety management. This paper presents a protocol for a scoping review that is intended to identify and map the types of non-invasive (non-piercing) acupressure interventions and their effectiveness on anxiety reduction in the existing research literature. Findings from this scoping review will provide an insight into the evidence available, and research gaps will be identified to guide future studies.

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REFERENCES

1. Remes O, Brayne C, Van Der Linde R, Lafortune L. A systematic review of reviews on the prevalence of anxiety disorders in adult populations. Brain Behavior. 2016;6(7):e00497.
2. Roy-Byrne P. Treatment-refractory anxiety; definition, risk factors, and treatment challenges. Dialogues Clin Neurosci. 2015;17(2):191-206.
3. Eaton WW, Bienvenu OJ, Miloyan B. Specific phobias. The Lancet Psychiatry. 2018;5(8):678-86.
4. Jorm AF, Christensen H, Griffiths KM, Parslow RA, Rodgers B, Blewitt KA. Effectiveness of complementary and self-help treatments for anxiety disorders. Med J Australia. 2004;181(S7).
5. Kasper S. Anxiety disorders: under-diagnosed and insufficiently treated. Int J Psychiatry Clin Practice. 2006;10(1):3-9.
6. Bystritsky A, Khalsa SS, Cameron ME, Schiffman J. Current diagnosis and treatment of anxiety disorders. Pharmacy Therap. 2013;38(1):30.
7. Wardenaar KJ, Lim CC, Al-Hamzawi AO, Alonso J, Andrade LH, Benjet Cd et al. The cross-national epidemiology of specific phobia in the World Mental Health Surveys. Psychologic Med. 2017;47(10):1744-60.
8. Martin P. The epidemiology of anxiety disorders: a review. Dialogues Clin Neurosci. 2003;5(3):281-98.
9. Marciniak MD, Lage MJ, Dunayevich E, Russell JM, Bowman L, Landbloom RP et al. The cost of treating anxiety: the medical and demographic correlates that impact total medical costs. Depression Anxiety. 2005;21(4):178-84.
10. Bandealy SS, Sheth NC, Matuella SK, Chaikind JR, Oliva IA, Philip SR et al. Mind-body interventions for anxiety disorders: a review of the evidence base for mental health practitioners. FOCUS. 2021;19(2):173-83.
11. Arikian SR, Gorman JM. A review of the diagnosis, pharmacologic treatment, and economic aspects of anxiety disorders. Primary Care Companion to J Clin Psychiatry. 2001;3(3):110.
12. Whiteford HA, Degenhardt L, Rehm J, Baxter AJ, Ferrari AJ, Erskine HE et al. Global burden of disease attributable to mental and substance use disorders: findings from the Global Burden of Disease Study 2010. Lancet. 2013;382(9904):1575-86.
13. Xiong P, Liu M, Liu B, Hall BJ. Trends in the incidence and DALYs of anxiety disorders at the global, regional, and national levels: Estimates from the global burden of disease study 2019. J Affective Disord. 2022;297:83-93.
14. Wells J. Prevalence and severity across aggregated disorders. Te Rau Hinengaro: The New Zealand Mental Health and Wellbeing Survey Wellington: Ministry of Health, forthcoming. 2006.
15. Ministry of Health. Briefing to the Incoming Minister of Health, 2017: The New Zealand Health and Disability System: Organisation: Ministry of Health. 2017.
16. Nathan PE, Gorman JM. A guide to treatments that work: Oxford University Press. 2015.
17. Bandelow B, Reitt M, Röver C, Michaelis S, Görlich Y, Wedekind D. Efficacy of treatments for anxiety disorders: a meta-analysis. Int Clin Psychopharmacol. 2015;30(4):183-92.
18. Smith CA, Shewamene Z, Galbally M, Schmied V, Dahlen H. The effect of complementary medicines and therapies on maternal anxiety and depression in pregnancy: a systematic review and meta-analysis. J Affective Disord. 2019;245:428-39.
19. Yang XY, Yang NB, Huang FF, Ren S, Li ZJ. Effectiveness of acupuncture on anxiety disorder: a systematic review and meta-analysis of randomised controlled trials. Ann General Psychiatry. 2021;20(1).
20. Au DW, Tsang HW, Ling PP, Leung CH, Ip P, Cheung W. Effects of acupressure on anxiety: a systematic review and meta-analysis. Acupuncture Med. 2015;33(5):353-9.
21. Harris P. Acupressure: a review of the literature. Complementary Therap Med. 1997;5(3):156-61.

22. Beal MW. Acupuncture and oriental body work: Traditional and biomedical concepts in holistic care: History and basic concepts. Holistic Nursing Pract. 2000;14(3):69-78.
23. Moyer CA, Seefeldt L, Mann ES, Jackley LM. Does massage therapy reduce cortisol? A comprehensive quantitative review. J Bodywork Movement Therapies. 2011;15(1):3-14.
24. Lin J, Chen T, He J, Chung RC, Ma H, Tsang H. Impacts of acupressure treatment on depression: A systematic review and meta-analysis. World J Psychiatry. 2022;12(1):169-86.
25. Lee EJ, Frazier SK. The efficacy of acupressure for symptom management: a systematic review. J Pain Symptom Management. 2011;42(4):589-603.
26. Bazarganipour F, Taghavi SA, Allan H, Beheshti F, Khalili A, Miri F et al. The effect of applying pressure to the LIV3 and LI4 on the symptoms of premenstrual syndrome: A randomized clinical trial. Complementary Therap Med. 2017;31:65-70.
27. Cho Y, Joo J, Kim S, Sok S. Effects of meridian acupressure on stress, fatigue, anxiety, and self-efficacy of shiftwork nurses in South Korea. Int J Environmental Res Public Health. 2021;18(8).
28. Song HJ, Seo HJ, Lee H, Son H, Choi SM, Lee S. Effect of self-acupressure for symptom management: a systematic review. Complementary Therap Med. 2015;23(1):68-78.
29. Agarwal A, Ranjan R, Dhiraaj S, Lakra A, Kumar M, Singh U. Acupressure for prevention of pre-operative anxiety: a prospective, randomised, placebo controlled study. Anaesthesia. 2005;60(10):978-81.
30. Beikmoradi A, Najafi F, Roshanaei G, Pour Esmaeil Z, Khatibian M, Ahmadi A. Acupressure and anxiety in cancer patients. Iranian Red Crescent Med J. 2015;17(3):e25919.
31. Chen SR, Hou WH, Lai JN, Kwong JSW, Lin PC. Effects of acupressure on anxiety: A systematic review and meta-analysis. J Integrative Complementary Med. 2022;28(1):25-35.
32. Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D et al. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. Ann Internal Med. 2018;169(7):467-73.
33. Aromataris E, Munn Z. JBI manual for evidence synthesis. JBI: Adelaide, Australia. 2020.
34. Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ. 2021;372:n71.

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