

Developing a Group Exercise Program For Older Adults to Impact Social Participation

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Abstract

Introduction: Social isolation and physical activity can impact the overall health of older adults. Researchers have found that there is a connection between social participation, loneliness, and activity levels in older adults. Thus, the purpose of this study is to examine whether a weekly group exercise program at Anytime Fitness can positively impact the social and mental health of older adults that are at risk for social isolation and loneliness. **Method:** Participants were seven men and nine women (Mean age 66.8) who participated in a seven-week group functional training program led by a Occupational Therapy Doctoral (OTD) Student. Participants completed pre- and post-assessment questionnaires that addressed social and mental health. Body fat percentage was measured prior and following the program to assess physical health. **Results:** There were positive changes between the pre- and post- assessment for 14 of the categories measuring social and mental health, however there were negative changes for three of the categories. There was one category that showed equally negative and positive changes. On average, participants improved in body fat percentage after the seven-weeks. All participants had positive feedback and reported high satisfaction toward the program. **Discussion:** Older adults benefit from a group exercise program because they are more motivated to regularly participate. A group exercise program can positively impact the social and mental health of older adults.

Introduction

As of 2018, around 49 million Americans were 65 years or older, and researchers predict the population size to grow to 98 million by 2060 (NCOA, 2018). The physical changes that accompany the aging process can lead to a decrease in endurance, dexterity, balance, and cardiovascular health for older adults can be combated with physical activity programs designed

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specifically for the older adult population (Bjorklund, 2014). Researchers have found that individuals with higher physical activity levels have lower mortality risks (Feldman et al., 2015). Despite the commonly known benefits of physical activity, an alarming majority of older adults do not meet the recommended amount of daily physical activity (McPhee, French, Jackson, Nazroo, Pendleton, & Degens, 2016). Individuals are motivated by social interaction and personal enjoyment to participate in sports or physical activities (Allender, Cowburn, & Foster, 2006). Older adults' perception of their general health is strongly associated with their levels of social participation (Robins, Hill, Finch, Clemson, & Haines, 2018). Researchers have found that higher levels of social isolation and loneliness are correlated with decreased gait speed, and specifically loneliness is correlated with increased difficulty in performing activities of daily life (Shankar, McMunn, Demakakos, Hamer, & Steptoe, 2017).

Health services that typically use a medical model approach can benefit from using the Lifespan Frame of Reference to address motivational drives for older adults (Cole & Tufano, 2008). Lifespan Frame of Reference focuses on how older adults cope with transitional roles, such as aging, death of a loved one, and retirement (Cole & Tufano, 2008). When older adults have a negative self-perception of aging and are unable to effectively transition through life, they have a higher risk for poor health and functional outcomes; intervening and addressing negative perceptions of aging can slow the decline in physical function (Sargent-Cox, Anstey, & Luszcz, 2012). Changing negative perceptions of aging can be done by providing support in transitional roles and facilitating older adults to participate in their environments at age-appropriate levels, such as physical activity (Cole & Tufano, 2008). Although older adults may understand the physical benefits of physical activity, health care practitioners need to focus on the areas outside the medical

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model, such as social participation and leisure activities which may motivate older adults to engage in the needed physical activity. (Cole & Tufano, 2008).

Social Participation

Social participation is a very important and meaningful occupation for older adults. Social support systems change for older adults throughout their lives for many reasons, such as retirement, illness, and deaths (Smith, Banting, Eime, O'Sullivan, Van Uffelen, 2017). A study identified the variables that distinguish lonely individuals, and the researchers found that lonely individuals reported having inadequate social systems, such as infrequent contact with friends, and reported having fewer supportive people in their lives (Wilson & Moulton, 2010). Socially isolated or lonely older adults are at higher risk for physical and mental conditions, such as chronic disease, falls, depression, cognitive decline, and mortality (Coyle & Dugan, 2012; Wilson & Moulton, 2010). Older adults' perception of their general health is strongly associated with their levels of social isolation (Robins, Hill, Finch, Clemson, & Haines, 2018). Researchers have concluded that community-based interventions provide meaningful social participation for older adults (Smallfield & Molitor, 2018). When participating in group-based activities and when encouraged by health care providers, older adults are motivated to participate in physical activities and have higher self-efficacy for exercising (Mcphee, French, Jackson, Nazroo, Pendleton, & Degens, 2016). Researchers assessed social participation of physically active older adults and found by promoting the benefits of social participation in advance; the older adults were more likely to have higher levels of physical activity and a reduction of sedentary time (Kikuchi et al., 2017). Providing social participation benefits in the health services of older adults is essential to increase physical activity (Smith, Banting, Eime, O'Sullivan, Van Uffelen, 2017). Preferences for group programs, socializing with others, and encouragement and motivation from others were factors that researchers found

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promoted consistent participation in physical activity programs for older adults (Bethancourt, Rosenberg, Beatty, & Arterburn, 2014). Researchers found that to improve social participation, older adult's biases towards fitness, fears toward abilities, and their identities must be addressed (Goll, Charlesworth, Scior, & Scott, 2015).

Mental Health

Social isolation impacts the mental health of individuals, but the two dimensions of isolation, subjective and objective, can have different effects on mental health. (Taylor, Taylor, Nguyen, & Chatters, 2016). Subjective isolation is commonly defined as loneliness and is the perception of whether or not someone feels isolated, whereas objective isolation is the quantifiable measure of social support, such as the size, type, frequency of contact, and amount of participation with their social network (Elder & Retrum, 2012). Researchers analyzed the different effects of subjective and objective isolation on the mental health of older adults and found that compared to objective isolation, subjective isolation from family and friends has higher correlations with an increase in depressive symptoms and psychological distress (Taylor, Taylor, Nguyen, & Chatters, 2016). Social participation plays a major role in cognitive functioning and successful aging (Bourassa, Memel, Woolverton, & Sbarra, 2017). When older adults participate in social activities, they are exposed to cognitively demanding environments; therefore, the social activities may act as a buffer for cognitive decline (Bourassa, Memel, Woolverton, & Sbarra, 2017). Bae, Ik, Ryu, & Heo (2017) conducted a study to analyze the impacts of physical activity on older adults and concluded that light exercise has a positive correlation with both the mental and physical health, overall well-being, and life satisfaction of older adults.

Health Services

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Health care systems and government agencies are responsible for promoting physical activity but have not found a way for implementing regular exercise into the older adult population as a whole (McPhee, French, Jackson, Nazroo, Pendleton, & Degens, 2016). Older adults experience barriers that inhibit participation in physical activity programs. The barriers include feeling unfamiliar with the benefits of exercise, lack of motivating instructors, program criteria, unawareness about available programs, and programs not meeting the individuals' goals and needs (Bethancourt, Rosenberg, Beatty, & Arterburn, 2014). By developing a physical activity program that incorporates social support for older adults, health care practitioners can improve physical activity in older adults (Smith, Banting, Eime, O'Sullivan, Van Uffelen, 2017). Health care practitioners need to increase older adults' physical activity and exercise participation to a level that is beneficial for older adults (Taylor, 2014). Researchers found success in improving physical activity when health care practitioners provided older adults with detailed and individualized information for the adult to participate in exercise routinely (Taylor, 2014). There is a need in the healthcare system for practitioners to provide individualized recommendations about the type, amount, intensity, and frequency of physical activity to receive health benefits (Taylor, 2014). Researchers found that older adults desire to have health care professionals assist them with establishing a physical activity routine, setting realistic and age-appropriate goals, and tracking their progress (Bethancourt, Rosenberg, Beatty, & Arterburn, 2014). The older adult population needs greater support from the health care system and more client-centered, age-appropriate adjustments from practitioners to address physical activity programs for older adults (Bethancourt, Rosenberg, Beatty, & Arterburn, 2014).

Researchers found that many older adults have negative thoughts associated with starting an exercise program, but they feel more positive about it once they have participated (Ruby, Dunn,

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Perrino, et al., 2011). Older adults are more likely to be motivated to participate in leisure exercise when they feel a sense of enjoyment related to the exercise (Haughton, Wyrwich, Brownson, Clark & Kreuter, 2006). Exercises and activities need to be age-appropriate and at a light intensity level for the older adults to receive benefits physically, mentally, and socially (Bae, Ik, Ryu, & Heo, 2017). By improving both the quality and quantity of social interaction for an older adult through an exercise program, the risk of depressive symptoms and psychological distress may decrease (Taylor, Taylor, Nguyen, & Chatters, 2016). Health care providers need to increase physical activity participation of older adults. Social isolation is correlated with poor health outcomes and it needs to be addressed for the growing older adult population. Addressing social isolation with group physical activity can help improve the aging process for older adults (Sargent-Cox, Anstey, & Luszcz, 2012).

Social isolation and feelings of loneliness are under assessed conditions in older adults and are highly connected with poor overall health outcomes (Coyle & Dugan, 2012). With the pandemic of COVID-19, social isolation and loneliness are greater threats than ever before in the older adult population. Instead of the initial two weeks of quarantine, society has been faced with almost a year of social distancing and isolation, which intensifies social isolation and loneliness (Wang, Rabheru, Peisah, Reichman, & Ikeda, 2020). Due to limited interactions with friends and family, older adults have physical and mental health consequences that need to be addressed (Wang, Rabheru, Peisah, Reichman, & Ikeda, 2020; Panchal et al., 2020). Because of the correlation between physical activity and social isolation and loneliness, health professionals may be able to impact the mental and social health of older adults (Shankar, McMunn, Demakakos, Hamer, & Steptoe, 2017). A holistic health care practitioner with the resources and knowledge to provide client-centered services can influence older adults to regularly participate in physical activity by focusing on

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intrinsic motivation (Bethancourt, Rosenberg, Beatty, & Arterburn, 2014). Occupational therapists are qualified to provide client-centered interventions that implement routines of wellness into an individual's personal lifestyles in order to impact their social and mental health (Bethancourt, Rosenberg, Beatty, & Arterburn, 2014). By having an occupational therapy mindset, older adults' client factors and environmental factors can be addressed in order to help them physically and mentally participate in a healthy exercise routine. Older adults are in need of exercise programs led by skilled health care professionals who can provide support, guidance, and follow-up appointments while conducting client-centered exercises (Bethancourt, Rosenberg, Beatty, & Arterburn, 2014). The purpose of this study is to examine whether a weekly group exercise program at Anytime Fitness can positively impact the social and mental health of older adults that are at risk for social isolation and loneliness.

Needs assessments

Methods

The Occupational Therapy Doctoral (OTD) student (a certified personal trainer) met with the Anytime Fitness staff to converse about the needs at their club and their training program. Participants were recruited via word of mouth, club advertisement, social media, and Anytime Fitness's communicating system. The recruiting information offered a free group exercise program for older adults led by an OTD student (a certified personal trainer) for seven weeks. Inclusion criteria consisted of being 60+ years of age, availability to complete pre- and post-interview, and the ability to participate 1x/week on average for the seven weeks. To obtain past medical history, physical activity level, and social and mental health information, a pre-assessment was conducted one to two weeks prior to the seven-week program beginning. Each initial interview lasted between

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30 to 60 minutes. Details were documented via voice recording with verbal consent provided by interviewee.

Results

The Anytime Fitness owner and personal training manager expressed a need to expand their Ageless (50+ year old) program. The staff presented a desire to learn how to recruit older adults to the gym and clients in a training program that would benefit the older adults holistically. Members and clients of the club who were 60+ years old met with the OTD student to discuss their needs and desires from the club and a training program. All participants stated that they were interested in learning about challenging but age-appropriate exercises. Also, all older adult participants were looking for ways to incorporate a healthy exercise routine into their lives and how to improve their overall health.

Program

Methods

Participants from Anytime Fitness were recruited by word of mouth, fliers, and social media advertising. There were 23 older adults (16 females and 7 males) who agreed to participate in the program. The ages of the participants ranged from 60 to 83 years old with the average age equaling 66.8 years. All participants ranged in physical activity level. Only 11 participants had been engaging weekly in physical activity in the club or in a personal training session and one participant regularly engaged in dance prior to the treatment. Ten participants reported not regularly engaging in physical activity inside or outside a gym. Only one participant was sedentary and required a rollator to mobilize. The group consisted of 16 retirees, five full-time workers, and two part-time workers. Marital status of the participants consisted of 14 married, five widowed, three divorced, and one single individual.

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All individuals participated in a group exercise program that focused on full-body functional training that incorporated mobility, stability, strength, and endurance (Refer Appendix A). The program design followed Anytime Fitness' Ageless Program, which was developed by Dr. Dan Ritchie and Dr. Cody Sipe who co-founded the Functional Aging Institute in 2013 (Functional Aging Institute, 2013). FAI training programs focus on exercises that provide functional longevity by involving strength, aerobic health, balance, agility, mental acuity, and coordination for older adults (Functional Aging Institute, 2013). Group, circuit training provides a fun and social environment for older adults who have a wide range of functional and health levels (Sipe, nd). The hour-long sessions were formatted to include three to five minutes to socialize, five to 10 minutes of balance exercises, 30 – 40 minutes of functional exercises, and five to 10 minutes of cool down. The OTD student sought out participant feedback in regard to difficulty of exercises, music, format of workouts, and social factors. All participants completed an exit interview, which involved filling out a questionnaire consisting of the items from the initial questionnaire and questions in regard to program satisfaction and perceived social impacts.

Results

The program lasted seven weeks with three sessions a week (Monday, Wednesday, and Friday from noon to one o'clock). Participants were required to attend at least one session per week. The program was located at the fitness club, Anytime Fitness – Indianapolis/Fishers, and occurred on the purple functional training turf (18 ft x 37 ft). Every group session focused on full-body functional training, allowed for socializing before, during, and after every gathering, and incorporated balance training (Refer Appendix A). The training intensity was adjusted based on feedback from participants and each individual's physical fitness. Participants were encouraged to take frequent, necessary breaks and to modify exercises as needed and instructed. The certified

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trainer (the doctoral occupational therapy student) moved around the purple turf frequently checking on participants, modifying exercises, and adjusting exercise form. Feedback in regard to difficulty of exercises, music preferences, format of workouts, and social factors were sought out in order to enhance the experience for all participants. The group sizes varied as a result of participants' weekly availability and drop-out over the course of the seven-week program. There were 16 remaining participants out of the original 23 participants at the end of the seven-week program. There were seven men and nine women participants at the end of the seven week program. The attrition rate occurred due to scheduling conflicts, injuries that occurred outside of the program, and concerns in regard to COVID protocol. Participants who were unable to attend one session per week were excluded from data gathering, but still welcomed to participate in the sessions. On average, participants attended 13.65 out of the 21 sessions throughout the seven-week program, which was equivalent to 1.95 sessions per week. Number of sessions attended by participants ranged from 7 to 21 sessions.

Outcome Measures

Methods

Subjective and objective information was gathered from participants by the OTD student during pre- and post-assessment meetings. Pre-assessment meetings lasted from 30-60 minutes, which included education of the purpose behind the project, measuring body fat percentage, gathering written objective information, and asking open-ended questions to gather subjective information. Post-assessment meetings lasted 20-45 minutes in order to collect written objective information, reassess body fat percentage, and gather subjective program satisfaction reports. Data was analyzed using Google Forms. A Google Form was developed to mimic the questions asked on the questionnaire. After written and recorded information was obtained from participants, the

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occupational therapy student entered the information into the Google Form. The Google Form provided summary results for the pre-assessment and the post-assessment. The pre- and post-assessments were compared in order to analyze the changes in group results after completing the seven-week program.

Social Health, Loneliness, Mental Health

The questionnaire used for the pre- and post-assessments was influenced by mental health, social health, and quality of life scales found in literature. The social health aspect of the questionnaire was developed from questions on Friendship scale (Hawthorne, 2006), indicators from the NSHAP study (Cornwell & Waite, 2009), DeJong Gierveld Loneliness Scale (Gierveld & Tilburg, 2006), the Perceived Support Network Inventory (PSNI) (Oritt, Paul, & Behrman, 1985) and other measures of social isolation validated by researchers (Zavaleta et al., 2017). The mental health portion of the questionnaire was influenced by Patient Health Questionnaire (PHQ-9) (Kroenke et al., 2001) and Severity Measure for Generalized Anxiety Disorder (Lebeau et al., 2012). The first seven questions used a Likert scale of “Every day,” “Most days,” “Few days,” or “Never.” Five questions used a Likert scale of “Very satisfied,” “Fairly satisfied,” “Not very satisfied,” “Not at all satisfied,” or “Don’t know/No answer.” The last seven questions used a Likert scale of “Never,” “Occasionally,” “Half of the time,” “Most of the time,” or “All of the time.” The questions used for qualitative measurements are as listed:

1. *“I feel lonely”*
2. *“I find it easy to make new friends”*
3. *“How often in the previous 4 weeks have you spent time with family”*
4. *“How often in the last 2 weeks have you met face to face with friends or family outside of your household”*

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5. *"I often feel rejected"*
6. *"I miss having people around"*
7. *"I experience a general sense of emptiness"*
8. *"How satisfied or unsatisfied are you with your life overall"*
9. *"How satisfied or unsatisfied are you with your friends"*
10. *"How satisfied or unsatisfied are you with your family"*
11. *"How satisfied or unsatisfied are you with your neighborhood/town/community"*
12. *"How satisfied or unsatisfied are you with your spouse or partner"*
13. *"In the past 14 days, I have felt tense muscles, felt on edge or restless, or had trouble relaxing or trouble sleeping"*
14. *"In the past 14 days, I have avoided or did not approach or enter situations about which I worry"*
15. *"In the past 14 days, I have left situations early or participated only minimally due to worries"*
16. *"In the past 14 days, I have felt anxious worried or nervous"*
17. *"In the past 14 days, I have had little interest or pleasure in doing things"*
18. *"In the past 14 days, I have felt down, depressed, or hopeless"*
19. *"In the past 14 days, I have had trouble falling or staying asleep or sleeping too much"*

Subjective Program Satisfaction. Program satisfaction was assessed through motivational interviewing and acquiring qualitative and subjective information from the participants during conversation. The interviewer obtained information by asking open ended questions.

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“Tell me your thoughts toward the program.”

“How did this program impact your social life?”

“How satisfied were you with the program?”

“What did you enjoy about the group program?”

“What did you not enjoy about the group program?”

“What would you change about the program?”

“How were your relationships with the others in the program?”

“What benefits did you gain from this group? Socially, mentally, and physically?”

Results

Pre-assessment and post-assessment data were analyzed only for the participants that were able to attend at least one session a week. There were 16 participants who completed both the pre- and post- assessment.

Quantitative Results

By the completion of the seven-week program, there was an average total loss of 0.61% body fat percentage by the group of participants. There were positive changes in how participants responded to the items: “I find it easy to make new friends” (Figures 3 & 4), “How often in the last 2 weeks have you met face to face with friends or family outside of your household” (Figures 7 & 8), “I often feel rejected” (Figures 9 & 10), “I miss having people around” (Figures 11 & 12), “I experience a general sense of emptiness” (Figures 13 & 14), “How satisfied or unsatisfied are you with your life overall” (Figures 15 & 16), “How satisfied or unsatisfied are you with your friends” (Figures 17 & 18), “How satisfied or unsatisfied are you with your neighborhood/town/community” (Figures 21 & 22), “How satisfied or unsatisfied are you with your spouse or partner” (Figures 23 & 24), “In the past 14 days, I have had little interest or pleasure in doing things” (Figures 33 & 34),

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“In the past 14 days, I have felt down, depressed, or hopeless” (Figures 35 & 36), and “In the past 14 days, I have trouble falling or staying asleep or sleeping too” (Figures 37 & 38). There were notable changes between pre and post test for the following items: “In the past 14 days, I have avoided or did not approach or enter situations about which I worry” (Figures 27 & 28) and “In the past 14 days, I have left situations early or participated only minimally due to worries” (Figures 29 & 30). There were changes in all items of the objective measures, except for the item “In the past 14 days, I have felt anxious, worried, or nervous” (Figures 31 & 32), which stayed consistent between pre- and post- assessment. Although there were positive changes in most items, there was a negative change for the following items: “I feel lonely” (Figures 1 & 2), “How often in the previous 4 weeks have you spent time with family” (Figures 5 & 6), and “How satisfied or unsatisfied are you with your family” (Figures 19 & 20). There were both negative and positive changes in the item “In the past 14 days, I have felt tense muscles, felt on edge or restless, or had trouble relaxing or trouble sleeping” (Figures 25 & 26).

Subjective Results

Pre-Assessment. At the initial assessment, 10 out of the 16 participants mentioned feeling isolated due to loss of a partner, moving, COVID-19 circumstances, or their lifestyle. Four participants mentioned they wished to have friends that participated in more physically active hobbies or leisure activities. Two participants reported being very satisfied with their life and friendships overall at the time of the initial assessment owing it to their outgoing personalities and optimistic outlooks. Five participants expressed great excitement toward participating in a group exercise program, however the remaining 11 participants seemed indifferent to a group setting. Four individuals stated a desire to engage in more hobbies and leisure activities with their significant

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others. Eight of the 16 participants were hesitant toward the exercise program's age appropriateness and impacts of past medical conditions.

Post-Assessment. All participants reported loving or enjoying the group exercise program. Every individual commented on either their shock at their lack of balance, the comradery while working on balance in a group, or the benefits of the balance exercises. Of the 16 participants, 13 participants specifically mentioned how encouraging working on balance was together because it affirmed that they were not the only one struggling. Two participants stated they had a hard time remembering the names of the individuals in the program and suggested there to be more time for group introductions during the sessions. Besides the date and time of the program, there were no suggested changes to the format of the program. Three participants mentioned they did not develop close friendships with other participants outside of the hour sessions, however they did enjoy seeing them weekly and at other times while at the club. Three participants mentioned a positive experience about running into each other at a store during an off day from the group sessions. Four participants commented on how beneficial and positive it was to regularly engage with a group of similarly aged individuals outside of their norm, such as churches or workplaces. The three couples who participated mentioned the satisfaction of engaging in the program with their spouse because it allowed them to regularly partake in an activity with each other. Two participants reported sleeping better at night on the days they participated in the group sessions.

Discussion

Previous research indicates the older adults are at risk for both social isolation and for participating minimally in physical activity, which are both highly correlated to poor health outcomes (McPhee et al., 2016; Coyle & Dugan, 2012). Community and group-based programs can provide meaningful social experiences and motivate older adults to participate in physical activities

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(Smallfield & Molitor, 2018; Mcphee et al., 2016). An area that needs further intervention is learning how to intertwine social participation with physical activity more appropriately for older adults, thus the purpose of this project.

The information gathered from this project lined up with research in literature. For example, the participants reported enjoying the program because they were engaging in an activity with a group of similarly aged adults (Mcphee et al., 2016). Also, the participants stated they specifically enjoyed exercises, such as the balance training, because they were able to see that they were not the only person struggling, which helped them have a better perception of their own aging (Sargent-Cox, Anstey, & Luszcz, 2012). Similar to the findings of Haughton et al., (2006), most participants stated they were more motivated to attend every session because it gave them an activity to do outside of the home and they looked forward to participating with the same group of people. All participants reported the program exceeding their expectations whether they were initially excited before the first sessions or had no expectations at all, which lines up with researchers' findings that older adults tend to feel more positive toward an exercise program after participating (Ruby, et al., 2011). Because the barriers, such as unfamiliarity with exercises, lack of personal instructors, program availability, and not addressing goals and needs, were tackled throughout the seven-week program, the participants reported the program as being age appropriate and engaging (Bethancourt, Rosenberg, Beatty, & Arterburn, 2014). Interestingly, there were noticeable improvements in most quantitative outcomes along with the subjective outcomes. Although the older adults verbally reported positive benefits from participating in the program, the subjective outcome item "I feel lonely" showed a negative change at the end of the program; however, other subjective isolation measurements demonstrated positive changes (Taylor, Taylor,

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Nguyen, & Chatters, 2016). In the future, this item can be broken down into smaller sections, for example, but not limited to, “I feel lonely because I wish I had more friends”, “I feel lonely when I spend too much time by myself”, or “I feel lonely because I wish I had more things to do during the week”. Another way to dissect that item further, instead of looking at the average changes of each item, each participant’s data of the items could be individually analyzed for changes. Even though there was a negative change on the item “I feel lonely”, all of the participants verbally reported during the motivational at the post-assessment that the program was a very meaningful and beneficial experience. Overall, all participants that committed to attending the sessions at least once a week reported and demonstrated positive social health, mental health, and physiological benefits.

As predicted, there were many limitations that existed. First, participants were all made aware of the purpose of the project and could have engaged and interacted at high levels due to their biases. Second, limitation was that the quantitative outcomes may have been skewed due to the fact that COVID restrictions were loosening up because of the increase of vaccinations among the population, which would impact overall social and mental health. A third limitation is that the program occurred during the COVID pandemic, which has impacted many peoples’ social, mental, and physical health. Lastly, only the participants who committed to attending a session at least once a week were interviewed at the end, so the individuals who dropped out or attended less than once a week were not measured. This fact could impact the generalizability to all older adults.

Despite the limitations, the findings from this project demonstrated how a group-based exercise program can benefit older adults both physically and mentally. Although the participants did not develop deep friendships after seven-weeks, the weekly social interactions motivated the older adults to engage in more physical activity. Older adults may benefit from the extra source of

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motivation to engage in physical activity, while fitness facilities may benefit from gaining a larger client population to serve. There are many reasons why this project is beneficial to the field of occupational therapy. One reason is that this demonstrated how a group-based program can impact the social health of older adults and provide meaningful social participation regularly. A program like this one can produce positive health outcomes for older adults such as increased activity tolerance, improved strength, and lower body fat percentages that can aid with better occupational performance. Occupational therapists can provide engaging, group-based balance training in exercise programs for older adults that can improve their functional mobility and balance at home and in their communities. Lastly, this is important for occupational therapy as a field because physical activity and exercise are hobbies and leisure activities that can either directly add meaning to one's life or aid with performance of meaningful activities that add purpose to one's life. Occupational therapists can help develop exercise programs in communal living spaces, nursing facilities, and fitness facilities that will benefit older adults physically, mentally, and socially.

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References

- Allender, S., Cowburn, G., & Foster, C. (2006). Understanding participation in sport and physical activity among children and adults: a review of qualitative studies. *Health education research, 21*(6), 826-835
- Bae, W., Ik, S., Ryu, J., & Heo, J. (2017). Physical activity levels and well-being in older adults. *Psychological Reports, 120*(2), 192-205. doi:10.1177/0033294116688892
- Bethancourt, H., Rosenberg, D. E., Beatty, T., & Arterburn, D. E. (2014). Barriers to and facilitators of physical activity program use among older adults. *Clinical medicine & research, 12*(1-2), 10-20.
- Bjorklund, B.R. (2014). *Journey of adulthood* (8th ed.). New York, NY: Pearson. ISBN: 978-0205970759
- Bourassa, K. J., Memel, M., Woolverton, C., & Sbarra, D. A. (2017). Social participation predicts cognitive functioning in aging adults over time: comparison with physical health, depression, and physical activity. *Aging & mental health, 21*(2), 133-146.
- Cole, M.B., & Tufano, R. (2008). *Applied theories in occupational therapy: A practical approach*. Thorofare, NJ: SLACK, Inc.
- Coyle, C. E., & Dugan, E. (2012). Social isolation, loneliness and health among older adults. *Journal of aging and health, 24*(8), 1346-1363.
- Cornwell, E. Y., & Waite, L. J. (2009). Measuring social isolation among older adults using multiple indicators from the NSHAP study. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 64*(suppl_1), i38-i46.
<https://doi-org.ezproxy.uindy.edu/10.1093/geronb/gbp037>
- Elder, K. & Retrum, J. (2012). AARP foundation isolation framework report. Retrieved from

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aarpfoundation.org

Feldman, D. I., Al-Mallah, M. H., Keteyian, S. J., Brawner, C. A., Feldman, T., Blumenthal, R.

S., & Blaha, M. J. (2015). No evidence of an upper threshold for mortality benefit at high levels of cardiorespiratory fitness. *Journal of the American College of Cardiology*, 65(6), 629-630

Functional Aging Institute (2013). *The Functional Aging Institute*. Retrieved from

<https://functionalaginginstitute.com/about/>

Gierveld, J. D. J., & Tilburg, T. V. (2006). A 6-item scale for overall, emotional, and social

loneliness: Confirmatory tests on survey data. *Research on aging*, 28(5), 582-598.

<https://doi.org/10.1177/0164027506289723>

Goll, J. C., Charlesworth, G., Scior, K., & Stott, J. (2015). Barriers to social participation among

lonely older adults: the influence of social fears and identity. *PloS one*, 10(2).

Haughton McNeill, L., Wyrwich, K. W., Brownson, R. C., Clark, E. M., & Kreuter, M. W.

(2006). Individual, social environmental, and physical environmental influences on physical activity among black and white adults: a structural equation analysis. *Annals of Behavioral Medicine*, 31(1), 36-44.

Hawthorne, G. (2006). Measuring social isolation in older adults: development and initial

validation of the friendship scale. *Social Indicators Research*, 77(3), 521–548.

Hwang, T. J., Rabheru, K., Peisah, C., Reichman, W., & Ikeda, M. (2020). Loneliness and social

isolation during the COVID-19 pandemic. *International psychogeriatrics*, 32(10),

1217–1220. <https://doi.org/10.1017/S1041610220000988>

Kikuchi, H., Inoue, S., Fukushima, N., Takamiya, T., Odagiri, Y., Ohya, Y., Amagasa, S., Oka,

IMPACTS OF GROUP EXERCISE

- K., & Owen, N. (2017). Social participation among older adults not engaged in full- or part-time work is associated with more physical activity and less sedentary time. *Geriatrics & Gerontology International*, 17(11), 1921-1927. <https://doi.org/10.1111/ggi.12995>
- Kroenke, K., Spitzer, R. L., & Williams, J. B. (2001). The PHQ-9: validity of a brief depression severity measure. *Journal of general internal medicine*, 16(9), 606–613.
<https://doi.org/10.1046/j.1525-1497.2001.016009606.x>
- Lebeau, R. T., Glenn, D. E., Hanover, L. N., Beesdo-Baum, K., Wittchen, H. U., & Craske, M. G. (2012). A dimensional approach to measuring anxiety for DSM-5. *International Journal of Methods in Psychiatric Research*, 21(4), 258-272.
- McPhee, J. S., French, D. P., Jackson, D., Nazroo, J., Pendleton, N., & Degens, H. (2016). Physical activity in older age: perspectives for healthy ageing and frailty. *Biogerontology*, 17(3), 567-580.
- National Council of Aging. (2018). Healthy Aging Fact Sheet. Arlington, VA: Retrieved from <https://www.ncoa.org>
- Oritt, E.J., Paul, S.C., Behrman, J.A. (1985). The perceived support network inventory. *American Journal of Community Psychology*. 13(5): 565-582.
<https://doi.org/10.1007/BF00923268>
- Panchal, N., Kamal, R., Orgera, K., Cox, C., Garfield, R., Hamel, L., & Chidambaram, P. (2020). The implications of COVID-19 for mental health and substance use. *Kaiser family foundation*.
- Robins, L. M., Hill, K. D., Finch, C., Clemson, L., & Haines, T. (2018). The association between physical activity and social isolation in community-dwelling older adults. *Aging & mental health*, 22(2), 175-182.

IMPACTS OF GROUP EXERCISE

- Ruby, M. B., Dunn, E. W., Perrino, A., Gillis, R., & Viel, S. (2011). The invisible benefits of exercise. *Health Psychology, 30*(1), 67.
- Shankar, A., McMunn, A., Demakakos, P., Hamer, M., & Steptoe, A. (2017). Social isolation and loneliness: Prospective associations with functional status in older adults. *Health psychology, 36*(2), 179.
- Sipe, C (nd). *Functional Circuits for Aging Clients* [PowerPoint slides].
- Smallfield, S., & Molitor, W. L. (2018). Occupational therapy interventions supporting social participation and leisure engagement for community-dwelling older: A systematic review. *American Journal of Occupational Therapy, 72*(4), 7204190020p1-7204190020p8.
- Smith, G. L., Banting, L., Eime, R., O'Sullivan, G., & Van Uffelen, J.G. (2017). The association between social support and physical activity in older adults: a systematic review. *International Journal of Behavioral Nutrition and Physical Activity, 14*(1), 56.
- Spitzer, R. L., Kroenke, K., Williams, J. B., & Löwe, B. (2006). A brief measure for assessing generalized anxiety disorder: the GAD-7. *Archives of Internal Medicine, 166*(10), 1092-1097. <https://doi:10.1001/archinte.166.10.1092>
- Taylor, D. (2014). Physical activity is medicine for older adults. *Postgraduate medical journal, 90*(1059), 26-32.
- Taylor, H. O., Taylor, R. J., Nguyen, A. W., & Chatters, L. M. (2016). Social isolation, depression, and psychological distress among older adults. *Journal of Aging and Health, 1-18*. doi: 10.1177/0898264316673511
- Wilson, C., & Moulton, B. (2010). *Loneliness among older adults: A national survey of adults 45+*. Washington, DC: AARP. Retrieved from https://assets.aarp.org/rgcenter/general/loneliness_2010.pdf

IMPACTS OF GROUP EXERCISE

Zavaleta, D., Samuel, K., & Mills, C. T. (2017). Measures of social isolation. *Social Indicators Research, 131*(1), 367-391. <https://doi.org/10.1007/s11205-016-1252-2>

IMPACTS OF GROUP EXERCISE

Appendix A

Workout Template

Week 1 Day 1

- Warmup/Balance
 - Introduction with names and 1 fact about self
 - SL standing w/ changing arm positions (each leg)
 - Heel to toe standing (both legs leading)
- Circuit 1: Half of group – 20 seconds on, 20 seconds off (6x)
 - Bodyweight TRX rows
 - Step Ups
- Circuit 2: Half of group – 20 seconds on, 20 seconds off (6x)
 - Bear Hug Medicine Ball Squats
 - Alternating OHP
- Circuit 3: Full Group – 30 seconds (3x each station)
 - TRX push ups
 - Lateral step ups
 - Forward press
- Cool Down
 - Triceps stretch
 - Inner thigh stretch
 - Hamstring stretch
 - Oblique Stretch

IMPACTS OF GROUP EXERCISE

Week 1 Day 2

- Warmup/Balance
 - Name with place they were born or grew up
 - Lateral stepping with single leg standing
 - Forward and backward heel to toe walking

complete group circuit 3x, switch to next circuit and complete 3x - 30 seconds each

- Group circuit: 1
 - TRX lunges
 - Squat press unilateral
 - Straight arm band pulls
 - Oblique twist with ball
- Group circuit: 2
 - TRX flutters
 - Banded lateral walks
 - DB boxing
 - KB DL
- Cool Down
 - Arm circles
 - Opening chest
 - Hamstring stretch

Week 1 Day 3

- Warmup/Balance
 - Alt knee to elbow standing crunches

IMPACTS OF GROUP EXERCISE

- Alt overhead reach to standing crunch
 - Heel to toe standing (both legs)
 - Lunge standing (both legs)
- 1 large group circuit (20 sec, 20 seconds rest) 6x
 - Small banded squats (reg or with chair)
 - Bent over rows with large bands
 - Forward reach with DB rotation
 - SA planks TRX with shoulder abduction
 - Single Leg step ups
- Cool Down
 - Floor stretch
 - Glutes
 - Abductors
 - Back
 - Hamstrings
 - Shoulder circles

Week 2 Day 2

- Warmup/Balance
 - Split squat stance – bring toe closer to heel every 15 seconds, changing head orientation (both legs)
 - You Go, I Go Squats (1, 2, 3, ..., 8 reps)
- Circuit 1: 6 minutes (30 seconds each time)
 - Squats with knee drive (modified with TRX)

IMPACTS OF GROUP EXERCISE

- OHP with small bands above wrists
- Circuit 2: 6 minutes
 - Rolling Weighted ball in squat
 - KB farmers carry (resting on shoulders)
- Circuit 3: 6 minutes
 - Shoulder tap planks (floor or bench)
 - Band bicep curls
- Reviewing Form: squats and lunges
- Cool Down:
 - Hamstrings
 - Neck
 - Shoulders
 - Adductors

Week 2 Day 2

- Warmup/Balance
 - Review names
 - Windmill stretch
 - Partner oblique twist ball passes
 - Calf raises
 - Eyes closed narrow stance
 - Eyes closed narrow stance with alternating heel lifts
- Group Circuit - at your own pace
 - Brace squat

IMPACTS OF GROUP EXERCISE

- TRX rows
- Supine chest press
- Alt step ups
- Plank leg raises
- Stretching
 - Cross body arm stretch
 - Forearms
 - Calves

Week 2 Day 3

- Warmup/Balance
 - Tight rope walking on turf
 - Floor and Standing Pelvic tilts
- In Your Own Space Circuit - Need 1 or 2 KB/DB
 - Wood chops (10e)
 - Curls (10)
 - Side to side squats (10)
 - SA rows (10e)
 - Overhead Ext (10)
 - Torso Twists (10e)
 - Rev lunge with knee drive (10e)
 - SA OHP (10e)
- Stretching
 - Hamstring

IMPACTS OF GROUP EXERCISE

- Forward reach
- Backward circles

Week 3 Day 1

- Warmup/Balance
 - SL stances
 - SL abduction
 - 15 toe raises
 - 15 arm circles forward, backward, OH reaches
- Group circuit (30 seconds on, 15 sec off - 3x) (20 sec, 15 - 1x)
 - TRX Y pulls
 - TRX rev lunges
 - squat and press
 - backward weighted arm circles
 - KB sumo squats
 - cable bicep curls
 - Sphinx back extension
 - side box runs
- Cool Down
 - Tricep
 - Rear delt
 - Backward circles
 - Chest opening - hands behind back
 - 3x overhead reach to toe touch

IMPACTS OF GROUP EXERCISE

Week 3 Day 2

- Warmup/Balance
 - Internal/external shoulder rotation with 1 DB (3x, 10 reps)
 - Split squat stance bringing toe closer to heel
- Superset Circuit - Switch with partners every 30 seconds
 - 1. Swiss ball back extension
 - 1. Squat and vertical toss
 - 2. Straight arm raise overhead
 - 2. Large banded squat
 - 3. Bent over wallball bounce
 - 3. Cable side to side steps
 - 4. Tubing bent over rear delt row
 - 4. Glute Bridge with abduction
- Cool Down
 - Hip flexor in standing
 - Oblique
 - Cross body shoulder stretch
 - Forward reach with arm circles

Week 3 Day 3

- Warmup/balance
 - Tightrope walking
 - Arm circles forward, backward, OHP
- At your own pace circuit

IMPACTS OF GROUP EXERCISE

- Forward box runs
- Deadbugs
- Split squat oblique twists
- TRX push ups
- Squat and press
- Inward/outward bicep curls
- Cool Down
 - IT stretch
 - Hamstring
 - Torso/oblique

Week 4 Day 1

- Warmup/Balance
 - Marches
 - Soldier toe touches
 - High knees
 - Under knee claps
 - Shifting left to right with alt arm raises
- At Your Own Pace Circuit 1 (9 minutes)
 - TRX MTN climbers (10e)
 - Lat lunges (10e)
 - tricep kickbacks (10e)
- At Your Own Pace Circuit 2 (9 minutes)
 - TRX bicep curls (10)

IMPACTS OF GROUP EXERCISE

- Hip mobility squat (10)
 - Wood chops (10e)
- At Your Own Pace Circuit 3 (9 minutes)
 - Slider Rev Lunges (10e)
 - Around the world (10)
 - Shoulder tap planks (10e)
- Cool Down
 - Neck stretches
 - Cross body shoulder
 - Inner thigh and hamstring stretch

Week 4 Day 2

- Warmup/Balance
 - SL standing - open and closed eyes
 - TRX group rotating (30 sec, 2x)
 - rows
 - push ups
- In Your Own Space Circuit 1 (8 minutes)
 - Overhead tricep ext
 - Lat shoulder raise
 - Weighted squat
- In Your Own Space Circuit 2 (8 minutes)
 - Curl and press
 - Bird dogs

IMPACTS OF GROUP EXERCISE

- Straight leg DL
- In Your Own Space Circuit 3 (8 minutes)
 - High knee
 - Banded side to side steps
 - DB boxing

Week 4 Day 3

- Warmup/Balance
 - Eyes occluded standing
 - SL standing
 - Squats
 - High knees
 - Jumping jacks
 - Straight leg toe touch
- At your Own Pace Circuit (10e)
 - Ladders
 - Squat ball rolls
 - OHP w/ large band
 - Lateral shoulder circles
 - TRX rollouts
 - Plank leg raises
 - Chair hamstring walks
- Cool Down
 - Hamstring stretch

IMPACTS OF GROUP EXERCISE

- Cross body shoulder
- IT band

Week 5 Day 1

- Warmup/Balance
 - Toe presses
 - Alt SL toe presses
 - High knees
 - Soldier reaches
 - Groups of 3 squatting ball passes
- At your own pace circuits by equipment
 - Bands
 - SL DL
 - Hip Abduction
 - Standing chest flies
 - TRX
 - Flutters
 - Rows
 - DBs
 - Curl and press
 - X squats
- Cool Down
 - Seated stretching
 - Straight back sitting

IMPACTS OF GROUP EXERCISE

Week 5 Day 2

- Warmup/Balance
 - Tightrope walking with 2 dumbbells
 - Partner standing toe taps
- At your own pace circuit 1 (8min)
 - DB boxing
 - KB Figure 8s
 - Tricep kickbacks
- At your own pace circuit 2 (8min)
 - Side to side squats
 - OHP
 - Bicep curls
- At your own pace circuit 2 (8min)
 - Forward press
 - Weighted butt kicks
 - Weighted jumping jacks
- Cooldown
 - External rotation
 - Backward circles
 - Inner thighs

Week 5 Day 3

- Warmup/balance
 - SL standing with other foot in front, lateral, behind

IMPACTS OF GROUP EXERCISE

- Heel to toe stance
 - 20 jumping jacks
- At own pace circuit (30 minutes)
 - Ropes
 - Alt kicking bosu ball
 - SA cable row
 - Ladders
 - TRX bicep curls
 - Seated hip abduction with bands
- Cool Down
 - Low back stretch
 - Standing oblique stretch
 - Wide stance inner thighs and hamstrings

Week 6 Day 1

- Warmup/Balance
 - Group partner ball passes (3-4 people)
 - SL passes
- At Your Own Pace Circuit (10-15 reps each)
 - Plate drives
 - Plate curls
 - SL side steps with bands
 - Chair hamstring walks
 - Banded rows

IMPACTS OF GROUP EXERCISE

- Cool Down
 - Hamstring
 - Abductors
 - Cross body shoulder

Week 6 Day 2

- Warmup/balance
 - Ropes
 - Ladders
 - Back to back partner passes
 - SL standing with different UB orientations
- At your own pace
 - Cable forward reach
 - Step ups
 - Static lat lunges
 - TRX chin up
 - Side to side OHP
 - SA OH extension
- Cool down
 - Stretching outdoors
 - Chest
 - Calves
 - Quads

Week 6 Day 3

IMPACTS OF GROUP EXERCISE

- Warmup/Balance
 - external rotation elbows up and down
 - OH raises
 - toe touch hamstring stretch
 - standing oblique crunch
- Circuit (30 minutes)
 - toe taps
 - seated swiss ball ohp
 - straight arm band pull downs
 - bear hug squats
 - lateral banded walks
 - straight arms oblique twists
- Cool Down
 - DB bicep curls
 - DB tricep kick backs
 - anchored back stretch

Week 7 Day 1

- Warmup/Balance
 - Tight rope walking with DB
 - forward
 - backward
 - grapevine
 - tip toes

IMPACTS OF GROUP EXERCISE

- At your own pace circuit (10-20 reps)
 - Cable underhand row
 - Lateral step ups
 - Banded DL
 - Banded jumping jacks
 - Split squat unilateral OHP
 - TRX bicep curls
 - DB Bent Over Extensions
- Cool Down
 - Standing hip flexor stretch
 - Anchored low back stretch

Week 7 Day 2

- Warmup/Balance
 - Alt marching
 - Group ball passing - heels raised, one legged
- At Own Pace Circuit (10-20 reps)
 - Calf raises on step (TRX)
 - Rear delt straight arm pulls
 - Small banded overhead reach
 - Mtn climbers
 - Swinging lunges/steps
 - Unilateral elevated squat
- Cool Down

IMPACTS OF GROUP EXERCISE

- Neck
- Upper back
- Shoulders
- Hamstrings

Week 7 Day 3

- Warmup/Balance
 - SL standing
 - Alt SL hops
- At your own pace circuit (5-15 reps)
 - Ladders
 - Ropes
 - Wall ball bounces
 - Toe taps
 - TRX push ups
 - Wood chops
- Cool Down
 - Hands and knees stretching
 - Hip flexor stretch
 - Thoracic stretch
 - Triceps

Appendix B

Pre-Assessment Questionnaire

IMPACTS OF GROUP EXERCISE

Name: _____ DOB: _____ Gender: _____

Marital Status: _____ Work Status: _____

Children Status: _____ Living Situation: _____

1. I feel lonely
(a) Every day; (b) Most days; (c) Few days; (d) Never.
2. I find it easy to make new friends
(a) Every day; (b) Most days; (c) Few days; (d) Never.
3. How often in the previous 4 weeks have you spent time with family?
(a) Every day; (b) Most days; (c) Few days; (d) Never.
4. How often in the last 2 weeks have you met face to face with friends or family outside of your household?
(a) Every day; (b) Most days; (c) Few days; (d) Never.
5. I often feel rejected.
(a) Every day; (b) Most days; (c) Few days; (d) Never.
6. I miss having people around.
(a) Every day; (b) Most days; (c) Few days; (d) Never.
7. I experience a general sense of emptiness
(a) Every day; (b) Most days; (c) Few days; (d) Never.
8. How satisfied or unsatisfied are you with your life overall?
(a) Very satisfied; (b) Fairly satisfied; (c) Not very satisfied; (d) Not at all satisfied; (e) Don't Know/No Answer.
9. How satisfied or unsatisfied are you with your friends?
(a) Very satisfied; (b) Fairly satisfied; (c) Not very satisfied; (d) Not at all satisfied; (e) Don't Know/No Answer.

IMPACTS OF GROUP EXERCISE

10. How satisfied or unsatisfied are you with your family?

(a) Very satisfied; (b) Fairly satisfied; (c) Not very satisfied; (d) Not at all satisfied; (e) Don't Know/No Answer.

11. How satisfied or unsatisfied are you with your neighborhood/town/community?

(a) Very satisfied; (b) Fairly satisfied; (c) Not very satisfied; (d) Not at all satisfied; (e) Don't Know/No Answer.

12. How satisfied or unsatisfied are you with your spouse or partner?

(a) Very satisfied; (b) Fairly satisfied; (c) Not very satisfied; (d) Not at all satisfied; (e) Don't Know/No Answer.

Social Network: 1) please mark all that relate to you. 2) Estimate the size. 3) Frequency of contact

|
Spouse or partner: _____

Family members: _____

Friends: _____

Co-workers: _____

Professional Help Giver (Doctor, Lawyer, Counselor): _____

Religious leader: _____

Self-help Group (AA, Woman's support, etc.): _____

Other: _____

How satisfied are you with your personal social network? What would you change about your social network?

IMPACTS OF GROUP EXERCISE

In the past 14 days, I have...

1. Felt tense muscles, felt on edge or restless, or had trouble relaxing or trouble sleeping
(a) **Never** (b) **occasionally** (c) **half of the time** (d) **most of the time** (e) **all of the times**
2. Avoided, or did not approach or enter, situations about which I worry
(a) **Never** (b) **occasionally** (c) **half of the time** (d) **most of the time** (e) **all of the times**
3. Left situations early or participated only minimally due to worries
(a) **Never** (b) **occasionally** (c) **half of the time** (d) **most of the time** (e) **all of the times**
4. Felt anxious, worried, or nervous
(a) **Never** (b) **occasionally** (c) **half of the time** (d) **most of the time** (e) **all of the times**
5. Had little interest or pleasure in doing things
(a) **Never** (b) **occasionally** (c) **half of the time** (d) **most of the time** (e) **all of the times**
6. Felt down, depressed, or hopeless
(a) **Never** (b) **occasionally** (c) **half of the time** (d) **most of the time** (e) **all of the times**
7. Trouble falling or staying asleep, or sleeping too much
(a) **Never** (b) **occasionally** (c) **half of the time** (d) **most of the time** (e) **all of the times**

IMPACTS OF GROUP EXERCISE

Post-Assessment Questionnaire

Name: _____ DOB: _____ Gender: _____

Marital Status: _____ Work Status: _____

Children Status: _____ Living Situation: _____

-
1. I feel lonely
(a) Every day; (b) Most days; (c) Few days; (d) Never.
 2. I find it easy to make new friends
(a) Every day; (b) Most days; (c) Few days; (d) Never.
 3. How often in the previous 4 weeks have you spent time with family?
(a) Every day; (b) Most days; (c) Few days; (d) Never.
 4. How often in the last 2 weeks have you met face to face with friends or family outside of your household?
(a) Every day; (b) Most days; (c) Few days; (d) Never.
 5. I often feel rejected.
(a) Every day; (b) Most days; (c) Few days; (d) Never.
 6. I miss having people around.
(a) Every day; (b) Most days; (c) Few days; (d) Never.
 7. I experience a general sense of emptiness
(a) Every day; (b) Most days; (c) Few days; (d) Never.
 8. How satisfied or unsatisfied are you with your life overall?
(a) Very satisfied; (b) Fairly satisfied; (c) Not very satisfied; (d) Not at all satisfied; (e) Don't Know/No Answer.
 9. How satisfied or unsatisfied are you with your friends?
(a) Very satisfied; (b) Fairly satisfied; (c) Not very satisfied; (d) Not at all satisfied; (e) Don't Know/No Answer.

IMPACTS OF GROUP EXERCISE

10. How satisfied or unsatisfied are you with your family?
(a) **Very satisfied**; (b) **Fairly satisfied**; (c) **Not very satisfied**; (d) **Not at all satisfied**; (e) **Don't Know/No Answer**.
11. How satisfied or unsatisfied are you with your neighborhood/town/community?
(a) **Very satisfied**; (b) **Fairly satisfied**; (c) **Not very satisfied**; (d) **Not at all satisfied**; (e) **Don't Know/No Answer**.
12. How satisfied or unsatisfied are you with your spouse or partner?
(a) **Very satisfied**; (b) **Fairly satisfied**; (c) **Not very satisfied**; (d) **Not at all satisfied**; (e) **Don't Know/No Answer**.

In the past 14 days, I have...

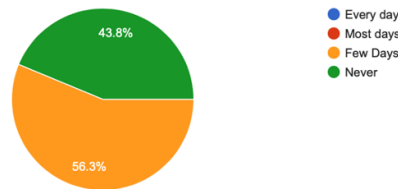
1. Felt tense muscles, felt on edge or restless, or had trouble relaxing or trouble sleeping
(a) **Never** (b) **occasionally** (c) **half of the time** (d) **most of the time** (e) **all of the times**
2. Avoided, or did not approach or enter, situations about which I worry
(a) **Never** (b) **occasionally** (c) **half of the time** (d) **most of the time** (e) **all of the times**
3. Left situations early or participated only minimally due to worries
(a) **Never** (b) **occasionally** (c) **half of the time** (d) **most of the time** (e) **all of the times**
4. Felt anxious, worried, or nervous
(a) **Never** (b) **occasionally** (c) **half of the time** (d) **most of the time** (e) **all of the times**
5. Had little interest or pleasure in doing things
(a) **Never** (b) **occasionally** (c) **half of the time** (d) **most of the time** (e) **all of the times**
6. Felt down, depressed, or hopeless
(a) **Never** (b) **occasionally** (c) **half of the time** (d) **most of the time** (e) **all of the times**
7. Trouble falling or staying asleep, or sleeping too much
(a) **Never** (b) **occasionally** (c) **half of the time** (d) **most of the time** (e) **all of the times**

IMPACTS OF GROUP EXERCISE

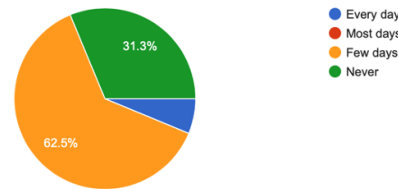
Summary Pre-Assessment Results	Summary Post-Assessment Results
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Figures 1 and 2

I feel lonely
16 responses

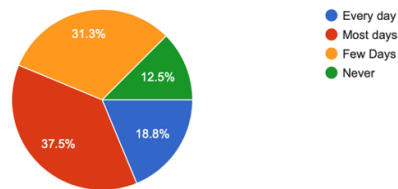


I feel lonely
16 responses

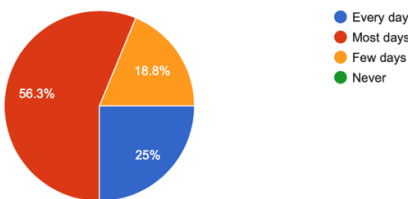


Figures 3 and 4

I find it easy to make new friends
16 responses

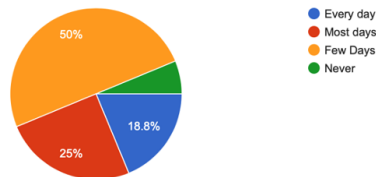


I find it easy to make new friends
16 responses

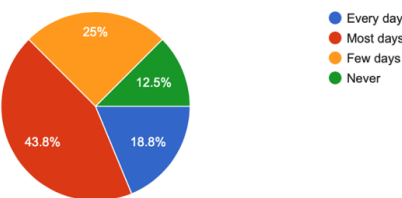


Figures 5 and 6

How often in the previous 4 weeks have you spent time with family?
16 responses

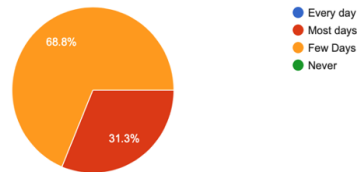


How often in the previous 4 weeks have you spent time with family?
16 responses

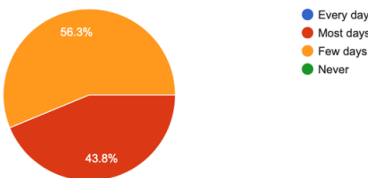


Figures 7 and 8

How often in the last 2 weeks have you met face to face with friends or family outside of your household
16 responses



How often in the last 2 weeks have you met face to face with friends or family outside of your household
16 responses

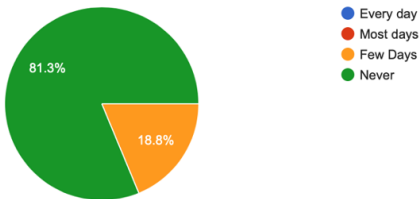


IMPACTS OF GROUP EXERCISE

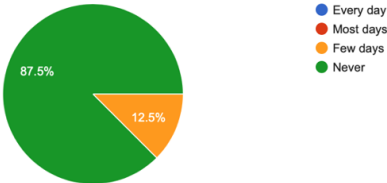
Summary Pre-Assessment Results	Summary Post-Assessment Results
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Figures 9 and 10

I often feel rejected
16 responses

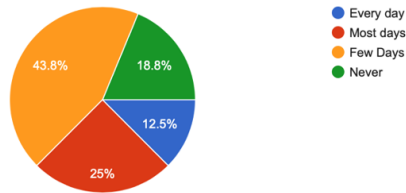


I often feel rejected
16 responses

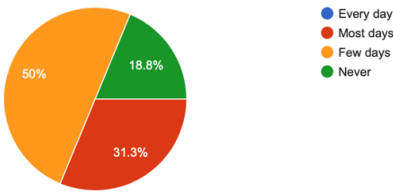


Figures 11 and 12

I miss having people around
16 responses

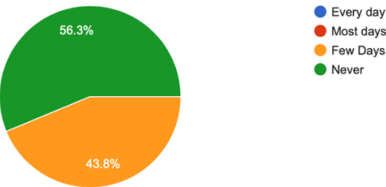


I miss having people around
16 responses

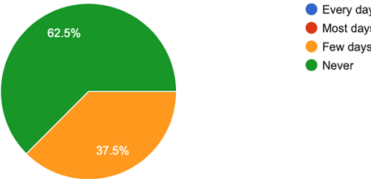


Figures 13 and 14

I experience a general sense of emptiness
16 responses

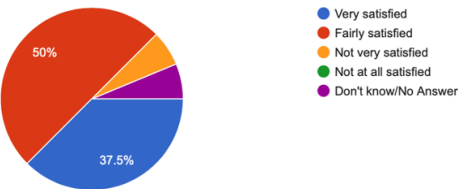


I experience a general sense of emptiness
16 responses

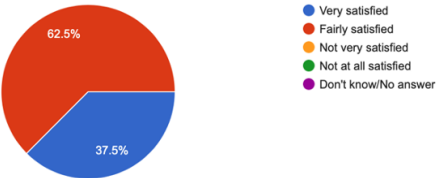


Figures 15 and 16

How satisfied or unsatisfied are you with your life overall
16 responses



How satisfied or unsatisfied are you with your life overall
16 responses



IMPACTS OF GROUP EXERCISE

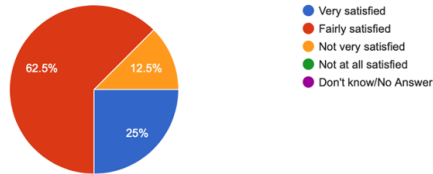
Summary Pre-Assessment Results

Summary Post-Assessment Results

Figures 17 and 18

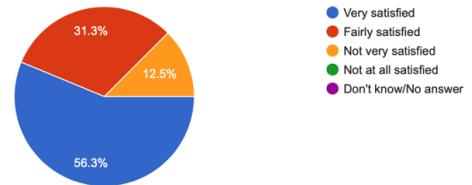
How satisfied or unsatisfied are you with your friends

16 responses



How satisfied or unsatisfied are you with your friends

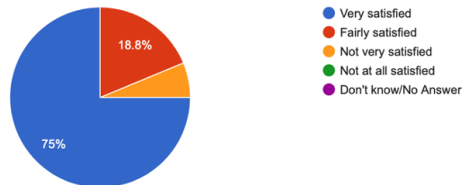
16 responses



Figures 19 and 20

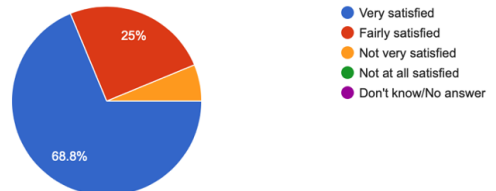
How satisfied or unsatisfied are you with your family

16 responses



How satisfied or unsatisfied are you with your family

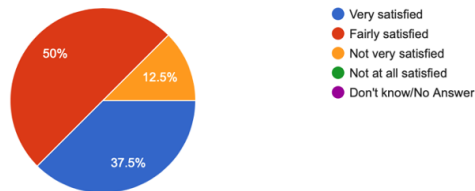
16 responses



Figures 21 and 22

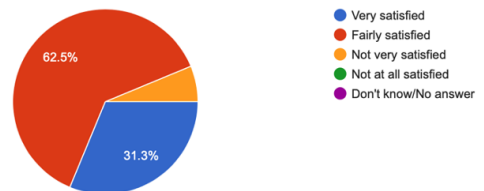
How satisfied or unsatisfied are you with your neighborhood/town/community

16 responses



How satisfied or unsatisfied are you with your neighborhood/town/community

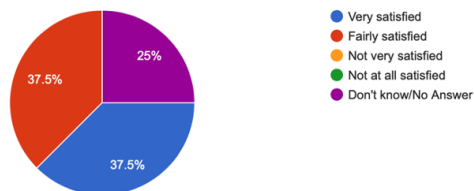
16 responses



Figures 23 and 24

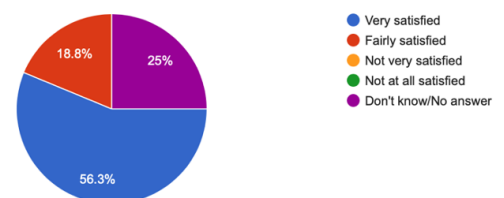
How satisfied or unsatisfied are you with your spouse or partner

16 responses



How satisfied or unsatisfied are you with your spouse or partner

16 responses



IMPACTS OF GROUP EXERCISE

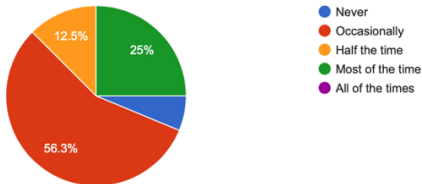
Summary Pre-Assessment Results

Summary Post-Assessment Results

Figures 25 and 26

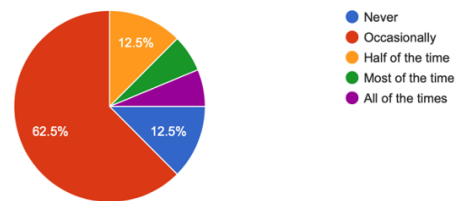
In the past 14 days, I have felt tense muscles, felt on edge, or restless, or had trouble relaxing or sleeping

16 responses



In the past 14 days, I have felt tense muscles, felt on edge or restless, or had trouble relaxing or trouble sleeping

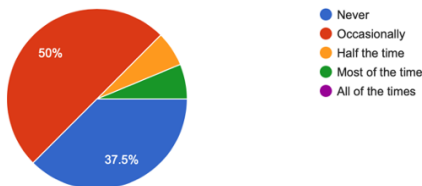
16 responses



Figures 27 and 28

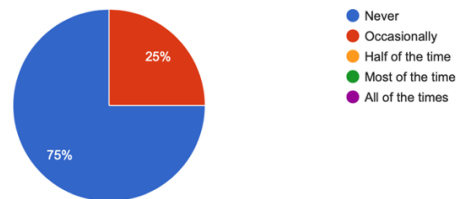
In the past 14 days, I have avoided, or did not approach or enter, situations about which I worry

16 responses



In the past 14 days, I have avoided or did not approach or enter situations about which I worry

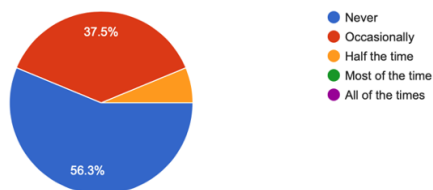
16 responses



Figures 29 and 30

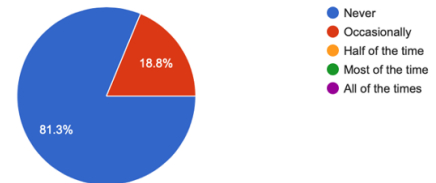
In the past 14 days, I have left situations early or participated only minimally due to worries

16 responses



In the past 14 days, I have left situations early or participated only minimally due to worries

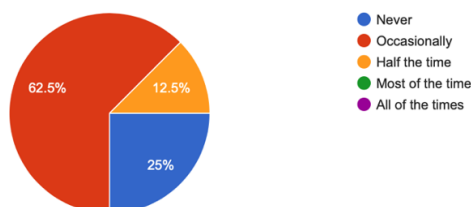
16 responses



Figures 31 and 32

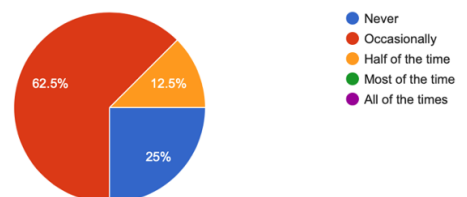
In the past 14 days, I have felt anxious, worried, or nervous

16 responses



In the past 14 days, I have felt anxious, worried, or nervous

16 responses



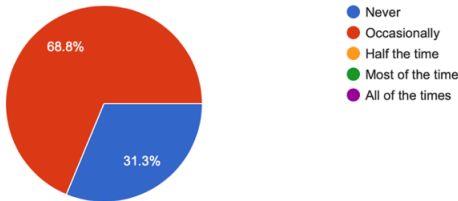
IMPACTS OF GROUP EXERCISE

Summary Pre-Assessment Results	Summary Post-Assessment Results
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Figures 33 and 34

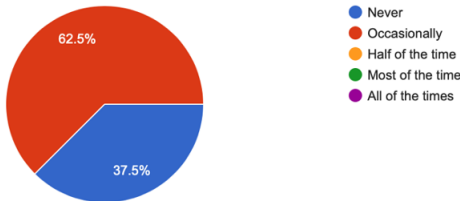
In the past 14 days, I have had little interest or pleasure in doing things

16 responses



In the past 14 days, I have had little interest or pleasure in doing things

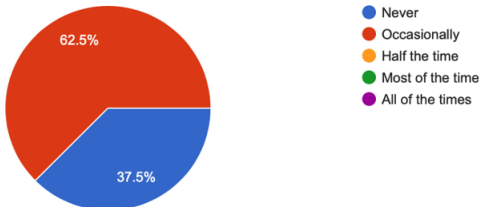
16 responses



Figures 35 and 36

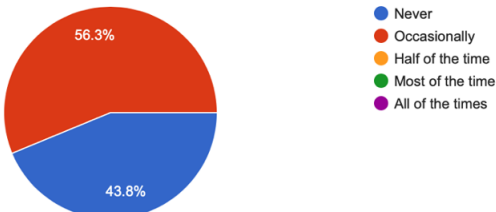
In the past 14 days, I have felt down, depressed, or hopeless

16 responses



In the past 14 days, I have felt down, depressed, or hopeless

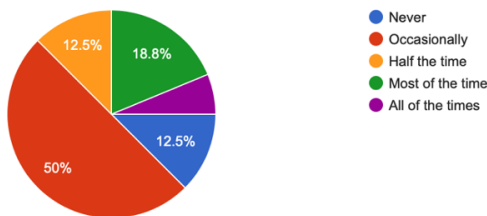
16 responses



Figures 37 and 38

In the past 14 days, I have trouble falling asleep, staying asleep, or sleeping too much

16 responses



In the past 14 days, I have trouble falling or staying asleep or sleeping too much

16 responses

