

## The Effect of Culturally-Based Interventions on Stunting Prevention Efforts in Children Aged 0-5 Years: A Systematic Literature Review

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### ABSTRACT

**Background:** The high rate of stunting is closely linked to cultural influences within local communities. Therefore, health promotion intervention strategies need to be adapted to align with the cultural context of each community. **Objective:** This study aims to analyze culturally based interventions for preventing stunting in children aged 0-5 years. **Methods:** This literature review was conducted systematically using the PRISMA 2020 guidelines. Searches across five databases (ProQuest, ScienceDirect, Taylor & Francis, Scopus, and Google Scholar) yielded seven articles involving 352 participants who received culturally based stunting prevention interventions. **Results:** Seven articles were analyzed in depth, including three experimental studies without control groups. Five studies reported that culturally based health education interventions effectively improved knowledge, attitudes, and stunting prevention practices among caregivers of toddlers ( $p < 0.05$ ). The remaining two studies found that culturally grounded supplementary feeding interventions improved toddlers' nutritional status ( $p < 0.05$ ). **Conclusion:** Culturally based interventions are effective in strengthening stunting prevention efforts for children aged 0-5 years. Integrating cultural approaches enhances community acceptance and can serve as a strategic option for governments to accelerate stunting reduction programs.

**Keywords:** Culture, Health Promotion, Local Wisdom, Stunting

### INTRODUCTION

Chronic stunting is a common nutritional issue among toddlers and remains prevalent, particularly in developing countries such as Indonesia. Stunted growth in early childhood negatively affects a country's productivity and socioeconomic development (Akombi *et al.*, 2017); (Rahayu, Pamungkasari and Wekadigunawan, 2018); (Rizkika, Ruwiah and Fithria, 2023). Children who experience stunting are more susceptible to physical growth problems, delayed cognitive development, and reduced productivity and quality of life in the long term (Andriyanto, Ibnu and Hidayati, 2017); (Beal *et al.*, 2018); (Ariadi, 2023). Consequently, a high prevalence of stunting can hinder national development.

According to reports from UNICEF and WHO, stunting rates—especially in developing countries in South Asia, Southeast Asia, and Sub-Saharan Africa—remain high, posing a significant challenge that requires urgent attention (Suratri *et*

*al.*, 2023); (Maulina *et al.*, 2024). The average stunting rate in Southeast Asia is 25.4%, while Indonesia is estimated to contribute 4.7% of all global stunting cases. Despite the implementation of various nationwide intervention programs, Indonesia's stunting prevalence remains above the national target of below 14%, with current rates exceeding 21% (Khasanah *et al.*, 2022); (Cahyani, Ashuri and Aditya, 2024).

Various interventions have been carried out, including supplementary feeding programs, nutrition education, and improvements in basic health services. However, most approaches remain top-down and do not adequately consider sociocultural norms and traditional practices within local communities (Marni, Limbu and Parimahua, 2024); (McKay *et al.*, 2025); (Suparji, Rahayu and Handayani, 2024). In several regions in Indonesia, childcare practices, dietary habits, and health beliefs are strongly

influenced by cultural values (Marni *et al.*, 2025); (Marni, Limbu and Parimahua, 2024); (Sumardino, Lestari and Widodo, 2024). As a result, culture-based interventions can serve as an effective strategy for stunting prevention.

Culture-based interventions are developed by considering community beliefs, values, traditional customs, and the influential roles of community leaders in disseminating health information, making these interventions more easily accepted and practiced by the community (Dickin *et al.*, 2021); (Handayani *et al.*, 2024); (Fitrianiingsih *et al.*, 2025). This approach also promotes active community involvement in designing and implementing health interventions (McKay *et al.*, 2025). Although numerous studies have examined culture-based approaches in the context of child health, a comprehensive review of their effectiveness in preventing stunting has not yet been conducted.

This systematic review aims to: (1) identify the types of culture-based interventions used in preventing stunting in children aged 0-5 years; (2) examine the effects of these interventions on nutritional status and the incidence of stunting; and (3) evaluate the feasibility and potential integration of culture-based approaches into sustainable stunting prevention programs.

## METHODS

### Design

This systematic review was conducted based on the PRISMA checklist guidelines for systematic literature reviews (Page *et al.*, 2021). This study examines the impact of culture-based interventions on preventing stunting in children aged 0-5 years.

### Eligibility Criteria

This systematic review employed the PICO format, consisting of the following elements: population—children aged 0-59 months; intervention—culture-based interventions such as nutritional support, health education, community empowerment, or other culturally tailored approaches; comparison—non-culture-based interventions; and outcome—improvements in child nutritional status and stunting prevention, including knowledge, attitudes, and behavior. The

articles reviewed were original research studies utilizing quantitative methodologies.

### Search Strategy

The protocol for this systematic review has been registered with PROSPERO under the registration number CRD420251141454. A comprehensive literature search was conducted beginning on March 9, 2025, using the search terms “stunting,” “child stunting,” “malnutrition,” “undernutrition,” and “children under five,” combined with “cultural-based intervention,” “culture-based approach,” “traditional practices,” and “local wisdom,” as well as “child malnutrition,” “stunting prevention,” and “nutrition improvement.” Articles were sourced from six databases: ProQuest, ScienceDirect, Taylor & Francis, Scopus, and Google Scholar. Automatic filters were first applied to focus on original articles published within the last decade and available as full-text downloads. Following this step, the Mendeley Reference Manager was used to identify and remove duplicate records from the various database sources.

### Study Selection

For data management, the Mendeley Reference Manager was used. Data processing was carried out by two authors through the following steps. First, after removing duplicates, we screened the titles and abstracts to assess the relevance of each study to the predetermined research topic. Second, we retrieved the full texts and conducted an initial eligibility assessment. Finally, we evaluated the full texts based on the established inclusion and exclusion criteria. Critical appraisal was then performed using the JBI instrument for RCTs and experimental studies with two groups, and the NIH tool for experimental studies without control groups. All appraisal results were subsequently revalidated by two additional researchers.

## RESULTS AND DISCUSSION

### Results

#### Article Selection

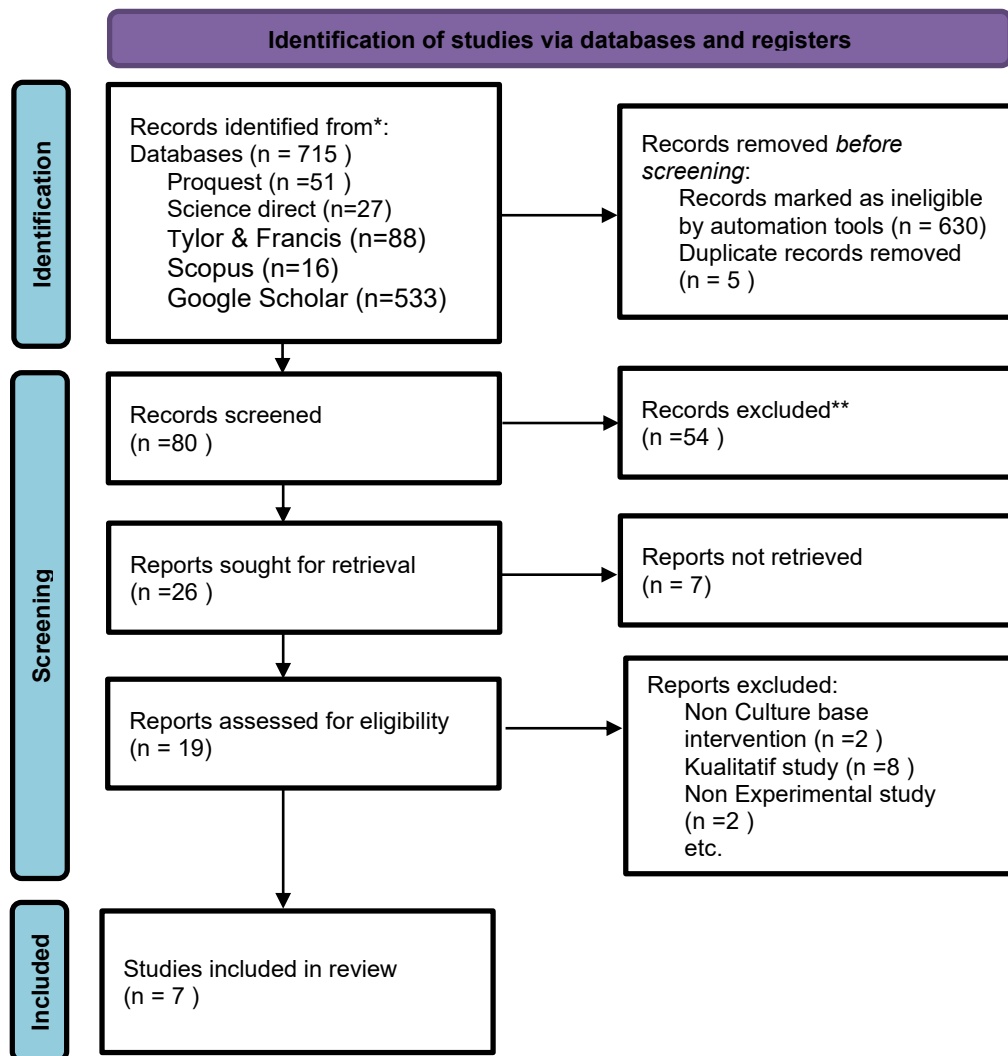
Overall, 715 articles were retrieved from five databases using the predetermined keywords. After applying limiters, 85 articles remained eligible. Following the removal of duplicates, 80 articles were retained. Title and abstract screening resulted in 26 potentially

relevant articles. Nineteen full-text articles were then excluded for the following reasons: two articles did not use culture-based interventions, eight articles did not employ a quantitative approach, and two articles did not use experimental designs. Ultimately, seven articles proceeded to the analysis stage, each demonstrating a risk-of-bias score above 80% (low risk category).

**Research Characteristics**

Detailed characteristics of the included studies are presented in Table 1.

One article employed a randomized controlled trial design, three articles used a quasi-experimental design with a control group, and three articles used a quasi-experimental design without a control group. Based on the intervention outcomes, two articles implemented local food-based nutritional interventions aimed at improving nutritional status, while five articles used culturally based health education interventions to enhance knowledge, attitudes, and stunting prevention practices.



**Table 1.** Characteristics Subjects Based Age, Sex, Eductaion on FGD Activity

Authors	Types of Research and Participants	Type of Intervention	Content of Intervention	Intervention Methode/Tools	Outcome Measures
<b>Quasy experiment with control group</b>					
(Astuti, Winarti and Mirasa, 2023)	Intervention: 30 Control: 30 Total: 60	Health education based on local	Stunting prevention and feeding patterns in	Lectures and modules based on local wisdom	Parents' knowledge and parenting patterns

		wisdom	fulfilling toddlers' nutrition		
(Apriyani and Febianti, 2024)	Intervention: 35 Control: 35 Total: 70	Health education based on local wisdom	Mothers' nutritious food intake, breastfeeding, parenting patterns	Education using booklets and videos written in local language	Family awareness about stunting prevention
(Marni <i>et al.</i> , 2025)	Intervention: 30 Control: 30 Total: 60	Health education based on local wisdom	Increasing cadres' capacity to deliver health education on factors related to stunting	Modules and posyandu cadre training	Knowledge, perception, attitude, and practices related to stunting prevention
<b>Quasy experiment without control group</b>					
(Yorita and Gustina, 2023)	Intervention: 40 Control: - Total: 40	Health education based on local wisdom	Empowerment of traditional leaders (Paubuki) and cadres	Modules and leaflets based on needs analysis	Complementary feeding (MPASI) and exclusive breastfeeding practices
(Fitrianingsih <i>et al.</i> , 2025)	Intervention: 24 Control: - Total: 24	Intervention using local food ingredients with cultural values	Utilization of local Katuk leaves	Processing Katuk leaves	Nutritional status of toddlers (Height-for-Age, H/A)
(Handayani <i>et al.</i> , 2024)	Intervention: 30 Control: - Total: 30	Health education based on local wisdom	Mothers' nutritious food intake, exclusive breastfeeding, children's health, and clean water consumption	Educational pocketbook "Anti-Stunting Intervention Package"	Mothers' knowledge, attitudes, and behaviors in stunting prevention
<b>Randomized Control Trial (RCT)</b>					
(Nababan, Ismail and Sihotang, 2024)	Intervention: 34 Control: 34 Total: 68	Intervention using local food ingredients with cultural values	The use of local food ingredients, torbangun leaves, which hold local wisdom values	Biscuits with torbangun leaves	Nutritional status of toddlers (Height-for-Age, H/A)

## Discussion

This systematic review evaluated the effectiveness of culturally tailored health education programs in reducing stunting among children aged 0-5 years. Overall, the findings indicate that approaches integrating local cultural factors can improve knowledge, attitudes, and caregiving practices and ultimately support better nutritional health among children. The evidence suggests that education delivered in alignment with local cultural contexts—such as using native languages, regional symbols, and the involvement of traditional leaders and

health professionals—can enhance community comprehension and acceptance of health information. Studies by (Astuti, Winarti and Mirasa, 2023) and (Apriyani and Febianti, 2024), for instance, used audiovisual media and booklets incorporating local wisdom, resulting in significant improvements in families' understanding of stunting prevention. These findings are consistent with the systematic review by (Wildia *et al.*, 2025), which concluded that cultural values strongly influence community attitudes toward health education.

The principles of health communication emphasize the importance of cultural relevance when delivering educational messages. Approaches aligned with local norms and values tend to be more readily accepted and are more effective in promoting behavior change. This aligns with research indicating that nutrition education interventions adapted to the sociocultural context are more effective in shaping community attitudes and behaviors (Vinci, Bachtiar and Parahita, 2022). The involvement of community leaders has also been shown to enhance program sustainability and increase community trust, particularly when local resources are incorporated in nutrition improvement initiatives (Marni *et al.*, 2025). (Fitrianiingsih *et al.*, 2025) and (Nababan, Ismail and Sihotang, 2024) similarly reported that interventions using local food resources can effectively improve toddlers' nutritional status, offering both nutritional benefits and cultural relevance.

Culturally based interventions can be delivered through various educational media, including modules, videos, booklets, and counseling. Integrating multiple forms of media increases participant engagement and promotes deeper comprehension of the material. (Apriyani and Febianti, 2024) and (Handayani *et al.*, 2024) demonstrated that multimodal approaches provide a more comprehensive learning experience and accommodate diverse learning styles, thereby increasing the likelihood of sustained behavior change. These results align with the systematic review by (Tiyas and HasanBasri, 2023), which emphasizes the value of complementary delivery methods in strengthening educational impact, particularly within health promotion. In the context of stunting prevention, culturally based multimodal interventions facilitate the delivery of essential information on nutrition, caregiving, and toddler care to families with varied social and educational backgrounds.

Although the studies included in this systematic review generally report positive outcomes, variations exist in study design, duration, and evaluation methods. Some studies, such as those by (Yorita and Gustina, 2023) and (Handayani *et al.*, 2024), did not include control groups, warranting caution when interpreting their

findings. Additionally, many studies relied on cross-sectional designs, limiting their ability to assess causal effects or long-term impacts on family behavior and child nutritional status. The use of self-report measures also introduces potential bias. Therefore, future research employing longitudinal designs and objective indicators is required to evaluate the causal impact of culturally based interventions. Nevertheless, the available studies illustrate that even simple culturally informed health education can positively influence caregiving practices, particularly in complementary feeding.

Overall, the findings of this review highlight the importance of integrating cultural perspectives into stunting prevention programs. Interventions tailored to local contexts, leveraging community strengths, and involving active participation from families and healthcare workers appear more effective and more likely to be widely adopted. Practitioners and policymakers should consider incorporating culturally based interventions as part of the national strategy to accelerate stunting reduction. Comparative studies are needed to assess the effectiveness of culturally informed approaches relative to standardized interventions. Furthermore, evaluating the cost, sustainability, and scalability of these approaches will be essential for developing more inclusive and evidence-based intervention policies.

## CONCLUSION

Culturally based health education interventions are effective in improving knowledge, attitudes, and stunting prevention practices among children aged 0-5 years in Indonesia. Approaches tailored to the local context—such as the use of local languages, cultural symbols, and the involvement of community leaders—have been shown to enhance the acceptance and effectiveness of health messages. The use of diverse educational media further strengthens understanding and supports more sustainable behavior change. Although limitations remain due to variations in study designs and evaluation methods across the included literature, the findings provide a strong indication that integrating culturally based approaches can effectively accelerate stunting reduction efforts. Nevertheless, further research with more

rigorous designs and objective indicators is needed to assess sustainability and long-term effectiveness.

#### LIMITATION

Variations in design, duration, and evaluation methods have led to heterogeneity in the results and limited the strength of the findings' interpretation. In addition, the absence of control groups in some studies, the use of self-report methods, and cross-sectional designs do not allow for the depiction of causal relationships and longitudinal effects.

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