



ORIGINAL ARTICLE

Elderly Individuals have Similar Attitudes Towards Physical Activity and Exercise as the Young and Middle Aged, but are Less Likely to Seek Companionship or Gym Memberships

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Abstract

As our population continues to extend life expectancy, a central concern is the quality of life into old age. The purpose of this study was to examine the beliefs, outlooks, opinions, and perceptions on Physical Activity (PA) and exercise (EX) of an elderly population in South Carolina compared to their younger age counterparts. Males and females ages 18 years and older representing 13 diverse groups from Cherokee County, South Carolina participated in this study. Phase I of the research study concentrated on gathering data through facilitated focus group discussions. A survey was created to validate the findings of the initial focus group interviews. The survey was based on themes regarding PA, EX and the gym environment from the interviews. 345 participants in total, aged 18 years and older, voluntarily completed a survey. The focus of this study is the 65+ year old group and whether their results differ from younger and middle aged participants. Data from the 18-64 year old participants has previously been published, but is presented in a different format in the current study and used as a point of comparison to data from the elderly participants, which has not previously been published. In this study, the majority of all respondents felt that there was a difference between PA and EX and that national guidelines for activity could be achieved through lifestyle PA, although this percentage was lower in elderly males. Overall, most attitudes and opinions towards EX and PA were similar in 65+ year old participants compared to younger ones, or the overall response reflective of all age groups. Most respondents also felt that lifestyle PA was preferable to traditional EX, except for elderly females. However, all age groups thought

that it was easier to incorporate PA vs. EX into their daily routine, particularly when goal oriented. Interestingly, elderly males were less inclined than younger males or females of any age group, to find companionship to be important when being active. Elderly participants associated EX with being structured as well as painful and tiring, etc. However, despite these negative associations, elderly individuals in particular still found EX to be a stress reliever. Overall, there were relatively few differences in the responses of elderly vs. younger and middle-aged participants. "Stress reliever" and "I'm happy and feel like I've accomplished something afterwards" were also associated with PA (i.e. >50%), in addition to their association with EX. However, elderly participants in particular associated "stress reliever" more so with EX than PA. Fewer elderly participants indicated that they had a gym membership (30-37%), compared to those aged 18-64 (44-57%). However, the responses of elderly participants that did have a gym membership to the other statements did not indicate that they felt intimidated, embarrassed or any negative feelings towards the gym environment.

Introduction

Physical Activity (PA) is defined as any bodily movement that result in energy expenditure and encompasses exercise, sports, and physical activities performed as part of daily living, occupation, leisure, or active transportation. Exercise (EX) is a subcategory of PA that is planned, structured, repetitive, and has



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a final or intermediate objective for improvement or maintenance of physical fitness [1]. Despite the established health benefits of PA and EX, less than one-third of the older adult population meet recommended PA levels in national surveys and remain the least active age group [2]. It is expected that 25% of the world's population will be older than 65 years in 2030 with the fastest growing segment of the elderly population older than 85 years [1,3]. The American Geriatrics Society has reported that 58% of adults 64 and older are completely sedentary, 29% perform some PA, and only 10% meet the CDC guidelines for physical activity [4]. Additionally, 28–34% of adults aged 65–74 years and 35–44% of seniors aged 75 years or older spend no time engaging in PA [5].

The promotion of PA in the elderly population is an important public health aim as it has been shown to improve life quality, and to reduce all-cause mortality and the incidence and implications of many diseases and disabilities [6]. As our population continues to extend life expectancy, a central concern is whether the added time comprises years of healthy life and promotes a high health-related quality of life into old age [7].

Elderly Population Attitudes, Preferences and Opinions Towards PA and EX

PA carries a positive perception throughout the older population [8]. Nonetheless, there is a decrease in those who take part in it, specifically on the moderate to vigorous level that associates directly with increased age. Reports show that 50% of sedentary individuals 65 and older have no plan of engaging in EX [9]. Boulton [10] highlighted that older adults preferred lifestyle activities, such as cleaning or gardening, over specific structured exercises. In a previous study from our group, participants ages 18 and older associated EX with structure, planning and being a chore, while lifestyle PA was easier and more enjoyable to incorporate into one's day [11]. Therefore, incorporating lifestyle PA may be a more realistic option, and includes day to day tasks like vacuuming, doing the dishes and walking pets. These activities, while not vigorous or traditionally considered working out, have been proven to provide health benefits and may be more suitable for the older adult population in some cases.

Walking (88%) and moderate PA (83%) are the most popular forms of PA during a typical week among adults 50-79 while the most common sport activities were golf, lawn games, tennis and swimming [12]. A 2019 study by Morgan, et al. [13] suggested that PA is preferred as it provides older adults sensual enjoyment by exposure to music, smells, and touch not otherwise experienced in daily life. The pleasure from being outside and close to nature is correlated to an increase in PA. Where older adults have engaged in activities that they have found enjoyable, greater adherence has been reported.

Elderly Population and their Association with EX

Being active brings numerous benefits to older adults. Exercise has been shown to reduce falls by 21%, with a greater effect of exercise programs incorporating challenging balance activities for more than 3 hours per week [12]. Data from multiple sources reveals that two in three participants (67%) say there are such programs in their community, with only one in six (15%) currently participating in these programs while nearly half (42%) have participated at some time in their lives [10]. Weightlifting or strength training (31%) and aerobics (22%) are found to be the most popular community-based exercise programs [14]. However, older adults may feel the pressure to perform well when doing structured exercise and keep pace with those around them, leading to discomfort in a traditional gym or workout setting. Studies have shown that when given the opportunity to work-out in a senior only gym, individuals feel more comfortable and more motivated to exercise. These senior based gyms include equipment with extra padding for comfort, trainers specialized in senior care to create exercise programs, and classes on how to best operate and utilize equipment [15]. Along with suitable equipment and facilities for older adults, having classes geared specifically towards the senior age group has had a popular reaction in most studies [9].

The influence of gender has not been extensively studied, but may play a role in the activity that the older adult population is willing to participate in. A focus group study performed by Otago University's School of Physiotherapy showed that males were not comfortable with involvement in workout classes including yoga, Tai Chi, or Pilates due to the common female association with the activities [9].

Elderly Population and their Outlook on Traditional Gym Culture and Environment

Important intrapersonal factors can impact participation at a gym/fitness center, and may be impacted by the embarrassment felt due to personal appearance, the competitive atmosphere of gyms, and apprehension regarding the ability to maintain the exercise intensity set by other participants [2,6]. Exercising at their own pace and finding peers, competent staff, and accessible machines were all positive factors for continuing to exercise in a gym [15].

An earlier study [16] explored older adults' experiences of becoming regular participants in a gym, triggered by currently health problems. Older gym users reported significant physical and social benefits, but felt conflicted with the attitudes towards the meaning of fitness and desired outcomes during their interactions with younger gym instructors [16]. This is consistent with a study by Beauchamp [14] whose findings showed

that older individuals found the prospect of exercising with considerably younger participants to be largely unappealing; therefore, a positive preference for exercise classes comprised of similarly aged participants was favored. Older adults may experience discrimination that they are physically inactive, frail, easily fatigued and experience pain with any PA [17]. Nielsen [6] reports that many of their older subjects felt alienated from the youthful fitness culture, and that they were told to “dress and act their age”, and that participating in sports and exercise was seen as a disparity between age and proper behavior.

The purpose of this study was to examine an older population’s beliefs, outlooks, opinions, perceptions on PA, EX, and gym culture in South Carolina, compared to their younger age groups counterparts. It was hypothesized that although there might be a slight variance in the results, overall, the elderly would prefer lifestyle, goal-oriented PA because they find it more feasible, meaningful, and enjoyable to incorporate into their daily lifestyle. Further, it was theorized the elderly participants would view EX as being more structured, painful, tiring, etc., and difficult to initiate. The elderly group would also find both PA and EX to be a “stress reliever” and positively impact their happiness and a sense of accomplishment. In addition, although the older population respect the gym environment and even appreciate the benefits of a structured, exercise atmosphere, both males and females would still prefer lifestyle PA outside the gym culture.

Methods

Participants

This study received clearance from the Institutional Review Board at Limestone College. Males and females ages 18 years and older representing 13 diverse groups from Cherokee County, South Carolina participated in this study. Data from the subjects 65 years and older is reported for the first time. The data shown in this study is part of a larger study including younger and middle-aged adults (18 to 64 years). For the purpose of comparison, data from these young subjects which has been previously published albeit in different form [11], was included in our tables. However, this is reported in a different format in the current study i.e. as the average response of all 18 to 64 year olds combined, as well as to combine the data of both males and females. It should be stressed that the data from the elderly participants (65 and older) has not previously been published. Informed consent was obtained from all participants. Focus groups from Cherokee County in South Carolina included members from a United Methodist and Baptist church, the Board of Public Works, the City of Gaffney staff, Rotary Clubs, City of Gaffney firefighters and schoolteachers from a rural elementary school. The exclusion criteria were any health conditions that precluded a participant from exercising.

Procedures

Phase I: Phase I of the research study concentrated on gathering data through facilitated focus group discussions and took place in Cherokee County (175 people) from December of 2016 to May of 2018. Focus groups included 6-15 participants and were held in a preferred meeting place to facilitate a relaxed discussion. Conversations were not recorded, and each participant was reassured that the discussions would be kept confidential. Participants were urged to share their associations and perceptions of exercise versus PA, as well as their perceptions of the gym environment.

The focus group discussions lasted 45 to 60 minutes. Participants were free to leave at any time. The same, trained investigator facilitated each group discussion. Guiding questions included: What do you think of when you hear the word exercise? What comes to your mind when you hear the words physical activity? How do you compare your perception of exercise to PA? Is PA more realistic, enjoyable and doable to accomplish as a part of your day? What is your perception of the gym environment? Do you feel judged while working out in the gym? Do you think the recommended PA guidelines of 150 minutes of MVPA can be met in lifestyle PA? Are you intimidated when using the equipment in the gym? Further probing questions followed and were dependent upon the participants’ initial responses. Focus group discussions were observed by 1 or 2 university students who made notes of the conversation as well as an interpretation of what they heard. The group facilitator thoroughly examined all of the focus group notes gathered from the student note takers as well as their own notes to identify recurring themes, which could ultimately be incorporated into the survey questionnaire (Phase II). From the feedback given in phase I, it became clear that many participants were cognizant of the benefits of exercise, but from a practical standpoint, lifestyle PA was preferred.

Phase II: A survey was created to validate the findings of the initial focus group interviews. The survey was based on themes regarding PA, exercise and the gym environment from the interviews as previously reported [11]. Survey administration was scheduled at a convenient time and location suitable for each group with the objective of obtaining as many participants as possible. Participation in the focus group discussions was not required for completion of the survey. Survey questions are indicated in [Table 1](#), [Table 2](#), [Table 3](#) and [Table 4](#).

Results

345 participants in total, aged 18 years and older, voluntarily completed a study survey. The elderly (65+ year) participants comprised 31% of total participants. 52 of the female participants were 65 years or older (15% of total), and 56 of the males were 65+ years (16%

Table 1: Attitudes and opinions towards physical activity and exercise For each of the following statements, please choose either yes or no for your response.

	Yes	No
Is there a difference between physical activity and exercise?		
Do you think the Canadian/USA's guidelines of 150 minutes of moderate to vigorous physical activity each week can be achieved by physical activity alone, or is it necessary to "exercise?"		
Would you prefer to engage in more vigorous physical activity such as energetic yard work, brisk walking or forcefully raking leaves than exercise?		
Do you think exercise has greater health benefits than physical activity?		
Is physical activity or exercise easier for you to do when it's goal-oriented (i.e. gardening) or when there's a destination/purpose (i.e. walking to work)?		
When you are physically active or exercise, is it important to have one or more friends or colleagues to be physically active or exercise with?		
Would you be interested in learning HOW to be more vigorously active in your everyday activities such as when walking the dog, cleaning around the house, running errands or playing with your kids?		
Is engaging in physical activity a more natural, realistic and enjoyable part of your day than exercise?		
Is moderate to vigorous physical activity easier to incorporate into your day than exercise?		

Table 2: Descriptors of physical exercise vs. exercise. Identify whether you associate each descriptor with Physical Activity (PA) or exercise (E).

_____ Enjoyable, fun, rewarding
_____ Gardening, raking leaves, washing the car and other yard work
_____ Weightlifting
_____ Painful, tiring, boring
_____ Walking
_____ Achieving 150 minutes of moderate to vigorous activity per week
_____ Jogging, cycling, swimming laps
_____ Planned, structured, regimented, routine, repetitive
_____ Taking the stairs
_____ Not rewarding, an obligation, a chore
_____ Stress reliever
_____ Cleaning the house or carrying groceries
_____ Group fitness classes (step bench, spinning, yoga, etc.)
_____ I'm happy and feel like I've accomplished something afterwards
_____ Treadmill, stepper, elliptical, bike
_____ Difficult to overcome inertia to achieve (or hard to get motivated to do)
_____ Playing with children
_____ Impractical, it takes too long (drive to the gym, exercise, shower, etc.)
_____ Walking the dog
_____ Sweating, hard work, requires maximal intensity

Table 3: Gym membership and perceptions.

	Yes	No
Are you a gym member?		
If yes, is going to the gym a necessary part of life in order to take care of yourself?		
If yes, do you enjoy the exercise you do (treadmill, weights, group fitness class, etc.)?		
If yes, is getting started (inertia) a problem?		

Table 4: Ranking of statements describing gym culture. Please circle the number that represents how you feel about the gym environment and gym members.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I think there is a negative culture in the gym with too much concern over physical appearance	1	2	3	4	5
I prefer physical activities (walking, hiking, raking leaves, playing with children, etc.) outside the gym environment	1	2	3	4	5
Using the equipment in the gym can be intimidating	1	2	3	4	5
I feel judged in a gym environment	1	2	3	4	5
The gym environment is intimidating	1	2	3	4	5
I feel a disconnect with “fit” gym members because they are so far ahead of me	1	2	3	4	5
The gym makes me feel vulnerable and exposed	1	2	3	4	5
I am too embarrassed to go to the gym	1	2	3	4	5
I don't want to join a gym because I associate it with exercise	1	2	3	4	5
Women are more likely than men to exercise to look good	1	2	3	4	5
I go to the gym to look and feel better	1	2	3	4	5
I go to the gym to improve my health	1	2	3	4	5

Table 5: Attitudes and opinions towards physical activity and exercise. The percentage of respondents who answered “Yes”.

Attitude/Opinion	Ages 65+	Ages 18-64	All ages
Is there a difference between physical activity and exercise?	Male 64% Female 71% Both 68%	Male 81% Female 74% Both 78%	Male 77% Female 73% Both 75%
Do you think USA's guidelines for physical activity can be achieved by physical activity alone?	Male 55% Female 87% Both 70%	Male 67% Female 65% Both 66%	Male 64% Female 73% Both 67%
Would you prefer to engage in more vigorous physical activity such as energetic yard work, brisk walking or forcefully raking leaves than exercise?	Male 69% Female 45% Both 58%	Male 66% Female 64% Both 65%	Male 67% Female 57% Both 63%
Do you think exercise is better for you than physical activity?	Male 61% Female 71% Both 65%	Male 64% Female 58% Both 62%	Male 63% Female 63% Both 63%
Is physical activity or exercise easier for you to do when it's goal-oriented (i.e. gardening) or when there's a destination/purpose (i.e. walking to work)?	Male 84% Female 78% Both 81%	Male 83% Female 90% Both 85%	Male 83% Female 86% Both 84%
When you are physically active, is it important to have one or more friends or colleagues to be physically active with?	Male 33% Female 61% Both 46%	Male 63% Female 63% Both 63%	Male 55% Female 62% Both 58%
Would you be interested in learning HOW to be more vigorously active in your everyday activities such as when walking the dog, shoveling snow or playing with your kids?	Male 46% Female 60% Both 53%	Male 50% Female 63% Both 55%	Male 49% Female 62% Both 54%
Is engaging in physical activity a more natural, realistic and enjoyable part of your day than exercise?	Male 100% Female 69% Both 83%	Male 81% Female 87% Both 83%	Male 85% Female 80% Both 83%
Is moderate to vigorous physical activity easier to incorporate into your day than exercise?	Male 84% Female 71% Both 78%	Male 77% Female 72% Both 75%	Male 79% Female 72% Both 76%

Number of respondents:

South Carolina males: 18-64 years, n = 142-144; 65+ years, n = 45-56

South Carolina females: 18-64 years, n = 82-93; 65+ years, n = 51-52

of total). The average age of the elderly females was 74.6 + 7.4 years, and 72.9 + 6.2 years for the males. Non-smokers represented 95% of the participants, except for the 35-64 year old males which was 82% (18% smokers). Data from male and female 18-64 year old participants (separated as 18-34 and 35-64 year old participants) in a previous study. This data has been recalculated and presented as 18-64 year olds, as well as the average of all age groups, as a comparison to the older population (65+ years). The focus of this study is the 65+ year old group; this data has not previously been published.

The responses to various attitudes and opinions towards PA and exercise (EX) are shown in Table 5. The majority of respondents felt that there was a difference between PA and EX and that national guidelines

for activity could be achieved through lifestyle PA, although this percentage was lower in elderly males. Overall, most attitudes and opinions towards EX and PA were similar in 65+ year old participants compared to younger ones, or the overall response reflective of all age groups. Most respondents also felt that lifestyle PA was preferable to traditional exercise, except for elderly females. However, all age groups thought that it was easier to incorporate PA vs. EX into their daily routine, particularly when goal oriented. Interestingly, elderly males were less inclined than younger males or females of any age group, to find companionship to be important when being active.

Statements that are commonly associated with EX are indicated in Table 6. The percentages shown indicate

Table 6: Responses to survey questions indicating a strong association of a descriptive statements with exercise (either exercise only, or both exercise and physical activity) rather than physical activity only. Numbers represent the percentage of total respondents associating a word or phrase with exercise.

Descriptive Statement	Ages 65+	Ages 18-64	All ages
Stress reliever	Male 78% Female 75% Both 76%	Male 63% Female 66% Both 64%	Male 67% Female 69% Both 68%
I'm happy and feel like I've accomplished something afterwards	Male 63% Female 84% Both 73%	Male 61% Female 69% Both 64%	Male 62% Female 75% Both 67%
Painful, tiring, boring	Male 90% Female 68% Both 80%	Male 74% Female 91% Both 81%	Male 78% Female 83% Both 80%
Can achieve 150 minutes of moderate to vigorous activity per week	Male 78% Female 98% Both 79%	Male 60% Female 61% Both 69%	Male 65% Female 76% Both 69%
Planned, structured, regimented, routine, repetitive	Male 84% Female 80% Both 82%	Male 85% Female 86% Both 87%	Male 84% Female 86% Both 86%
Not rewarding, an obligation, a chore	Male 66% Female 63% Both 65%	Male 48% Female 58% Both 52%	Male 53% Female 59% Both 56%
Difficult to overcome inertia to achieve	Male 92% Female 80% Both 86%	Male 83% Female 84% Both 84%	Male 86% Female 82% Both 84%
Impractical, takes too long	Male 89% Female 77% Both 84%	Male 78% Female 88% Both 82%	Male 81% Female 84% Both 83%
Sweating, hard work, requires maximal intensity	Male 86% Female 82% Both 84%	Male 70% Female 90% Both 79%	Male 75% Female 87% Both 80%
Treadmill, stepper, elliptical, bike	Male 100% Female 93% Both 97%	Male 99% Female 97% Both 98%	Male 98% Female 96% Both 97%
Group fitness classes (step bench, spinning, yoga, etc.)	Male 96% Female 91% Both 93%	Male 91% Female 95% Both 93%	Male 93% Female 94% Both 93%

Weightlifting	Male 100% Female 89% Both 95%	Male 96% Female 98% Both 97%	Male 97% Female 95% Both 96%
Jogging, cycling, swimming laps	Male 94% Female 91% Both 93%	Male 90% Female 87% Both 90%	Male 91% Female 88% Both 90%

Number of respondents:

South Carolina males: 18-64 years, n = 117-133; 65+ years, n = 47-51

South Carolina females: 18-64 years, n = 67-90; 65+ years, n = 41-45

Table 7: Responses to survey questions indicating a strong association of a descriptive statement with physical activity (either physical activity only, or both physical activity and exercise) rather than exercise only. Numbers represent the percentage of total respondents associating a word or phrase with physical activity. *also associated with EX.

Descriptive Statement	Ages 65+	Ages 18-64	All Ages
*Stress reliever	Male 70% Female 59% Both 64%	Male 61% Female 54% Both 59%	Male 64% Female 56% Both 60%
*I'm happy and feel like I've accomplished something afterwards	Male 87% Female 61% Both 75%	Male 73% Female 42% Both 61%	Male 77% Female 49% Both 65%
Enjoyable, fun, rewarding	Male 88% Female 87% Both 87%	Male 83% Female 91% Both 86%	Male 85% Female 90% Both 87%
Walking	Male 66% Female 64% Both 65%	Male 62% Female 66% Both 63%	Male 63% Female 65% Both 64%
Playing with children	Male 94% Female 84% Both 89%	Male 95% Female 96% Both 95%	Male 94% Female 92% Both 93%
Taking the stairs	Male 68% Female 71% Both 69%	Male 80% Female 88% Both 83%	Male 76% Female 82% Both 79%
Gardening, raking leaves, shoveling snow and other yardwork	Male 96% Female 86% Both 91%	Male 92% Female 96% Both 93%	Male 93% Female 93% Both 93%
Walking the dog	Male 66% Female 68% Both 67%	Male 81% Female 89% Both 84%	Male 76% Female 82% Both 79%
Cleaning the house or carrying groceries	Male 96% Female 84% Both 91%	Male 91% Female 98% Both 94%	Male 93% Female 93% Both 93%

Number of respondents:

South Carolina males: 18-64 years, n = 117-133; 65+ years, n = 47-51

South Carolina females: 18-64 years, n = 67-90; 65+ years, n = 41-45

participants that associated a descriptive statement with EX, or both EX and PA. As previously reported in younger and middle aged adults (REF), elderly participants associated exercise with being structured or planned, as well as painful and tiring, hard work, initially difficult

to begin (inertia), and obligation/chore. However, despite these negative associations, elderly individuals in particular found EX to be a stress reliever. Overall, there were relatively few differences in the responses of elderly vs. young and middle-aged participants.

Statements commonly associated as being part of lifestyle PA, which included the association of a statement with either PA, or both PA and EX, are shown in Table 7. “Stress reliever” and “I’m happy and feel like I’ve accomplished something afterwards” were also associated with PA (i.e. >50%), in addition to their association with EX as shown in the previous table. However, elderly participants in particular associated “stress reliever” more so with EX than PA. This seems to be in partial contradiction to the overwhelming association of “enjoyable, fun, rewarding” with PA by the elderly.

Participants’ associations with the traditional gym culture are shown in Table 8 and Table 9. Fewer elderly participants indicated that they had a gym membership (30-37%), compared to those aged 18-64 (44-57%). However, the responses of elderly participants that did have a gym membership to the other statements (taking care of yourself, enjoyment of activities, difficulty in starting) was essentially the same as younger individuals. In other words, elderly participants did not indicate that they felt intimidated, embarrassed or any negative feelings towards the gym environment.

Discussion

Clearly all age groups including the older population believe there is a difference between PA and EX, and think that the PA guidelines can be achieved through PA alone. Although the majority of elderly women did not prefer lifestyle PA (versus EX), the outlook and beliefs on PA and EX were similar across all age groups among males and females. This indicates the importance of educating the public to the power and benefit of lifestyle

PA while providing significant intervention strategies to help the general public at large achieve higher levels of PA seamlessly within the course of their day.

One of the most interesting results from this study indicated that older males were less likely to seek out companionship while engaging in PA. Perhaps it is more feasible for many older males to be physically active individually particularly when engaging in cardiovascular movements in a traditional gym setting using cardio equipment such as the treadmill, rowing machine, or stationary bicycle. Or perhaps that males are more individual-minded when deciding to fit PA into their day. However, this is in direct contrast to studies resulting in higher levels of PA participation due to a “sociable atmosphere” whether the environment included a well-qualified instructor along with other participants, or if the activities are perceived as enjoyable with other similar partakers often times in a more traditional exercise setting [9]. In addition, another consideration is that of physically inactive individuals perceiving themselves as physically active, resulting from their perception of PA to be based on a social context. That is, older adults who are surrounded by fellow adults who follow a sedentary lifestyle, may believe that they are completing enough PA in relation to everyone around them. It has been found that this social based assessment leads to a neutral stance on the necessity and benefits of PA and EX, in turn leading to further sedentary behaviour with increased age [18]. Along with this, studies have found that often the older population does not feel the need to workout unless they experience a level of enjoyment in the activity they are doing, unlike the younger adult population that may be motivated by other factors like

Table 8: Male and female responses to survey questions related to gym participation. Numbers represent the percentage of respondents answering “Yes” to the question.

	Ages 65+	Ages 18-64	All Ages
Are you a gym member?	Male 30% Female 37% Both 34%	Male 49% Female 57% Both 52%	Male 44% Female 50% Both 46%
If yes, is going to the gym a necessary part of life in order to take care of yourself?	Male 65% Female 76% Both 71%	Male 56% Female 70% Both 62%	Male 58% Female 71% Both 64%
If yes, do you enjoy the activities you do (treadmill, weights, group fitness classes, etc.)?	Male 88% Female 94% Both 91%	Male 88% Female 82% Both 85%	Male 88% Female 85% Both 87%
If yes, is getting started (inertia) a problem?	Male 46% Female 25% Both 38%	Male 44% Female 65% Both 53%	Male 45% Female 55% Both 49%

Number of respondents:

South Carolina males: 18-64 years, n = 141; 65+ years, n = 56

South Carolina females: 18-64 years, n = 94; 65+ years, n = 51

*Note: the number of respondents indicated are those that answered yes or no to having a gym membership. The number of respondents for the remaining questions would be this number multiplied by the % indicating yes.

Table 9: Ranking of statements associated with gym culture (1, strongly disagree; 5, strongly agree).

	Ages 65+	Ages 18-64	All Ages
I think there is a negative culture in the gym with too much concern over physical appearance	Male 3.0 Female 2.6 Both 2.8	Male 3.0 Female 3.0 Both 3.0	Male 3.0 Female 2.9 Both 2.9
I prefer physical activities (walking, hiking, raking leaves, playing with children, etc.) outside the gym environment	Male 3.8 Female 3.3 Both 3.6	Male 3.8 Female 3.9 Both 3.8	Male 3.8 Female 3.7 Both 3.7
Using the equipment in the gym can be intimidating	Male 2.9 Female 2.7 Both 2.8	Male 2.7 Female 3.3 Both 2.9	Male 2.7 Female 3.1 Both 2.9
I feel judged in a gym environment	Male 2.6 Female 2.6 Both 2.6	Male 2.7 Female 3.1 Both 2.8	Male 2.7 Female 2.9 Both 2.8
The gym environment is intimidating	Male 2.7 Female 2.6 Both 2.6	Male 2.7 Female 2.9 Both 2.8	Male 2.7 Female 2.8 Both 2.7
I feel a disconnect with “fit” gym members because they are so far ahead of me	Male 2.8 Female 2.5 Both 2.7	Male 2.7 Female 3.0 Both 2.8	Male 2.7 Female 2.8 Both 2.8
The gym makes me feel vulnerable and exposed	Male 2.5 Female 2.5 Both 2.5	Male 2.4 Female 2.9 Both 2.6	Male 2.4 Female 2.8 Both 2.6
I am too embarrassed to go to the gym	Male 2.1 Female 2.1 Both 2.1	Male 2.0 Female 2.2 Both 2.1	Male 2.0 Female 2.2 Both 2.1
I don't want to join a gym because I associate it with exercise	Male 2.3 Female 2.0 Both 2.2	Male 2.3 Female 1.9 Both 2.2	Male 2.3 Female 2.0 Both 2.2
I go to the gym to look and feel better	Male 3.5 Female 3.1 Both 3.3	Male 3.4 Female 3.6 Both 3.5	Male 3.4 Female 3.4 Both 3.5
I go to the gym to improve my health	Male 3.8 Female 3.4 Both 3.6	Male 3.6 Female 4.0 Both 3.7	Male 3.6 Female 3.8 Both 3.8

Number of respondents:

South Carolina males: 18-64 years, n = 140-143; 65+ years, n = 51-52

South Carolina females: 18-64 years, n = 90-93; 65+ years, n = 45-49

physical appearance and overall improved strength and agility [4].

Consistent with all age groups, the elderly participants found EX (as well as PA) to be a stress reliever despite viewing it to be a chore, obligation, repetitive, routine, planned, and structured. This is not surprising given the time and energy it can take to prepare and organize oneself to participate in EX, especially keeping in mind the responsibilities of day-to-day life many people feel from home and work that can prevent involvement in PA weekly [11,19]. Research including subjects from both South Carolina and Southern Ontario, found the number one ranked motivation for EX was feeling happier and less stressed afterwards, as well as a sense of accomplishment [20]. Similar results have been found

in the 65 and older age group as well. This is consistent with a cross-sectional study performed at the University of Texas that found an average of 64% of participants felt that exercising reduced their tension and/or stress [4].

It is not entirely clear why many elderly people associate “stress reliever” and “enjoyable, fun, rewarding” more with EX, or EX and PA, rather than only PA compared to the younger and middle-aged groups who associated “stress reliever” and “I’m happy and feel like I’ve accomplished something afterwards” more with PA, or PA and exercise (but not just EX). There could possibly be a relationship between the elderly feeling like they have more time to choose EX in a traditional setting due to the retirement status of most in this age

group. The time constraints tend to be less and to help prevent injury and pain associated more frequently with this age group, more emphasis could be placed on “working out” at home or at the gymnasium. Nielsen [6] examined the additional benefits from participating in a group exercise through a qualitative meta-ethnography research analysis. The authors concluded that PA could help in regaining feelings of purpose, of being needed in collective group activity, and create habitual routine and structure to the day. For older adults, such a focus may be advantageous at this stage in their lives as older adults have other goals which are of greater personal importance and allow individuals to enjoy social relations beyond their chosen activity [6,13].

Finally, the males indicated a preference towards physical activities such as gardening, walking, playing with children, raking leaves outside the gym environment as well as going to the gym to feel better and improve health compared to their female counterparts who revealed no such preferences in any of these areas.

Conclusion

Overall, the older adult population have similar preferences, beliefs, and views towards PA and EX as the younger and middle-aged groups do. Since one size does not fit all when it comes to engaging in PA, it is important to customize PA for the 65 and up adults. In particular, it is important not to assume that older participants want to socialize together to achieve PA guidelines, or that elderly participants taking part in group activities are necessarily obtaining adequate levels of PA. The medical, healthcare, academic, and fitness professional communities should uniquely approach and educate the senior adults on the benefits of PA and help shape unique PA activities, just as they would for younger individuals, in order to promote a happier, healthier, more physically active aging population.

Statement of Competing Interests

The authors have no competing interests.

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