



## Traditional games and public health: a sociocultural review of Indonesian perspectives

*Juegos tradicionales y salud pública: una revisión sociocultural desde las perspectivas indonesias*

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### Abstract

**Introduction:** Modernization, digital lifestyles, and urban pressures have reduced the practice of traditional games in Indonesia, raising concerns regarding decreased physical activity and weakened cultural continuity. This review aims to analyze the sociocultural meanings and public health contributions of Indonesian traditional games within a contemporary social context. **Methodology:** A systematic review was conducted on peer-reviewed articles published between 2015 and 2025 that examined Indonesian traditional games. Studies indexed in major academic databases were reviewed and analyzed using perspectives from sports science, anthropology, and health promotion.

**Results:** The findings show that traditional games contribute to physical fitness, motor development, emotional balance, and mental well-being. At the same time, they function as culturally embedded platforms that strengthen social cohesion, moral learning, identity formation, and intergenerational relationships. This review offers an integrative sociocultural–public health perspective that positions traditional games not merely as recreational activities, but as culturally grounded public health resources.

**Conclusions:** Indonesian traditional games hold dual value as tools of cultural resilience and as promoters of active, healthy lifestyles. Their integration into physical education and community-based health programs represents a culturally sustainable strategy for improving public health. Further research is recommended to explore policy development and adaptive implementation of traditional games in urban and digital environments.

### Keywords

Traditional games, sociocultural review, public health, cultural sustainability, Indonesia, physical literacy.

### Resumen

**Introducción:** La modernización, los estilos de vida digitales y las presiones urbanas han reducido la práctica de los juegos tradicionales en Indonesia, generando preocupación por la disminución de la actividad física y la continuidad cultural. El objetivo de esta revisión es analizar los significados socioculturales y las contribuciones a la salud pública de los juegos tradicionales indonesios en el contexto social contemporáneo.

**Metodología:** Se realizó una revisión sistemática de artículos revisados por pares publicados entre 2015 y 2025 que examinan los juegos tradicionales indonesios. Los estudios indexados en las principales bases de datos académicas fueron revisados y analizados desde las perspectivas de las ciencias del deporte, la antropología y la promoción de la salud.

**Resultados:** Los hallazgos muestran que los juegos tradicionales contribuyen a la condición física, el desarrollo motor, el equilibrio emocional y el bienestar mental. Al mismo tiempo, funcionan como espacios culturales que fortalecen la cohesión social, el aprendizaje moral, la formación identitaria y las relaciones intergeneracionales. Esta revisión presenta una perspectiva integradora sociocultural–salud pública que sitúa los juegos tradicionales no solo como actividades recreativas, sino como recursos culturales para la salud pública.

**Conclusiones:** Los juegos tradicionales indonesios poseen un doble valor como herramientas de resiliencia cultural y promoción de estilos de vida activos y saludables. Su integración en la educación física y en programas comunitarios de salud representa una estrategia culturalmente sostenible. Se recomienda profundizar en políticas públicas y en su adaptación a contextos urbanos y digitales.

### Palabras clave

Juegos tradicionales; promoción de la salud; revisión sociocultural; sostenibilidad cultural; alfabetización física.

## Introduction

Physical inactivity has become a serious global public health concern, contributing to the rising prevalence of non-communicable diseases such as obesity, diabetes, cardiovascular disorders, and declining mental well-being (DiPietro et al., 2020; WHO, 2020). Processes of modernization, urbanization, and digitalization have progressively displaced outdoor communal activities, fostering sedentary and individualistic lifestyles. These trends highlight the urgent need for culturally grounded forms of physical activity that not only improve health outcomes but also reinforce social cohesion and community engagement.

In the Indonesian context, traditional games, including *permainan fisik adat* (indigenous physical games), *senam kelompok lokal* (local group exercises), and community-based collective activities, have historically functioned as integrative practices that promote physical fitness, social interaction, and the transmission of moral and cultural values (Ayudya et al., 2024; Hasani et al., 2024; Mahdavi et al., 2024; Mediastika et al., 2024; Minsih et al., 2024). Rooted in the philosophy of *gotong royong* (mutual cooperation), these practices foster collective participation, intergenerational interaction, and social solidarity. However, rapid socio-cultural change and digital lifestyles have significantly reduced participation in traditional games, particularly among younger generations.

Evidence from health promotion research consistently shows that integrating cultural elements into physical activity interventions enhances participation, motivation, and long-term adherence (Aryastami & Mubasyiroh, 2021; Green et al., 2022; Green & Kreuter, 2005; Peltzer & Pengpid, 2019; Santoso et al., 2024; Syaokani et al., 2024). Nevertheless, research on Indonesian traditional games remains fragmented. Many studies prioritize physiological outcomes such as endurance, agility, or flexibility (Lee et al., 2022a; Nuzzo, 2020), while others emphasize sociocultural dimensions, including intergenerational interaction, identity formation, and cultural transmission (Casini, 2022; Luchoro-Parrilla et al., 2021; Matvapayev, 2024; Merrill & Fivush, 2016; Ozkoc & Bozdal, 2023; Rakhoveio et al., 2025; Saifuddin et al., 2022). Few studies systematically integrate these physical and sociocultural dimensions to examine traditional games as culturally embedded resources for community-based public health strategies.

Comparative studies across Southeast Asia further demonstrate that revitalizing traditional sports and games can support cultural education, strengthen community identity, and contribute to public health interventions (Ahmed et al., 2021; Dahyat, 2025; Damanik & Sinaga, 2021; Dewi et al., 2020; Dezfoulian & Nemati, 2025; Gultom et al., 2022; Liu et al., 2020; Nguyen et al., 2022; Rachman et al., 2025; Rakhman et al., 2024; Tang & Jardine, 2016). These findings underscore the relevance of traditional games not only as recreational activities but also as culturally meaningful practices capable of promoting physical well-being and cultural sustainability.

Despite this growing body of literature, there remains a lack of comprehensive syntheses that position Indonesian traditional games simultaneously within sociocultural theory and public health frameworks. Existing studies rarely conceptualize traditional games as integrated cultural–health practices that bridge physical activity, social cohesion, and cultural resilience. Addressing this gap, the present study provides a sociocultural systematic review of traditional games in Indonesia by integrating perspectives from sports science, anthropology, and health promotion. This review identifies conceptual patterns, theoretical contributions, and practical implications to inform culturally sustainable health policies, strengthen community engagement, and support the preservation of intangible cultural heritage through the revitalization of traditional games.

This article is structured as follows. The introduction outlines the background and research gap concerning traditional games and public health. The literature review discusses sociocultural foundations, empirical evidence, and existing gaps. The methodology section explains the systematic review design and selection procedures. The results section synthesizes key thematic findings from the selected studies, followed by a discussion of theoretical, sociocultural, and practical implications. The article concludes with recommendations for future research and policy development.

## Literature Review

### *Sociocultural Foundations of Traditional Games*

Research on traditional games is commonly situated within sociocultural and public health frameworks that emphasize the interconnection between physical activity, social structures, and cultural meaning. From a sociological perspective, Bourdieu conceptualizes physical practices as part of *habitus*, socially structured dispositions that both reflect and reproduce cultural norms, values, and power relations (Bourdieu, 2020). Within this framework, traditional games function not merely as physical activities but as collective practices through which social identity, discipline, cooperation, and moral order are enacted and internalized.

Complementing this view, Durkheim's theory of social integration highlights the role of communal rituals and shared physical activities in strengthening collective consciousness and social solidarity (Durkheim, 2016; Hudain et al., 2025). Participation in traditional games generates shared emotional energy and reinforces moral unity, fostering a sense of belonging and collective responsibility. These dynamics are particularly relevant to community-based public health initiatives, as social cohesion and collective participation are key determinants of sustained engagement in physical activity.

From an interpretive anthropology perspective, Geertz conceptualizes embodied performances as cultural texts through which symbolic meanings are communicated and cultural knowledge is transmitted (Geertz, 1973). Traditional games, therefore, operate as symbolic practices that encode local values, ethical norms, and worldviews while simultaneously engaging the body in health-enhancing movement. By integrating these theoretical perspectives, traditional games can be understood as sociocultural phenomena that bridge individual physical health, community cohesion, and the continuity of intangible cultural heritage.

### *Empirical Evidence on Physical and Social Benefits*

Empirical studies consistently demonstrate that traditional games provide multidimensional benefits encompassing physical fitness, socio-emotional development, and community engagement. Across Southeast Asia, the integration of culturally rooted physical practices into public health and school-based programs has been shown to enhance participation, motivation, and long-term adherence. This effectiveness is largely attributed to the playful nature of traditional games, their cultural familiarity, and the social interaction they inherently promote, positioning them as accessible and contextually relevant forms of physical activity.

In the Indonesian context, traditional games contribute significantly to children's motor development while simultaneously strengthening cultural identity and intergenerational relationships. For example, Zulnadila et al. report that games such as hadangan, egrang batok, and gobak sodor enhance both gross and fine motor skills through activities involving running, balancing, coordination, object manipulation, and spatial awareness (Zulnadila et al., 2025). Beyond physical outcomes, these games foster cooperation, communication, turn-taking, and emotional regulation, highlighting their role in socio-emotional learning. Similarly, studies on Banjar traditional games indicate that they contribute to physical health while facilitating the transmission of local cultural values and social norms (Rakhman et al., 2024). When implemented within Physical, Sports, and Health Education (Pendidikan Jasmani, Olahraga, dan Kesehatan—PJOK), traditional games function as pedagogical tools integrating physical development with cultural education and socialization.

Intervention-based research further confirms the health-promoting potential of traditional games. Zubaida et al. implemented an 11-week traditional sports program (Zubaida et al., 2023) and documented significant improvements in VO<sub>2</sub> endurance, 30-meter sprint performance, and flexibility. These findings suggest that traditional games can elicit moderate-to-high intensity physical exertion comparable to structured exercise programs. Complementary evidence from motor development research indicates that traditional games naturally incorporate fundamental movement patterns, including sprinting, agility, balance, and object control, making them developmentally appropriate forms of functional training across age groups.

Collectively, these findings position traditional games as holistic interventions that nurture physical health, emotional well-being, social connectedness, and cultural continuity. Their community-oriented



and culturally embedded nature fosters intrinsic motivation and supports sustainability beyond conventional exercise routines. Nevertheless, existing studies reveal methodological limitations, such as short intervention durations, small or single-site samples, and limited use of control groups. These constraints underscore the need for more rigorous, longitudinal, and demographically diverse research designs. Despite these limitations, the accumulated empirical evidence supports the potential of traditional games as culturally responsive interventions situated at the intersection of health promotion, education, and cultural preservation in Indonesia and comparable contexts.

### ***Public Health Perspectives on Culturally Grounded Interventions***

Culturally grounded, community-based interventions are increasingly recognized as effective strategies for health promotion. Green and Kreuter's PRECEDE-PROCEED framework emphasizes that aligning interventions with community values, norms, and social organization enhances sustainable behavior change (Green & Kreuter, 2005). Traditional games exemplify such culturally congruent practices, integrating physical activity with social participation, collective identity, and cultural meaning.

In Indonesia, where gotong royong and local wisdom guide communal life, traditional games provide an accessible, culturally resonant platform for promoting physical health. Cooperative and competitive dynamics foster social accountability, peer motivation, and informal support networks, supporting adherence and engagement. These activities also promote moral education, teamwork, rule-following, conflict resolution, and pro-social behaviors, mitigating sedentary behavior, social isolation, and enhancing emotional resilience. Intergenerational participation further strengthens family involvement and community bonding, extending the reach of health promotion beyond schools.

Traditional games are low-cost, require minimal equipment, and can be implemented in diverse settings, making them suitable for low-resource communities. They offer an inclusive model of culturally adapted physical activity that reduces disparities and aligns with WHO principles for community-centered health interventions.

However, integrating traditional games into formal health promotion requires systematic planning, curriculum alignment, teacher training, and community mobilization. When evidence-based and monitored, culturally grounded games serve as strategic tools to promote active lifestyles, strengthen community resilience, and preserve cultural heritage.

### ***Gaps in Existing Literature***

Despite promising findings, research on Indonesian traditional games remains fragmented with several gaps. First, most studies focus on specific regions, single cultural groups, or isolated games, limiting comparative insights across Indonesia's diverse cultural landscape. Cross-regional analyses of games like hadangan (West Java), gobak sodor (Central Java), ma'badong (Sulawesi), begasing (Lombok), and Banjar games (Kalimantan) are scarce, making it difficult to identify generalizable principles for national implementation.

Second, a conceptual gap exists as many studies isolate physiological outcomes from sociocultural interpretations. Physical fitness indicators such as agility, endurance, or motor skills are often analyzed without integrating cultural meaning, social bonding, community identity, or moral values. Interdisciplinary frameworks combining sports science, anthropology, educational psychology, and public health remain underutilized.

Third, limited attention is given to policy integration, scalability, or formal implementation in schools, urban spaces, or digital health platforms. While efficacy for physical and socio-emotional development is evident, questions of teacher training, program sustainability, and alignment with national health policies and WHO recommendations are rarely addressed (Chen et al., 2024; Habelalmateen et al., 2024; Hua, 2022; Jiang, 2020; Setiawan et al., 2024).

Fourth, methodological limitations are common: small samples, short interventions, single-school studies, or lack of control groups reduce generalizability. Longitudinal evidence on lasting impacts for physical health, socio-emotional resilience, and cultural identity is largely absent.

These gaps indicate the need for comprehensive, interdisciplinary, and policy-oriented research on traditional games as culturally grounded health promotion strategies. Enhancing methodological rigor,

comparative breadth, and theoretical integration is essential to leverage traditional games as sustainable, culturally resonant tools for public health in Indonesia.

### ***Integrative Framework for Traditional Games***

To address existing gaps, this review synthesizes multidisciplinary perspectives to present traditional games as sociocultural instruments for health promotion. Anthropologically, they are embodied cultural practices transmitting knowledge, moral values, and symbolic meanings across generations. Bodily movements, ritualized play, and intergenerational participation form a living archive where children learn cooperation, resilience, emotional regulation, and ethical norms.

Sociologically, collective physical activities reinforce social cohesion, belonging, and community identity. Traditional games act as participatory social fields where solidarity is enacted through shared rules, mutual dependence, coordination, and collective celebration. In Indonesia, principles like gotong royong and communal harmony are reaffirmed through active engagement.

From a public health perspective, traditional games are culturally aligned interventions promoting sustainable health behaviors. Their familiar design enhances intrinsic motivation, lowers participation barriers, and leverages peer support. They are low-cost, accessible, and socially engaging alternatives to conventional fitness programs, addressing multiple determinants including physical activity, social connection, emotional well-being, and cultural identity.

Positioned at the intersection of anthropology, sociology, and public health, this framework highlights the dual function of traditional games: preserving cultural continuity while enhancing physical, mental, and social well-being. They emerge as cultural-health systems where bodily practice, social interaction, and cultural meaning converge, providing a conceptual basis for research and practice that integrates cultural values, social dynamics, and health outcomes. Scholars and policymakers are encouraged to recognize traditional games as culturally embedded, socially generative, and health-promoting practices relevant to contemporary Indonesian society.

### ***Synthesis and Research Gaps***

The reviewed literature shows that Indonesian traditional games offer multidimensional benefits, integrating physical, social, and cultural dimensions. Empirical studies demonstrate improvements in cardiovascular fitness, agility, flexibility, motor skills, and emotional well-being among children and adolescents. Beyond physiology, these games strengthen social bonds, enhance intergenerational interaction, and transmit moral values, collective identity, and cultural heritage. Cooperative and competitive structures foster empathy, teamwork, communication, and conflict resolution, positioning traditional games as holistic, culturally embedded health-promoting practices.

Despite these strengths, notable gaps remain. First, cross-regional comparative studies are scarce, limiting understanding of shared principles and context-specific variations across Java, Sumatra, Kalimantan, Sulawesi, Nusa Tenggara, and other regions. Second, many studies focus narrowly on physiological outcomes, neglecting sociocultural dimensions and the holistic nature of traditional games. Third, strategies for integrating traditional games into public health programs, school curricula, urban planning, or digital health initiatives remain underexplored, including issues of teacher training, curriculum alignment, scalability, and sustainability.

These gaps underscore the need for comprehensive, interdisciplinary, and policy-oriented research. The integrative framework proposed in this review offers a foundation for policymakers, educators, and health practitioners to design culturally responsive strategies. Situating traditional games at the intersection of culture, community, and health can support the revitalization of indigenous practices while advancing national public health goals.

## Method

### *Research Design*

This study adopts a systematic literature review (SLR) design to synthesize multidisciplinary perspectives on traditional games in Indonesia. An SLR enables a transparent, replicable, and methodologically rigorous process for identifying, evaluating, and integrating relevant literature across diverse academic fields. In the context of this study, the SLR approach facilitates the consolidation of theoretical frameworks, empirical findings, and identified research gaps related to traditional games as culturally embedded health-promotion practices.

The choice of an SLR is particularly appropriate given the fragmented nature of existing research on Indonesian traditional games, which is dispersed across disciplines such as sports science, anthropology, sociology, education, and public health. Rather than producing isolated empirical results, this review aims to integrate these diverse perspectives to develop a comprehensive understanding of how traditional games function simultaneously as physical activities, sociocultural practices, and community-based health resources.

By employing an SLR design, this study also allows for the systematic comparison of methodological approaches, outcome measures, and conceptual frameworks used in prior research. This facilitates the identification of dominant research trends, methodological limitations, and underexplored areas, thereby providing an evidence-informed foundation for future interdisciplinary research and practical implementation. Overall, the SLR design supports the study's objective of positioning traditional games within an integrative sociocultural–public health framework relevant to the Indonesian context.

### *Literature Search Strategy*

The literature search was conducted across multiple academic databases to ensure comprehensive coverage of multidisciplinary research on traditional games and public health. The primary databases included Scopus and ScienceDirect, selected for their extensive indexing of peer-reviewed international journals in sports science, health, social sciences, and education. Google Scholar was used as a complementary search engine to capture relevant publications that may not be indexed in subscription-based databases, particularly interdisciplinary and regionally focused studies.

In addition, ResearchGate was utilized selectively to identify supplementary publications, including preprints or author-shared versions of articles already published in peer-reviewed journals. Studies retrieved from ResearchGate were included only if they could be verified as peer-reviewed and met all inclusion criteria, thereby maintaining methodological rigor.

A combination of keywords and Boolean operators (AND, OR) was applied to retrieve relevant studies. Search terms included: “traditional games,” “traditional sports,” “Indonesia,” “public health,” “physical activity,” “cultural practices,” and “sociocultural.” These terms were adapted across databases to account for variations in indexing and search functionalities. To ensure the inclusion of contemporary research and current public health and educational perspectives, the search was limited to publications published between 2015 and 2025.

This process yielded a limited number of studies that simultaneously addressed Indonesian traditional games from both public health and sociocultural perspectives. Following the screening process based on predefined inclusion and exclusion criteria, a total of seven (7) peer-reviewed articles met the eligibility criteria and were included in the final qualitative synthesis.

Due to variations in database indexing systems, differences in search algorithms, and the interdisciplinary nature of the topic, the initial number of retrieved records could not be consistently quantified across all platforms. Nevertheless, the selection process adhered to systematic screening principles, including relevance assessment, methodological rigor, and contextual focus, to ensure transparency and validity.

### *Inclusion and Exclusion Criteria*

To ensure that the selected studies were relevant, methodologically sound, and aligned with the objectives of this review, explicit inclusion and exclusion criteria were systematically applied throughout the screening process.



The inclusion criteria encompassed peer-reviewed journal articles, conference proceedings, scholarly books, and institutional reports that examined traditional games or culturally embedded physical activities within the Indonesian context or the broader Southeast Asian region. Studies were included if they addressed at least one of the following dimensions: physical health outcomes (e.g., fitness, motor development, physical activity levels), sociocultural aspects (e.g., social cohesion, cultural identity, intergenerational interaction), or educational implications related to traditional games. Eligible studies employed empirical, theoretical, or mixed-method research designs and provided sufficient methodological detail to allow critical appraisal.

The exclusion criteria comprised studies conducted outside the Indonesian or Southeast Asian context, as their cultural and social settings were considered insufficiently comparable. Research focusing exclusively on modern or commercial sports, gym-based fitness programs, or non-cultural physical exercise interventions was excluded. In addition, opinion pieces, editorials, commentary articles, and studies lacking methodological clarity or empirical grounding were omitted from the review.

The systematic application of these criteria ensured that the final corpus of literature provided credible, contextually relevant, and multidimensional insights into the physical, social, and cultural roles of traditional games as health-promoting practices.

### ***Data Extraction***

Data extraction was conducted using a structured and systematic approach to ensure consistency, transparency, and comparability across the selected studies. For each article that met the eligibility criteria, key information was systematically recorded, including author(s) and year of publication, research objectives, study context, methodological design, sample characteristics, and primary findings related to physical, social, emotional, and cultural outcomes of traditional games.

In addition to empirical findings, information on theoretical frameworks, intervention characteristics (where applicable), and limitations identified by the authors was also extracted. This process enabled the identification of recurring concepts, patterns, and methodological tendencies across studies. All extracted data were organized into a comparative matrix, which facilitated cross-study analysis and supported the synthesis of evidence across disciplinary perspectives.

The structured data extraction process provided a comprehensive overview of how traditional games have been conceptualized, implemented, and evaluated within educational, community, and public health contexts. This approach ensured that both outcome-oriented evidence and conceptual contributions were captured, forming a robust foundation for the subsequent thematic analysis and synthesis presented in the results section.

### ***Trustworthiness***

To ensure rigor, transparency, and credibility throughout the review process, several strategies were systematically implemented in accordance with established standards for qualitative and systematic reviews. First, source triangulation was applied by retrieving literature from multiple academic databases and publication types, consistent with Denzin's triangulation principles, to enhance comprehensiveness and interpretive validity (Denzin, 2012).

Second, each included study underwent critical appraisal focusing on methodological clarity, analytical rigor, and relevance to the review objectives. This appraisal was guided by general principles outlined in the Cochrane Handbook for systematic reviews (Egger et al., 2022), alongside established criteria of trustworthiness in qualitative research, including credibility, dependability, confirmability, and transparency (Enworo, 2023; Guba, 1981; Schwandt et al., 2007).

Third, all review procedures, including the search strategy, inclusion and exclusion criteria, and data extraction process were explicitly documented to ensure transparency and replicability. The reporting of the review followed PRISMA guidelines (Moher et al., 2010), while the synthesis process adhered to best practices for thematic synthesis (Thomas & Harden, 2008). Attention was also given to maintaining clear audit trails and systematic coding procedures, as recommended for qualitative rigor (Nowell et al., 2017).

Collectively, these strategies strengthen the trustworthiness of the review by ensuring that interpretations and conclusions are grounded in methodologically sound, transparently documented, and systematically analyzed evidence.

## Results

### Summary of Selected Literature and PRISMA Diagram

To provide a clear and systematic overview of the reviewed studies, Table 1 summarizes the key characteristics of the literature included in this systematic review. The table presents essential information on authorship, research objectives, methodological approaches, and principal findings across physical, social, and cultural dimensions, as well as the research gaps identified in each study. This structured synthesis enables readers to readily grasp the scope, analytical focus, and empirical contributions of the selected literature, while also illustrating the diversity of perspectives and methods represented in the review.

Figure 1 displays a PRISMA-style flow diagram that illustrates the step-by-step process used to identify, screen, and select studies for inclusion. The diagram demonstrates how records retrieved from multiple academic databases were systematically filtered through duplicate removal, title and abstract screening, and full-text eligibility assessment. At each stage, studies that did not meet the predefined inclusion criteria were excluded, resulting in a final set of seven studies retained for qualitative synthesis.

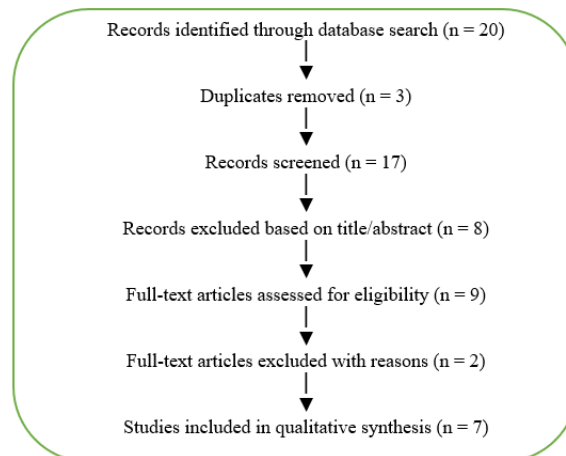
Although the number of included studies is limited, this outcome reflects the application of rigorous inclusion and quality criteria rather than a lack of available literature. The final corpus represents studies that most closely aligned with the review objectives and provided sufficient methodological clarity and analytical depth to support thematic synthesis. The PRISMA diagram thus reinforces the transparency, rigor, and reproducibility of the review process, while Table 3.1 substantiates the analytical foundation upon which subsequent thematic findings are developed. Together, these elements strengthen the credibility and trustworthiness of the evidence base used in this review.

Data:

Table 1. Summary of Selected Literature (2015–2025)

No	Author(s)	Year	Study Focus	Method	Key Findings	Gaps
1	Zulnadila et al.	2025	Traditional games & physical fitness among Indonesian elementary students (Zulnadila et al., 2025)	Systematic review	Traditional games effectively enhance children's physical fitness; play-based approaches align with fundamental motor development.	Only six articles met the criteria; limited scope—time range and databases could be expanded.
2	Damanik et al.	2024	Cultural values in traditional Simalungun games (Damanik & Sinaga, 2021)	Descriptive	Traditional games transmit cooperation, discipline, creativity, and cultural values.	Limited integration of social, cultural, and physical outcomes.
3	Setiawan et al.	2020	11-week traditional sport intervention for youth (Zubaida et al., 2023)	Quasi-experiment	Improved physical fitness and motor skills in youth.	Short intervention duration; small sample size.
4	Lee et al.	2022	Southeast Asian community-based exercise programs (Lee et al., 2022b)	Survey	Culturally relevant exercise programs increase motivation and participation.	Limited data from Indonesian urban contexts.
5	Ahmed, Zuk & Tsuji	2021	Land-based physical activity interventions among Indigenous adults (Ahmed et al., 2021)	Systematic review	Traditional land-based activities improve self-reported health and well-being.	Limited longitudinal research; insufficient integration of traditional and modern health perspectives.
6	Kusuma et al.	2021	A Study of Learning Physical Fitness Activities Based on Traditional Balinese Sports Games for Students' Physical Fitness (Kusuma et al., 2021)	Case study	Improvements in flexibility and stress reduction.	Small-scale study with limited generalizability.
7	Al Munawar et al.	2025	Community-based physical activity literacy program (Al Munawar et al., 2025)	Descriptive	Increased community knowledge, awareness, and motivation for daily activity.	Lack of quantitative health measures and long-term evaluation

Figure 1. PRISMA-style Flow Diagram of Literature Search



### ***Thematic Synthesis of Findings***

The thematic synthesis of the selected studies reveals four interrelated themes that illustrate how traditional games function as culturally embedded practices with implications for physical health, social interaction, and cultural sustainability. These themes emerge consistently across the reviewed literature despite variations in regional contexts, age groups, and research designs.

#### *Physical Health and Motor Development Outcomes*

Across the reviewed studies, traditional games demonstrate measurable contributions to physical health and motor development. Reported outcomes include improvements in cardiovascular endurance, agility, balance, flexibility, coordination, and overall motor proficiency, particularly among children and adolescents. Games involving running, jumping, balancing, and object manipulation, such as *gobak sodor*, *hadangan*, and *egrang batok* were consistently associated with enhanced gross and fine motor skills. Several studies indicate that the intensity of movement generated through traditional games can reach moderate-to-vigorous physical activity levels, comparable to structured exercise programs, thereby supporting their relevance for physical fitness development.

#### *Social Interconnection and Community Cohesion*

Beyond physical outcomes, traditional games strongly facilitate social interaction and collective engagement. The reviewed literature highlights that cooperative and competitive game structures promote teamwork, communication, turn-taking, and shared responsibility. Participation in traditional games fosters social bonding, peer support, and mutual accountability, contributing to a sense of belonging within groups. In school and community settings, these dynamics were found to strengthen interpersonal relationships and encourage inclusive participation, reinforcing the role of traditional games as social practices that extend beyond individual physical performance.

#### *Cultural Transmission and Identity Formation*

A recurring theme across the selected studies is the role of traditional games in transmitting cultural values, moral norms, and collective identity. Traditional games function as informal cultural learning spaces where participants internalize values such as cooperation, fairness, respect for rules, and communal harmony. Intergenerational participation further enhances this function by facilitating the transfer of local knowledge and cultural meanings from elders to younger generations. Through repeated embodied practice, traditional games contribute to the preservation of intangible cultural heritage while reinforcing cultural identity within contemporary social contexts.

#### *Implementation Contexts and Constraints*

The reviewed studies also reveal variation in the contexts in which traditional games are implemented, including formal education settings, community programs, and informal play environments. While school-based implementation, particularly within physical, sports, and health Education (PJOK) is the most frequently reported context, several studies note challenges related to limited instructional time,

teacher preparedness, and curricular alignment. Methodological constraints, such as short intervention durations and small sample sizes, further limit the assessment of long-term impacts. These findings underscore the need for systematic planning, institutional support, and longitudinal evaluation to optimize the integration of traditional games into health promotion initiatives.

## Discussion

The synthesis of findings from the seven selected studies provides a multidimensional understanding of how traditional games operate within Indonesia's sociocultural and public health landscape. Despite variations in regional contexts, participant groups, and research designs, the reviewed studies demonstrate a notable convergence in their conclusions. Traditional games consistently emerge not merely as recreational activities, but as culturally embedded physical practices with the capacity to enhance physical fitness, foster socio-emotional development, and support the preservation of cultural heritage.

Interpreting these findings through sociocultural and public health lenses reveals that traditional games function simultaneously at multiple levels. At the individual level, they contribute to physical and emotional well-being; at the social level, they promote interaction, cooperation, and community cohesion; and at the cultural level, they facilitate the transmission of values, norms, and collective identity. This multidimensional role aligns with established theories of embodied practice, social integration, and culturally grounded health promotion, reinforcing the relevance of traditional games as integrative cultural-health resources rather than isolated physical activities.

This discussion section elaborates on these patterns by situating the empirical findings within broader theoretical frameworks and public health models. It examines how traditional games resonate with sociological and anthropological theories of embodied culture, as well as with health promotion frameworks emphasizing community participation and cultural relevance. Furthermore, this section addresses the implications of the findings for public health policy, education, and community-based interventions, while also identifying methodological and conceptual gaps that warrant further scholarly investigation.

### *Physical Health and Public Health Implications*

The synthesis of evidence across the reviewed studies demonstrates that traditional games constitute effective, culturally grounded physical activity interventions with clear relevance for public health promotion. Despite variations in age groups, regional contexts, and study designs, the findings consistently indicate that traditional games contribute to improvements in physical fitness, motor development, and health-related outcomes, positioning them as viable alternatives to conventional exercise programs.

Across developmental stages, traditional games support fundamental and advanced physical capacities. Among younger children, engagement in traditional play enhances basic motor skills such as running, jumping, throwing, balance, and coordination, which are critical foundations for lifelong physical activity (Ariyanto et al., 2020; Rachman et al., 2025). For older children and adolescents, games such as Benteng, Kasti, and Hadang are associated with improvements in speed, explosive power, agility, flexibility, and cardiorespiratory endurance, with performance gains comparable to structured physical training (Jahrir & Aziz, 2024; Rijal et al., 2025; Santoso et al., 2024). These outcomes indicate that traditional games can generate moderate-to-vigorous physical activity levels sufficient to support health-related fitness.

From a public health perspective, these findings are particularly significant in the context of rising physical inactivity, sedentary lifestyles, and non-communicable disease risk among children and adolescents. Traditional games offer low-cost, accessible, and contextually adaptable forms of physical activity that can be implemented in schools, community spaces, and informal settings without specialized infrastructure or equipment. Their playful and culturally familiar nature enhances intrinsic motivation, enjoyment, and sustained participation, addressing common barriers associated with conventional exercise-based interventions.

Importantly, traditional games also support preventive health strategies by integrating physical exertion with social interaction and emotional engagement. Unlike individualistic fitness routines, these ga-

mes promote peer support, cooperation, and informal accountability, which are known to facilitate adherence and long-term behavior change. In this sense, traditional games align with community-centered and culturally responsive public health approaches that emphasize participation, social capital, and local relevance.

Nevertheless, the public health implications of these findings must be interpreted with caution due to methodological limitations in the existing literature. Many studies rely on small samples, short intervention durations, and limited use of control groups, constraining generalizability and causal inference. Despite these limitations, the convergence of evidence across diverse contexts suggests that traditional games represent promising, culturally embedded tools for promoting physical activity and supporting early preventive health efforts. Strengthening the evidence base through larger-scale, longitudinal, and methodologically rigorous studies will be essential to fully establish their population-level impact.

### ***Sociocultural Significance and Community Cohesion***

Beyond their physical benefits, traditional games function as sociocultural practices that reinforce community cohesion, collective identity, and the transmission of cultural values. The reviewed studies consistently indicate that traditional games are embedded within local social structures and cultural meanings, operating as informal social institutions through which norms, moral values, and patterns of interaction are enacted and sustained.

From a sociological perspective, these findings align with Bourdieu's concept of habitus, in which bodily practices reflect and reproduce socially shared dispositions, norms, and values (Bourdieu, 2020). Through repeated participation in rule-based play, individuals internalize cooperation, discipline, fairness, and respect for others as embodied forms of social learning. Traditional games therefore function not merely as recreational activities but as sites of value transmission where cultural norms are learned through action rather than instruction.

Consistent with Durkheim's emphasis on collective rituals, traditional games also serve to strengthen social solidarity and collective consciousness (Durkheim, 2016; Hudain et al., 2025). Shared physical engagement, coordinated movement, and mutual dependence during play foster emotional energy, trust, and a sense of belonging. These dynamics are particularly evident in games that require teamwork and strategic cooperation, reinforcing prosocial behavior and communal responsibility within both school and community settings.

From the perspective of symbolic anthropology, traditional games can be understood as cultural texts that convey ethical, spiritual, and narrative meanings (Geertz, 1973; Zalmansyah et al., 2023). This is illustrated in contexts such as Balinese traditional games grounded in the philosophy of Tri Hita Karana, where physical activity embodies harmony between humans, nature, and the spiritual real (Kardiawan, 2013). In such cases, play operates as a medium through which cosmological beliefs and cultural worldviews are enacted and sustained through embodied practice.

Importantly, traditional games also contribute to intergenerational interaction and cultural continuity. Their collective and inclusive nature facilitates the transmission of knowledge, values, and local wisdom from older to younger generations, counteracting cultural erosion associated with modernization and digitally mediated lifestyles. As low-cost and adaptable practices, traditional games support social inclusion by enabling participation across age groups, genders, and socioeconomic backgrounds, thereby strengthening community resilience and social capital.

Collectively, these findings position traditional games as sociocultural resources that integrate physical activity with cultural identity and social cohesion. Rather than isolated educational or recreational tools, traditional games emerge as culturally embedded practices that sustain communal bonds, reinforce shared values, and support the continuity of local cultures within contemporary Indonesian society.

### ***Policy, Education, and Implementation Challenges***

The synthesis of findings underscores the strategic potential of traditional games as culturally grounded instruments for public health promotion and educational development. However, translating this potential into sustainable practice requires careful consideration of policy alignment, institutional capacity, and implementation challenges. As several public health scholars emphasize, culturally relevant

physical activity interventions are most effective when they are embedded within supportive policy environments and local social systems rather than implemented as isolated programs (Green & Kreuter, 2005; Sallis et al., 2015).

From a policy perspective, traditional games align closely with national and global agendas promoting physical activity, preventive health, and community-based interventions. The World Health Organization consistently highlights the importance of culturally adapted and community-centered strategies in addressing physical inactivity and non-communicable disease risk (WHO, 2020; World Health Organization, 2022). Traditional games, which integrate physical movement with social participation and cultural meaning, exemplify what Kahn and colleagues describe as “context-sensitive health promotion,” where behavior change is supported by social norms and collective practices rather than individual motivation alone (Kahn et al., 2002). Despite this alignment, explicit policy frameworks that formally recognize traditional games as legitimate public health interventions remain limited, constraining their scalability and institutional sustainability.

In educational contexts, traditional games offer substantial pedagogical value by integrating physical, cognitive, social, and moral development. Educational theorists argue that embodied and socially mediated learning environments are particularly effective for fostering holistic development, especially among children and adolescents (Kirk, 2009; Vygotsky & Cole, 1978). When embedded within physical education curricula and character education programs, traditional games can support not only physical literacy but also cooperation, empathy, and ethical reasoning. However, as Kirk and Bailey et al. caution, the educational impact of physical activity depends heavily on instructional design and teacher competence (Bailey et al., 2009; Kirk, 2009). The reviewed studies often provide limited detail regarding teacher training, pedagogical strategies, and assessment mechanisms, suggesting that traditional games are frequently treated as informal or supplementary activities rather than as intentionally designed learning experiences.

At the level of implementation, scholars in community health and cultural studies emphasize that sustainability depends on social ownership and intergenerational engagement (Geertz, 1973). Urbanization, reduced access to open spaces, academic pressures, and the dominance of digital entertainment present significant barriers to sustained traditional play, particularly in urban environments. Although traditional games are adaptable and low-cost, their continued practice requires active involvement from families, schools, and community leaders. Programs that overlook cultural custodianship and local participation risk becoming short-lived or culturally disconnected, a concern frequently raised in community-based intervention research (Minkler & Wallerstein, 2011).

Methodological limitations in the existing evidence base further complicate policy and educational uptake. Many studies rely on small samples, short intervention periods, quasi-experimental designs, or single-group analyses, limiting causal inference and generalizability. Public health methodologists stress that without longitudinal and comparative evidence, culturally grounded interventions often struggle to gain policy legitimacy despite promising outcomes (Victora et al., 2004). In addition, uneven regional representation and variability in outcome measures, particularly for sociocultural and emotional dimensions, restrict cross-study synthesis and weaken the evidentiary foundation required for large-scale adoption.

These challenges point to clear priorities for future research and implementation. Scholars in physical activity and public health advocate for multi-level, interdisciplinary approaches that integrate sports science, anthropology, education, and policy studies to capture the full complexity of culturally embedded practices (Sallis et al., 2015). Longitudinal and comparative studies across regions and cultural traditions are essential to identify transferable principles while respecting local specificity. Equally important is research on implementation processes, including teacher professional development, curriculum integration, governance models, and policy alignment.

Finally, innovation must be approached with cultural sensitivity. While digital or hybrid adaptations of traditional games may enhance relevance for contemporary youth, cultural scholars caution that modernization should not dilute symbolic meaning or communal values embedded in traditional practices (Casini, 2022; Geertz, 1973). Ensuring inclusivity for marginalized groups, children with disabilities, and communities with limited resources is also essential for equitable impact. By addressing these policy, educational, and methodological challenges, traditional games can be repositioned not only as cultural



heritage practices but as scalable, evidence-informed strategies for advancing public health, education, and sociocultural resilience in Indonesia.

## Conclusions

This systematic review synthesizes evidence from selected studies (2015–2025) to provide an integrated understanding of the roles of traditional games within Indonesia's public health, educational, and sociocultural contexts. The findings demonstrate that traditional games are not merely recreational activities, but culturally embedded, multidimensional practices that contribute to physical fitness, motor development, socio-emotional competencies, and the reinforcement of cultural identity. Viewed through interdisciplinary lenses, traditional games function as hybrid cultural–health systems that align bodily movement with social values, communal interaction, and cultural continuity.

By positioning traditional games within ecological public health and sociocultural frameworks, this review highlights their strategic relevance as low-cost, contextually appropriate, and culturally resonant interventions. Their integration into school-based physical education, community health initiatives, and culturally informed urban play policies offers a viable pathway for promoting physical activity while simultaneously strengthening social cohesion and preserving local heritage. Philosophies such as *Tri Hita Karana* and values of *gotong royong* further illustrate how traditional games embody locally grounded approaches to holistic well-being.

Although the available evidence remains methodologically diverse and regionally uneven, the overall synthesis reaffirms the significance of traditional games as sustainable resources for advancing public health, education, and cultural resilience. For educators, policymakers, and public health practitioners, traditional games present a unique opportunity to bridge cultural preservation with health promotion, contributing to a healthier, socially connected, and culturally resilient Indonesian society, while also providing evidence to support culturally grounded physical activity policies in Indonesia and comparable Global South contexts.

## Authors' Contributions

All authors have read and agreed to the published version of the manuscript. They drafted and participated in contributing to the text and the manuscripts together, discussed all parts of this paper, edited and revised the earlier version, and approved the final version of the paper to be published.

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