



Understanding the Role Of Pickleball in Promoting Healthy Aging: a Qualitative Study Of Elderly Players in Indonesia

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Abstract. *This qualitative study explores the role of pickleball in promoting healthy aging among elderly players in Indonesia. As the global elderly population continues to rise, the need for effective strategies to enhance physical, mental, and social well-being in older adults becomes more pressing. Pickleball, a low-impact sport that combines elements of tennis, badminton, and table tennis, has gained significant popularity worldwide due to its accessibility, moderate intensity, and low risk of injury. This study employed a phenomenological approach, conducting semi-structured interviews, participant observations, and focus group discussions with 19 elderly pickleball players aged 50 and above in Surabaya, Indonesia. The findings suggest that regular participation in pickleball leads to significant improvements in physical health, including enhanced strength, balance, flexibility, and cardiovascular endurance. The sport also has positive effects on mental well-being, helping to reduce stress, improve cognitive function, and provide a sense of purpose and accomplishment. Socially, pickleball fosters community engagement, reduces feelings of isolation, and strengthens intergenerational relationships, allowing older adults to connect with younger generations. However, barriers such as physical limitations, limited access to facilities, and unfavorable weather conditions hinder consistent participation. In conclusion, pickleball is a valuable and effective activity for promoting healthy aging by providing a holistic approach to improving the quality of life in older adults. Policymakers, healthcare providers, and community leaders are encouraged to invest in pickleball infrastructure, promote awareness, and support active aging initiatives to further enhance the well-being of elderly populations. This version now has 253 words, making it more closely aligned with your desired word count.*

Keywords : *Elderly Well-being, Healthy Aging, Physical Activity, Pickleball, Social Engagement*

1. INTRODUCTION

In recent decades, the global population has experienced a significant demographic shift as the proportion of elderly individuals continues to rise (Wei et al., 2019). The increase in the elderly population has prompted urgent calls for innovative strategies to promote healthy aging (Surya et al., 2023). Physical activity has emerged as a cornerstone for enhancing the quality of life among older adults, as it not only supports physical health but also improves psychological well-being (Augustynowicz et al., 2021). Among the various physical activities available, sports that combine moderate intensity, social interaction, and accessibility hold significant potential for elderly populations. One such emerging sport is pickleball—a dynamic, low-impact game that has gained substantial popularity among older adults (Casper et al., 2023). This study seeks to investigate the effects of pickleball training on the physical aspects of elderly players, providing insights into how this sport can contribute to healthy aging (Heo et al., 2018).

Aging is accompanied by a gradual decline in physical abilities, including muscle strength, flexibility, and cardiovascular endurance (Visser et al., 2019). Additionally, age-related conditions such as arthritis, osteoporosis, and reduced balance increase the risk of falls and injuries, further limiting mobility (Feng et al., 2023). These physical challenges are often exacerbated by sedentary lifestyles, which are alarmingly prevalent among older adults. There are more elderly population does not meet the recommended levels of physical activity, placing them at greater risk for chronic diseases such as diabetes, hypertension, and cardiovascular disease (Saha et al., 2021).

Pickleball, a sport that combines elements of tennis, badminton, and table tennis, has rapidly gained popularity among older adults due to its unique characteristics (Cerezuela et al., 2023). The game is played on a smaller court than tennis, with a lightweight paddle and a perforated plastic ball, making it less physically demanding while still providing a moderate-intensity workout (Smith et al., 2018). The relatively simple rules and low risk of injury make pickleball an attractive option for elderly players, including those with limited athletic experience (West et al., 2024).

Regular participation in pickleball has been associated with numerous physical benefits for elderly players (Ryu et al., 2017). The sport involves a combination of aerobic and anaerobic movements, including short sprints, lateral movements, and hand-eye coordination exercises (Wintroub, 2009). These activities contribute to improved cardiovascular fitness, muscle strength, and flexibility, which are essential for maintaining independence and reducing the risk of falls (Smith et al., 2018). Studies have shown that pickleball players exhibit higher levels of physical activity compared to their sedentary peers, with measurable improvements in body composition, blood pressure, and balance (Wray et al., 2021).

Despite the growing popularity of pickleball, there is a lack of comprehensive research on its specific effects on physical fitness of elderly players. Most existing studies have focused on general physical activity or other sports, leaving a gap in the literature regarding the unique benefits of pickleball. This study aims to address this gap by systematically investigating the impact of pickleball training on the physical aspects of elderly players. By examining quantitative outcomes, this research seeks to provide evidence-based recommendations for integrating pickleball into health promotion programs for older adults. The primary objective of this study is to evaluate the physical effects of pickleball training on elderly players. Specifically, the research will focus on the following questions:

- a. How does regular participation in pickleball training affect physical health indicators such as cardiovascular fitness, muscle strength, balance, and flexibility in elderly players?
- b. How do elderly players perceive pickleball as a means of promoting their overall well-being, and what factors influence their continued participation in the sport?

2. METHODS

This study adopted a qualitative research approach using a phenomenological design to explore the lived experiences of elderly pickleball players in Indonesia. The phenomenological method was chosen as it allowed for an in-depth understanding of how participants perceived and experienced the role of pickleball in promoting their physical, mental, and social well-being. The study used purposive sampling to recruit elderly individuals (aged 50 and above) who actively participated in pickleball. Participants were selected from community sports clubs, senior recreational centers, and pickleball associations across Surabaya City in Indonesia. The final sample size consisted of 19 participants, ensuring sufficient data saturation while maintaining depth in individual experiences. The inclusion criteria required participants to be aged 50 years or older, actively involved in pickleball for at least six months, and willing to share their experiences through interviews. Individuals with severe cognitive impairments or medical conditions that prevented moderate physical activity were excluded from the study.

Data were collected using semi-structured interviews, participant observations, and focus group discussions (FGDs) to capture different perspectives on pickleball's role in healthy aging. One-on-one interviews, lasting between 30 and 60 minutes, were conducted to understand individual experiences, motivations, and perceived benefits of pickleball. An interview guide covered topics such as physical health, social interactions, psychological well-being, and barriers to participation. In addition, researchers observed pickleball sessions in community settings to analyze behavioral patterns, interactions, and engagement levels among elderly players. Notes on movement, expressions, and social dynamics complemented interview findings. Small-group discussions (4–6 participants per session) were also conducted to gather additional insights into shared experiences, social benefits, and challenges related to pickleball participation. All interviews and FGDs were recorded with participant consent and transcribed verbatim for analysis.

| Semi-Structured Interview Questions | |
|--------------------------------------------------------------|---------------------------------------------------------------------------------|
| A. General Background and Participation in Pickleball | |
| 1. | Can you tell me about how and when you started playing pickleball? |
| 2. | What motivated you to begin and continue playing pickleball? |
| 3. | How often do you play pickleball, and what does your typical session look like? |

| | |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| 4. | Have you been involved in other physical activities before? If so, how does pickleball compare to them? |
| B. Physical Well-being and Health Benefits | |
| 5 | Have you noticed any changes in your physical health since you started playing pickleball? If so, what are they? |
| 6 | In what ways do you think playing pickleball affects your strength, balance, and flexibility? |
| 7 | Do you feel that pickleball has influenced your stamina and cardiovascular health? How? |
| 8 | Have you experienced any injuries or physical discomfort related to pickleball? If so, how did you manage them? |
| 9 | How do you think pickleball contributes to maintaining an active and independent lifestyle as you age? |
| C. Mental and Emotional Well-being | |
| 10 | How does playing pickleball affect your mood and emotional well-being? |
| 11 | Have you noticed any changes in your stress levels or mental clarity since you started playing? |
| 12 | Do you feel more confident or motivated in daily life because of your participation in pickleball? Why or why not? |
| 13 | Have you encountered any mental or emotional challenges related to playing pickleball? If so, how have you addressed them? |
| D. Social Well-being and Community Engagement | |
| 14 | How has playing pickleball influenced your social life and interactions with others? |
| 15 | Have you built new friendships or strengthened existing relationships through pickleball? If so, can you share an example? |
| 16 | What role does pickleball play in fostering a sense of belonging or community among older adults? |
| 17 | Have you participated in any social or community events related to pickleball? If so, how did they impact your overall experience? |
| E. Motivation and Barriers to Continued Participation | |
| 18 | What factors encourage you to keep playing pickleball regularly? |
| 19 | Have you faced any challenges or barriers in continuing to play pickleball? If so, what are they? |
| 20 | What recommendations would you give to other older adults who are considering taking up pickleball for their health and well-being? |

Thematic analysis was used to identify common themes and patterns in participants' experiences. The analysis process involved transcribing interviews, reviewing field notes, and identifying recurring ideas and patterns. These initial codes were then grouped into broader themes related to physical, mental, and social well-being. The themes were refined and interpreted to ensure they accurately represented participants' lived experiences and aligned with the research questions. NVivo software was used to assist with qualitative coding and data management. The study adhered to ethical research guidelines, including informed consent from participants before the study, ensuring they understood the study's purpose, procedures, and their right to withdraw at any time. Confidentiality was maintained by anonymizing personal data and securely storing research materials.

3. RESULTS

Physical Well-being and Health Benefits

A majority of participants reported noticeable improvements in their physical health since taking up pickleball. Many stated that their strength, balance, and flexibility had significantly improved. One participant, a 57-year-old woman, shared:

"Before I started playing pickleball, I often felt unsteady when walking, but now I feel stronger and more confident in my movements."

Participants highlighted enhanced mobility and coordination, particularly in relation to footwork and hand-eye coordination. Several interviewees noted that pickleball had improved their reflexes and reaction times, which they believed contributed to their ability to perform daily activities with greater ease. One male participant, 62 years old, remarked:

"I used to have trouble bending down or moving quickly, but now I feel much more agile. It's like my body has become more responsive."

Cardiovascular health benefits were also frequently mentioned. Many players felt that their endurance had increased, allowing them to engage in prolonged physical activities without feeling fatigued. Some participants, who previously struggled with hypertension or high cholesterol, claimed that regular pickleball sessions had contributed to improved heart health. A 59-year-old woman stated:

"My doctor told me my blood pressure has been more stable since I started playing. I think it's because of the continuous movement and the fun aspect—it doesn't feel like exercise."

However, a few participants reported minor injuries, such as knee or shoulder pain, due to the intensity of certain movements. These injuries were typically short-term and manageable, with most individuals emphasizing that they took precautions, such as stretching before games and moderating their play when needed.

Mental and Emotional Well-being

The study found that pickleball had a positive impact on mental health, helping participants reduce stress, anxiety, and symptoms of depression. Many elderly players described the sport as a stress-reliever, with one 65-year-old man explaining:

"I feel so much happier after playing. It's a great way to forget about worries and just focus on the game."

Several participants stated that the structured yet enjoyable nature of pickleball provided them with a sense of purpose and motivation, especially those who had recently

retired. Engaging in regular games gave them a sense of routine, which was crucial for their mental well-being. One 64-year-old woman shared:

"Retirement was difficult for me because I didn't know what to do with my time. Pickleball gave me something to look forward to every week."

In addition to reducing stress, participants felt that pickleball helped improve cognitive function. Many described how the game required quick thinking, decision-making, and strategy, all of which helped keep their minds sharp. Some players compared it to a mental workout, as one 68-year-old man expressed:

"You have to anticipate where the ball will go, react quickly, and plan your shots. It's like a brain exercise disguised as a fun game."

Overall, the findings indicate that pickleball contributes to both emotional stability and cognitive engagement, making it an effective activity for promoting mental well-being in older adults.

Social Engagement and Community Support

Another significant finding was that pickleball served as a social bridge, fostering strong relationships among elderly players. Many participants mentioned that they had formed close friendships through the sport, which helped reduce feelings of isolation. A 61-year-old man stated:

"I've met so many great people through pickleball. It's not just about playing—it's about the friendships and connections you build."

Players frequently described the camaraderie and teamwork involved in pickleball, emphasizing how it provided a sense of belonging. This was particularly important for those who had lost spouses or lived alone. A 64-year-old widow explained:

"After my husband passed away, I felt lonely, but pickleball gave me a new family. We support each other, both on and off the court."

Pickleball was also perceived as a non-intimidating sport, making it easy for newcomers to integrate into groups. Many players expressed that the inclusive and welcoming nature of pickleball clubs helped them feel comfortable, even if they had no prior sports experience. A 56-year-old woman shared:

"I was never into sports, but the people here were so friendly and patient. They encouraged me to keep playing, and now I love it!"

In addition, several participants highlighted that they had participated in pickleball-related social events, such as tournaments, group outings, and community celebrations. These

activities strengthened their sense of identity within the group and provided opportunities for continued engagement.

Factors Influencing Participation and Barriers

Participants identified several factors that motivated them to continue playing pickleball. Enjoyment and fun were among the top reasons, with many expressing that they looked forward to each session. One 59-year-old man humorously remarked:

"It's the best part of my week! If I don't play for a few days, I feel like something is missing."

Another major motivator was the noticeable health benefits. Many players felt encouraged to keep playing because they could see improvements in their physical and mental well-being. Additionally, the social aspect of the sport played a crucial role in sustaining participation, as players enjoyed spending time with their peers.

Despite the many benefits, some participants faced challenges in maintaining regular participation. One common barrier was physical limitations, such as joint pain or mobility issues. Some elderly players had to modify their level of play to prevent injury, while others took breaks when necessary.

Another challenge was access to facilities. A few participants mentioned that pickleball courts were not always available in their communities, making it difficult to play regularly. A 61-year-old woman commented:

"I wish there were more places to play. Sometimes we have to travel far just to find a good court."

Weather conditions were also a limiting factor, particularly for those who played outdoors. Extreme heat or rain often disrupted scheduled sessions, making it harder for some players to stay consistent.

Lastly, a few participants mentioned that they had faced skepticism from family members who doubted whether playing sports at an older age was safe. However, these concerns generally diminished once family members saw the positive impact pickleball had on their health.

4. DISCUSSION

This study explored the role of pickleball in promoting healthy aging among elderly players in Indonesia. The findings highlight significant physical, mental, and social benefits, aligning with existing research on the positive effects of sports participation in older adults.

This section discusses these results in relation to relevant literature, emphasizing how pickleball contributes to healthy aging, active lifestyles, and social well-being.

Pickleball and Physical Well-being in Older Adults

The study found that regular participation in pickleball improved strength, balance, flexibility, and cardiovascular endurance among elderly players. These findings are consistent with previous studies emphasizing the role of moderate-intensity sports in maintaining physical health among older adults (Cerezuela et al., 2023). According to research by (Locke et al., 1997), racket sports enhance lower-body strength, agility, and coordination, reducing the risk of falls—one of the primary health concerns in aging populations.

Several participants in this study reported enhanced cardiovascular endurance and better blood pressure regulation due to their engagement in pickleball. This aligns with studies by (Kemi & Wisløff, 2010) which indicate that aerobic exercise in sports like pickleball improves heart health and lowers the risk of hypertension, stroke, and metabolic diseases. The dynamic movements in pickleball—such as lateral stepping, lunging, and sprinting—promote cardiovascular endurance, similar to findings in badminton and tennis studies (de Almeida, 2007).

However, some participants mentioned minor injuries and joint discomfort due to the physical demands of pickleball. Previous research suggests that older adults engaged in racket sports are susceptible to musculoskeletal issues, particularly in the knees, shoulders, and ankles (Forrester, 2020). This highlights the need for proper warm-ups, strength training, and modified playing techniques to prevent injuries while sustaining long-term participation in pickleball (Rangasamy et al., 2022).

Pickleball and Mental Well-being: Stress Reduction and Cognitive Benefits

A key finding of this study was that pickleball positively influenced mental health by reducing stress and enhancing cognitive function. Participants reported feeling happier, more energized, and mentally sharper. This is supported by research from (Baran et al., 2022), which states that engagement in moderate physical activity significantly reduces anxiety and depression in older adults. Similarly, (Iglesias & De la Villa, 2021) found that sports-based social interactions contribute to higher self-esteem and emotional resilience among aging individuals.

The cognitive benefits of pickleball were another important aspect. Many participants mentioned that the game required strategic thinking, fast decision-making, and motor

coordination, all of which helped maintain their cognitive agility. These findings align with research by (Tuncer, 2022), which suggests that physically active lifestyles reduce the risk of cognitive decline and neurodegenerative diseases such as Alzheimer's. Racket sports, in particular, have been linked to improved executive function, working memory, and reaction time (Li, 2023).

Furthermore, the structured nature of pickleball provided players with a sense of purpose, which is crucial for emotional stability in post-retirement life (Ismailova et al., 2017). This reinforces previous studies showing that elderly individuals who engage in regular recreational activities experience lower levels of loneliness and higher life satisfaction (Inal et al., 2007).

The Role of Pickleball in Social Engagement and Community Building

Social engagement emerged as a dominant theme in this study. Most participants emphasized that pickleball helped them build friendships, reduce social isolation, and create a sense of belonging. This supports research by (Blumstein et al., 2018), which highlights that social connectedness is a crucial determinant of health and longevity in older adults. The team-oriented and interactive nature of pickleball provides opportunities for teamwork, support, and companionship, similar to findings from research on community-based exercise programs (Casper et al., 2021).

Many participants also noted that pickleball was an inclusive and accessible sport, making it easier for older adults regardless of their skill level to participate (Zagrodnik, 2019). This is consistent with research by Heo & Ryu (2024), which emphasizes that recreational sports with lower physical entry barriers are more sustainable for long-term participation among elderly individuals. The non-intimidating and fun aspects of pickleball likely contributed to its growing appeal among aging populations (Kim et al., 2021).

Another crucial element was the role of pickleball in strengthening intergenerational interactions. Several participants shared that they played with younger family members, allowing them to bond across generations. This aligns with research by (Ryu et al., 2018), which suggests that intergenerational sports help reduce ageism, foster positive attitudes toward aging, and encourage active lifestyles across age groups.

Barriers to Pickleball Participation Among the Elderly

Despite the numerous benefits, this study identified several challenges that hindered regular participation in pickleball. These included physical limitations, accessibility to courts, weather conditions, and skepticism from family members. Similar barriers have been noted in research on senior sports participation (Riffée et al., 2023). Physical constraints, such as joint pain and fatigue, were frequently cited concerns. Research by Terrell & Ficquette (2023) suggests that modifying training intensity, incorporating low-impact warm-ups, and ensuring proper footwear can help mitigate injury risks among older athletes. Facility access was another major challenge. Several participants mentioned that pickleball courts were limited, particularly in smaller communities.

Lastly, cultural attitudes toward aging and sports participation were identified as potential deterrents. Some participants faced skepticism from family members who believed that engaging in sports at an older age could be dangerous. The negative societal perceptions often discourage elderly individuals from participating in physical activities. Promoting education and awareness about the safety and benefits of senior-friendly sports is essential to overcoming these misconceptions .

Implications and Future Directions

This study provides valuable insights into how pickleball contributes to healthy aging, reinforcing its potential as a sustainable and enjoyable exercise option for older adults. The findings suggest that pickleball should be integrated into public health strategies aimed at increasing physical activity among the elderly. Policymakers and community leaders should invest in pickleball facilities, promote awareness campaigns, and develop programs tailored to aging populations.

Additionally, future research should explore longitudinal impacts of pickleball participation on overall health outcomes, including muscle retention, mental well-being, and long-term adherence to active lifestyles. Comparative studies between pickleball and other senior-friendly sports, such as tai chi or walking soccer, could provide deeper insights into the most effective activities for promoting healthy aging.

CONCLUSION

In summary, this study found that pickleball plays a crucial role in promoting physical, mental, and social well-being among elderly players in Indonesia. The findings align with existing literature on the benefits of moderate-intensity exercise, social engagement, and active

aging strategies. Despite some barriers, pickleball emerged as a highly accessible and enjoyable activity that fosters community, enhances cognitive function, and supports cardiovascular and muscular health. Pickleball should be actively promoted as a key component of healthy aging initiatives. By addressing challenges related to accessibility and awareness, policymakers and community organizers can maximize the sport's potential for enhancing quality of life and longevity among older adults.

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