What's all the fuss about pickleball? Motivational profiles of middle age and older adult recreational pickleball players

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Older Adults and Pickleball

Abstract

As a person becomes older their physical activity options may change or be reduced. One activity that is proving differently among older adults is pickleball. As of 2022 over 3.1 million people in the United States participate in pickleball (USAPA Pickleball, 2022). From the casual observer, many recreational tennis courts have been modified to accommodate the increase of pickleball players. Also, many of these pickleball players are older (40 +). Thus, the purpose of this study was to investigate the motivational profiles of 40 and older adults towards playing pickleball. Generally, it was learned that 40 and older adults participate in pickleball for fun, exercise and the social interaction that comes from playing pickleball.

Key Points: Pickleball is an excellent activity for older adults, for the reasons that it is fun, provides a form of exercise and the social interactions between the players.
Benefits of engaging in health-enhancing physical activity (PA) include reduced chance of cardiovascular disease (Altavilla et al., 2018), diabetes (Bassuk & Manson, 2005), depression (Schuch & Stubbs, 2019) and osteoporosis (Dhurup, 2012). Additionally, engaging in PA for social interaction can enhance cognitive functions (Glei, et. al., 2005) and reduce depression (Chiao et. al., 2011). One activity that can enhance both PA and social interaction is pickleball, especially among the mature population of 40 years of age and older (Crumpler, 2015).

Pickleball is the fastest growing sport in the United States (Sports & Fitness Association, 2016), with approximately 3.1 million participants (USAPA Pickleball, 2020). The pickleball court is played on a 20 ft. by 44 ft. court with a volley zone in the center. The equipment used for playing pickleball is a paddle and wiffleball (Vitale & Liu, 2020). Pickleball could be considered a combination of tennis, badminton, wiffleball and table tennis. Games are played as singles or doubles (Vitale & Liu, 2020). Pickleball’s growth and popularity are evidenced by crowded community centers and its incorporation into recreational facilities, retirement communities, and physical education classes (Buzzelli & Draper, 2020). In 2000, there were roughly 500 to 700 known pickleball players in the United States (Schauer, 2013). Pickleball has significantly grown in the ‘sun belt’ states, such as Arizona, California, Florida, and Texas which are home to many of the older population (Hurley, 2015). Casper and Jeon (2019) stated, “By many accounts, pickleball is the fastest growing participation sport in the United States. Between 2010 and 2016, there has been a 385% increase in participation (over 2.5 million current players. The popularity of the game is expected to continue to grow up with an estimated eight million players by 2020 (p.29).

Self-Determination Theory
Self-Determination Theory (SDT) encompasses a broad approach for understanding and explaining a range of aspects associated with human motivation (Deci & Ryan, 1985, 1991). According to SDT, humans are driven by psychological needs which originate within or are influenced by the external environment (Standage et al., 2005). These psychological, universal, human needs have generally been organized into three categories: competence, autonomy, and relatedness. Competence suggests the perceived ability one has in completing a given task. Autonomy is the relative sense of one’s choice or agency to complete the task. Relatedness connotes a perception of belonging within a group or with significant others.

SDT postulates that individuals are endowed with the personal agency to evaluate a task, make decisions, and then self-regulate their behavior accordingly (Sun & Chen, 2010). Further, motivation is said to lie on a continuum from a complete absence of volition within a given task to engaging in the task with complete internally originating self-determination. This motivational continuum includes amotivation, various levels of extrinsic motivation, and intrinsic motivation. Individuals experiencing amotivation have no volition or intention to act. Extrinsically motivated individuals engage because of some motive external to the activity (e.g., desire to obtain a reward or fear of punishment). Those who are intrinsically motivated engage because they feel a personal enjoyment and satisfaction in doing so (Ryan & Deci, 2000).

A range of extrinsically motivated psychological states have been identified: external regulation (e.g., participation to obtain a reward), introjected regulation (e.g., participation to avoid shame or guilt), identified regulation (e.g., participation for personal importance), and integrated regulation (e.g., participation because of self-awareness of the potential benefits of engagement). However, extrinsically motivated individuals have not reached a level of engagement that reflects personal enjoyment for the task. (Ryan & Deci, 2000).
It is important to note that social activities such as pickleball “can facilitate or forestall intrinsic motivation by supporting verses thwarting people’s innate psychological needs” (Ryan & Deci, 2000, p. 71). In other words, when individuals are already intrinsically motivated for a given task (e.g., through novelty or challenge), the social aspects of the activity can strengthen the innate internally originating activity. Conversely, when activities have no appeal of novelty, challenge, or benefit to self, the social presence may invite extrinsic, or less self-determined reasons for engagement.

With the popularity of pickleball, research has emerged promoting its benefits. Casper and Jeon (2019) examined the psychological connection to pickleball by investigating active, older adults from the Southeastern United States (55 years and older) in relation to behavioral involvement and motives for participation. Results suggested that fitness and socialization were the main reasons driving participant engagement in pickleball. Another study extolling the benefits of pickleball in the older aged population investigated serious participation in pickleball and its effects on depression (Heo, et. al., 2018). The researchers considered serious participation to include highly dedicated amateurs who had participated in a state pickleball tournament and reported personal enrichment, self-actualization, self-gratification, and had group (team) accomplishments from playing the sport. Results revealed an inverse relationship between serious pickleball engagement and levels of depression. This suggests that pickleball engagement may serve as a possible intervention for lowering depression in adults.

Notwithstanding the growing popularity of pickleball in the United States, few studies have examined pickleball engagement from a self-determination perspective. When a social movement like the spread of pickleball increases at a relatively rapid pace, understanding this phenomenon can be beneficial. A better understanding of why people engage in pickleball may
facilitate further enhancement for the benefits associated with increased PA and social
engagement among the older adult population. Thus, the purpose of this study was to investigate
the motivational profiles of adults 40 years and older toward playing pickleball.

Methods

Participants and Setting

Participants, located in the Intermountain west, included 272 adults (114 males & 157
females) 40 years of age and older (r_age = 40 to 80+ years: see Table 1 for gender and age
groupings). Participants were recreational players who played on community outdoor courts,
recreational center courts, and indoor gymnasium courts.

Procedures

Upon IRB approval, a nonprobability sample of convenience was employed for data
collection. Participants were recruited with an introductory e-mail explaining the intent of the
study which included a link to the electronic questionnaire. After reviewing and selecting the “I
agree” section of the e-mail, participants provided informed consent to participate in the study.
Surveys were disseminated electronically on two occasions, with the second e-mail
communication as a reminder. Following consent, participants completed a brief survey via
Qualtrics.

Instrumentation

The survey used to investigate motivational profiles for engaging in pickleball consisted
of a modified version of the 16 item-four subscale (IM-intrinsic motivation, IR-identified
regulation, ER-external regulation and AM-amotivation), Situational Motivation Scale (SIMS;
Pelletier reference) followed by four open-ended questions. The SIMS stem stated, “Why are
you currently engaged in playing pickleball?” Participants responded to each of 16 items on a 7-
point Likert Scale (1= Not at All; 2= Very Little; 3= A Little; 4= Moderately; 5= Enough; 6= A
Lot & 7= Exactly) along with four open-ended questions. For example, they responded that they
were participating in the pickleball activities (a) “because I think that this activity is interesting”
or (b) “because I don’t have a choice.” All surveys were proctored using the same set of
instructions that were read prior to each survey. The SIMS survey has demonstrated acceptable
levels of validity and reliability across a variety of settings and populations over many years
(Briere et. al., 1995; Guay & Vallerand, 2000).

**Data Analysis**

The 16 items of the SIMS were reduced to four subscales by calculating the average of
each of the four corresponding items. Subsequent analyses were conducted on these subscale
scores. Preliminary analyses, conducted to check for outliers, normality, and reliability, were
performed on each subscale. Internal consistency was assessed by calculating a Cronbach alpha.
Pearson correlations were calculated among respective subscale scores to assess the stability of
the underlying simplex pattern (i.e., strongest correlations between adjacent subscales). If a
simplex pattern was evident, it would provide evidence supporting the self-determination
continuum (Pelletier, et at., 1995). The Self-Determination Index (SDI) was calculated as
follows; 2 *IM +1* IR -1* ER -2* AM. Larger SDI scores are indicative of increased self-
determined motivation. Between gender differences were examined via a series of one way
ANOVA s for each of the four SIMS subscale scores and the SDI score using a Bonferoni
adjusted p value of p < = .01 (see Table 1).

Other data collected from this study were the four open-ended questions on the survey.
The researchers analyzed all of the open-ended responses from the survey. For the open-ended
participant responses were correlated and reviewed to generate preliminary coding categories,
with framework analysis methodology for participant responses, as outlined by Check and Schutt (2011). Framework analysis incorporated the stages of (1) familiarization, (2) thematic, (3) identification, and (4) charting and interpretation (Rabiee, 2004).

Results

Means, standard deviations and reliability scores are available in Table 1. All subscale means were found to be normally distributed. The overall population demonstrated high levels of IM ($M=6.42; SD=.60$), IR ($M=6.33; SD=.70$), and low levels of ER ($M=1.58; SD=1.0$) and AM ($M=2.16; SD=.56$) as expected, suggesting that participants were decidedly more self-determined than not. In particular, the indices for autonomous forms of motivation (IM & IR) were between six and seven on a seven-point scale, while controlled forms of motivation (ER & AM) ranged between one and two on the low end of the seven-point scale.

Correlational analysis provided support for the simplex pattern among the motivational subscales (Prusak, et. al., 2004) (See Table 3). The strength and direction as reported in Table 2 indicate a positive relationship between IM and IR subscales and a negative relationship with ER and AM.

Between gender differences were found with females exhibiting significantly higher levels of IM ($F(2, 269) = 6.40, p = .002$) and IR ($F(2, 269) = 18.92, p < .001$) and SDI ($F(2, 269) = 9.13, p < .001$). No significant differences were noted between genders with respect to ER nor AM.

Other data collected from this study was the open-ended questions on the survey. The first open-ended question was, “What is it about pickleball that makes you want to play?” Throughout the participant responses, three main reasons were expressed: fun, competition, and the social aspects of playing pickleball. A 72 year old female stated,
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“The fun, challenge, exercise and most importantly the friendship. I am 72 and have friends from their 30’s to the 80’s. It’s so much more than just the game. It’s an incredible community. We laugh every day! If someone is having problems, we are there for them. It’s a family.”

A 63-year-old male said,

“It is fun, it is exercising, it is challenging, the endorphins flow when you play a good game or make a good shot, I have made hundreds of great friendships with people I have met playing pickleball- is these enough reasons…. I could go on!”

A 58 year old male stated, “Helps keep me healthy, added social benefit, is competitive and enjoy playing with a wide variety of skill sets.”

The second open-ended question was “How involved in physical activity or sports were you prior to playing pickleball?” The participants covered a wide spectrum of PA or sports participation. For example, there were college athletes, recreational sports participants, and those who had previously engaged in little PA. The third open-ended question was, “Why did you start playing pickleball?” For this question many of the participants were introduced to pickleball by a family member, husband, wife, or friend. The final open-ended question was, “In your opinion, why has pickleball become so popular over the past few years?” One participant stated, “Easy to learn. Can be played across all ages, gender, shapes, and sizes.” A 68-year-old female said, “Appeals to all ages and especially those with low activity levels and physical limitations.”

Similarly, a participant stated,

“It’s fun and very social. At our courts we are always planning something to do together. Lunch, food trucks, birthday parties! Unfortunately, a couple of funerals for those we have played with, and never would have had the opportunity to ever know if it hadn’t
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been for pickleball. Greatest sport for so much fun. Not stuffy like tennis! I’ve played
with people from 8 to 93 and from every walk of life. It’s so much fun to meet such a
diverse group and learn to know them and love them."

Discussion

Given the rapid growth of pickleball, the purpose of this study was to investigate the
motivational profiles of 40 years and older adults who participate in the activity. Individuals may
be motivated to engage in pickleball for any number of reasons, including those originating from
within or influenced by external conditions. Pickleball is a social activity. Given that social
activities can increase or thwart one’s self-determination for engagement, this study used both
quantitative and qualitative methods to better understand the rise of the pickleball phenomenon.

Survey results from this investigation suggest that participants who play pickleball enjoy
high internal volition and self-determination through participation. Most participants reported
playing pickleball because of its physical and social benefits (integrated regulation) and an
intrinsic enjoyment and satisfaction for playing (intrinsic motivation). Conversely, low survey
scores in both the external regulation and amotivation constructs suggest participants felt low
levels of coercion, internal or social pressure to participate. This suggests that participants
who played pickleball perceived their innate needs for competence, autonomy, and relatedness to
be generally fulfilled via engagement. In other words, pickleball provided an avenue for them to
feel they were skilled enough to play, had choice or personal autonomy, and experienced a sense
of social engagement and collegiality with others.

The qualitative data support the survey responses and give insight into the motivational
construct of relatedness. For example, one participant explained that pickleball “Helps keep me
healthy, added social benefits, is competitive and enjoy playing with a wide variety of people.”
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Another participant said, “It’s a fun, social community that I feel welcomed.” Another concurred, “The competition and the friendships that I make have been so enjoyable.” These responses suggest that the social was the primary aspect. According to SDT, social engagement facilitates self-determination when individuals are already intrinsically motivated to participate (Deci & Ryan, 2000). We suggest that, while not explicitly indicated by participants in the open ended questions, the sociality (relatedness) aspect was interrelated with the fulfillment of the other two social nutriments: competence and autonomy (as evidenced by the survey results). In other words, pickleball may be a social activity, but unless one feels some degree of competence in completing the task and some autonomy about how and in what matter it is carried out, the social pull may not be as strong and could even be detrimental.

Pickleball is a unique sport, particularly for the older population. One can learn the sport and perform at a reasonable level perhaps without the same prerequisite practice and experience of tennis, golf, or other activities. Moreover, the sport is becoming more accessible to a wider range of playing abilities. For example, if someone does not have the competence or confidence to play with some players, there is likely a group with which they can play, experience the sociality involved, and compete at an appropriate level for their skill set. The following participant quotes provide insight into these notions: “If someone is having problems, we are there for them. It’s a family.” “There is a sense of community and friendships, anyone can play pickleball. It’s fun, great physical exercise, makes you happy, challenges your mind and body. Easy to play for all ages.”

Findings and insights from this study support other research exploring the effects of playing pickleball on the happiness levels of older adults (50+) (Kim et al., 2021). It was reported that older adults experienced general happiness when playing pickleball. A secondary
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finding was that the older adults also had feelings of trust, safety and a community connection
with their teammates and opponents. These results strongly indicate how important the social
aspects are for the older pickleball players. Supportively, Casper et. al. (2021) studied the social
distancing restrictions during the COVID-19 pandemic on older pickleball players (65+). The
authors discovered that the COVID-19 restrictions significantly affected peoples’ psychological
well-being. This manifested itself in lower mental health, higher loneliness, and lower life
satisfaction.

Implication and Conclusion

This study carries implications beyond the sport of pickleball. Activities like pickleball
seem to invite the fulfillment of the motivational needs of competence, autonomy, and
relatedness in the older population. The construct of relatedness is of particular import. Human
beings are social creatures with an inherent need to associate with others. In designing or
redesigning physical activities opportunities for adults or children, it is important that provisions
for social interaction are made. However, social interaction is likely not as effective in promoting
activity if it is isolated from perceptions of competence and autonomy. Whether community or
recreation centers, physical education classes, youth sports, participants must work toward self-
determination by experiencing the competence necessary to engage while also having some
choice to their engagement.

Another implication of this study is the importance of taking advantage of the popularity
of pickleball. One way of taking advantage is implementing pickleball in 6-12 physical
education classes. Physical educators should incorporate a pickleball unit for obviously the
physical activity benefits, but to introduce students to the lifetime opportunities to play
pickleball. Pangrazi (2003) has stated that a quality high school physical education program is a
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good place to prepare students for being physically active after they graduate from high school. Pickleball is one of those activities that will assist students in lifelong physical activity. A final implication of this study is the social interactions that come to those that play pickleball. Once again from the qualitative data participants made the following statements, “I have made hundreds of great friendships with people I have met playing pickleball, is these enough reasons… I could go on!”, “I have met nice people on the court”, and “It’s an incredible community. We laugh every day! If someone is having problems, we are there for them. It’s a family.” These types of results have greatly helped those that participated in this study. Thus, strengthening pickleball’s benefitting a person’s life.
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References


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Table 1
Means, standard deviations, alphas scores, and effect sizes

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<th>Subscales</th>
<th>All</th>
<th>Alpha</th>
<th>Eta²</th>
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<tr>
<td></td>
<td>(N= 271)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
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<tr>
<td>Intrinsic Motivation</td>
<td>6.42</td>
<td>.60</td>
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<td>Identified Regulation</td>
<td>6.33</td>
<td>.70</td>
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<tr>
<td>External Regulation</td>
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<td>1.04</td>
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<tr>
<td>Amotivation</td>
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<td>.56</td>
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<td>SDI score</td>
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<td>2.22</td>
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<th>SD</th>
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<tr>
<td></td>
<td>n = 114</td>
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<td>n = 157</td>
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<td>Intrinsic Motivation</td>
<td>6.27</td>
<td>.63</td>
<td>6.52**</td>
<td>.56</td>
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<tr>
<td>Identified Regulation</td>
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<td>.72</td>
<td>6.51**</td>
<td>.61</td>
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<td>External Regulation</td>
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<td>SDI score</td>
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<td>2.3</td>
<td>13.6**</td>
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Note: ** = p< .01, Cronbach α ≥ .7 are acceptable, Eta² indicates percentage of variance accounted for

### Table 2
**Correlations**

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<th>Age</th>
<th>IM</th>
<th>IR</th>
<th>ER</th>
<th>AM</th>
<th>SDI</th>
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<td>.08</td>
<td>.15**</td>
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<td>.12</td>
<td>.09</td>
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<td></td>
<td></td>
<td>.15</td>
<td>.17</td>
<td>.54</td>
<td></td>
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<tr>
<td>ER</td>
<td></td>
<td></td>
<td></td>
<td>.20</td>
<td>- .53</td>
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<tr>
<td>AM</td>
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<td></td>
</tr>
<tr>
<td>SDI</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>- .53</td>
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</table>

Note ** = p < .01