

CULTURAL INFLUENCE ON THE INCIDENCE OF HYPERTENSION IN DEVELOPING COUNTRIES: A SYSTEMATIC REVIEW

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Abstract

Backgrounds; Hypertension is a major health problem in developing countries, with increase incident. Cultural factors, such as diet, physical activity, beliefs, and health perceptions, are thought to have a significant influence on the risk of hypertension. Previous research shows that interventions adapted to local culture are more effective in managing hypertension than conventional interventions. However, the influence of cultural factors on the prevalence of hypertension in developing countries is still not fully understood. **Objectives;** This study aims to systematically review the influence of cultural factors on hypertension in developing countries. **Methods;** Literature search was carried out on the electronic databases: PubMed, Scopus, ProQuest, Science-direct and Garuda. Study quality will be assessed using Preferred Reporting Items for Systematic Reviews and Meta-Analyses developed by the Joanna Briggs Institute. **Results;** The results show that a culture-based approach is highly effective in hypertension management in developing countries. Interactive and image-based educational methods have proven effective for patients with low health literacy, while family involvement in the hypertension management process has shown promising results. **Conclusions;** These findings emphasize the importance of considering local context in designing and implementing effective hypertension management programs in developing countries. **Keywords:** *Developing Countries; Cultural Factors; Hypertensi*

BACKGROUND

Hypertension is one of the major health problems in developing countries, with a continuously increasing prevalence [1]. According to the World Health Organization (WHO), hypertension accounts for approximately 12.8% of total deaths worldwide [2]. In developing countries, the prevalence of hypertension tends to be higher compared to developed countries, and it is often poorly controlled [3]. Cultural factors, such as diet, physical activity, beliefs, and health perceptions, are believed to have a significant influence on the risk of hypertension [4]. In developing countries, cultural factors often become important determinants of community behavior and lifestyle [5]. Previous research has shown that culturally tailored interventions are more effective in managing hypertension compared to conventional interventions [6,7].

However, the influence of cultural factors on the prevalence of hypertension in developing countries is still not fully understood [8]. Given the high cultural diversity in developing countries, a better understanding of how cultural factors contribute to hypertension risk is needed. This is important for developing more effective hypertension prevention and control strategies that are appropriate to the local cultural context [9].

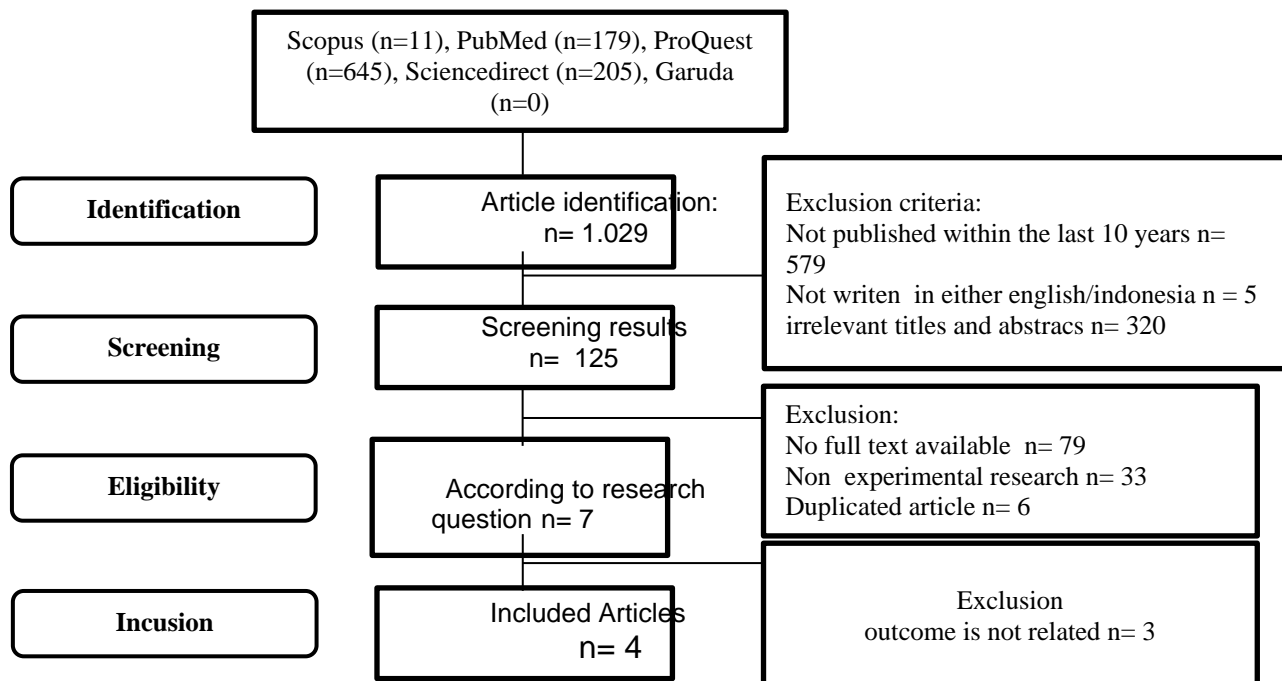
Therefore, this study aims to systematically review the influence of cultural factors on the prevalence of hypertension in developing countries. This systematic review is expected to provide a comprehensive overview of the role of cultural factors in hypertension risk and identify areas of research that still require further exploration.

METHODS

This systematic review provides the best evidence regarding the influence between cultural beliefs and the prevalence of hypertension in developing countries. This review follows the PRISMA guidelines, which are guidelines used to conduct systematic reviews and meta-analyses. PRISMA helps authors and researchers create high-quality systematic reviews and meta-analyses. Article criteria are determined based on the PICO framework (Population, Intervention, Comparison, and Outcome), which is used to select studies included in the systematic review. The PICO in this study is as follows: Population: Developing countries, Intervention: Cultural factors, Comparison: -, Outcome: Hypertension. In addition to these keywords, similar synonyms are also used to support article searches.

In searching for relevant research, the authors conducted a search for English-language articles published between 2014 and 2024. Several electronic databases used by the authors include Scopus, PubMed, ProQuest, ScienceDirect, and Garuda. The authors used keywords such as "Cultural beliefs" OR "cultural factors", "Developing Countries", "Hypertension" OR "High Blood Pressure". Searches on each database were conducted using keywords based on the PICO search technique and synonyms. Subsequently, the article database was processed using the Rayyan web service application to make data organization more effective and facilitate data extraction.

RESULTS AND DISCUSSION



Critical Appraisal (CASP) for RCTs	Wei Gan et al (2022)	Sanju Bhatta rai, et al (2023)	Jeroan J Allison, et al, (2016)	Djian Zeng et al, (2024)
Does the study answer the focused research question?	Yes	Yes	Yes	Yes
Was participant assignment to the intervention random?	Yes	Yes	Yes	Yes
Was all participants who entered the study accounted for at its conclusion?	No	Yes	Yes	Yes
Did participants and researchers remain unaware of the intervention given to them, and were the assessors/analysts of outcomes blinded?	Yes	No	No	Yes

Table 1. Critical Appraisal Skills Program (CASP) For RCTs Studies

Was the study group similar at the start of the trial, and was it randomly controlled?	Yes	Yes	Yes	Yes
Regardless of the experimental intervention, did each study group receive the same level of care (i.e., were they treated equally)?	No	No	No	Yes
Is the effect of the intervention reported comprehensively?	Yes	Yes	Yes	Yes
Is the accuracy of estimates of intervention or treatment effects reported?	Yes	Yes	Yes	Yes
Do the benefits of experimental interventions outweigh the harms and costs?	No	Yes	No	No
Can the results be applied to your local population or within your context?	Yes	Yes	Yes	Yes
Will the experimental intervention provide greater value to the individuals you are treating than any existing intervention?	Yes	Yes	No	No

Table 2. Risk of Bias Assessment

Name/year research	Random sequence of generations (Selection bias)	Allocation Concealment (Selection bias)	Blinding of participants and personnel (Performance bias)	Results were blinded to assessment (Detection bias)	Incomplete results data (Friction bias)	Selective reporting (Reporting bias)	Other sources are biased (others biased)
Wei Gan et al / 2022	+	+	-	+	-	-	-
Sanju Bhattarai et al / 2023	+	+	-	+	-	-	-
Jeroan J Allison, et al, 2016	+	+	-	-	-	-	-
Djian Zeng et al, 2024	+	+	-	+	-	-	-

Information (+) indicates a high risk of bias, (-) indicates a high risk of bias (?) indicates an unclear risk of bias

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Table 3 Characteristics, methods, interventions and outcomes

Author	Country	Objective	Design	samples	methods and interventions	Media	Frequency	Conclusion
Wei Gan (2022)	China	increase literacy health hypertension (HBP-HL) and quality life related health (HRQOL) for patient hypertension with literacy health low in Huzhou, Zhejiang, China via the Wheel of Change Behavioral (BCW) based educational program health pictorial interactive .	Study This is a trial controlled in a way random (RCT) with 9 month intervention and follow up continued 3 months.	Size sample was 120 participants with 60 people in the group intervention and 60 people in the group control .	Intervention This includes educational programs health pictorial interactive BCW -based which focuses on knowledge hypertension monitoring pressure blood , and change style life . Group control accept education health studying community routinely.	Intervention This use map pictures and discussion interactive For convey content education health.	Intervention carried out twice a month for two months first and a month once at seven month next. Act carry on done through telephone a month very during three month.	Intervention This designed For overcome gap in literacy health and management hypertension with use combined BCW theory with method education interactive. This program can applied in a way wide For increase management hypertension and reduce cost treatment consequence complications.
Sanju Bhattarai et al (2023)	Nepal	For evaluate effectiveness Approach Based Community For Management Hypertension (CAHM) in reduce level pressure blood and improve management hypertension in Nepal.	Study This is a non-blinded two-group cluster RCT with ratio 1:1 allocation.	Size sample No mentioned in a way explicit in text provided however study This involve group sociodemographic	Intervention This involve officer health communities (CHWs) who do visit home audit and feedback from BP, as well counseling special about change behavior and style life . Group control get maintenance routine hypertension.	Intervention This involve visit home by CHW and use material print and electronic data collection platforms.	Intervention This covers six visit house by CHW, with frequency that is not mentioned in a way explicit in text provided.	Intervention in research This covers counseling personal about modification style life, obedience treatment , and support For monitoring pressure blood in a way regular . CAHM can have implications policies and potential significant scalability No only in Nepal but
				different and participants from various background behind .				also in income countries low and middle others are facing it burden increasing hypertension big.
Offal Allison , et al, (2016)	Vietna mese	For evaluate feasibility and acceptability new based community with use " storytelling " method for increase control hypertension (HTN) in adults living in four community rural areas in Hung Yen province Vietnam.	Cluster-randomized controlled trial	A total of 100 patients , with 25 people aged 50 years or more suffer hypertension registered of four each commune	Intervention This involve development HTN intervention with use method storytelling , which includes involve member public For produce interactive multimedia intervention based on story patient . Intervention This aim For empowering patient and facilitate change in practice style life. Condition comparison will accepts DVD only containing material didactic about disease No common contagion but without story related hypertension	Interactive digital video discs (DVDs) will used For convey intervention	Not mentioned in a way explicit in given context, however intervention This involve DVD usage , and implied that participant will use the DVD on a frequency that allows it exists significant impact on control hypertension	Trials appropriateness This aim For give necessary foundation For scaled -RCT clusters big and powerful full For test efficacy intervention based new society. Test results scale full This will give proof practical to make policy health about method combat factor risk main disease cardiovascular with use feasible , sustainable , and cost-effective intervention cost
Dijian Zeng et al, (2024)	China especially in the community rural Liuyan g City , Hunan	The purpose of study This is For evaluate effectiveness Intervention Patient- Family Partnership (PFPI) on management hypertension and	Study This use trial design controlled in a way random (RCT)	Sample size study is 110 pairs consisting of families from sufferer hypertension and caregivers his family.	Group intervention received the PFPI, which includes five sessions training stare fortnightly based individual. Group control get maintenance ordinary that is visit home by a doctor village every	Intervention be delivered in a way direct through session training stare advance	Intervention done two weeks very with a total of five sessions during period ten Sunday	Research conclusions No given in context information. However , research This possibility big serve findings about effectiveness of PFPI in increase management hypertension and

Province	outcomes related to the community rural China	Partner This in a way random entered to in group intervention or group controls with 55 pairs in each group	three month , monitoring pressure blood , gift advice about maintenance hypertension independence , and questions about management hypertension answered	outcomes related based on data collected on one month (T1) and three month (T2) post intervention
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This systematic review reveals that cultural factors have a significant influence on the prevalence and management of hypertension in developing countries. I will now provide a discussion on how culture or habits in these five articles contribute to the rise or fall of hypertension rates in developing countries:

Culture and habits play a crucial role in hypertension management in developing countries. In China, Gan et al. identified that low health literacy, often linked to cultural and educational factors, contributes to a lack of understanding and management of hypertension [13]. Their proposed image-based educational approach attempts to bridge this cultural gap to improve patient understanding.

In Nepal, Bhattarai et al. recognized the importance of a comprehensive approach that considers the local socio-cultural context [14]. Eating habits, lifestyle, and public perception of health services in Nepal can influence the success of hypertension management programs. Allison et al. in Vietnam used culturally adapted storytelling methods, demonstrating that approaches aligned with local values and traditions can be more effective in improving hypertension control [15]. This emphasizes the importance of understanding and utilizing cultural elements in health interventions.

Zeng et al. emphasized the role of family in hypertension management in rural communities [16]. This reflects the strong social structure and family values in many developing countries, where family support can significantly influence health behaviors.

CONCLUSION

Based on this systematic review, it can be concluded that cultural factors have a significant influence on the prevalence and management of hypertension in developing countries. Overall, these four studies demonstrate that culture and habits can contribute to an increase in hypertension rates through unhealthy eating patterns, sedentary lifestyles, or lack of health awareness. However, with appropriate approaches that consider cultural context, such as tailored education, family involvement, and utilization of traditional communication methods, hypertension rates can be reduced. It is important to design interventions that not only address physiological risk factors but also take into account cultural norms, social structures, and local habits to enhance the effectiveness of hypertension management programs in developing countries.

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