

Adult Outdoor Play Preferences: Why Nature Space Design Matters

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Abstract

Adults from many communities who value unstructured, outdoor play and want to play have limited resources to engage in play (Talarowski et al., 2019). Many parks and playgrounds today are designed with children in mind and do not offer many adult-friendly play options. The purpose of this exploratory study was to examine outdoor and indoor adult play preferences to establish a baseline for adult play or nature space design. The survey was distributed to male (N=61) and female (N=261) 18–80-year-old participants through email and posts on Facebook, Instagram, and Twitter and given a three-week window to complete. The participants were asked to pick their five top activity preferences. Overall, 33% of the participants preferred nature activities, 24% preferred playground equipment, 22% preferred sports, and 21% preferred large-yard games. The top preferences predominately came from nature activities and large-yard games. Responses from write in questions showed this group of participants preferred being outdoors (84%), active (85%), and socially driven (97%). More opportunities that match these specific preferred activities must be considered so that adults can take full advantage of the benefits play can provide.

Keywords: adults, play, outdoors, nature, recreation

Play is essential in the development of healthy children and continued health throughout their lifespan as adults (Van Fleet & Feeney, 2015; Yogman et al., 2018). Research shows the healthiest form of play for children and adults is unstructured play (Gray, 2017; Louv, 2009; Rhea, 2022; Yogman et al., 2018). Unstructured play is defined as child-directed, voluntary, intrinsically motivated, imaginative, and involves an active and relaxed frame of mind (Gray, 2017; Rhea & Richun, 2018; Yogman et al., 2018). Researchers have seen this type of play reflected most often in children and very rarely in adults (Burr et al., 2019). Research has shown play is essential for brain development (Burr et al., 2019; Medina, 2017; Piaget, 1962), fine/gross motor skills (Dankiw et al., 2020), coordination, balance, executive function (Lee et al., 2020), and social/emotional skills (Clark & Rhea, 2017; Rhea, 2022; Yogman et al., 2018). In addition, unstructured play opportunities seem to be most beneficial when combined with the outdoors and nature (Dankiw et al., 2020; Kemple et al., 2016; Louv, 2016). Engaging in unstructured, outdoor play enhances whole health development and maintenance for a lifetime (Farbo & Rhea, 2021;

Farbo et al., 2020; Herrington & Brussoni, 2015). The benefits include higher levels of physical activity generated daily (Farbo & Rhea, 2022; Farbo et al., 2020); healthier body fat percentages (Farbo & Rhea, 2021; 2022); less stress and anxiety (Kirby et al., 2022); greater improvements in creativity, imagination, and problem-solving (Hunter et al., 2020; Lee et al., 2020); and improved emotional resilience, self-esteem, and self-confidence (Gibson et al., 2017; Gray, 2017; Medina, 2017).

A common misunderstanding among adults is that only children should engage in unstructured, outdoor play even then (Deterding, 2018). Present-day young and middle-aged adults, Millennials (born 1980-1995) and Gen Z's (born 1996-early 2000s), have experienced a much different childhood than adults from the Baby Boomer years (born 1946-1964). The Millennial adults (current ages 26-41) were exposed much more to organized, traditional sports as children and adolescents, whereas GenZ's (current ages 18-25) have been more exposed to and interested in adventure, alternative, or e-gaming (Auxier & Patterson, 2022). Both generations are highly competitive and think they are

failures if they lose. Each generation has been exposed less and less to the outdoors and unstructured play due to the increased importance of academics, outdoor safety, and technology. Children today spend over eight hours daily on some form of technology, reinforcing staying indoors and engaging in sedentary activities (Rhea, 2022; Yogman et al., 2018). Both generations have also experienced a culture where responsibility and decision-making have shifted to the adult, while children have little choice in what they want to do.

Conversely, Baby Boomers grew up when a lot more emphasis was placed on play, and children had much more control over their lives (Gray, 2017). In school, the focus was more on whole child development and one assessment given at the end of each year, but only to determine the child's developmental level. The Millennial and Z generations have been compromised by multiple assessments yearly, and their developmental level has been replaced with an academic outcome score, which determines their worth in school (Rhea, 2022). The Baby Boomers had 60 minutes of daily recess, 50 minutes of physical education, music, or art rotation, and four hours of classroom content in a 6-hour school day (Gray, 2017). Teachers were given a great deal of freedom on the development needs of the children rather than a test score (Gray, 2017; Lazarin, 2014). At home, children were given much more freedom to roam and explore further away from home without parental supervision. If families had it, technology was a black-and-white television with four channels and one residence phone line. It was much more common to see children walk to school and play outdoors until dusk daily than stay inside and watch TV. With such a drastic change in how children were exposed to the outdoors and specifically unstructured play 40-50 years ago vs. today, it is no wonder that our focus promoting unstructured, outdoor play has been for children and not as much for adults who had already missed play as children. Since many young adults today have truly never been able to experience play at its full potential, it is important that they learn the value of play now to receive all the benefits it can provide through their aging years.

When adults are asked if they play, they either say they do not have time to play, have difficulty deciding what play is or refer to structured physical activities such as basketball or soccer or indoor gaming activities (Burr et al., 2019). Structured play is typically competitive and involves sports and games guided by rules, boundaries, keeping score,

and set strategies (Burr et al., 2019; Frank et al., 2018). Participation in this type of play depends on others to be available, the adult still wants to be competitive, and the body can still do skills required for the structured activity (Capuozzo et al., 2019; Frank et al., 2018). As adults age, play becomes obsolete, with more time spent playing indoors or watching children play than playing themselves.

Today's society has become much more comfortable with indoor activities than going outdoors. Those who engage in indoor activities as their form of play often gravitate to sedentary and solitary activities as they are restricted by the available space and equipment (Lee et al., 2020). Outdoor play provides a sustainable immune system through exposure to sunlight, fresh air, and nature. The sun promotes the release of serotonin in the body, which can improve emotional states, decrease stress levels, and enhance brain function (Holick, 2016; Louv, 2016). Even with all these known benefits of unstructured outdoor play, it is very rare to see adults outside playing, which parallels the lack of children's outdoor play (Deterding, 2018).

Moreover, for adults who value unstructured, outdoor play and want to play, many communities have limited resources to engage in play (Talarowski et al., 2019). Many parks and playgrounds today are designed with children in mind and do not offer many adult-friendly play options. Gyms and recreational centers provide more structured and mainly indoor activities such as weightlifting or organized sports, which many adults, especially aging adults, do not prefer (Burr et al., 2019). Even if adults are comfortable with outdoor play, they may feel they need more options to engage in unstructured play as children do. Unfortunately, no literature suggests what kind of play activities adults would be interested in, even if play spaces were designed specifically for them. Based on this evidence, play can be a vital connection to improved adult health and longevity. However, not all forms of play are created equal, and the appropriate conditions and environment are essential for the best adult health benefits.

Therefore, the purpose of this exploratory study was to examine adult play preferences in general but also to determine any sex and age play differences. Due to the need for more evidence on adult outdoor and indoor play preferences, this study fills a gap in the literature to establish a baseline for adult play or nature space design work based

on adult preferences.

1 Methods

1.1 Participants

Participants were recruited through social media, local recess groups, students, friends, family, and by electronic mail in an effort to maximize responses. Most participants were recruited from the mid and south regions of the country. Both males and females were included from three different age groups to represent the young adult (18 to 39 years old), middle adult (40 to 59 years old), and older adult populations (60 years and older). Participants had to be at least 18 years old to be included.

A three-week collection window was determined two years post-COVID. This collection period was scheduled after adults could be in public spaces again for work and other activities. At the end of three weeks, 410 responses had been collected. However, 88 responses were excluded because of missing data for a final total of 322 participants. Table 1 provides the participant distribution by sex and age. The lowest group representation was the 60+ male group with seven participants. All other group representation ranged from 13 to 124. Females (N=261) responded more to the survey than males (N=61).

Table 1: Distribution of Participants by Sex and Age Group

Sex	Age Group	N
Male	20-39	41
	40-59	13
	60+	7
	Total Males	61
Female	20-39	124
	40-59	100
	60+	37
	Total Females	261
Total		322

1.2 Measures

An electronic survey administered through Qualtrics® was used to determine adult play preferences. No standardized assessment tool was

identified in the literature to measure different activity types, so the researchers developed the survey used in this study. A pilot study was completed first to test the survey. The pilot participants (N=214) were given a random assortment of pictures associated with different types of play. These pictures included similar activities used in the current study, presented in Table 2. Participants were asked to select their top five play choices within the 27 pictures available. Since it was impossible to include every activity associated with play, participants could write-in any activity not included at the end of the survey. Based on the participant results and feedback, the researchers then revised the original survey to add clearer pictures and descriptions so that participants could better understand the activity they were selecting. The new survey also provided pictures that enlarged when selected for better viewing. The final survey also divided the play choices into four different themes with 38 different items, reflective of the feedback given from the pilot survey. The participant still had an opportunity to write-in other play activities within the themes if not seen in the choices.

The revised survey began with two prompts to better focus respondents. The first prompt asked the participants to think about activities that they would like to play or enjoy playing. The second prompt asked the participants to think about activities that would motivate them more to play if a park offered them to the public. Following the prompts, directions were provided on navigating the survey and then age and sex data were collected. The second page of the survey, Table 2, consisted of the 38 different pictures and descriptions of various play activities categorized into four themes: large-yard games, nature activities, sports, and playgrounds with equipment. Large-yard games and sports were considered structured activities since they are typically considered competitive and involve sports and games that are guided by rules, boundaries, keeping score, and set strategies (Burr et al., 2019; Frank et al., 2018) while nature activities and playgrounds with equipment were considered unstructured activities since they are typically considered more self-directed, voluntary, and imaginative activities (Gray, 2017; Rhea & Richun, 2018; Yogman et al., 2018). Participants were given the opportunity to write in preferred activities not provided in the pictures, as well as provide their most favorite and least favorite activities selected. They were then asked if their preferences in play activities had changed as they aged,

to which they would respond yes or no. Finally, they were asked whether they prefer indoor or outdoor play, active or sedentary play, or if they prefer to play alone or in a group. The survey took approximately ten minutes to complete, and all responses were anonymous.

1.3 Procedures

The survey was distributed to participants through email and posts on Facebook, Instagram, and Twitter and given a three-week window to complete. Participants were encouraged to forward the survey to friends, colleagues, and family who they felt would be interested. We felt this would be the best way to collect a wide range of interests by age and sex. Researchers would send reminders through the same recruiting methods at the end of each week. At the end of the second week, limited responses for males and 60 and older populations were collected. Therefore, in the third week, researchers targeted those populations by asking for responses from the two lower number groups in the emails and social media posts.

1.4 Data Analysis

Data analysis was conducted using the IBM SPSS software Version 27. Researchers coded the data by age and sex before analyzing the data. Descriptive statistics were used to examine demographic and survey response data. Frequencies were used to determine the top ten most popular choices for play among the participants. Participants needed to complete the survey in full to be included in the final analysis.

2 Results

2.1 Play Preferences for All Participants

Figure 1 provides the ten most selected play activity preference responses. Cornhole received the most responses at 263, and cross country received the least number of responses at 49. Overall, 33% of the participants preferred nature activities, 24% preferred playground equipment, 22% preferred sports, and 21% preferred large-yard games.

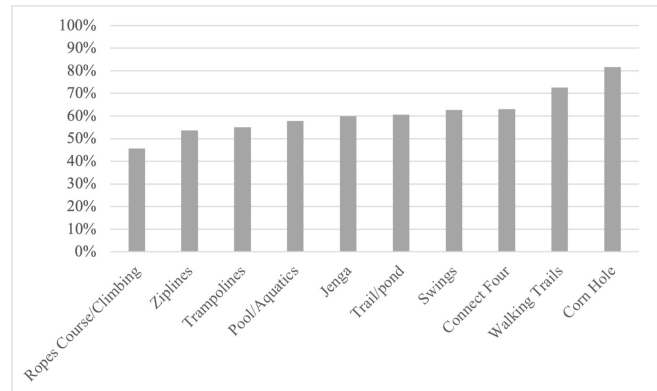


Figure 1: Play Preferences of All Participants

2.2 Play Preferences by Sex

The top ten preferred activities by sex are provided below in Figures 2 and 3. Cornhole received the most male (N=50) and female (N=213) responses. Walking trails were the next preferred activity for both sexes. Interestingly, males preferred obstacle courses (N=31) and open fields (N=32), whereas females preferred ziplines (N=138) and aquatics (N=154). The least observed male selection overall was the see-saw with 49 responses, whereas the least female observed selection overall was golf with 38 responses. Male activity preferences by theme showed 32% preferred nature activities, 28% preferred sports, 21% preferred playground equipment, and 19% preferred large-yard games. Female activity preferences by theme revealed 33% preferred nature activities, 25% preferred playground equipment, 21% preferred large-yard games, and 21% preferred sports.

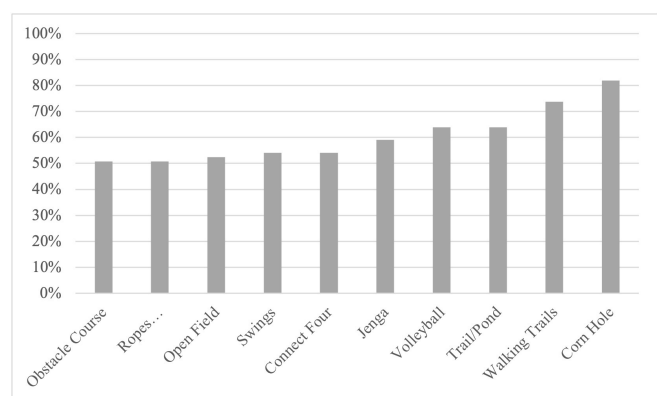


Figure 2: Play Preferences of Males

Table 2: Survey Subsections and Activity Choices

Subsection	Choices
Structured Play	Large-yard Games: Chess, Cornhole, Chinese Checkers, Checkers, Connect Four, Jenga Sports: Pickleball, Croquet, Tennis or Badminton, Basketball, Volleyball, Disc Golf, Bocce Ball, Golf, Horseshoes, Tetherball, Shuffleboard
Unstructured Play	Nature Activities: Wooded walking trail with pond, Mountain biking, Outdoor musical instruments, Sandpit, Amphitheater, Kayaking, Outdoor community garden, Cross Country Skiing, Water Skiing, Large open field, Pool/Aquatic Activities Playground Equipment: Swings, Obstacle Course, Zip line, See-saw, Trampolines, Monkey Bars, Climbing structure/ropes course, Merry Go Round

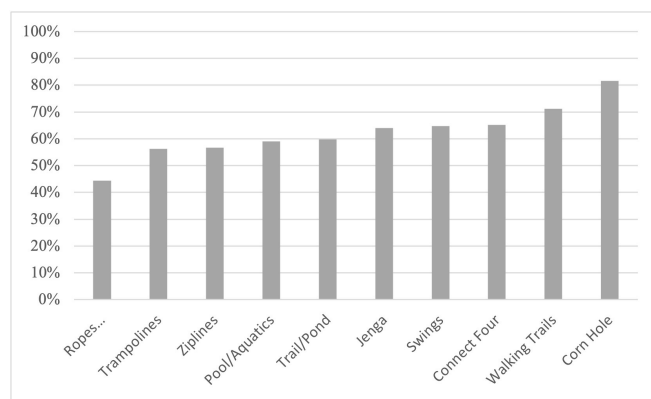


Figure 3: Play Preferences of Females

2.3 Play Preferences by Age Group

The top ten preferred activities by age group (18 to 39, 40 to 59, and 60 and older) are provided in Figures 4, 5, and 6 below. Cornhole received the most preferred responses across all age groups. The difference was in the second preferred activity across the age groups. The 18–39-year group preferred trampolines, whereas the 40 and older groups preferred walking trails. Other preferred top 10 activities did differ in order but mostly included similar activities. The least preferred activity selected for 18–39-year-olds was Chinese checkers with 13 responses. For 40 to 59-year-olds, the least preferred activity selected was pickleball with 14 responses. For 60 and older, the least preferred activity selected was the sandpit with four responses. The 18 to 39 group activity preferences by theme reflected 29% in nature activities, 28% in playground equipment, 23% in sports, and 20% in large-yard games. The 40 to 59 group activity preferences by theme reflected 34% in nature activities, 22% in sports, 22% in playground equipment, and 22% in

large-yard games. Finally, the 60 and older group activity preferences by theme reflected 34% in nature activities, 27% in sports, 21% in large-yard games, and 18% in playground equipment.

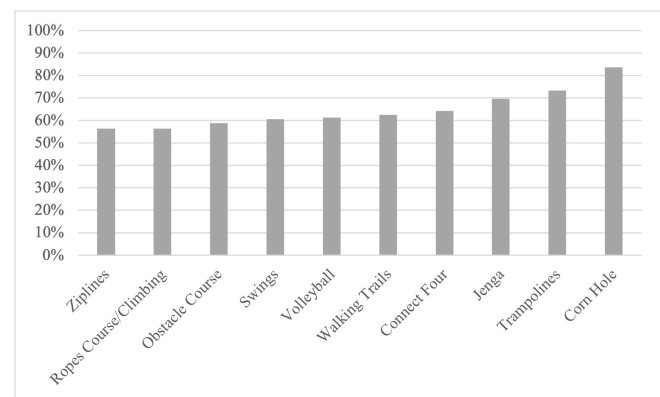


Figure 4: Play Preferences of 18- to 39-year-olds

2.4 Follow-up Question and Write in Results

Frequencies were computed on the follow-up questions: 1) Have their play preferences changed over time? 2) Do they prefer indoor or outdoor play? 3) Do they prefer perfect weather, any weather, or not to play outside at all? 4) Do they prefer active or sedentary play? 5) Do they prefer solitary play, group play, or both?

The results revealed that 235 out of 322 (73%) participants felt their play preferences had changed as they aged, while 87 (27%) said they had not. For location, 270 out of 322 (84%) participants preferred outdoor play, while 52 (16%) favored indoor play. For weather, 208 out of 322 (65%) favored play in any kind of weather, 108 (33%) favored perfect

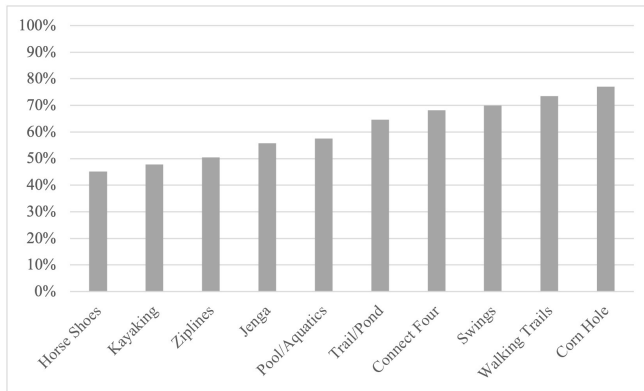


Figure 5: Play Preferences of 40- to 59-year-olds

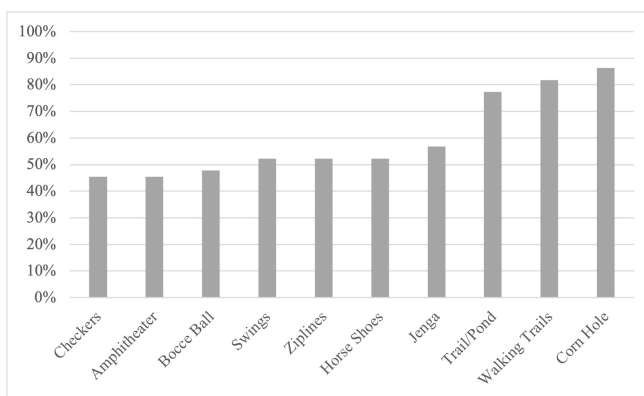


Figure 6: Play Preferences of 60 years and older

weather, and 6 (2%) preferred not to play outside at all. For the type of play, 275 out of 322 (85%) preferred active play, while 45 (15%) preferred sedentary play. Finally, 201 out of 322 (62%) stated that they preferred group play, 10 (3%) preferred to play alone, and 111 (35%) stated that they enjoyed both group and solitary play. Finally, some of the most frequent preferred activity responses written in included snowshoeing, table tennis, soccer, and yoga.

3 Discussion

Many present-day younger and mid-life adults experienced a deficiency of play opportunities growing up and consequently do not realize how important play is to living a healthier life (Walsh, 2019). As a result, it is very rare to see present-day younger adults engage in play, and many assume that it is an activity only for children (Deterding, 2018). The activities are absent for older adults

because play designers do not consider adult play needs, especially for different age groups. Few resources have been considered to encourage adult play, as parks, nature spaces, and recreation centers are predominately child-centered and offer more structured activities. Therefore, the findings in this study are a first step to identify if adults want to play and, if so, what types of play adults prefer if given the space to engage in it.

Based on the researcher's determination of which activities were considered unstructured and structured, 57% of the adults preferred outdoor/nature and playground activities (unstructured activities), whereas 43% preferred sports and large-yard games (structured activities). The top five choices were unstructured activities. Sports did not appear in the top ten, which is interesting considering sports, especially pickleball, are often considered the most acceptable form of play for many adults (Walsh, 2019). Other studies corroborated these findings stating when parks offer unstructured activities such as playground equipment, splash pads, walking trails, and a lake, they prefer those activities over sport equipment (Kaczynski et al., 2014; Van Fleet & Feeney, 2015). The adults in this study may have considered sports competitive and not what they prefer when visiting parks and being in nature to play.

In the present study, large-yard games and sports were considered structured, assuming both activities would produce competition and rule-following. The survey did not allow for a clear understanding of why they chose the different activities. For example, did adults choose large-yard games for competition and following the exact rules of the game, or for cooperative play and using creativity? Many strategies can be used with large-yard games without keeping score and following the exact rules. Adults in the present study could dismiss the competition and want to challenge themselves with the strategy. It could also be older adults use the games as unstructured, and the younger adults use them as structured. Either way, large-yard games were top preferences for all ages, especially cornhole, jenga, and connect four.

Based on these limited responses, parks and recreation management might want to consider designing different types of parks: some for adults and others for child-focused landscapes. Another option to consider is different spaces within parks and nature to offer a variety of unstructured activities designated for different age groups so each group can play specific to their physical, cognitive,

and social/emotional needs (Capuozzo et al., 2019; Yogman et al., 2018).

Males and females responded similarly as seven of their top ten choices were considered unstructured play elements. Again, depending on how the adults interpreted large yard games, all of the choices might have been unstructured. The only top ten sex difference was males preferred ropes/zip line activities while females preferred swings. Various activities could still be incorporated that would address male and female preferences. Across all responses, the biggest sex difference was seen in sports, as 28% of males selected these activities compared to only 21% of females. Surprisingly, both percentages were still low for adult populations. Since most male responses in the current study came from the 18 to 39 age group, this result could be due to heavy organized sport exposure during childhood that has influenced their interpretation of play as an adult (Capuozzo et al., 2019). One study showed boys preferred sports on a playground 41% of the time compared to only 11% of girls (Massey et al., 2018). Although some young adult males preferred sports over other activities, most males preferred similar activities to the females. This is a real positive since the research shows that individuals who spend more time in unstructured activities display more self-control, resiliency, and physical skills than those who spend more time in structured activities (Barker et al., 2014).

The age groups did differ on preferred activities. The 18 to 39 group seemed to pick higher intensity activities like trampolines, climbing, and obstacle courses than the middle and older age groups. On the other hand, middle-aged and older adults seemed to prefer more nature-based activities such as the amphitheater, trail/pond, and kayaking. Additionally, the 60-plus group seemed to prefer less intense activities such as bocce ball, checkers, jenga, horseshoes, and cornhole. These differences may be a result of physical disabilities that have developed, which would prevent older individuals from engaging in certain types of activities. Additionally, 86% of the older adults stated the way they play now has changed since they were children. This is consistent with the work of Burr et al. (2019), who conducted qualitative interviews with older adults about their experiences with play. The authors stated most of their participants still believe they play; however, the mode they play has changed throughout the years. They also stated they felt it was important to participate in physi-

cal and mental play to stay healthy, which could explain why checkers made it to the top ten for older adults and was not present in any other age group (Burr et al., 2019). Although not directly measured, the older adults in the current study also seemed to appreciate the value of play still and prefer various physical and mental play activities.

Lastly, most of the activities provided in the written responses were unstructured and included playing musical instruments, snowshoeing, and catching with a ball. Some popular structured activities offered by the participants were in the large yard games and sports subsections, including soccer, ping-pong, and yoga. Overall, this group of participants preferred being outdoors (84%), active (85%), and socially driven (97%). These attributes increase physical activity, stress relief, and socialization, promoting healthy lifestyles (Burr et al., 2019). More opportunities that match these specific preferred activities must be considered so that adults can take full advantage of the benefits play can provide.

3.1 Limitations

This study has some limitations that should be noted. First, a potential bias could have occurred since most of the survey responses were middle-aged women. This could lead to confounding results due to similar play preferences this age group may share. Second, the survey only asked about age group and sex. Knowing their race and/or ethnicity could have been beneficial for identifying any activity differences with more diverse populations. Third, although the survey offered various activities, not all adult interests might have been captured. To compensate for that, we offered an open-ended section for the respondents to offer other activities they preferred, and we included those in the results. The researchers did not have a way to track the exact population for this study, so the generalizability of the findings is unknown. We need to improve our demographic and activity targeting strategies for future participant outreach, instead of relying solely on social media and word of mouth. As a pilot study, this was considered a beginning place to consider adult play and nature activity considerations.

3.2 Future Directions

First, a larger pool of individuals from all age groups, by sex and race needs to be collected. The recruitment strategies may have been part of the

issue. Focusing on parks and sport locations for recruitment might yield a higher and more diverse response rate. Another study focused more on in-person and targeted online groups as recruitment strategies is needed to create a more robust adult population. A diverse response pool is important for identifying the most preferred activities/equipment needed in spaces for different adult age groups by sex and race. Second, a qualitative study should examine whether adults of all age groups would visit the parks and engage in the activities they selected in the survey if available. In addition, as part of the qualitative research, inquire about their past relationships with play. Asking these questions would provide a deeper understanding of adults and their real connection with play. Lastly, we would want to use the information gathered during this survey to create an actual playground to examine if adults would engage in play activities more due to the playground matching their play preferences. A future study could focus on why choices are made to clarify this distinction.

4 Conclusion

In conclusion, adults seem to prefer various unstructured activities on playgrounds and in nature rather than focusing on structured play activities such as sports. Cornhole was the number one activity and should be included in nature spaces or parks. Overall, adults do want to play, but parks and nature spaces only consider what children might like and do not focus on adult play preferences. Considering adult preferences is necessary for overall health and longevity and adds to the limited research on adult play interests.

Conflict of Interest

The authors disclosed no potential conflicts of interest regarding the research, authorship, and publication of this article.

Funding Sources

This research received no external funding.

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