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Comparative Analysis of Skills in Pickleball and Lawn Tennis

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Abstract

This study evaluated the health profiles and body mass index (BMI) of older individuals while comparing their skill levels in pickleball and lawn tennis, with emphasis on serving, dinking, volleying, forehand, and backhand techniques. Twenty individuals, ten from Agoo, La Union, Philippines and ten from Asingan, Pangasinan, Philippines who were 60 years of age or older, were purposefully chosen. A questionnaire and skill evaluations utilizing the USAPA Player Skill Rating Definitions were used to gather data, which were then assessed by seasoned coaches and senior technical officials. Descriptive statistics analyzed BMI and health conditions, weighted means assessed skill levels, and the Mann-Whitney U test determined significant differences between the sports. Results showed that 80% of participants had normal BMI, with common health concerns including eyesight problems (55%), arthritis (45%), and diabetes (20%), suggesting that regular participation in racket sports supports physical health and functional independence. Skill assessments revealed that pickleball players generally achieved higher ratings in serving, volleying, and forehand classified as "Advanced Competitive", while lawn tennis players excelled in forehand due to repeated rallying and serve-volley drills, with overall skill levels classified as "Advanced Intermediate." Significant differences were observed in serving, dinking, backhand, and forehand skills, reflecting the distinct technical demands of each sport, while volleying showed no significant difference. These findings highlight that engagement in racket sports enhances technical proficiency, coordination, reaction time, and overall physical and mental well-being in older adults, supporting their inclusion in community-based recreational programs to promote healthy aging.

Keywords: Health Conditions, Lawn Tennis, Physical Health, Pickleball, Senior Citizens.

Introduction

Pickleball is among the fastest-growing recreational sports in the United States, rapidly gaining popularity across all age groups. According to USA Pickleball, it originated in the summer of 1965 on Bainbridge Island, Washington—when Joel Pritchard, Bill Bell, and Barney McCallum created the game to entertain their families using a badminton court, ping pong paddles, and a plastic Wiffle ball (1). The name "pickleball" was coined within days by Joan Pritchard, who likened the game's blended nature to the "pickle boat" in crew racing, where leftover rowers compete. Although simple and accessible for all, playing pickleball at a high level still demands a certain degree of physical fitness. Pickleball and lawn tennis are both becoming very popular in local sports programs and activities, especially among the middle-aged and older generations in the Philippine setting. International literature also focuses on increasing attention to skill-based racket sports as the means to encourage motor coordination, physical fitness and active aging. Nevertheless, there is still a lack in local studies in the comparison of skills required in these two sports, which justifies the necessity of the studies to investigate their peculiarities and the outcomes on the level of performance and training.

Pickleball is a fast-growing recreational sport that is enjoyed by players of all ages and abilities. The physiological effects of playing pickleball, however, are relatively unexamined. These gaps are answered in one study pickleball, especially when played in doubles, causes a higher demand for physical activity and is more enjoyable than self-paced walking—except for step count (2). These modifications suggest that pickleball may be a good physical exercise to maintain and increase physical fitness. It is also noted that regular and sustained engagement in pickleball playing is positively associated with multiple domain-specific measures of cognition (3). Expert pickleball players showed improved split visual attention, multiple object tracking, and simple response time performance when compared to inactive controls; on the other hand, aerobic exercises showed improved working memory and

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inhibitory control.

Pickleball is an innovative racket sport described as a combination of ping-pong, tennis, and badminton sports, from sports rules and strategies down to sports equipment and facilities. The sport is especially popular with middle and older adults as it provides a means for both competition and exercise. Pickleball sports was already introduced in the Philippines in 2018 through the initiatives of the Professional Pickleball Association of the Philippines (PPA), with the association's mission, which is to be an instrument and leading organization in promoting, developing, and popularizing the sport of Pickleball throughout the country. In 2019, the sports were initially introduced to the different Higher Education Institutions (HEIs) in Luzon, including the Department of Physical Education of President Ramon Magsaysay State University (PRMSU). From 2021 until the present, seminars with participation from PE teachers and students were held to introduce the sport to Higher Education Institutions (HEIs) in the Visayas and Mindanao provinces.

The introduction of pickleball through a training program, as a game, and as a recreational activity, will be a good way for the people in the community to be involved in physical activities and promote a healthy lifestyle. Participants could also participate in regular competitions in the local and regional pickleball invitational competitions. As a result, they not only become healthy and active but also functional and productive in their community and society.

Pickleball is a relatively new sport that has been incorporated into the physical education (PE) curriculum. It is well-liked since it requires few complex learning resources and is accessible to players of all ages. Additionally, this sport is quite unique, which boosts students' willingness to practice PE, particularly in junior high schools (4). Accordingly, in physical education, pickleball games can enhance strength and fitness (5, 6). Maintaining this sport does not harm too much of the game's equipment, and it also makes learners more motivated and curious, which makes them more enthusiastic about participating in it. Implementation of Pickleball sports in schools, especially in physical education classes, is important to be able to serve as a model of this sport socialization evenly so that it can be recognized more widely not just among the students but also different people of different ages. Pickleball is a very popular and rapidly growing sport (7). It can be an exciting sport that allows people of all ages to keep active and fit and helps to foster a healthy lifestyle due to how easy and low impact it is to play. As with all sports, there is a risk of a variety of injuries. However, by taking a few steps in preparation coupled with proper knowledge of one's own health, Pickleball can be an enriching activity enjoyed by players of all ages. One argues that pickleball is very accessible due to its economical and portable equipment and can be played on a hard and flat surface of any size (8). It is also noted that pickleball, which has its roots in the United States, is a sport that uses an expanded table tennis racket and mixes the rules of badminton and tennis (9). Pickleball has few field limits and does not place much emphasis on speed. Participants take a "shallow squat" posture to attack and defend, which helps children train joint flexibility, whereas adults or elders can prevent knee degeneration, and enhance their cardiopulmonary function; thus, it is a sport that can be widely practiced by all age groups. This means that in playing pickleball, it is necessary to undergo basic and proper training or orientation before engaging in the sport to avoid possible injuries.

Another study found out that participation of older adults in leisure activities has psychosocial benefits, increases social interactions, and promotes well-being (10). Pickleball is one of the many recreational pursuits that promote healthy aging and constructive social contact among senior citizens. Likewise, during the pandemic, those who played less pickleball were noticeably more likely to express a lower level of life satisfaction (11). This implies that those middle and older adults who participate more in pickleball sessions are more likely to express a higher level of life satisfaction. It has said that the more deeply engaged in pickleball the middle and older adult players were, the more likely they were to be highly satisfied with their lives and have a positive experience with aging (12).

Many diseases, disabilities, and mental health conditions associated with aging can be delayed or prevented through regular exercise (8). Mid-life and older people are unable to reap the benefits of exercise due to several obstacles, many of which

are made worse in rural areas. But pickleball, a racquet sport, has recently gained popularity among senior citizens and seems to get over some of these obstacles. The authors conducted a six-week Pickleball intervention program on measures of muscle function, cognitive function, perceived pain, and cardio-metabolic risk, as well as several psychosocial factors contributing to adherence in sedentary rural participants. The sample's physical and mental health appeared to have improved as participants' vertical jump, cognitive function, and self-reported pain decreased. Over the course of the trial, participants showed good adherence and reported high levels of satisfaction. Therefore, with all the things considered, pickleball appears like a potential intervention to promote adulthood and older people stay engaged with exercise for long enough to improve their health and to obtain functional and cognitive-related benefits.

Players of all ages may participate in pickleball, which makes it special. Pickleball offers possibilities for players of all ages to compete in the age groups offered in all national and international championships. Under the same regulations, men and women, young and elderly, can play on the same team or against each other. Overall, the advantages of exercise include improving your mood, helping you lose weight, boosting your energy, lowering your chance of developing chronic illnesses, maintaining the health of your skin, preserving your memory, helping you relax, and reducing pain from inactivity. There are also physical health benefits associated with pickleball. Pickleball offers a lot of advantages, such as interacting with other players, enhancing physical health, having fun, and creating lifelong friendships (13). Pickleball can be played competitively or as a form of recreational activity. In competitive form, considering a training program to improve and develop the skills of an athlete plays an important role.

Training means engaging in activity to improve performance and/or fitness; this is best accomplished by understanding general sports training principles: overload, reversibility, progression, individualization, periodization, and specificity (14). The ability of the athlete to do motor movements in various regimens of speed, strength, skill, and resistance to be able to achieve both individual and team goals that are part of the sports method truly represents the level of physical training in a sporting event. Most sports have demanding physical requirements; thus, it's important to determine what each athlete needs to succeed. It appears that even with a significant decrease in training volume, enhanced training can still lead to improved performance among skilled individuals. These modifications to the training schedule do cause noticeable muscular adaptations, which are linked to greater performance. Strength training is essential to prevent injuries sustained while participating in sports. Pickleball can be physically demanding, especially for newcomers to sport or those who may struggle with balance or agility (15). American Council on Exercise pointed out that injury is not caused by pickleball or other sports; rather, it is the result of an unprepared body for the demands of the activity. Beyond improving performance in Pickleball, building strength is crucial for everyday tasks that involve less discomfort and a reduced risk of injury. People notice a decline in muscle mass and strength with time. Because of this, as we become older, it becomes more crucial to work on building and maintaining our physical strength. This implies that engaging in a proper training program in any sport is beneficial in improving the skills of the players and in reducing the risk of injury. Strength training is an important part of Pickleball's fitness routine (16). Strength training can help you develop the quickness, explosive power, and endurance needed for pickleball. Incorporating strength training into your fitness routine can also help reduce the risk of injury. A strong body is better equipped to handle the demands of the sport, reducing the risk of muscle strains and sprains. Also, strength training can also aid with balance and posture, both of which are important in pickleball since players are always transferring weight. Your pickleball performance can be greatly improved by adding an organized training regimen to your routine, regardless of experience level (17).

Aside from the training type, moral training, on the other hand, plays an important role in forming an athlete's personality, as it influences his/her development of competencies through its orientate and preparatory functions. Important components of an athlete's will, and moral education are self-control and self-restraint. Their behavior demonstrates a strong emphasis on self-

control and following the referee's decisions. The coach's engagement and moral instruction are essential. The involvement of a coach and moral training is essential as it leads to a deep development of the athlete's personality through moral education, as motivation plays a vital role in training the athletes and in boosting their self-esteem for their self-fulfillment (18). In sports training, moral education is crucial since it affects and enhances the results of sport. A vital component of any person's education is moral education, which begins in the home and is continued by both formal and informal institutions.

In sports, having no training program means having less and slower development of skills. Periodization of sports training is an art, and to proceed and create more meaningful planning, a significant paradigm shift will be necessary. It's science that involves breaking things down into the smallest possible parts. Beginning athletes frequently feel muscle soreness and body pain after starting a new routine, but after doing the same exercise and skill training for weeks or months at the same intensity, the athlete experiences little, if any, muscle soreness. This is because the body adjusts to the stress of the new exercise or training program, which eventually makes it easier to perform. This emphasizes that to get the best results possible, you constantly need to modify your workout and training regimen (19).

The literature overview reveals that racket sports positively influence motor coordination, balance, reaction time, and cognitive functioning of elderly people, which is the theoretical basis of the present study. In the Philippines, there are still gaps in evidence, which is localized, in the comparison of sport-specific skills of pickleball versus lawn tennis among seniors. This paper has not only theoretical contribution in terms of extending the frameworks of motor learning and aging but also empirical contribution in terms of offering comparative data on motor skills performance between two structurally unique racket sports.

The choice of the comparison between pickleball and lawn tennis was purposely made since these two racket sports have significant differences in biomechanics, court size, stroke kinematics, and physical load, which is why they are suitable in terms of performance analysis among older adults. The pickleball game focuses on third quarter-long rallies, close movement, and control of the paddle, unlike lawn tennis that involves bigger movement pattern, faster speed of the racquet-head, and physical activity. These opposing attributes can offer some rare knowledge on the way varying racket-sport frameworks influence the learning of technical skills and functional aptitudes in elderly players.

Therefore, this study aimed to develop a Seminar workshop for pickleball for all ages. It may also be used by badminton, lawn tennis, and table tennis players as their training regimen to continually develop their skills and talents while enjoying the game of pickleball.

Methodology

This study employed a qualitative-experimental approach to examine the skill levels of participants in pickleball and lawn tennis, specifically in the areas of serving, dinking, and volleying (20), using the USAPA Player Skill Rating Definitions as the assessment framework (21). The primary objective was to engage both pickleball and lawn tennis players in performing these three skills while capturing their experiences, perceptions, and reflections based on their prior playing background. The qualitative-experimental approach was selected since it enables direct observation of the stroke performance, and the descriptive analysis that does capture the actual skills performance and experience of older adult players. This is a suitable design in comparative skill studies where both measurable performance products and contextual player knowledge are necessary (22). The descriptive aspect was based on the framework of Creswell that will support the description of naturally arising variations in performance. The design is grounded by the theories of motor learning and motor skill acquisition which explain the development, adaptation, and variability of movement patterns based on the task in different sport scenarios.

The descriptive method was used to assess the Body Mass Index (BMI) and health condition of the respondents, mental health, and lifelong physical activity. The goal of the descriptive method is to characterize specific situations or events by seeing them in their natural setting. The only design that can explore single variables is a descriptive study. Descriptive studies examine the traits of a population, pinpoint issues that exist within a

group, or investigate differences in traits or customs between institutions (22). A descriptive study establishes only associations between variables. The survey method will be specifically utilized as it is deemed to be the most appropriate in finding the answers to the problem (20).

In this study, respondents consisted of twenty (20) senior citizen players, with ten (10) participants from Agoo, La Union, Philippines, and ten (10) from Asingan, Pangasinan, Philippines. The purposive sampling was done to make sure that the participants had enough prior exposure to either pickleball or lawn tennis, so that they could demonstrate meaningful strokes. Criteria Inclusion criteria were (a) age 60 and above (b) regular involvement in either sport at least six months (c) willingness to undergo skill assessments. Recruitment was organized via local sport clubs in which senior players play on a regular basis. This selection was based on their availability, willingness to participate, and prior playing experience, ensuring that the sample represented senior players who could meaningfully demonstrate and reflect on the required skills. This sampling approach allowed for a more focused comparison of skill performance, such as serving, dinking, and volleying, while also capturing participants' experience and perceptions of their respective sports.

A questionnaire was utilized to gather the demographic profiles of the respondents from the municipalities of Asingan, Pangasinan, Philippines, and Agoo, La Union, Philippines. Part I of the questionnaire focused on collecting the Body Mass Index (BMI) and relevant health conditions. Part II assessed the physical skill levels of the respondents, which were evaluated and rated by invited senior pickleball technical officials and experienced coaches using the USAPA Player Skill Rating Definitions as the assessment tool (21). To ensure the validity of the survey questionnaire, it was reviewed and evaluated by experts in pickleball, lawn tennis, and research. Their expertise helped confirm the accuracy, clarity, and relevance of the questionnaire items to the study's objectives.

The data gathered in this study were tallied, organized, and analyzed using Microsoft Excel and the Statistical Package for Social Sciences (SPSS). To answer problem number 1, frequency and percentage distributions were employed to present the demographic data of the respondents. Problem 2 was addressed using the weighted means to evaluate and compare skill performance levels. These statistical tools ensured accurate analysis and interpretation of the data collected in the study.

Results

Profile of the Respondents

Table 1 below presents the Body Mass Index (BMI) of the senior citizens.

The analysis of the respondents' Body Mass Index (BMI) revealed that most respondents from both municipalities fall within the normal BMI range: Agoo, La Union, Philippines (90%) and Asingan, Pangasinan, Philippines (70%), with an overall total of 80%. A smaller proportion is classified as Overweight (20%), while no respondents were underweight or obese, as presented in Table 1. This indicates that most participants maintain a healthy weight status, which may be associated with their regular engagement in racket sports such as pickleball and lawn tennis. This pattern suggests that pickleball and lawn tennis participants are largely health-conscious or that the sport attracts individuals already maintaining a healthy lifestyle. Alternatively, it could indicate that participation in pickleball may contribute positively to maintaining a normal weight.

Health Conditions

Table 2 presents the distribution of the respondents' health conditions across the two municipalities.

Table 1: Body Mass Index

BMI Categories	Agoo, La Union		Asingan, Pangasinan		Total	
	f	%	*f*	%	*f*	%
Underweight	0	0	0	0	0	0
Normal	9	90	7	70	16	80
Overweight	1	10	3	30	4	20
Obese	0	0	0	0	0	0

Table 2: Health Condition

Health Condition Categories	Agoo		Asingan		Total	
	f	*%*	*f*	*%*	*f*	*%*
Respiratory	0	0	2	20	2	10
Cancer	0	0	0	0	0	0
Osteoporosis	0	0	1	10	1	5
Heart Disease	0	0	0	2	2	10
Diabetes	1	10	3	30	4	20
Stroke	0	0	1	10	1	5
Arthritis	5	50	4	40	9	45
Eyesight	3	30	8	80	11	55
Anemia	0	0	0	0	0	0
Others	4*	40	2*	20	6	30

* Others: There are 4 respondents in Agoo, La Union, Philippines who have no health condition, and there are 2 respondents in Asingan, Pangasinan, Philippines who have hypertension

In terms of health conditions, the most reported issues are eyesight problems (55%) and arthritis (45%), followed by diabetes (20%). Other conditions, such as respiratory disease, osteoporosis, stroke, and heart disease, were reported in smaller percentages. Interestingly, 40% of respondents in Agoo, La Union, Philippines, reported no health condition, while 20% in Asingan, Pangasinan, Philippines, reported hypertension under the "Others" category. So, the data indicates that while many respondents have manageable health issues, chronic conditions like arthritis, eyesight problems, and diabetes are the most prevalent.

Level of Skills in Pickleball and Lawn Tennis

Table 3 summarizes the comparative skill levels of pickleball and lawn tennis participants across the five evaluated skill categories.

The table presents the skill levels of respondents from Agoo (Lawn Tennis) and Asingan (Pickleball) across five categories. Results show that Agoo participants generally fall under the "Advanced Intermediate" level, except for forehand skills, where they are rated "Advanced Competitive," and backhand skills, which remain at the "Intermediate" level. On the other hand, Asingan participants demonstrate higher ratings overall, particularly in serving, volleying, and forehand, all classified as "Advanced Competitive." When combined, the overall median ratings indicate that respondents are mostly at the "Advanced Intermediate" level, with forehand emerging as their strongest skill at the "Advanced Competitive" level.

This finding aligns with general trends observed in sports, where certain physical capabilities may decline with age. However, it's noteworthy that pickleball has seen significant participation across all age groups. The average age of pickleball players decreased from 41 years in 2020 to 38.1 years in 2021, reflecting a younger demographic engaging in the sport (23). Despite this shift, older adults continue to participate actively, benefiting from the sport's adaptability and social aspects. Other performance aspects (serving, dinking, forehand, backhand) showed no statistically significant associations with age.

Table 3: Level of Skills

Skills Categories	Agoo *(Lawn Tennis)*		Asingan (*Pickleball*)		Total	
	Median	***Description***	***Median***	***Description***	***Over-all Median***	***Description***
Serving	4	Advanced Intermediate	5	Advanced Competitive	4	Advanced Intermediate
Dinking	4	Advanced Intermediate	4	Advanced Intermediate	4	Advanced Intermediate
Volleying	4	Advanced Intermediate	5	Advance Competitive	4	Advanced Intermediate
Backhand	3	Intermediate	4	Advanced Intermediate	4	Advanced Intermediate
Forehand	5	Advanced Competitive	5	Advanced Competitive	5	Advanced Competitive

The findings in Table 3 affirm that regular exercise and participation in racket sports can help older adults achieve advanced levels of sport-specific technical skills, with pickleball's accessibility and tennis's technical demands fostering distinct patterns of stroke mastery.

Significant difference in the Basic Skills of Pickleball and Lawn Tennis

The Mann-Whitney U test results in Table 4 on the next page showed statistically significant differences ($p<0.05$) between pickleball and lawn tennis participants in serving, dinking, backhand, and forehand skills, while volleying skills showed no significant difference ($p=0.208$). These findings indicate that although participants of both racket sports demonstrate comparable performance in volleying, substantial differences exist in most other core strokes, highlighting the unique technical demands of each sport.

The data shows that pickleball's smaller court dimensions, lighter paddles, and underhand serving mechanics encourage repetitive stroke practice and improve shot placement and agility, which may explain the advanced ratings in serving and forehand performance among pickleball players (24, 25). Lawn tennis, on the other hand, demands greater physical intensity, racquet-head speed, and biomechanical precision, especially for serves and backhands, which may explain the higher skill refinement observed in these categories (26, 27).

Table 4: Significant Difference in Basic Skills of Pickleball and Lawn Tennis

Skills Categories	Mann-whitey U test	
	p-value	***Decision***
Serving	0.000	Significant
Dinking	0.005	Significant
Volleying	0.208	Not Significant
Backhand	0.002	Significant
Forehand	0.012	Significant

Alpha = 0.05 significance value

Discussion

Profile of the Respondents

The profile of the respondents showed that most participants maintain a healthy weight status, which may be associated with their regular engagement in racket sports such as pickleball and lawn tennis. This pattern suggests that pickleball and lawn tennis participants are largely health-conscious or that the sport attracts individuals already maintaining a healthy lifestyle. Alternatively, it could indicate that participation in pickleball may contribute positively to maintaining a normal weight. These findings are consistent with studies demonstrating that physically active older adults are more likely to maintain stable and healthy BMI levels (28). Engagement in regular physical activity, such as racket sports, has been shown to help regulate body composition, preserve lean muscle mass, and reduce age-related fat accumulation, all of which contribute to overall health and functionality in older adults.

While there is presence of overweight individuals (20%) may appear concerning, recent literature highlights an "obesity paradox" among older adults, wherein those classified as mildly overweight exhibit lower mortality rates and better outcomes compared to their peers in lower BMI categories (29, 30). Another study showed that optimal BMI thresholds for older adults are slightly higher than those used for younger populations, suggesting that these overweight participants may not be at increased risk but instead possess additional physiological reserves beneficial during aging (30, 31).

However, BMI has limitations as a sole health indicator, particularly in older populations. It does not differentiate between muscle and fat mass or account for fat distribution, both of which are important indicators of health in aging individuals (32, 24). The active involvement of participants in pickleball and lawn tennis likely supports better muscle retention, coordination, and cardiovascular health, meaning that their BMI data should be interpreted in conjunction with physical performance measures and activity levels.

Overall, these findings suggest that senior citizen players engaged in recreational sports exhibit a healthier weight profile than their sedentary counterparts reported in national surveys. This emphasizes the importance of continued participation in accessible sports like pickleball

and lawn tennis, which not only provide recreation but also contribute to weight management, physical fitness, and quality of life among older adults.

Health Conditions

In terms of health conditions, the findings align with global research indicating visual impairment and musculoskeletal disorders, particularly arthritis, are among the most prevalent age-related health concerns in older adults (33). Age-related vision loss, including cataracts and presbyopia, affects most individuals by the age of 80, and untreated visual impairment has been identified as a modifiable risk factor for dementia, with evidence suggesting that addressing vision problems could prevent up to 19% of dementia cases (34).

Arthritis remains one of the leading causes of functional limitations in seniors, affecting mobility and overall quality of life, while diabetes poses risks such as diabetic retinopathy, a condition responsible for 12% of new blindness cases annually (35). Although hypertension was reported in 20% of Asingan, Pangasinan, Philippines, respondents, lower than the national average of 44–72% among Filipino seniors, this may reflect the protective benefits of regular physical activity and participation in racket sports (36, 37). These findings reinforce the principles of Sustainable Development Goal 3: Good Health and Well-Being, which emphasizes ensuring healthy lives and promoting well-being at all ages (38). The lower prevalence of severe conditions and the overall active lifestyle of participants demonstrate how accessible community-based sports like pickleball, and lawn tennis can contribute to healthier aging, functional independence, and the achievement of SDG 3's global vision for older adults.

Level of Skills in Pickleball and Lawn Tennis

These results on the level of skills are consistent with evidence that participation in racket sports enhances musculoskeletal coordination, shot accuracy, and reaction time, even in older adults (38, 39). Other studies also highlight pickleball as an accessible sport for seniors, offering shorter courts and slower-paced gameplay that promote frequent practice of technical strokes, leading to skill improvement and confidence development (40, 41). In lawn tennis, it has been shown to improve forehand precision, stroke fluidity, and aerobic endurance through repetitive rallying and serve-volley drills, which aligns with the Agoo group's higher forehand ratings (42, 43). Meta-analyses also suggest that regular engagement in racket sports supports both physical and cognitive health, contributing to enhanced strategy, reaction speed, and fine motor control in senior athletes (44, 45). These outcomes strongly align with the United Nations Sustainable Development Goal (SDG) 3: Good Health and Well-Being, which advocates for ensuring healthy lives and promoting well-being across all ages by encouraging accessible, enjoyable physical activities like racket sports to enhance longevity and quality of life (46).

Pickleball offers accessible mechanics, enabling seniors to refine shot placement, consistency, and reflexive control traits reflected in the Asingan respondents' "Advanced Competitive" ratings in serve, volley, and forehand. Its smaller court and softer ball allow more frequent, controlled repetitions of critical strokes, fostering rapid skill development and increased confidence in shot accuracy and strategy.

For lawn tennis, repetitive rallying and serve-volley drills among senior players contribute to advancement in forehand precision and general stroke fluidity, explaining the Agoo group's elevated forehand level. The literature supports that senior tennis participation enhances strength, swing coordination, and aerobic endurance, all of which contribute to improved performance in fundamental tennis strokes.

Significant difference in the Basic Skills of Pickleball and Lawn Tennis

With no significant difference in volleying performance, it aligns with findings that both sports emphasize net play, requiring similar levels of hand-eye coordination, rapid reaction time, and strategic anticipation during game play. These skills demand may create a convergence in volleying ability regardless of the sport (26). Moreover, in the USDPT Research (2023), studies comparing older adults who regularly play racket sports gives emphasis that pickleball players often excel in mobility-focused attributed such as single-leg balance, gait speed, and shoulder flexibility, whereas tennis players maintain higher cardiovascular output and power-based skills (47).

All these findings emphasize that the structure and play mechanics of pickleball and tennis lead to distinctive skill development pathways. For senior players, engaging in either sport can produce advanced skill sets, though each has different motor learning processes and physical adaptations. This understanding supports the integration of both sports in recreational and training programs for older adults to promote balanced skill acquisition, physical health, and functional longevity.

Though each discipline emphasizes different motor learning processes and physical adaptations. This insight supports the integration of both sports in recreational and training programs for older adults to promote balanced skill acquisition, physical health, and functional longevity, aligning with global initiatives like the United Nations Sustainable Development Goal 3 (SDG 3), which advocates for accessible physical activity opportunities to ensure health and well-being across all ages (46).

The results indicate that pickleball and tennis should be included in the community-based sports programs of older adults to ensure balanced development of skills and physical health. Pickleball was selected as the sport of choice due to its simple mechanics and lower physical conditioning requirements, making it more appropriate for participants who do not possess advanced athletic training compared with lawn tennis. Senior wellness programs in barangays and the local government can include structured training sessions and especially emphasize stroke mechanics, balance, and mobility training.

Conclusion

Most senior participants maintained a healthy BMI, suggesting that regular engagement in racket sports like pickleball and lawn tennis supports weight management and overall physical health. These findings highlight the role of accessible recreational sports in promoting fitness, functional independence, and quality of life among older adults. For health conditions of the respondents, while lung disease, osteoporosis, stroke, and heart disease were less common among respondents, the most common health issues were diabetes (20%), arthritis (45%), and vision problems (55%). According to these results, playing racquet sports like lawn tennis and pickleball on a regular basis may help reduce serious health risks and promote functional independence, healthier aging, and general well-being—all of which are aligned in accordance with SDG 3 - Good health and well-being.

In the skill level, senior participants typically received "Advanced Intermediate" ratings, with their strongest skill being the forehand. While lawn tennis players from Agoo, La Union, excelled in forehand due to repeated rallying and serve-volley drills, pickleball players from Asingan, Pangasinan, demonstrated higher overall ratings, especially in serving, volleying, and forehand ("Advanced Competitive"), reflecting the sport's accessible mechanics and frequent practice opportunities. With these findings, regular racket sports involvement improves older individuals' technical proficiency, musculoskeletal coordination, and response time, promoting both physical and mental health and general well-being in accordance with SDG 3.

While there was no significant difference in volleying, suggesting similar net-play skills between the two games, the Mann-Whitney U test found significant differences between pickleball and lawn tennis participants in serving, dinking, backhand, and forehand skills. Pickleball's smaller court, lighter paddles, and underhand serves encourage repetitive repetition and agility, while lawn tennis calls for more physical intensity, racquet speed, and biomechanical precision. These variations represent the distinct technical demands and mechanics of each sport. Overall, the results show that both sports promote advanced skill development through different motor learning processes and physical adaptations, which supports their inclusion in senior citizen recreational programs to improve physical health, functional longevity, and skill acquisition.

The study has limitations such as the small sample size used and the controlled environment within which the skills were done. The level of participant experience might also play a role in the comparative performance of skills in the two racket sports. Future studies can involve larger, more diverse samples, inject performance analytics into competitive conditions, as well as longitudinal gains to learn more about how skills are acquired in pickleball and lawn tennis.

This study demonstrates that both pickleball and lawn tennis promote advanced skill development,

functional independence, and healthy aging among older adults, with pickleball emerging as a particularly accessible option for community and educational programs. The findings contribute localized evidence from the Philippines, extending global literature on recreational sports and aging, and reinforce the alignment of racket sports with Sustainable Development Goal 3 on Good Health and Well-Being. These insights may guide educators, trainers, and policymakers in designing inclusive, sustainable programs that enhance physical and psychosocial well-being in senior populations.

Abbreviations

BMI: Body Mass Index, SDG: Sustainable Development Goal, USAPA: USA Pickleball Association.

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Author Contributions

The author confirms sole responsibility for all aspects of the study, including the conceptualization, data collection and curation, formal analysis, project administration, visualization, original drafting, and review and editing of the manuscript.

Conflict of Interest

The author declares no conflicts of interest.

Declaration of Artificial Intelligence (AI) Assistance

During the preparation of this work, artificial intelligence tools (ChatGPT, Grammarly) were used solely to assist with grammar checking, style refinement, and improvement of textual coherence. The author reviewed and verified all generated suggestions to ensure the accuracy, integrity, and originality of the manuscript content.

Ethics Approval

The DMMMSU Research Ethics Committee gave the Ethical Clearance for the conduct of the research.

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