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Review Paper

Games of Aging: A Literature Review on Traditional Tabletop Games as a Site of Physical Maintenance, Mental Vitality and Social Continuity

Lulu Feng[1,2], Khadijah Alavi[1,*], Azahah Abu Hassan Shaari[1], Jixiang Peng[1,3] & Yun Sun[1,4]

[1]Centre for Research in Psychology and Human Well-Being, Faculty of Social Science and Humanities, Universiti Kebangsaan Malaysia, 43600 Bangi, Selangor, Malaysia
[2]Panzhihua University, 617000 Panzhihua, Sichuan, China
[3]Chongqing Business Vocational College, 401331, Chongqing, China
[4]College of Modern Economics & Management JUFE, 330000 Nanchang, Jiangxi, China

* Corresponding author: khadijah@ukm.edu.my

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Abstract: This study systematically examines the potential of traditional tabletop games as a low-cost, non-invasive psychosocial intervention to promote active and healthy aging. Against the backdrop of global population aging, older adults increasingly face challenges such as cognitive decline, social isolation and reduced physical mobility. While existing research acknowledges the value of tabletop games, it often focuses on isolated outcomes and suffers from methodological limitations-including non-standardized measurement tools, small sample sizes and short intervention durations-which restrict comprehensive conclusions. To address these gaps, this review adopts an interdisciplinary approach, integrating evidence from gerontology, cognitive psychology, public health and game studies. We propose a conceptual model that links specific game mechanics to health-promoting behaviours and aging-related outcomes, framing tabletop gaming not merely as leisure but as a culturally embedded practice with psychosocial benefits. Findings indicate that regular engagement with such games can enhance fine motor skills and hand and eye coordination, slow the progression of cognitive decline, particularly in memory and executive functions and strengthen social connections, thereby reducing feelings of loneliness. The study concludes that traditional tabletop games represent a highly accessible, enjoyable and scalable intervention that can effectively complement formal health and social services. They offer a practical, sustainable strategy to mitigate complex aging-related challenges, especially in resource-limited settings and community-based care environments.

Keywords: Active Aging; traditional tabletop games; physical maintenance; mental vitality; social continuity.

Introduction

Population ageing has emerged as a critical global public health challenge. According to the World Health Organization (2022), by 2050, the number of people aged 60 and above will double to 2.1 billion. In particular, the population aged 65 and over is projected to reach 400 million, accounting for approximately 25% of the global population. This demographic shift is expected to place substantial economic and caregiving burdens on societies worldwide (McGrath et al., 2020; Wang et al., 2022; Rijeng et al., 2024), prompting growing concern over the health and well-being of older adults.

As individuals age, they often encounter a range of health-related challenges, including cognitive decline, psychological issues (such as depression and anxiety) and social isolation (Boisseau et al., 2002;

Dartigues et al., 2013; Shi et al., 2023). These problems not only diminish their quality of life but also impose significant pressures on families and healthcare systems. Consequently, there is an urgent need to explore cost-effective and accessible health interventions. This has become a key research focus in the fields of geriatric medicine and public health (Phiri et al., 2024; Weatherly et al., 2009).

This study aims to construct a multidimensional analytical framework using a systematic literature review approach to examine the impact of traditional tabletop games-referred to as PMCC, which includes Mahjong, chess and card games-on the well-being of older adults (Du et al., 2025). This research seeks to uncover the potential of traditional tabletop games as a supportive tool for healthy ageing. It also aims to provide theoretical insights and methodological guidance for future studies and practical applications. To ensure methodological rigor and transparency, this study have adhered strictly to the PRISMA guidelines for systematic retrieval, screening and evaluation of relevant literature.

Literature Review

This study is grounded in Active Aging Theory (Bar-Tur, 2021; Johnson & Mutchler, 2014), which emphasizes the enhancement of older adults' quality of life by optimizing three core domains: health, social participation and security. According to this theoretical framework, aging should not be viewed merely as a stage of decline, but as a dynamic process where individuals are supported to remain active contributors to society. In line with this perspective, existing studies have demonstrated that traditional tabletop games can play a valuable role in promoting various aspects of health among older adults. For example, these games can foster physical activity (such as improving hand-eye coordination and fine motor skills), stimulate cognitive functioning (including memory, attention and strategic thinking) and enhance social engagement (through cooperative tasks, competition and shared experiences) (Gauthier et al., 2019; Noda et al., 2019). These multidimensional health benefits make tabletop games an increasingly relevant tool in aging-related health promotion.

However, a significant limitation in the current literature is that most studies tend to focus on a single dimension of health benefits, often isolating either cognitive function, emotional well-being, or social behavior without integrating these aspects into a cohesive framework. Moreover, there is a lack of theoretical clarity and absence of a systematic analytical model that explains how specific game elements contribute to different health outcomes, particularly across the physical, psychological and social domains (Wang et al., 2022; Ammar et al., 2024). This fragmented approach limits our understanding of the mechanisms of action involved in tabletop game interventions and makes it difficult to translate findings into interdisciplinary practical applications, such as program design, policy implementation, or clinical use.

In response to these gaps, the present study aims to synthesize both theoretical foundations and empirical findings related to active aging through a systematic literature review, with the goal of constructing a comprehensive and dynamic analytical framework. This framework seeks to reveal the complex associations between specific game elements (e.g., rules, goals, player interaction, game mechanics) and corresponding health behaviours. Specifically, this study addresses the question: How do different game elements affect multidimensional health behaviours through specific intervention pathways?

To answer this, we propose the "Game Element-Health Behaviour" Mapping Model, developed from the synthesis of existing evidence. This model identifies and categorizes the mechanisms by which design characteristics of tabletop games influence older adults' health outcomes across the physical, psychological and social dimensions. Ultimately, this model not only expands upon the foundational principles of Active Aging Theory but also offers a practical and operational tool for the design, evaluation and implementation of future game-based interventions targeted at the aging population.

Methodology

1. Research Approach

The objective of this research is to systematically review and synthesize existing studies on traditional tabletop games in the context of aging, focusing on their roles in promoting physical maintenance, mental vitality and

social continuity among older adults. To achieve this goal, this study adopts the Systematic Literature Review (SLR) approach, which is widely recommended in health and social science research (Korsgaard, 2013).

Compared to narrative literature reviews, the SLR method helps reduce researcher bias by applying a transparent, replicable and comprehensive search and analysis process (Phillips et al., 2015). This approach improves the validity, accuracy and generalizability of findings by ensuring that the selection, evaluation and synthesis of studies follow clearly defined criteria (Wilson et al., 2017).

By employing the SLR method, this study aims to map current research trends, identify gaps in the literature and propose future research directions regarding the health and social benefits of traditional tabletop games for the aging population.

2. Research Method

This study was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 statement (Page et al., 2021), which provided the foundational framework for executing the systematic review. Adherence to these established guidelines ensured rigorous methodological transparency and comprehensive documentation throughout all phases of the review process, thereby enhancing the reliability and reproducibility of the study findings.

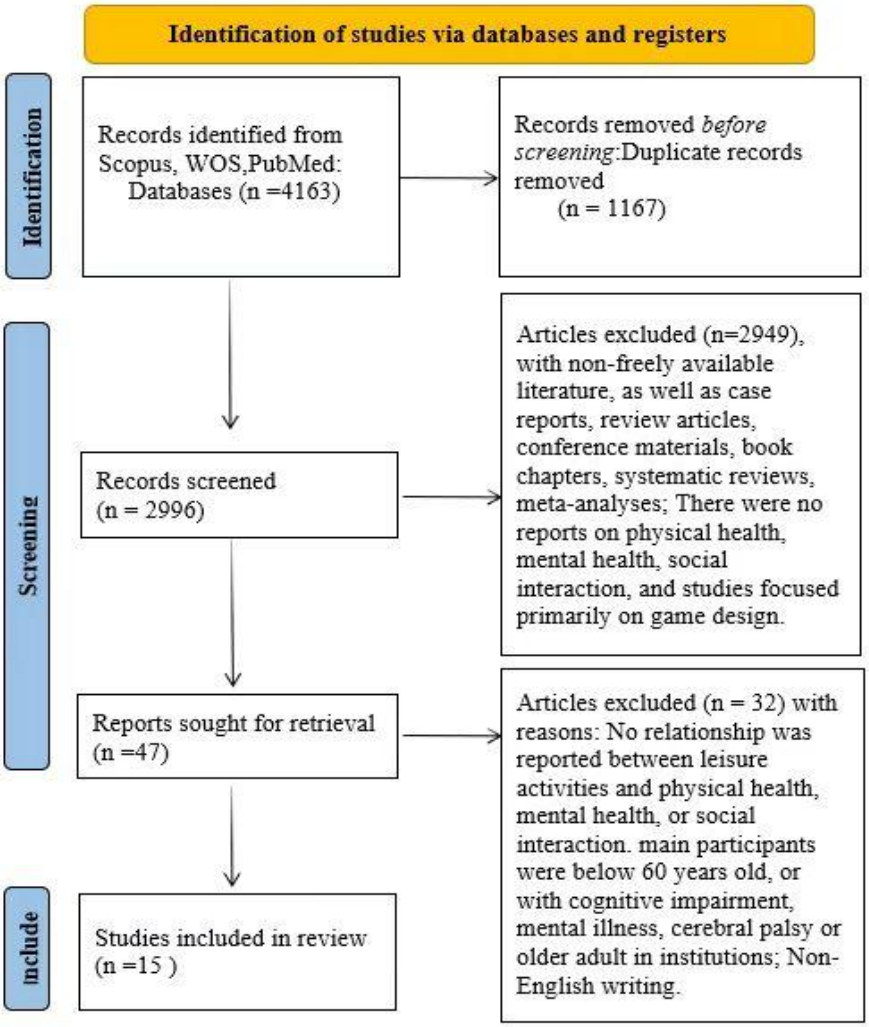

Figure 1. PRISMA Flow Diagram

The PRISMA framework incorporates a standardized set of reporting criteria accompanied by a four-phase flow diagram (Moher et al., 2009), which has been widely endorsed for strengthening the methodological rigor, replicability and overall quality of systematic reviews (Liberati et al., 2009). The

decision to employ this framework was driven by three principal considerations: (1) its requirement for precise formulation of research questions utilizing PICO elements; (2) its provision of a standardized protocol that ensures objectivity and transparency in the study selection process (Page et al., 2021); and (3) its capacity to minimize the risk of evidence omission through a structured, replicable search strategy.

Although originally developed within medical research, the PRISMA guidelines have garnered substantial traction across a diverse range of academic disciplines, including psychology, social sciences and public health (Pahlevan-Sharif et al., 2019). This broad applicability underscores the versatility and methodological robustness of PRISMA as an instrument for evidence synthesis in varied research contexts.

In implementation, the present review meticulously followed the PRISMA protocol, systematically carrying out the stages of identification, screening, eligibility assessment and final inclusion of relevant studies. A detailed depiction of this process, illustrating the flow of information and the reasons for exclusion at each stage, is provided in Figure 1 (the PRISMA flow diagram), thereby offering a transparent and accountable narrative of the literature selection procedure.

1. Identification

In this phase, a comprehensive and systematic advanced search was performed across three major academic databases-Web of Science, Scopus and PubMed-which are widely recognized for their extensive coverage of peer-reviewed literature in the fields of health, social sciences, psychology and gerontology. To ensure broad coverage and inclusion of relevant studies, a carefully designed set of expanded keywords was employed. These keywords targeted three conceptual clusters: older adults, traditional tabletop games and well-being-related outcomes.

Here is a full set of keywords: (aged OR elder* OR geriatr* OR old OR older adult OR older people OR older person OR senior) AND (board game OR card game OR checkers OR chess OR Go game OR Mahjong OR Monopoly OR poker OR puzzle OR tabletop game) AND ((active ageing OR healthy ageing OR productive ageing OR ageing well OR optimal ageing OR positive ageing OR successful ageing OR healthy aging OR active aging) OR (active OR healthy OR successful OR productive OR well OR optimal) OR (health* OR behav* OR wellbeing OR Prevent* OR social OR exer* OR acti* OR edu* OR engagement OR habit* OR affect* OR mood OR emotion* OR self-efficacy OR self-esteem OR cognitive OR physical OR psychological)).

The publication time frame was restricted from January 1, 2013, to January 1, 2025, allowing the study to capture both foundational literature and the most recent developments. The actual search was conducted on January 1, 2025, ensuring that the review included up-to-date studies within the specified time window. The initial search process yielded a total of 4,163 potentially relevant articles.

2. Screening

During the preliminary screening, all article titles were reviewed, 1,167 duplicate records and clearly unrelated entries were removed. This left a refined pool of 2,996 articles for further examination. In the screening phase, the abstracts of these articles were reviewed thoroughly. Many studies were excluded at this stage due to several reasons, including limited access (i.e., not freely available), lack of original research (e.g., case reports, review articles, conference papers, book chapters, systematic reviews and meta-analyses) and lack of relevance to the key outcomes. Specifically, many studies failed to address the physical, mental, or social benefits of tabletop gameplay. Others focused primarily on the design, mechanics, or educational elements of games, rather than their empirical health impacts. After this round of screening, 47 articles remained for full-text evaluation, representing studies that at least met the basic thematic relevance.

3. Eligibility

In this phase, the remaining 49 articles (a slight discrepancy in counts due to overlap resolution and late exclusions) were subjected to full-text review by the research team. The authors independently assessed the methodological quality, thematic focus and population criteria of each article. The inclusion criteria were explicitly defined: studies had to provide empirical evidence linking tabletop games or leisure activities to

measurable outcomes in physical health, mental health, or social interaction among older adults; participants had to be aged 60 or above; and studies must exclude individuals with cognitive impairment, severe mental illness, cerebral palsy, or those residing in institutional settings. Additionally, only studies written in English were considered. As a result of this eligibility assessment, 32 articles were excluded for not meeting one or more criteria and 15 articles were ultimately retained for the final stage of the review.

4. Inclusion

In the final phase, the remaining 15 studies underwent a final quality assessment and systematic data extraction process. Key information, including study design, participant characteristics, the type of game employed and the associated health or social outcomes, was systematically charted using a standardized Excel framework. Each study was evaluated for its methodological rigor, clarity of outcome measures and relevance to the research questions. The selected studies collectively provided robust empirical evidence on the role of traditional tabletop games in enhancing the health, emotional well-being and social connectedness of older adults. These findings serve as the analytical foundation of this systematic review and contribute meaningful insights into the potential of low-cost, accessible leisure interventions for aging populations. The evidence synthesized here not only informs current academic discourse but also offers practical implications for healthcare practitioners, social workers and policy makers involved in elderly care and wellness promotion.

The Findings

Among the studies reviewed, 33.3% reported that tabletop games, as a simple and easy leisure activity, has a positive effect on enhancing the coordination ability of older adults and improving the balance ability of older adults. Tabletop games may improve the balance of older adults, which accounts for 6.7% in this study. The randomized controlled trials by Ammar found that an eight-week interactive physical-CT program based on board games improved cognitive function, reduced fall risk by improving physiological fall risk factors such as body sway and speed processing, showing tabletop games may help reduce the risk of falling (Ammar et al., 2024). 6.7 percent studies found that tabletop games can improve the ability of older adults to coordinate their eyes and hands. The older adults who have long played mahjong have better reaction time, motion time and finishing accuracy (Tsang et al., 2016). However, as Kim (2020) wrote, it is also important to note that other forms of physical activity are needed.

Research shows that tabletop game activity may indirectly promote physical health by enhancing hand-eye coordination and reducing the risk of functional disability (Guardabassi et al., 2024). Studies found that older adults who often play mahjong, chess and card games have a lower incidence rate of shoulder pain (He et al., 2024). In addition, studies found that playing mahjong can improve sleep quality and duration (Lee et al., 2020). In this review, 80% of the studies showed that tabletop games had an important impact on the psychological health of older adults. A total of 26.7% of the studies showed that tabletop games significantly improved the emotional state of older adults. Spanish studies have shown that older adults who participate in tabletop games experienced significantly improved emotional states, with a notable reduction in the Geriatric Depression Scale (GDS-SF) scores (Cibeira et al., 2021).

Italian researchers have found that the number of tabletop games can significantly improve the well-being of older adults, especially in low-level and middle-level difficult games, which are more obvious (Guardabassi et al., 2024). Chinese studies have also shown that tabletop games such as mahjong and other tabletop games can improve the life satisfaction of older adults (Lee et al., 2020). The qualitative study of American immigrants in the United States has found that mahjong as an entertainment and recreational activity helps to pass time, relieve boredom and play a positive role in emotional conditioning (Kim, 2020). A 53.3% study shows that tabletop games can effectively improve the cognitive function of older adults. Spanish researchers have found that a 12-week game of playing chess can significantly improve the cognitive state of older adults, especially in Montreal cognitive assessment (MoCA) test shows a clear improvement (Cibeira et al., 2021). Japanese studies have shown that GO training helps improve visual working memory, especially face-to-face interaction (Iizuka et al., 2019).

Extensive cross-sectional research in China (7308 older adult) shows that， older adults who are often involved in cards or mahjong are better at the cognitive function test, especially in terms of attention, computing and language ability (Wang et al., 2022). In addition, the 10-year longitudinal study confirmed further: There is a positive long-term relationship between mahjong playing frequency and older adult cognitive function (Zhu et al., 2024):

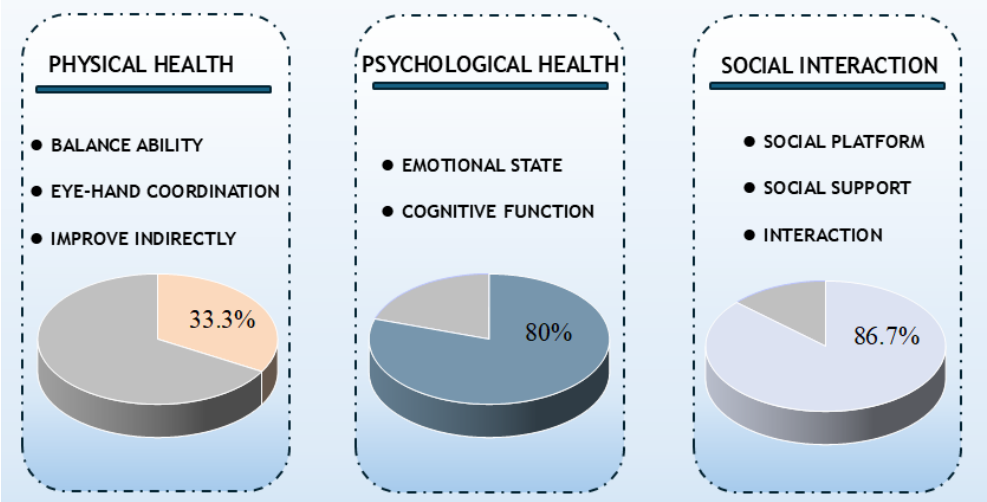

Figure 2. Impacts of Tabletop Games on Older Adults' Well-being

Articles in this review show that 86.7 percent of tabletop games as a social activity not only improves social participation in older adults, but also promotes language communication and enhanced social support, which has a positive effect on social integration of older adults. A 26.7% study shows that tabletop games provide an important social platform for older adults. Japanese researchers have found that older adults who play the game on the outside are more active in social interaction than the older adults who use tablets alone, suggesting that the face-to-face interaction between tabletop games is an important part of its social value (Iizuka et al., 2019). Spanish studies have also observed that more social behaviour, such as mutual help and social interaction, can be an important way for chess training to improve the quality of life (Cibeira et al., 2021). Chinese researchers have found that older adults involved in mahjong, chess and card games (PMCC) tend to have broader social networks and higher frequency social interaction (He et al., 2024). Another longitudinal study, based on the Chinese older adult health care study (CLHLS), further confirms that playing mahjong as a social activity can promote language communication and social platform (Zhu et al., 2024).

Tabletop games not only increase the social frequency of older adults but also provides them with social support and emotional communication opportunities. This view is supported by the 20% of articles in this study and the cluster randomized controlled trial in NingXia shows that board game can promote social interaction between older adults, provide social support and emotional comfort, thereby reducing loneliness (Shi et al., 2023). Italian researchers have found that the older adults involved in the tabletop games show increased social interaction and reduced loneliness, which is closely related to the ascension of older adult happiness (Guardabassi et al., 2024). 13.3% of the study found that the tabletop games, as an intergenerational activity, can promote interaction and communication between different age groups.

A 20-year study in France suggests that tabletop games can promote social interaction and intergenerational communication, which can be rich in the social life of older adults (Dartigues et al., 2013). For the older adult of different cultural backgrounds, the traditional tabletop games also have the meaning of cultural inheritance. The qualitative study of Chinese immigrants in the United States found that the important activities in the Chinese culture, enhance interpersonal relationships, also help elderly immigrants maintain cultural connections, which have special significance for their psychological adaptation and cultural identification in foreign countries (Kim, 2020).

Discussion

This review includes 15 related papers, although the number is small, but the theme has attracted global attention. The study, which has been studied across Asia, Europe, the Middle East and North America, has been linked to a higher proportion of Asian countries, especially China, which may be related to important positions in Chinese culture (Cibeira et al., 2021; Kim, 2020). Tabletop games have an international study of older adults. It is worth noting that this is a relatively small area of research.

Table 1. Game elements - healthy behaviour mapping model

Game Element	Health behaviour	Intervention path	Articles support
Physical Characteristic	Improve Balance ability, eye-hand coordination, other indirectly benefits	Improve physical function and reduce risk of fall	Tsang et al., 2016; Ammar et al., 2024
Psychological Characteristic	Enhance sleep quality, Immersive experience, instant feedback	Reduce anxiety stress, improve psychological health, enhance confidence and self-efficacy	Cibeira et al., 2021; Zhu et al., 2024
Social Interaction	Enhancing social connections, reduce loneliness	Enhance social behavior and promote social participation	Wang et al., 2022; Iizuka et al., 2019
Rule Complexity	Enhanced execution, function, attention, visual working memory	Improve cognitive function and delay cognitive decline	Cibeira et al., 2021; Iizuka et al., 2019

Notes: These findings strongly support the use of tabletop games in health interventions for older adults, aligning with the WHO active aging model that stresses physical, psychological (including cognitive) and social well-being.

Although there were more articles in the study of children and young people, there were relatively few studies of older adults. In terms of time distribution, these studies have increasing in recent years between 2013 and 2024. This trend suggests that the academic focus on tabletop games as a non-drug intervention to promote older adult health is rising. Most studies have focused on the effects of tabletop games on the health of older adults, including physical and psychological health (Ammar et al., 2024; Shi et al., 2023; Guardabassi et al., 2024), little research on the influence on the social interactions (Zhu et al., 2024; Guardabassi et al., 2024).

In the study, we found that different game elements of tabletop games, have different but positive effect on older adults in physical health, psychological health and social interaction. First, tabletop games have a positive effect on the health behaviour of older adults through some physical characteristics reduces the risk of fall by improving the coordination, balancing ability and reaction speed of the hand, improving the physical function (Tsang et al., 2016; Ammar et al., 2024). Second, the psychological characteristic of tabletop games improves the psychological health and cognitive function by improving the quality of sleep, providing immersing experience and instant feedback, reducing anxiety and stress (Lee et al., 2020; Cibeira et al., 2021; Wang et al., 2022). The feedback mechanism in the game enhances the confidence and self-efficacy of older adults and further promotes problem resolution (Zhu et al., 2024; Estrada-Plana et al., 2021).

Third, social interaction is another important element in tabletop games, which improves the psychological health and social participation of older adults by enhancing social connection and reducing lonelinesser, which effectively alleviates the huge pressure that children face when supporting their parents, as it makes it easier for them to provide emotional support. (Wang et al., 2022; Iizuka et al., 2019; Alavi et al., 2011). In addition, rule complexity is one of the core elements of tabletop games, which improves the cognitive function of older adult by providing cognitive challenges to slow cognitive decline and reduce the risk of dementia (Cibeira et al., 2021; Iizuka et al., 2019; Dartigues et al., 2013).

Conclusion

In conclusion, this study developed the "Game Elements-Healthy Behaviour" Mapping Model to systematically explore how traditional tabletop games influence the health and well-being of older adults. Drawing on a comprehensive systematic literature review, it highlights that tabletop games are not merely

leisure activities but meaningful interventions that support multiple dimensions of healthy aging. Unlike much of the existing literature that isolates cognitive training or social interaction, this study offers an integrated perspective encompassing physical, mental and social domains. Grounded in Active Aging Theory, it provides strong evidence that tabletop games can serve as a holistic and effective strategy for aging well.

Furthermore, the findings show that traditional tabletop games offer a low-cost, accessible and culturally relevant means to promote older adults' health. They stimulate cognition, foster emotional engagement, strengthen social bonds and even encourage light physical activity-all essential to healthy aging. Their adaptability across settings-from community centres and senior clubs to residential care facilities-makes them a flexible and scalable approach for diverse aging populations.

Given the increasing demographic pressure of population aging on public health systems worldwide, policymakers and healthcare providers should recognize the value of tabletop games as part of a comprehensive strategy to promote healthy aging. These games can be integrated into national or local-level health promotion initiatives, serving as preventive tools that foster active participation, reduce isolation and enhance emotional well-being. Moreover, the use of culturally familiar games-such as mahjong, chess, or traditional card games-can improve acceptance and engagement among older populations.

Furthermore, this study highlights the urgent need to develop more tabletop games specifically designed for older adults. It calls for a reimagining of aging not as a period of decline, but as a dynamic phase where structured play and meaningful interaction can enhance life quality and dignity.

Most importantly, this systematic review directly informs and lays the groundwork for our future empirical research. Based on the conceptual model and gaps identified here, our next step will be to design and conduct a mixed-methods intervention study. This subsequent research will empirically test the "Game Elements-Healthy Behaviour" Mapping Model proposed in this paper through a randomized controlled trial (RCT). We plan to recruit community-dwelling older adults to participate in a structured tabletop gaming program over several months. Quantitative measures (e.g., cognitive tests, scales for psychological well-being, social connectedness metrics) will be used to quantitatively assess the health outcomes, while qualitative interviews will provide deeper insights into the participant experiences and the mechanisms of change. This future study aims to move from theoretical framework to evidence informed practice, generating robust data to support the targeted design of game supported interventions for aging populations.

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Informed Consent Statement: This research was approved by the Research Ethics Secretariat of National University of Malaysia on May 28, 2025, with the approval number being UKM PPI/111/8/ JEP-2025-180.

Conflicts of Interest: The authors declare no conflict of interest.

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