



## Research Article

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# Rural Appalachian Pickleball Players' Motives, Benefits, and Barriers

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## Abstract

**Background:** The obesity epidemic disproportionately affects older adults in rural areas, and physical activity levels within this population are insufficient to address the issue. Currently, there is research to support that pickleball can target motivations and overcome barriers to stimulate and maintain individuals' participation in physical activity to achieve health-related benefits. However, the relationship between these concepts requires deeper investigation. **Aims and Objectives:** The purpose of this study is to investigate West Virginia pickleball players' motivations to be physically active as well as be the first to relate these to their perceived benefits of their participation and barriers to being physically active. **Materials and Methods:** A sequential explanatory mixed-method approach was employed to gain greater insight into these relationships within a successfully growing sport. The design included: Phase 1 - an online survey distributed to state pickleball group participants; and Phase 2 - focus groups consisting of pickleball participants in four areas of the state. The content of the survey was adapted from previously validated instruments and peer-reviewed research to address pickleball players' motives, benefits, and barriers of being physically active. Following, the focus group's semi-structured script was drawn from the results of the survey. **Results:** Phase 1 yielded a sample of 65 participants while Phase 2 consisted of 16 participants. The pickleball players' demonstrated a central tendency to be motivated by concepts of enjoyment (4.84), physical health (4.6), social health (4.43), psychological health (4.38), and competition (4.38). The central tendencies of the perceived benefits of playing pickleball emphasized social health (4.68), enjoyment (4.56), and physical health (4.6). Thematic analyses of the pickleball players' motivations demonstrated a wide range of key themes that align with concepts implemented within the survey: psychological health, social health, competition, enjoyment, physical health, and mastery. Key themes of the pickleball players' perceived benefits were associated with concepts of physical health, psychological health, social health, and competition, and the participants discussed barriers related to concepts of physical health and cultural influences. Moreover, the focus group data further defined accessibility as a key concept related to the participants' motivations and barriers to play pickleball. The primary investigator and fellow student researcher also noted a potential barrier posed by the pickleball players' contrasting inclinations towards competitive or social gains. **Conclusion:** Overall, pickleball participation was strongly related with older adults' subjective well-being within the results of both phases of this study. The insight into the relationships between the pickleball players' motives, perceived benefits, and perceived barriers can assist in increasing participants' adherence within various physical activity programs or interventions. These results hypothesize that programs or interventions that activities which address this relationship will be successful in retaining participants and achieving health-related benefits from increased physical activity levels.

**Keywords:** Physical activity, Active aging, Sequential explanatory mixed-methods, Survey, Focus groups.

## INTRODUCTION

According to the West Virginia Department of Health and Human Resources' (WVDHHR) most recent Behavioral Risk Factor Surveillance System (BRFSS) data, West Virginia is ranked the highest in the nation for the prevalence of poor physical health, poor mental health, and activity limitations. [1] West Virginia is also consistently within the top of the nation's charts in cognitive impairments, rates of overweight and obesity, falls, cardiovascular disease, diabetes, COPD, and depression - all of which were noted to be highest in occurrence within the older population. [1] Furthermore, 28.2% of West Virginian adults do not participate in physical activity with the highest prevalence of physical inactivity occurring among those aged 65 and older. [1] Research has determined that rural populations in the United States, like those in West Virginia, are disproportionately associated with decreased levels of physical activity and increased rates of obesity and chronic diseases. [2, 3] This issue is further exacerbated within the aging population. [4, 5] In fact, the CDC has determined that there is a significant negative correlation between levels of physical inactivity and age. [6] Specifically, 25.4% of adults 50–64 years old, 26.9% of adults 65–74 years old, and 35.3% of adults ≥75 years old are considered sedentary. [6]

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There is a considerable amount of evidence that supports higher levels of physical activity ameliorates obesity and chronic disease, and within older adults, these benefits extend to include improving cognitive function and lower rates of depression. [3, 5, 7] Consistent participation in physical activity has been shown to decrease chronic disease risk by 20–30% in comparison to physically inactive individuals. [7] However, the results of the National Health and Nutrition Examination Survey (NHANES) indicate only 49.1% of adults ≥65 years old adhered to appropriate levels of physical activity. [8] Motivations and barriers are two of the most prominent factors that stimulate and maintain individuals' participation in physical activity to achieve health-related benefits. [9, 10] Moreover, research encompassing motivations and barriers to being physically active within older populations has found a common, age-specific emphasis on health considerations, such as "staying independent" and "fear of falling" respectively. [10] Furthermore, older adults are motivated to participate in physical activities that are social and leisurely in nature, but barriers can hinder older adults in rural communities from engaging in physical activity that serves these motives. [10-12] These barriers can include deficient numbers of facilities, spaces, professionals, and participants. [12] Overall, it can be hypothesized that activities which address this relationship will be successful in retaining participants and achieving health-related benefits from increased physical activity levels.

Currently, there is research to support that leisure sports have the potential to serve this purpose. [11, 12] In particular, a racket sport called pickleball - characterized by simple rules, comparably low injury risk, ease of play, high accessibility and social features - has become the fastest growing leisure sport in the United States and is especially popular among older adults. [11, 13] In fact, pickleball participation has been associated with increased levels of moderate to vigorous physical activity and decreased sedentary behaviors in older adults. [14] Additionally, pickleball promotes long-term adherence via opportunities to improve skills and even compete, and, thus, the sport has been associated with psychosocial, cognitive, and physiological benefits, particularly within this population. [11, 12]

Pickleball proponents believe the nature of the sport appeals to motivations and overcomes barriers associated with rural, aging populations [12]. In fact, two studies have already investigated the relationship between pickleball and older participants' motivations explicitly [15, 16]. In Buzzelli and Draper's study, they reported mastering new tasks and skills as the primary motivation and competition as the main perceived benefit of their participants [15]. The researchers cited that this reflected a relationship between the two factors but not a parallel association [15]. The findings of Casper and Jeon corroborated that of Buzzelli and Draper, and the leading motivations of their participants also included mastery of new skills and competition [15, 16]. However, Casper and Jeon's work also demonstrated that fitness and socialization were the most important motivational factors of their participants [16]. Despite the limited and inconsistent research in the interest of motivations and older adults' participation in pickleball, these two studies create a foundation for future investigation.

Correspondingly, only one of these studies included gathering perceived benefit measures in their methods, and none have been found to incorporate perceived barriers into their pursuits [15]. The purpose of this study is to investigate West Virginia pickleball players' motivations to be physically active as well as be the first to relate these to their perceived benefits of their participation and barriers to being physically active. A sequential explanatory mixed-method approach will be taken to gain greater insight into these relationships within a successfully growing sport. The results could be promising from a public health perspective since pickleball has been shown to effectively increase physical activity levels and promote health-related benefits [16]. It can be conjectured then that the findings of this study could be applied to not only increase the effectiveness of pickleball

organizations but also to ensure the success of other future physical activity interventions and sports programs for aging, rural populations.

## MATERIAL AND METHODS

### Methodology

This study employed a mixed methods design to gain more robust information about the key factors in pickleball players' motivations, benefits, and barriers regarding physical activity. Specifically, a sequential, explanatory structure begins with a quantitative-driven phase followed by a qualitative-driven phase to best facilitate an in-depth understanding of general trends demonstrated in these key factors. [17] The follow-up model of the sequential, explanatory mixed method design will best fit the aims of this project by emphasizing the initial quantitative phase to gain further insight into significant results. [17]

This approach has been previously applied to effectively determine barriers and facilitators to general physical activity within the active aging population. [18, 19] Thus, our research will attempt to align with its predecessors to further investigate pickleball players. Additionally, these studies employed a quantitative questionnaire within the first phase to be followed by interview methods although their purposes and construction differed. [18, 19] Correspondingly, the construction of our two-phase design included: Phase 1 - an online survey distributed to state pickleball group participants; and Phase 2 - focus groups consisting of pickleball participants in four areas of the state.

### Participants

A convenience sampling approach was employed throughout both phases of the study. [20, 21] The sampling frame broadly consisted of West Virginia pickleball players contacted through various means and volunteered to be a potential participant. For Phase 1, a two-step recruitment method was employed, consisting of first requesting lists of potential participants from prominent leaders within the pickleball community across the state via their contact information listed on the USA Pickleball's Places 2 Play service website (places2play.org) and then directly listed a "call to action" within private pickleball Facebook groups from differing regions in West Virginia (WV). Ultimately, these processes yielded 173 volunteer participants across the state of WV. Once Phase 1 was concluded, the previously established connections with pickleball leaders across the state were leveraged to purposely select a sample for focus groups for Phase 2. Leaders who agreed to participate further recruited 2-5 of their peers to participate in a discussion with them. These networks effectively facilitated four focus group sessions of 3-6 participants from four different geographic locations within WV.

### Instruments

#### Survey

The content of the survey was adapted from previously validated instruments and peer-reviewed research in order to address pickleball players' motives, benefits, and barriers to being physically active. Specifically, the Physical Activity and Leisure Motivation Scales and Exercise Benefits/Barriers Scale have been statistically established as reliable and valid within aging populations. [9, 22] Thus, these instruments served as the foundation for the survey's Likert rating scale. The statements were tailored to address common motivations and benefits of pickleball playing and common barriers to being physically active in rural and aging populations. These concepts encompassed all of the following: physical health, social health, psychological health, enjoyment, competition, mastery, cultural influences, and health pressures. Table 1 describes each of these in further detail. While this instrument was driven by the quantitative Likert scales, a few open-ended questions were included for the

participants to provide further details. Additionally, demographic information was collected with further inquiries into the participants' frequency of play, commutes, facilities, league memberships, costs, and other activities.

The survey instrument was reviewed by faculty members with related expertise at West Virginia University for further edits and feedback throughout the survey development process. The first of these reviews consisted of an in-depth analysis and discussion with the mentors of the project, and the second solidified the edits made to the document. The third review served as a pre-test of the survey within its virtual format with special attention paid to the layout, complex questions, redundancy, and length [20].

### Focus Groups

True to the methodological approach, the focus group's semi-structured script was drawn from the results of the survey [17]. Thus, an emphasis was placed on the primary perceived motivators and benefits related to pickleball as well as a focus on the barriers to being physically active that the players had experienced, as this portion of the survey in Phase 1 was scored poorly by the respondents. Further inquiries were added to the focus groups' discussions to investigate the players' opinions on pickleball's popularity. The focus group script and protocol were drawn up in three, separate sessions of reflecting and revising with a knowledgeable and highly experienced faculty member that served as the project mentor.

### Protocols

#### Phase 1 - Survey

Within the first phase, the survey was implemented via the Qualtrics survey engine as a self-administered, internet questionnaire. Utilizing Qualtrics to gather data for this study benefit the practicality and structure of the survey [20]. Qualtrics also doesn't require any additional applications or steps to get to the survey and, thus, improves accessibility. Furthermore, Qualtrics provides data on the participants' progress and completion rate of the survey, and this feature assisted in the data cleaning process [23]. Data lines that are under 90% complete were classified as nonresponse and removed. Additional nonresponses in the open-ended questions were noted and discussed with the project's mentor in relation to the focus group discussions.

#### Phase 2 - Focus Groups

Several considerations were made within Phase 2 to benefit the focus group discussions' feasibility and rigor [21]. In order to accommodate geographical distances and available facilities, these processes were offered virtually as well as in-person. Two of the focus groups were conducted via Zoom, one at the School of Applied Human Sciences at West Virginia University, and the last at a large, community sports facility. The discussions were conducted by the primary investigator and a fellow student researcher to ensure proper engagement with the participants as well as extensive notetaking. Afterward, the two recorded their own reflections and summaries of the conversations. Furthermore, the sessions were audio recorded and transcribed to facilitate accurately capturing the pickleball players' responses and ideas [21].

### Analyses

The analyses of this study occurred at the conclusion of each phase. The quantitative data was assessed via SPSS software. Since Likert scales are considered interval level data, measures of central tendency, including mean, are the most appropriate procedures [24]. To analyze the qualitative data, the four-step, thematic analysis process depicted by Braun & Clarke was conducted to identify patterns and emerging themes [25]. Due to the large amount of qualitative data gathered,

NVivo data analysis software was employed since it is an intuitive and efficient software program. The primary investigator validated the results of both phases via cooperation with the fellow graduate student researcher and project mentor [25].

## RESULTS

### Phase 1 - Survey

The two-step recruitment approach for the survey in Phase 1 yielded a sample of 173 West Virginian pickleball players. From this sample, 73 responses were received (42% response rate) Eight responses were eliminated from the analyses because they were below a 90% completion rate. Consequently, the resulting sample consisted of 65 participants.

Eighty-six percent (86.15%) of the participants were between the ages of 50 and 70+ years old with the majority between the ages of 60-69 years old (44.6%) (Table 2). Additionally, Table 3 indicates that the majority of the participants play 2-3 times/week (57.8%) although one respondent didn't answer this question. Forty-six percent (46.2%) of the participants commute between 10-19 minutes. The majority of participants also play on public outdoor courts (86.2%), and eighty-five percent (84.6%) of the respondents indicated that they played in multiple spaces. The results of the survey also determined that 83.1% of the participants pay to play pickleball, and the answers provided within the open, follow-up question revealed that the general costs are around \$5/session.

Moreover, the pickleball players' Likert scale ratings demonstrated a central tendency to be motivated by concepts of enjoyment (4.84), physical health (4.6), social health (4.43), psychological health (4.38), and competition (4.38) (Table 4). The primary motivations listed by the participants in the open-ended question corroborated these results, most frequently using terms that relate to enjoyment, physical health, social interaction, and competition concepts. Furthermore, the central tendencies of the perceived benefits of playing pickleball, displayed in Table 5, also emphasized social health (4.68), enjoyment (4.56), and physical health (4.6) within the Likert scale ratings. Correspondingly, the participants mainly used terms related to concepts of physical and social health within their descriptions of their primary perceived benefits within the open-ended question. Pearson correlation analyses revealed strong relationships between the pickleball players' motivations and perceived benefits regarding physical activity within the concepts of psychological health ( $r=0.74$ ) and enjoyment ( $r=0.71$ ) (Table 6). However, the barriers section performed poorly. Each of the statements were almost unanimously scored 1 out of 5 as "definitely false," and participants described their confusion within the follow-up, open-ended question.

### Phase 2 - Focus Groups

A total of 16 West Virginian pickleball players participated in the focus groups of Phase 2; however, one participant chose not to complete the demographic questionnaire. All participants were over the age of 50, and 80% were between the ages 60-69 years old (Table 7). All of the participants indicated that they play on outdoor public courts available to the public. The majority of the participants play pickleball 4-5 days/week (60%), are not associated with a league (60%), and pay to play (93%) (Table 8). However, the results of the open, follow-up question most commonly listed costs of around \$5/session, corroborating the survey results.

### Motivations

Thematic analyses of the pickleball players' motivations demonstrated a wide range of key themes that align with concepts implemented within the survey: psychological health, social health, competition, enjoyment, physical health, and mastery (Figure 1). Additionally, the

focus group data further defined accessibility as a key concept related to the participants' motivations to play pickleball, encompassing the sports' ease of entry within terms of age, fitness level, and financial means. This concept is further defined within Table 1.

*"It's a very accessible sport. It's . . . playable by most levels of fitness, most stages, and . . . the learning curve is very quick."*

*"Pickleball, you can start even being older. You can be in your fifties or sixties or seventies."*

*"Grandparents could play this game with a grandchild."*

*"It's relatively low cost to play. You don't have to have a lot of gear - a paddle . . . Most people have an extra paddle to get you started."*

Figure 1 depicts these major concepts as well as several themes and subthemes attributed within each that emerged from the data. The pickleball players' most commonly cited motives related to the social and accessibility aspects of the sport (Figure 1).

*"The other thing for me is how welcoming everyone is . . . We're all equal. We're all out there to enjoy the sport and enjoy the company. And the people were very welcoming and invited us in their group."*

It is also important to note that the participants continuously termed pickleball as "fun" and, thus, established that enjoyment is also a significant motivator.

*"I have more fun playing pickleball than I think I do anything else, and that's why I play."*

*"I couldn't get into lifting weights because that just would not be fun. I don't like to get on the treadmill . . . and walk because it's just not fun. But playing pickleball is fun."*

The COVID-19 pandemic was also found to serve as a motivator for the pickleball players, as it was deemed a safe, outdoor way to be physically active with others.

*"Coming out of COVID, I think there is a huge need . . . to group again and to interact and actually see people. . . Pickleball does that. It gives you that social interaction that you're looking for."*

#### Benefits

Key themes related to the benefits perceived by the pickleball players were associated with concepts of physical health, psychological health, social health, and competition (Figure 2). Figure 2 demonstrates that the most commonly discussed benefits were improvements in the participants' physical and psychological health.

*"My health is the best it's been in twenty plus years. I've got a goal, and sixteen pounds more to go, and I'll have lost one hundred pounds . . . That (was) pretty much from playing pickleball."*

*"I have . . . a friend out in Utah, who . . . was in Afghanistan . . . on two different tours . . . He basically checked out of society because of his PTSD. He was so depressed. Somewhere online, somebody talked him into playing pickleball, so he started to play and fell in love with it . . . If you ask him, he'll tell you it saved his life."*

In fact, increased "stamina" and "mental alertness" were frequently cited as primary benefits.

*"Our mental health . . . has improved because we've been out playing competitively, playing socially, and . . . of course, it requires using . . . your brain as a muscle to think through the strategies and play the game."*

Furthermore, the formation of quality social relationships was extensively discussed throughout the focus group sessions, and, therefore, was a primary benefit achieved for the participants.

*"I went to a Christmas house party that was . . . probably half of the people there were pickleball."*

*"I've got like 1,500 friends Facebook friends. Half of them now are pickleball friends."*

#### Barriers

Figure 3 details the key concepts, themes, and subthemes that were uncovered within the thematic analyses of the pickleball players' perceived barriers to being physically active. The participants discussed barriers related to concepts of physical health and cultural influences, including injury risks and the COVID-19 epidemic.

*"I have a lot of arthritis in my feet, and I really do have to bank my time or space in between my play."*

*"I now know pickleball will give you injuries. I got a torn meniscus in my left knee, and that slowed me down."*

*"Before COVID here, we were getting 25 to 30 people coming in the evening to play . . . We had that many people, and then COVID hit. And we really had to stop it stop . . . open play because there was too many people."*

Within these discussions, the organization of accessibility as a key concept was further solidified (Figure 3). Specifically, the primary themes of this data detailed the effects of pickleball's explosion in popularity as well as a lack of quality facilities.

*"The system (is) going in and showing up, and you've got . . . 16 players that can be playing at any given time and then . . . 16 players sitting on the benches waiting to play."*

*"When we play outdoors, the courts are in horrendous condition, and they have been on the schedule. They should have been done a year and a half ago."*

*"They've been actually really slow in building facilities, and there actually are . . . zero public facilities to play pickleball."*

The primary investigator and fellow graduate student researcher also noted a potential barrier posed by the pickleball players' contrasting inclinations towards competitive or social gains (Figure 3).

*"I mean, if you're good, you don't enjoy playing with somebody that's not. And if you're not very good, you don't enjoy playing with somebody that's really good."*

In fact, several participants described the lengths they will take to play with similarly oriented pickleball players – "traveling" and coordinating their "own groups." One of the more socially driven focus groups even explicitly detailed their frustration with overly competitive players.

*"We've started to be the no drama pickleball group . . . Now we just want to play for fun and exercise, and we don't want to . . . be so competitive that we get an arguments and fight and stuff."*

#### Relationships between Motivations, Benefits, and Barriers

Since the aims of this research sought to understand the relationships between pickleball players' perceived motives, benefits, and barriers regarding being physically active, a broader conceptualization of the project, as a whole, was undertaken following the thematic analyses (Figure 4). From the analyses conducted, it can be conjectured that the

players' motivations, benefits, and barriers are related to physical health, social health, and competitive concepts. Similarly, psychological health is considered a key motivator and benefit related to playing pickleball while accessibility poses a significant motivator and barrier to physical activity (Figure 4). Furthermore, enjoyment and mastery of pickleball-related skills were also an important motivator for the participants.

## DISCUSSION

This study sought to expand upon previous literature surrounding motivation and benefits related to playing pickleball to include further inquiry into perceived physical activity barriers. Within both phases of the explanatory mixed-method approach, a variety of key motivations were defined. Casper and Jeon had similarly found several common motives within pickleball players. [16] These included physical health, social influences, and competition – all of which were determined important concepts within the perceived motives, benefits, and barriers of our sample. Additionally, the results of this study corroborated previous investigations, and mastery or skill acquisition was found to be a prominent influence on pickleball participation. [15,16] However, these findings substantiated strong relationships between the players' perceived motivations, benefits, and barriers through in-depth quantitative and qualitative analyses as recommended by Buzzelli and Draper. [16]

Overall, pickleball participation was strongly related with older adults' subjective well-being within the results of both phases of this study. This is conjectured from the understanding that well-being is comprised of physical, psychological, and social health aspects, and these were considered key motivators, benefits, and barriers. [26] Congruently, Heo et al. (2022) suggested that pickleball participation can serve as a form of "serious leisure" to enhance well-being and

"successful aging." [26] Ryu et al. (2018) further probed this relationship by incorporating the players' personalities as valid predictors of pickleball's effects on well-being. [27] This could offer some explanation into the considerable number of key concepts defined within this research process, as it implies that there are a variety of personality orientations drawn towards pickleball. However, this assumption would require further investigation that effectively employs a social behavioral theoretical framework to guide the design and appropriately define psychosocial concepts.

Similarly, Kim et al. (2018) positions the accrual of social networks as a significant mediating factor between enjoyment and pickleball participation. [28] The results of this study comparably distinguished enjoyment as an important motivator and social health as a benefit and influence on barriers of pickleball participation. However, it is important to note that social health's connection to pickleball barrier was mitigated by the players' social vs. competitive orientations towards the sport. Thus, more pointed inquiries surrounding perceived motivations, benefits, and barriers in relation to pickleball participation should continue to consider the implications of enjoyment and social health.

In the wake of the COVID-19 pandemic, the effects of the quarantine and precautions have had lasting implications within the public health realm of physical activity. In this study, COVID-19 was established as both a motivator and barrier to participating in pickleball. Although posed as contradictory, these findings corroborate that of Casper et al. (2021). [29] Since pickleball can be played outdoors, some considerations could be made by the groups to continue to be physically active in a safe space. However, COVID-19 was still associated with negative impacts on psychological and social health within pickleball players, much like in these results. [29]

**Table 1:** Descriptions of Key Concepts of Pickleball Players' Motivations, Benefits, and Barriers

Concepts	Description
<b>Physical Health</b>	Refers to all statements related to physical body functions and conditions
<b>Social Health</b>	Refers to all statements related to interacting and forming relationships with other people
<b>Psychological Health</b>	Refers to all statements related to mental and emotional abilities and conditions
<b>Enjoyment</b>	Refers to all statements related to feelings of pleasure and satisfaction
<b>Competition</b>	Refers to all statements related to activities or processes of trying to win over another
<b>Mastery</b>	Refers to all statements related to possessing or achieving skills or techniques
<b>Cultural Influences</b>	Refers to all statements related to historical, geographical, and familial factors
<b>Health Pressures</b>	Refers to all statements related to existing health conditions and health professionals' recommendations
<b>Accessibility</b>	Refers to all statements related to the quality of being easily entered

**Table 2:** General Demographics of Phase 1 (Survey)

Choice	Age (yrs)					Gender	
	30-39	40-49	50-59	60-69	70+	Male	Female
Count	5	4	13	29	14	34	31

**Table 3:** Demographics Specific to Participation in Pickleball of Phase 1 (Survey)

Choice	Frequency (days/week)			Commute (min)		Part of League		Locations				Pay to Play			
	2-3	4-5	6-7	<10	10-19	20-30	>30	Yes	No	Public/ Outdoor	Public/ Indoor	Private/ Outdoor	Private/ Indoor	Yes	No
	Count	37	26	1	19	30	11	5	26	39	56	24	38	35	54

**Table 4:** Central Tendencies of Perceived Motivations in Phase 1 (Survey)

Means	Motivators							
	Enjoyment	Mastery	Psychological Health	Physical Health	Social Health	Health Pressures	Competition	Cultural Influences
	4.84	4.06	4.38	4.60	4.43	3.45	4.38	3.16

**Table 5:** Central Tendencies of Perceived Benefits in Phase 1 (Survey)

Means	Benefits							
	Enjoyment	Mastery	Psychological Health	Physical Health	Social Health	Health Pressures	Competition	Cultural Influences
	4.56	4.06	3.73	4.49	4.68	2.89	3.88	3.91

**Table 6:** Correlations between Perceived Motivations and Benefits in Phase 1 (Survey)

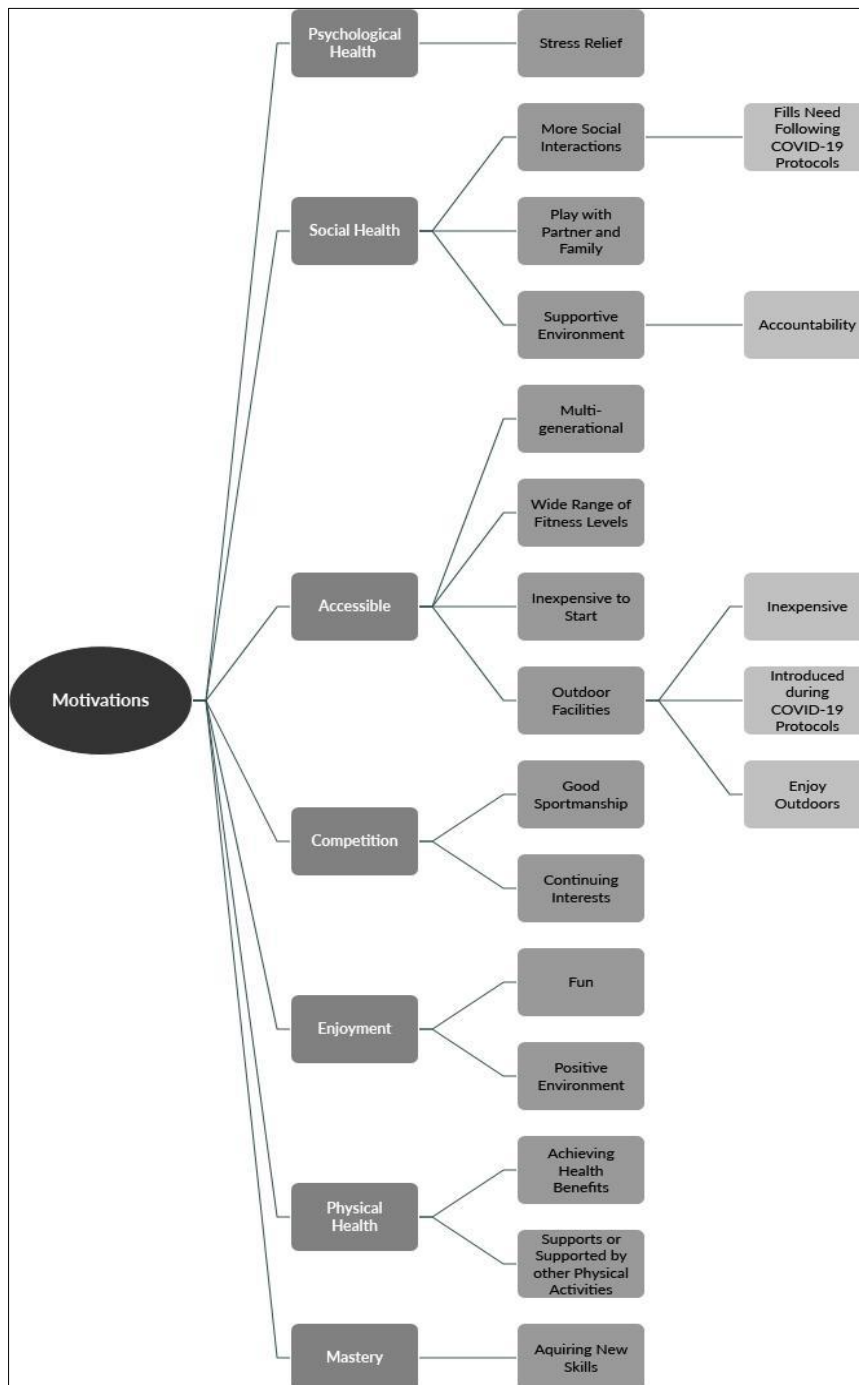
Correlations (r)	Motivations and Benefits							
	Health Pressures	Cultural Influences	Social Health	Competition	Physical Health	Psychological Health	Enjoyment	Mastery
	0.52	0.61	0.28	0.66	0.31	0.74	0.71	0.15

**Table 7:** General Demographics of Phase 2 (Focus Groups)

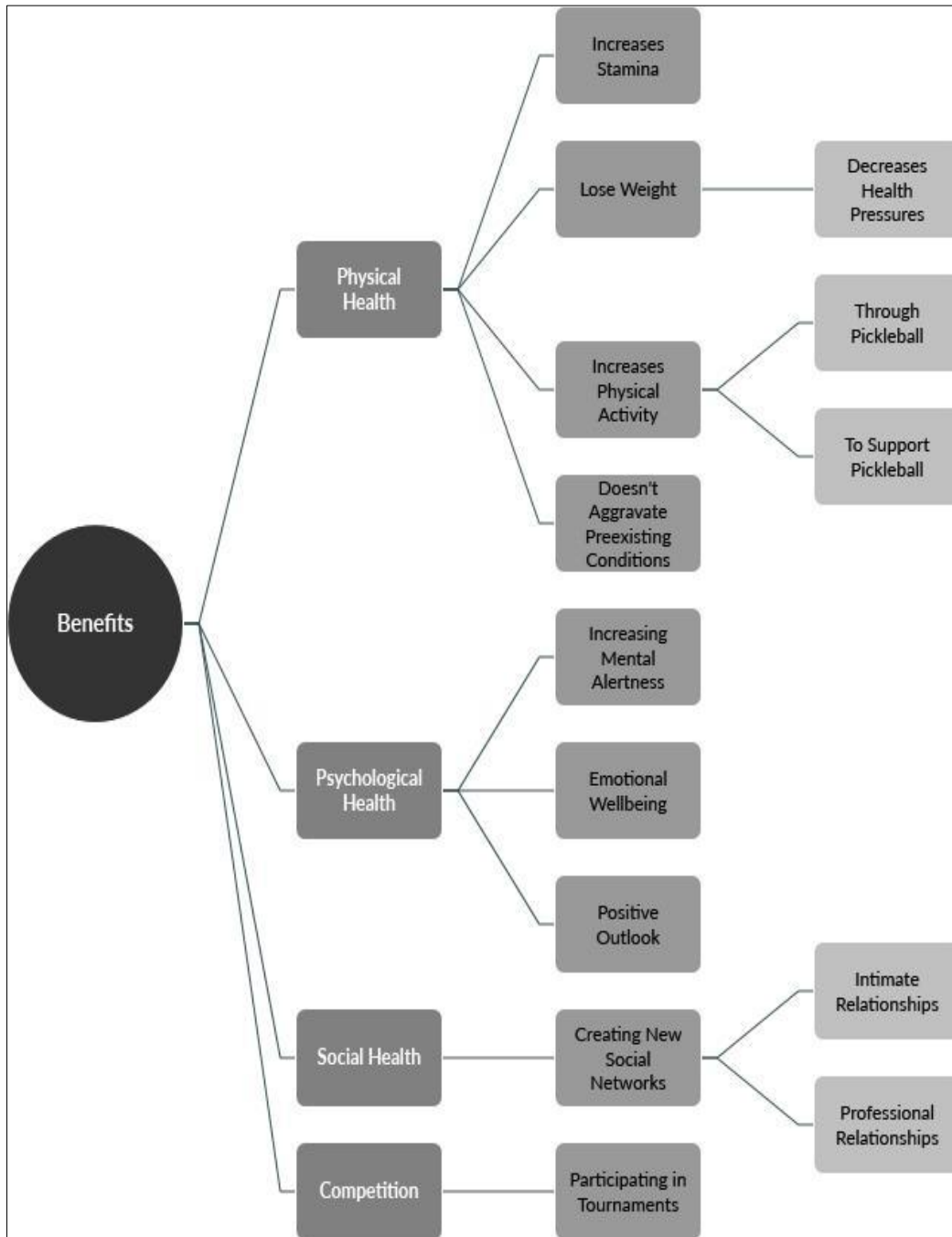
Choice Count	Age (yrs)					Gender	
	30-39	40-49	50-59	60-69	70+	Male	Female
	0	0	1	12	2	6	9

**Table 8:** Demographics Specific to Participation in Pickleball of Phase 2 (Focus Groups)

Choice Count	Frequency (days/week)				Commute (min)			Part of League		Locations				Pay to Play	
	2-3	4-5	6-7	<10	10-19	20-30	>30	Yes	No	Public/ Outdoor	Public/ Indoor	Private/ Outdoor	Private/ Indoor	Yes	No
	5	9	1	5	6	1	3	6	9	16	11	1	7	14	1



**Figure 1:** Mind Map of Perceived Motivations in Phase 2 (Focus Groups)



**Figure 2:** Mind Map of Perceived Benefits in Phase 2 (Focus Groups)

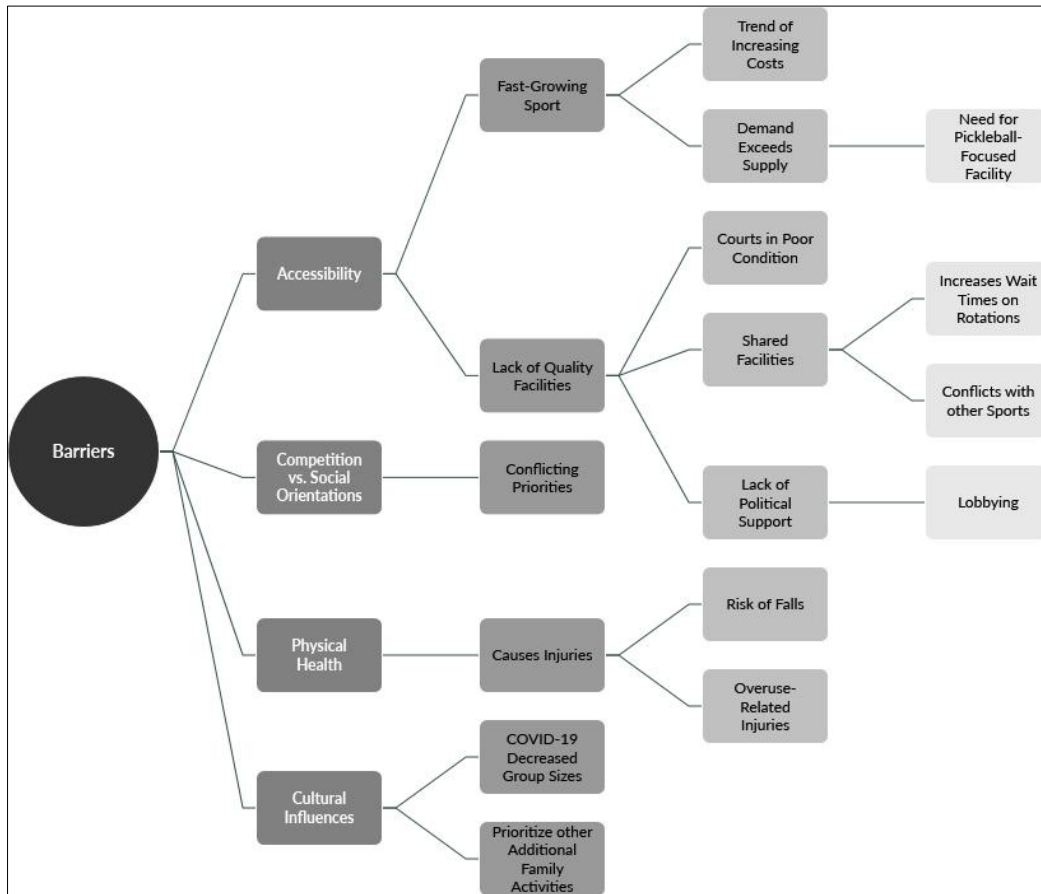


Figure 3: Mind Map of Perceived Barriers in Phase 2 (Focus Groups)

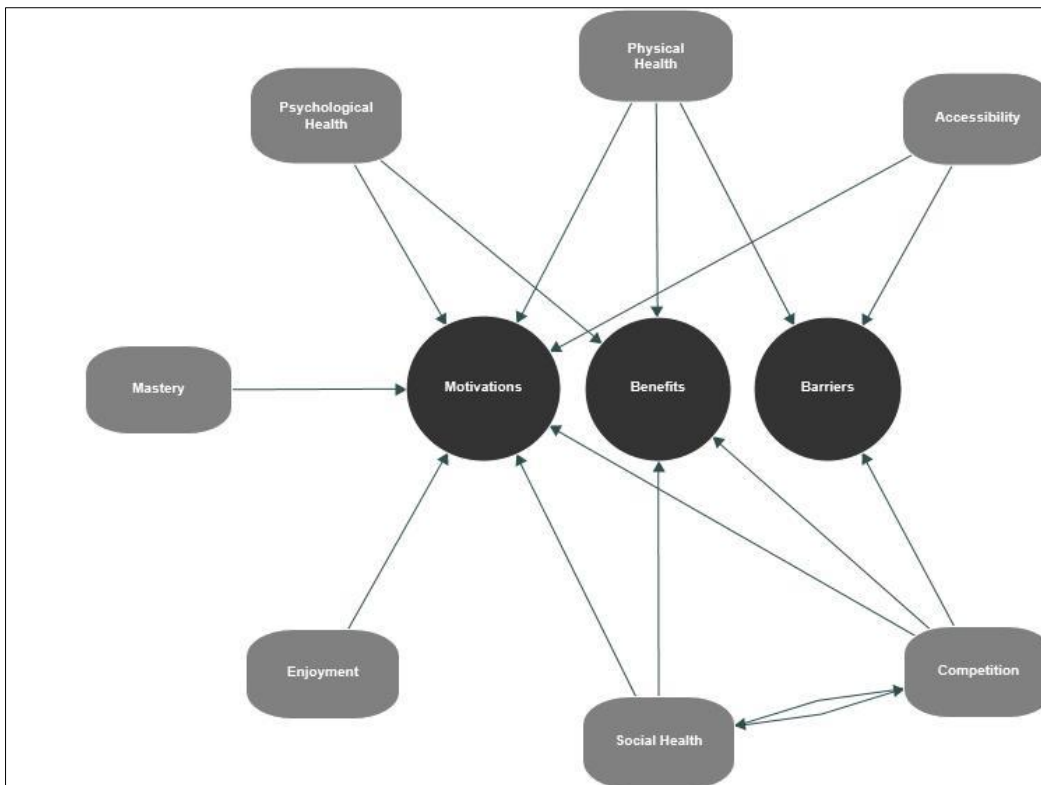


Figure 4: Concept Map of Perceived Motivations, Benefits, and Barriers in Phase 2 (Focus Groups)



## CONCLUSION

Considering the prevalence of obesity rates in older populations in rural areas like West Virginia, this study was conducted with aims at providing practical directions for future intervention efforts. The pickleball players of Phases 1 and 2 indicated that they engage in consistent physical activity, and health-related perceived benefits were supported via both quantitative and qualitative processes. Thus, it can be conjectured that pickleball effectively promotes physical activity and improves the participants' health, substantiating previous claims.<sup>[7]</sup> Moreover, the insight into the relationships between the pickleball players' motives, perceived benefits, and perceived barriers can assist in increasing participants' adherence within various physical activity programs or interventions. These results hypothesize that programs or interventions that target improvements related to their participants' motivations to become physically active will efficiently maintain their members and further benefit their progress toward achieving health-related benefits, supporting previous findings.<sup>[7]</sup> Furthermore, the findings support that addressing and minimizing participants' perceived barriers will also aid in retaining participants within physical activity interventions.<sup>[10]</sup>

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## Disclosure

The author reports no conflicts of interest in this work.

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