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A Delphi Consensus of Mindfulness-Based Cognitive Therapy for managing anxiety and blood pressure in hypertensive patient

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Abstract

Background: Hypertension not only stands as a primary contributor to cardiovascular diseases but also exhibits a strong interconnectedness with psychological aspects, one of which is anxiety. **Objective**: This study aims to develop a consensus-based protocol for implementing Mindfulness-Based Cognitive Therapy (MBCT) in managing anxiety and blood pressure among hypertensive patients. **Method**: We conducted a Delphi consensus study that included a panel of experts with diverse backgrounds in hypertension, mindfulness, and psychology. Eleven experts participated in the three rounds of Delphi consensus. **Result**: The core of MBCT covers the introduction of mindfulness, mindful awareness of thoughts and emotions, mindful eating and hypertension with D.A.S.H., cultivating gratitude and positivity, mindfulness in daily activities, mindfulness for coping with anxiety, mindfulness and self-compassion, and review and integration. The study represents a crucial step in bridging the gap between research and clinical and community nursing practice, providing a structured framework for healthcare professionals to address anxiety and hypertension simultaneously. This consensus holds significant clinical and community promise, offering a standardized approach to MBCT implementation in hypertensive patient care. **Conclusion**: By addressing both psychological and physiological aspects, it has the potential to reduce anxiety levels and contribute to improved blood pressure control. **Recommendation**: Clinicians should consider integrating the Delphi consensus MBCT protocol into their hypertension management practices and promote interdisciplinary collaboration among healthcare providers.

Keywords: MBCT, mindfulness, anxiety, hypertension

INTRODUCTION

Hypertension, a chronic medical condition characterized by persistently elevated blood pressure levels, represents a significant global health concern. Its prevalence continues to rise, with an estimated 1.13 billion individuals affected worldwide in 2021, as reported by the World Health Organization (WHO) (1).

Hypertension is a leading cause of cardiovascular diseases and is closely intertwined with psychological factors, notably anxiety (2). The coexistence of hypertension and anxiety creates a complex interplay that can worsen both conditions, leading to adverse health outcomes and increasing the burden on healthcare systems (3,4).

Mindfulness-Based Cognitive Therapy (MBCT), developed initially as an intervention for preventing depressive relapse, has garnered attention in recent years for its potential in addressing anxiety and hypertension (5,6). MBCT combines mindfulness and cognitive therapy principles to cultivate self-awareness, emotional regulation, and adaptive responses to stressors (7). While numerous studies have explored the individual effects of MBCT on anxiety and blood pressure, there is a growing need to establish a clear, evidence-based protocol that integrates MBCT as a holistic intervention for hypertensive patients experiencing anxiety (7,8).

This study presents the development of such a protocol through a Delphi consensus process. The Delphi method, a systematic approach involving expert consensus, is a valuable tool for developing clinical guidelines and protocols, particularly when there is a need to distill collective knowledge and achieve consensus on complex healthcare interventions (9,10). The study harnesses the expertise of a panel of experts in mindfulness, complementary nursing, hypertension management, and related disciplines to construct a comprehensive MBCT protocol tailored to hypertensive patients experiencing anxiety.

We provide an overview of the methodology employed to reach a consensus among experts, outline the key components of the proposed MBCT protocol, and discuss the potential implications for enhancing the well-being of hypertensive individuals. By amalgamating the wisdom of experts in the field, this Delphi consensus protocol strives to offer a valuable resource for clinicians and researchers alike, bridging the gap between mindfulness-based interventions and effective hypertension management within the context of comorbid anxiety.

OBJECTIVE

This study aims to systematically develop an evidence-based protocol integrating MBCT as a comprehensive therapeutic approach for individuals afflicted with hypertension and anxiety.

METHODS

Literature review

An extensive list of definitions, characteristics, procedures, and specific significant points of MBCT in managing anxiety and blood pressure among hypertensive adult patients was created using data from primary research. For living systematic review, Garuda, PubMed, Web of Science, and Science Direct were searched for articles published in English and Indonesian from 2013 to 2023. The authors conducted a thorough manual review of specific published studies. They categorized distinct results from those studies into different categories, forming a compilation of outcomes to be included in the initial stage of the modified Delphi consensus process.

Development of the first Delphi questionnaire

The first Delphi questionnaire serves as the foundation for engaging experts in the iterative Delphi consensus process. The questionnaire was developed in a correlational approach with a literature review of some items: participants' eligibility criteria, mindfulness practice, integration of cognitive therapy, session structure, anxiety, and blood pressure monitoring. The core of the MBCT program is summarized as the introduction of mindfulness, mindfulness awareness of thoughts and emotions, mindful eating and hypertension, cultivation of gratitude and positivity, mindfulness in daily activities, mindfulness for coping with stress or anxiety, mindfulness and self-compassion, and review and integration.

Expert panel selection

The selection of experts to participate in the Delphi consensus process was guided by specific eligibility criteria designed to ensure the inclusion of individuals with relevant expertise and experience in the fields of mindfulness, psychology, hypertension management, and related disciplines, including educational qualifications, professional experience, publications and research, clinical experience, an interdisciplinary perspective.

Eleven experts: five nurses, three physicians, and three psychologists were invited based on the mentioned criteria from some areas in Indonesia, the Philippines, and Thailand. Most hold PhD degrees with at least five years of practical experience in their respective fields. Moreover, the eligible experts had published peer-reviewed research articles, book chapters, and relevant literature in reputable academic journals. Experts must validate their qualifications to be considered for inclusion.

Delphi Consensus Process

The Delphi consensus methodology was employed in this research to systematically gather and synthesize expert opinions regarding developing a protocol for utilizing Mindfulness-Based Cognitive Therapy (MBCT) in managing anxiety and blood pressure in hypertensive patients. The Delphi method is a well-established approach for achieving consensus among experts on complex healthcare interventions.

The procedure involved several iterative cycles, each meticulously planned to collect and amalgamate insights from experts. In each process, the following steps were taken: 1) experts received the questionnaire and were requested to assess the significance or viability of each element. In addition, experts were also given opportunities to gather additional opinions and insights regarding the use of MBCT in managing anxiety and blood pressure in hypertensive adults that had not been mentioned in the questionnaire; 2) experts were prompted to offer qualitative feedback, recommendations, and explanations for their evaluations, 3) responses from earlier rounds were scrutinized to pinpoint common ground and disparities, 4) consequent cycles integrated adjustments and enhancements grounded in expert feedback, shaping the evolution of the protocol.

After confirming their participation, all experts were sent a questionnaire via email. Following each round, the responses provided by the experts were meticulously analyzed for each question. Consensus was predetermined as an agreement rate exceeding 70%. Questions that failed to achieve consensus were carried over to the subsequent round. In the first round, the results and the reasoning behind their fellow participants' responses were anonymously shared with the experts. Additional questions necessitating clarification were incorporated as deemed necessary. Furthermore, experts were given the opportunity to propose significant, relevant items to be included in the subsequent questionnaire.

A preliminary set of recommendations was formulated based on the outcomes of the second round. These results were presented during an online meeting held in August 2023, where items needing more consensus were subject to extensive discussion. All comments and recommendations voiced during this meeting were diligently documented. Experts were also allowed to articulate their reasoning and reconsider their perspectives. The results encompassing the items that achieved consensus over the course of three rounds were subsequently presented to the experts. This prompted a need for more in-depth clarification on a few items, leading to the developing of a fourth questionnaire. The outcomes related to the items that achieved consensus were submitted for final approval to all experts who participated in the Delphi process.

RESULTS

Literature review

The review of available evidence was done, with 261 articles screened. After setting the inclusion criteria, the rest of the articles included in this study were eight articles with a total population of 527 hypertensive patients who experienced anxiety. The literature review identified four specific characteristics of MBCT: MBCT-general, MBCT in pregnancy, MBCT-anxiety, and telephone-delivered MBCT. The

output of the literature review was published separately.

Delphi process

Eleven participants from Indonesia, the Philippines, and Thailand willingly participated in the study and completed the first round. Among these eleven experts invited to engage in the second round of the Delphi process, more than 75% rated the outcomes in this subsequent round. In addition, the qualitative data from the expert's point of view also concluded that there was a similarity (more than 75%). The demographic characteristics are presented in Table 1.

Table 1. Participants Characteristics

Characteristics	N (%)
Gender	
Female	6 (54.5)
Male	5 (45.5)
Country	
Indonesia	8 (72.7)
The Philippines	1 (9)
Thailand	2 (18.3)
Educational background	
Master	4 (36.4)
PhD	7 (63.6)
Clinical experience	
3 to 5 years	3 (27.3)
More than five years	8 (72.7)

Responses revealed a variety of perspectives and initial divergence among experts. Several key themes emerged in the first round, including components of MBCT, patient assessment, and integration into care. In the second round, experts received a summary of collective responses from the first round, allowing them to consider their initial perspectives considering the feedback from the group. The next round of the iterative nature of the process led to an increased agreement over subsequent rounds.

After three rounds, a consensus level of more than 90% was achieved among the expert panel on the core component of MBCT protocol for managing anxiety and blood pressure in hypertensive patients. We utilized this consensus to develop the final protocol, incorporating the following key elements:

Definition of MBCT for managing stress and blood pressure in adult patients with hypertension

The first-round questionnaire contained five questions about defining an MBCT program for managing anxiety and blood pressure in hypertensive patients. 95% of experts agreed that MBCT was training to observe and accept an individual's current situation and became part of non-pharmacological therapy to lower anxiety and blood pressure levels. This therapy is indicated for patients with hypertension who experience anxiety and is delivered in eight sessions in total.

Aims of MBCT for managing anxiety and blood pressure in adult patients with hypertension

The expert agreed that the aim of MBCT for managing anxiety and blood pressure in patients with hypertension is divided into two aspects: general and specific. For general purposes, more than 90% of experts agreed that this therapy aims to enhance awareness in hypertensive patients to accept their current condition, thereby reducing anxiety and blood pressure. Moreover, the specific objectives of the MBCT are based on every session. Table 2 provides the aim of every session in the MBCT for managing anxiety and blood pressure in patients with hypertension.

Procedures of MBCT for managing anxiety and blood pressure in adult patients with hypertension

According to all experts, the procedure of mindfulness interventions has similar characteristics that are adapted based on the specific objectives of the therapy. Before the core therapy is given, there needs to be some plan, and the organization also provides some related instruments to support the intervention.

In the initiation round, the authors observed various instruments measuring anxiety. Based on this observation, the authors proposed adopting a standardized tool for measuring anxiety supported by a strong foundation of evidence-based research. As a result, the Zung Self-Rating Anxiety Scale was chosen as a comprehensive instrument for measuring anxiety levels. The digital sphygmomanometer and the blood pressure measurement sheet received unanimous

agreement (100%) from the experts as a standardized instrument for assessing blood pressure.

The experts held various opinions about the eight-session components as the core therapy of MBCT for managing anxiety and blood pressure in patients with hypertension. Inconsistent terminology was also noted, but the terms had the same meaning. The following round reached a consensus on the core therapy of MBCT for managing anxiety and blood pressure in patients with hypertension. It contains an introduction to mindfulness (session 1), mindful awareness of thoughts and emotions (session 2), mindful eating and hypertension with D.A.S.H (Dietary Approaches to Stop Hypertension) (session 3), cultivating gratitude and positivity (session 4), mindfulness in daily activities (session 5), mindfulness for coping with anxiety (session 6), mindfulness and self-compassion (session 7), and review and integration (session 8).

DISCUSSION

In our Delphi consensus study, we successfully established a consensus among experts regarding the protocol for implementing Mindfulness-Based Cognitive Therapy (MBCT) in managing anxiety and blood pressure in hypertensive patients. The experts reached a high level of agreement on the critical components of the protocol, emphasizing the importance of mindfulness techniques, cognitive restructuring, and lifestyle modifications.

Our findings align with previous research demonstrating the potential of MBCT in addressing anxiety and its comorbidity with hypertension (6,7,11,12). However, our study goes a step further by providing a consensus-based protocol, which offers a standardized approach to MBCT implementation in clinical settings. This protocol bridges the gap between research and practice, making it more feasible for healthcare professionals to integrate MBCT into hypertension management.

The consensus-based protocol derived from our study has significant clinical implications. It offers a structured framework for healthcare providers to deliver MBCT interventions to hypertensive patients with anxiety, potentially leading to better outcomes regarding anxiety reduction and blood pressure control. Integrating MBCT into routine care could reduce the reliance on pharmacological treatments alone.

Our study contributes to the evolving theoretical framework surrounding mindfulness-based interventions in healthcare. It supports the notion that combining mindfulness techniques and cognitive restructuring can synergistically reduce anxiety and, subsequently, positively impact blood pressure regulation. This aligns with the biopsychosocial model of hypertension, emphasizing the importance of psychological factors in its management.

Despite its contributions, our study has limitations. The consensus was obtained from a panel of experts, and while their insights are valuable, real-world implementation may encounter challenges that could be considered in the consensus process. The absence of direct patient involvement in the Delphi process is another limitation, and future research should incorporate patient perspectives.

Future research in this area should focus on the practical implementation of the consensus-based protocol in clinical settings, assessing its effectiveness in real-world hypertensive patient populations. Longitudinal studies can explore the sustained effects of MBCT on anxiety and blood pressure control over extended periods. Additionally, investigating the cost-effectiveness of this approach is warranted to guide healthcare policy decisions.

Conclusion

In conclusion, our Delphi consensus study has established a robust protocol for implementing Mindfulness-Based Cognitive Therapy in managing anxiety and blood pressure in hypertensive patients. This protocol has significant clinical implications, including enhanced treatment options, holistic patient care, patient empowerment, reduction in medication dependence, and a complementary approach. Moreover, by providing a protocol for this MBCT, future research should focus on long-term outcomes, comparative effectiveness, dose and duration patient-centered research implementation of strategies, cost-benefit analysis, and digital health integration. By pursuing these research directions, the researchers can contribute valuable insight into

implementation strategies for the Delphi consensus MBCT protocol in managing anxiety and blood pressure in hypertensive patients.

REFERENCES

(1) Khoury M, Urbina EM. Hypertension in adolescents: diagnosis, treatment, and implications. The Lancet Child & Adolescent Health. 2021 May;5(5):357–66.

(2) Khasanah DN. The Risk Factors Of Hypertension In Indonesia (Data Study Of Indonesian Family Life Survey 5). Jphrecode. 2022 Feb 21;5(2):80.

(3) Johnson HM. Anxiety and Hypertension: Is There a Link? A Literature Review of the Comorbidity Relationship Between Anxiety and Hypertension. Curr Hypertens Rep. 2019 Sep;21(9):66.

(4) Lim LF, Solmi M, Cortese S. Association between anxiety and hypertension in adults: A systematic review and meta-analysis. Neuroscience & Biobehavioral Reviews. 2021 Dec;131:96–119.

(5) Benenson I, Waldron FA, Jadotte YT, Dreker M (Peggy), Holly C. Risk factors for hypertensive crisis in adult patients: a systematic review. JBI Evidence Synthesis. 2021 Jun;19(6):1292–327.

(6) Ghahari S, Mohammadi-Hasel K, Malakouti S, Roshanpajouh M. Mindfulness-based Cognitive Therapy for Generalised Anxiety Disorder: a Systematic Review and Meta-analysis. East Asian Arch Psychiatry. 2020 Jun 30;30(2):52–6.

(7) Conversano C, Orrù G, Pozza A, Miccoli M, Ciacchini R, Marchi L, et al. Is Mindfulness-Based Stress Reduction Effective for People with Hypertension? A Systematic Review and Meta-Analysis of 30 Years of Evidence. IJERPH. 2021 Mar 11;18(6):2882.

(8) Li J, Cai Z, Li X, Du R, Shi Z, Hua Q, et al. Mindfulness-based therapy versus cognitive behavioral therapy for people with anxiety symptoms: a systematic review and meta-analysis of random controlled trials. Ann Palliat Med. 2021 Jul;10(7):7596–612.

(9) Grant S, Armstrong C, Khodyakov D. Online Modified-Delphi: a Potential Method for Continuous Patient Engagement Across Stages of Clinical Practice Guideline Development. J GEN INTERN MED. 2021 Jun;36(6):1746–50.

(10) Munblit D, Nicholson T, Akrami A, Apfelbacher C, Chen J, De Groote W, et al. A core outcome set for post-COVID-19 condition in adults for use in clinical practice and research: an international Delphi consensus study. The Lancet Respiratory Medicine. 2022 Jul;10(7):715–24.

(11) Cladder-Micus MB, Speckens AEM, Vrijsen JN, T. Donders AR, Becker ES, Spijker J. Mindfulness-based cognitive therapy for patients with chronic, treatment-resistant depression: A pragmatic randomized controlled trial. Depress Anxiety. 2018 Oct;35(10):914–24.

(12) Jiang S si, Liu X hua, Han N, Zhang H jing, Xie W xiang, Xie Z juan, et al. Effects of group mindfulness-based cognitive therapy and group cognitive behavioral therapy on symptomatic generalized anxiety disorder: a randomized controlled noninferiority trial. BMC Psychiatry. 2022 Dec;22(1):481.