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Evaluating the Relationship Between Quality of Life and Exercise in Older Adults
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Abstract

Older adult exercise participation has proven beneficial for improving physical and mental health. This study evaluates older adults’ quality of life after participation in an exercise class. The WHOQOL-bref survey was utilized in a sample of older adults (N=16) who fall within the range of 60 to 100 years of age ($M=78$, $SD=11.54$), male (31%) and female (69%), at Jewish Family Service in Los Angeles, California. Results suggest a significant difference in the Domain 2 psychological scores between females ($Md=75$, $n=11$) and males ($Md=44$, $n=5$), $U=8$, $z=-2.24$, $p=0.02$, with a large effect size ($r=0.56$). No significant differences were found in Domains 1, 3, or 4. Overall scores were found to fall below previously tested WHOQOL-bref norm ranges. These findings are not aligned with previous research, which has recognized numerous benefits for older adults who participate in exercise classes. Future studies should strive to collect pre and posttest data to better understand changes or improvements that may have occurred after exercise participation.

*Keywords:* older adults, exercise, quality of life
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Evaluating the Effects of Exercise Classes with Older Adults

Understanding how to improve quality of life in older adult years is important to all people since everyone ages. However, it is of particular importance now as the elderly population grows at a rapid rate, almost doubling the number of older adults to 72.1 million individuals by 2030 (Department of Health and Human Services: Administration on Aging). Older adults who experience physical disability, or suffer from one or more health conditions also experience a lower quality of life (White, Wójcicki & McAuley, 2009). Exercise has been shown to have positive impacts on the mental and physical health and well being of individuals, even decreasing mortality and morbidity in older adults (Nied & Franklin, 2002). Jewish Family Service (JFS) offers a variety of classes to older adult clients with different levels of functioning. The different classes offered by JFS include: Strength Training, Cardio Circuit, Chair Yoga, Dynamic Balance, Salsa Fit, and Training Basics. This gives older adults with lower physical functioning the ability to participate in less difficult physical activity, while still engaging in some form of exercise. The purpose of this research project is to assess the quality of life of older adults post participation in an exercise class offered by JFS, through analyzing results from a self-reported quality of life survey.

Ecological Perspective and Older Adult Quality of Life

Various levels of society interact with each other to mold an older adult’s experience of quality of life (Stokols, 1996). It is very beneficial for services to be offered on a community level, as well as having community level participation in implementing these services, because volunteers, with proper instruction and training, can successfully fill the need for these services without having to pay for or acquire outside professionals (Kamegaya, Maki, Yamagami, Yamaguchi, Murai & Yamaguchi, 2012). However, these programs also require individual participation and capability of
participation, which varies for different participants based on age, gender, genetics, health status, and many other components (Stokols, 1996). On a macro level, government funding for community and senior center fitness programs, health care programs, and coverage available to older adults can affect the kinds of support and resources that are available. It is important that communities offer fitness services to older adults, because they can be a more cost-effective approach to promoting healthier aging by prevention and improving health in older adults (Adams-Fryatt, 2010; Avers, 2010). From an ecological perspective it is also important that services given to older adults incorporate various societal levels and institutions that affect their lives (Stokols, 1996). Like JFS, many senior centers provide older adults with support that meets and integrates multiple needs of their participants, not only exercise (Hand, Cavanaugh, Forbes, Govern, & Cress, 2012). JFS fills a community level need for exercise classes that cater to specific needs of older adults by offering a variety of exercise classes for participants at different levels of function. This current project focuses on a community level fitness program available through JFS.

**Exercise and Overall Quality of Life in Older Adults**

The World Health Organization (WHO) (2014) identifies various benefits of exercise for older adults including positive impact on functional ability, cognition, fall risk reduction, as well as “improve cardiorespiratory and muscular fitness, bone and functional health, reduce the risk of [non communicable diseases] NCDs, [and] depression (Section 1, par.2).” Exercise provides benefits for varying components of an individual’s health and well-being. Elavsky et al. (2005) studied 174 physically active older adults, measured quality of life at baseline, one year after, and then five years after baseline, and found that there was a consistent and significant positive correlation between exercise, affect, self-efficacy, physical self-esteem, as well as satisfaction with
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and quality of life. Similarly, in a study of 60 older adults ages 55 years and up, carried out by Heydarnejad and Dekhordi (2010), it was found that those participants who were part of the randomly assigned exercise test group had higher scores on their quality of life survey, in comparison to the control group, which showed no improvement. These two studies display similar results, where participants of physical exercises reported improved scores on quality of life surveys that were administered.

White, Wójcicki and McAuley (2009) approached quality of life in older adults from a different angle, arguing that quality of life is correlated not with one’s physical ability but rather with one’s self-efficacy. It was found that if someone was more confident in their ability to carry out certain physical tasks then they reported higher physical self-esteem, which ultimately led to better reports of overall quality of life (White, Wójcicki & McAuley, 2009). Acree et al. (2006) measured Health Related quality of life (HRQL) in 112 men and women between 69 and 80 years old who were separated into two groups based on higher or lower physical activity levels. Acree et al. (2006) found that the group with higher physical activity reported higher HRQL scores, showing that greater engagement in physical exercises can lead to improved physical and mental health and well-being. It was also found that improved physical and mental well-being led to greater independence (Spirduso & Cronin, 2001), while being able to be more independent and feeling safe in one’s home, as opposed to being dependent on others or at risk for injury, can positively influence overall quality of life (Shepard, 1993). Exercise provides improvement in various aspects of an individual’s life such as physical ability, health status, and mental-well being, and all of these components work together to help create a more comprehensive, positive, and improved life experience (Acree et al, 2006; Elavsky et al., 2005; White, Wójcicki & McAuley, 2009).
Physical Benefits

Various research on exercise and older adults has shown that exercise can provide a multitude of physical benefits including improved flexibility, strength, and various disease prevention (Adams-Fryatt, 2010; Lista & Sorrentino, 2010; WHO, 2014), including “management of cardiovascular disease, metabolic syndrome, cancer fatigue, arthritis, osteoporosis, obesity, diabetes mellitus, and even chronic obstructive pulmonary disease” (Adams-Fryatt, 2010, p.189). Adams-Fryatt (2010), argues, “participation in regular physical activity through the middle-age years and into retirement may delay biological aging by 10 to 12 years” (p.188-9). A lengthened life expectancy could be attributed to the improved physical health and disease prevention that is associated with consistent and persistent exercise. For older adults who are not in a physical state to participate in certain forms of activity, it is still important to start where they are and then build up to higher levels, in order to help improve physical well-being (Adams-Fryatt, 2010; Avers, 2010; Cayley, 2008; Nied & Franklin, 2002; WHO, 2014). Also, by improving or maintaining physical well-being, independence can also be maintained or increased (Cayley, 2008). One’s ability to complete daily tasks on their own can have positive effects for their quality of life (Cayley, 2008) correlating how one’s physical activity is interconnected with one’s mental and psychological well-being (Acree et al., 2006; Lista & Sorrentino, 2010).

Psychological and Social Benefits

Exercise can provide not only changes in mental well-being, but also changes in social participation and activity because it offers a place to interact with and receive support from other people working on a similar goal. Participating in exercise classes with other peers has been shown to have a positive effect on the positive benefits of

In addition, Acree et al. (2006) found that improved physical activity was associated with improved mental health, including improvements in social functioning, as opposed to older adults who reported being more sedentary in their daily lives. White, Wójcicki and McAuley (2009) argue that there is a lack of existing research that displays whether the correlation between exercise and quality of life, “...is direct or whether it potentially operates through other psychosocial factors” (p. 1). It has been found that self-efficacy, or one’s confidence in their ability to carry out particular tasks was found to be correlated to one’s physical self-esteem, which in turn could improve an individual’s quality of life score (McAuley et al., 2006; White, Wójcicki & McAuley, 2009). In a single blind randomized controlled exercise trial, Gothe et al. (2010) found that participants who took part in exercise activities reported higher levels of perceived attractiveness and physical self-worth in comparison to the baseline measure. McAuley et al. (2006) argued that the relationship between increased physical activity and improved quality of life is not based on one or two variables, but rather there are multiple variables that are improved through exercise in a sequence, from physical and mental health status, self-efficacy, life satisfaction, and others, that eventually lead to an improved quality of life.

White, Wójcicki and McAuley (2009) propose that exercise programs for older adults should incorporate components that work on improving self-efficacy, in order to help older adults achieve higher self-worth, because if an individual perceives certain conditions to be disabling to an extensive level then they will report lower overall quality of life. Self-efficacy and self-esteem are important factors that determine how someone perceives their quality of life (McAuley et al., 2006; White, Wójcicki &
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McAuley, 2009) and different exercises and exercise programs should be tailored to the individual to help promote these protective factors in older adults (Gothe et al., 2010).

Exercise has also been shown to have positive effects on depression in older adults. Blumenthal et al. (1999) compared the effects of medication and exercise on older adults with major depression and found that after 16 weeks of participating in an exercise intervention participants showed improvement that mirrored the reduction of depression shown with medication use. This has insightful significance in showing how exercise can be beneficial, being as conducive as some medications in certain situations. Improvement in depressive symptoms might also be explained by increased or improved physical function, since depressive symptoms could be attributed to certain physical disability or physical limitations (Pahor, Brenes, Penninx, Ip, Rejeski, Messier & Williamson, 2007). The idea that improved physical function and improved depression are correlated with increased exercise participation, illustrates the conclusions of previous studies, which have argued that multiple variables are improved by exercise participation, which ultimately leads to an enhanced quality of life.

Cognitive Benefits

Exercise has been shown to improve the cognition of older adults when they continuously participate in exercise over a period of time (Kamegaya et al., 2012). Aerobic exercise participation, such as walking, jogging or swimming were shown to have better results in improving cognitive function with older adults who participated, in comparison to inactive older adults (Gregory, Gill & Petrella, 2013). Lista and Sorrentino (2010) argue that there is a connection between physical activity and improvement in various areas of mental health functions in older adults, however it is unclear if exercise directly improves brain function or if the improvement in physical health leads to improvement in mental health. Either way, commitment to physical
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activity can promote healthier cognitive function in older adults, despite their process of aging.

The Current Study

Previous research has found multiple benefits and positive effects between exercise and quality of life in older adults. This program evaluation aims to explore how exercise affects quality of life in participants of exercise classes at JFS. Previous studies have shown positive correlations between exercise participation and improvement in overall quality of life, which is what this study expects to find at JFS. Participants were asked to complete a quality of life survey where they could self-report their exercise and quality of life, which were then reviewed for any correlations. An open-ended question was also asked to give participants the opportunity to share personal reflection and interpretation on how participants felt they either benefitted or did not benefit from exercise, as it related to their quality of life.

Methodology

Sample Characteristics

The sample (N=16) includes male (31%) and female (69%), older adult participants age 60 and older (M=78; SD=11.54), who participated in at least one exercise class offered by Jewish Family Service from January 2015 to February 2015. Participants were recruited from exercise classes offered in low-income neighborhoods. All class attendees were asked to participate in the project. Out of 91 registered class attendees, 16 chose to complete a posttest survey for a 17.5% participation rate from this convenience sample. The California State University, Northridge MSW IRB Subcommittee approved this study on October 22nd, 2014.
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Design

This study utilized a convenience sample in a one-shot case study (XO) design, without a control group or randomization. This type of study is beneficial, in order for agencies providing services, to gain a preliminary understanding of how an intervention might affect its participants (Rubin and Babbie, 2014). For this particular study, it is beneficial for JFS to see how their clients, participants of the exercise classes they offer, report on how the exercise classes impact their lives. Results will be presented to JFS. However, Rubin and Babbie (2014) argue that the design of this study lacks the ability to control for causal correlation between the dependent and independent variable, and does not control for threats to its internal validity. In order to have a better understanding of some possible outside factors the survey included the questions “Have you participated in exercise classes at Jewish Family Service before or is this your first time?”, “Which exercise classes are you participating in?” These questions might prove helpful in explaining differences in improvement or non-improvement levels, through having information on how often or how many exercise classes they have participated in, since the level of physical exercise participation may be related to the level of improvement physically and mentally.

Measures

The standardized World Health Organization Quality of Life Survey-BREF (WHOQOL-BREF) instrument was used for this study; it is a shorter version of the WHOQOL. The WHOQOL-BREF survey has been widely used in previous research studies, continues to be increasingly used in various languages and countries as well, and has alpha reliability of 73.5 for the Physical health domain, 70.6 for Psychological wellbeing, 71.5 for Social relationships and 75.1 for the Environment domain (Hawthorne, Hermann, & Murphy, 2005). Each domain measures level of satisfaction in
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different areas of the participant’s daily life. Domain 1 includes facets related to physical health including activities of daily living, dependence on medicinal substances and medical aids, energy and fatigue, mobility, pain and discomfort, sleep and rest, and work capacity. Domain 2 includes facets related to psychological health including bodily image and appearance, negative feelings, positive feelings, and self-esteem, spirituality/religion/personal beliefs, thinking, learning, memory and concentration. Domain 3 includes facets related to social relationships including personal relationships, social support, and sexual activity. Domain 4 includes facets related to environment including financial resources, freedom, physical safety and security, health and social care: accessibility and quality, home environment, opportunities for acquiring new information and skills, participation in and opportunities for recreation/leisure activities, physical environment (pollution/noise/traffic/climate), and transport.

In addition to completing the standardized survey, participants were asked to share their age, and previous participation in exercise classes. Participants completed one post-test (Appendix 1) survey. The survey included the open-ended question, “How has participating in an exercise class affected your life?”

Data Collection

Data collected for the purpose of this researcher study was retrieved from participants in JFS exercise classes at two separate senior center locations. Of the 16 participants, 63% of those who completed surveys participated in classes at Location A and 37% of participants were in exercise classes at Location B. Location A and B provide the same types of exercise classes taught by different instructors, including Salsa Fit, Gait and Balance, Chair Yoga, Cardio Circuit, and Flexibility Training. Participants of the survey were enrolled in different exercise classes, and some
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Participants were enrolled in more than one class. Participants were not enrolled in classes at more than one location, eliminating the possibility for duplicate survey responses.

Results

Quality of Life

Overall, results of a quality of life survey as reported by older adult exercise participants (N=16) at Jewish Family Service, were lower than previously reported means (see Table 1). Table 1 shows the mean and standard deviation (SD) for quality of life domain scores by gender. Norm ranges for domain scores were retrieved from Hawthorne, Herrman, and Murphy’s (2006) study, “Interpreting the Whoqol-bref: Preliminary Population Norms and Effect Sizes.”

Table 1. JFS Participants’ WHOQOL-bref Scores by Gender

<table>
<thead>
<tr>
<th>Domain</th>
<th>Males</th>
<th>Females</th>
<th>Total</th>
<th>Domain Score Norm Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Physical Health</td>
<td>52.8</td>
<td>12.9</td>
<td>66.6</td>
<td>19</td>
</tr>
<tr>
<td>Psychological</td>
<td>46.2</td>
<td>10.4</td>
<td>68.2</td>
<td>15.5</td>
</tr>
<tr>
<td>Social Relationships</td>
<td>39.4</td>
<td>33.5</td>
<td>58.5</td>
<td>23.3</td>
</tr>
<tr>
<td>Environment</td>
<td>51.4</td>
<td>13.1</td>
<td>66.1</td>
<td>11.4</td>
</tr>
</tbody>
</table>

The Mann-Whitney U test revealed a significant difference in the psychological scores between females ($Md=75$, $n=11$) and males ($Md=44$, $n=5$), $U=8$, $z=-2.24$, $p=0.02$, with a large effect size ($r=0.56$). Female participants scored significantly higher than male participants on Domain 2 of the WHOQOL-bref. Mann-Whitney U tests revealed no significant differences in Domains 1, 3, and 4 between males and females, age groups, or location of participation.
Participants also responded to the open-ended question, “How has participating in an exercise class affected your life?” Responses to these questions revealed three general themes. These themes included 1) Exercise will improve physical health 2) Exercise will improve mental health and 3) Exercise allows for social interaction.

A higher number of participants reported that physical health was more likely to be impacted by their participation in exercise classes. An 87-year-old female participant reported that, exercise classes, “Keep me moving. Keep my body from deteriorating. Help my balance,” which reflect some of the physical benefits of participation in exercise. Similar comments included “Going to help me get around, get stronger” (72-year-old female) and “Since taking exercise classes, I am not tripping. It helps my arthritis” (86-year-old female).

In terms of improving mental health, a 68-year-old male participant stated, “Improving my health improves my emotions.” Two participants, one 97-year-old male and one 87-year-old female, reported exercise as being beneficial for socialization. The 97-year-old male stated that, “It is a necessity, gives me a purpose, makes me feel good, chance to meet new people and interact.” A 66-year-old female reported both socialization and physical benefits and stated, “I will be able to socialize with people. Exercise according to my doctor will keep me more mobile and should lessen the pain from arthritis and fibromyalgia.”

Generally responses fell into three overall themes, however eleven of the fifteen participants reported physical benefits as the main benefit of exercise participation. Very few participants acknowledged the mental health benefits of exercise. These results show that most participants associated exercise with physical benefits but not mental health or emotional benefits. This reveals the need to motivate older adults to
participate by informing them of the multiple benefits associated with exercise classes through psychoeducation.

**Discussion, Limitations, Implications for Social Work**

Results of this study revealed a significant difference in the psychological scores between females and males, where female participants scored significantly higher than male participants on Domain 2 of the WHOQOL-bref. Domain 2 scores various facets of psychological health including bodily image and appearance, negative feelings, positive feelings, self-esteem, spirituality/religion/personal beliefs, thinking, learning, memory and concentration. This finding aligns with previous research, which suggests that men are more likely to suffer from lower psychological health than women, and continues to decline as men get older in age (Adams-Fryatt, 2010; Hawthorne, Herrman, & Murphy, 2006; Mental Health Foundation, 2010).

Exercise class participants who did not choose to complete the survey stated that they thought the WHO-QOL-bref, with 26 questions, was too long of a survey. Another limiting factor to collecting data was impacted by the researcher's inability to personally ensure that surveys were distributed and collected. The researcher had to rely on other employees, who are responsible for their own job requirements. Future researchers interested in this area of study should assess the needs of the population they seek to study, in addition to providing appropriate compensation for more detailed surveys, if possible.

Initially the researcher hoped to collect both pre-tests and post-tests from participants of the exercise classes. However, a lack of new participants enrolling in exercise classes did not allow for pre-tests to be administered to participants who had not yet participated in exercise classes. Future research should seek to conduct research where it will be possible to obtain both pre and posttests from participants, in order to
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better connect how exercise classes as an intervention affect the overall quality of life in older adult participants.

The sample in the current study also revealed lower scores on all domains than previous studies (Hawthorne, Herrman, & Murphy, 2006) revealing a low functioning group. A collection of pre and posttests could possibly provide a more accurate description of what kinds of changes occurred after participation (Rubin and Babbie, 2014) in an exercise class in comparison to survey responses submitted while not participating in exercise classes. However, this difference may also be due to the fact that participants of this particular study come from a disadvantaged low-income community. In the study “Interpreting the whoqol-bref: Preliminary population norms and effect sizes,” researchers were able to collect data from a random sample of 570 older adults age 60 and older in Australia (Hawthorne, Herrman & Murphy, 2006). Although Hawthorne, Herrman & Murphy’s (2006) study utilized a randomly selected population it is possible that this study was not representative of participants in the current study, because their study took place in Australia. In addition, the current study focused solely on older adults who attended exercise classes in low-income neighborhoods. According to the American Psychological Association (2015) socioeconomic status (SES) “…is a key factor in determining the quality of life of older Americans” (Psychological Health and Well-Being section, para. 1), and the experience of poverty and low SES is an attribute of poor psychological health in older adults. This study did not request SES of participant’s, however, quality of life cannot be accurately measured without incorporating participants’ SES. Future research should seek to obtain the SES of participants to better assess differences related to the impact of outside factors on clients’ exercise participation outcomes.

It will also be important for future research to seek understanding of the
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limitations to exercise participation in older adults. Compromised ambulation and falls, comorbid health problems, a lack of understanding of the effects of exercise and its necessity, or a lack of resources and services that can all lead to the lack of physical activity or exercise engagement (Adams-Fryatt, 2010; Bethancourt, Rosenberg, Beatty & Arterburn, 2014; Rasinaho, Hirvensalo, Leinonen, Lintunen & Rantanen, 2006). In order for exercise programs to offer the best possible support and encouragement for older adults to participate and engage in higher levels of physical activity, it will be important for these programs to understand why older adults don’t or can’t participate. JFS has incorporated a wide variety of low-impact classes into their fitness program, which allow for participants at various levels to participate. This may prove beneficial for other programs to incorporate in order to increase older adult participation in exercise classes.

It is especially important for those working with the older adult population to be familiar with programs that can improve quality of life for clients. Previous research shows that exercise programs can offer a plethora of benefits for those who participate at any level of physical functioning. The benefits can improve a client’s likelihood for being able to live independently safely for as long as possible. Providing clients with psychoeducation about the benefits of exercise, and instilling that those benefits are not limited to physical well-being but also improved cognitive function, self-esteem, depression, as well as a number of other facets of daily living and quality of life may increase the likelihood of participation. However, it is also important to be aware of barriers and limitations for older adults in participating, as well as other outside factors that may contribute to older adults’ quality of life, such as socioeconomic status.
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References


Blumenthal, J., Babyak, M., Moore, K., Craighead, W., Herman, S., et al. (1999). Effects of exercise training on older patients with major depression. Archives of Internal Medicine, 159(19), 2349-2356.


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World Health Organization – Quality of Life Survey (WHOQOL)

Name: __________________________
Age: __________________________

Have you participated in exercise classes at Jewish Family Service before or is this your first time?
______________________________________________________________

Which exercise classes are you participating in?
______________________________________________________________

The following questions ask how you feel about your quality of life, health, or other areas of your life. I will read out each question to you, along with the response options. Please choose the answer that appears most appropriate. If you are unsure about which response to give to a question, the first response you think of is often the best one.

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life in the last four weeks.

<table>
<thead>
<tr>
<th></th>
<th>Very poor</th>
<th>Poor</th>
<th>Neither poor nor good</th>
<th>Good</th>
<th>Very good</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How would you rate your quality of life?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Very dissatisfied</th>
<th>Dissatisfied</th>
<th>Neither satisfied nor dissatisfied</th>
<th>Satisfied</th>
<th>Very satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. How satisfied are you with your health?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
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The following questions ask about how much you have experienced certain things in the last four weeks.

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>A little</th>
<th>A moderate amount</th>
<th>Very much</th>
<th>An extreme amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.</td>
<td>To what extent do you feel that physical pain prevents you from doing what you need to do?</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>4.</td>
<td>How much do you need any medical treatment to function in your daily life?</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>5.</td>
<td>How much do you enjoy life?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6.</td>
<td>To what extent do you feel your life to be meaningful?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>A little</th>
<th>A moderate amount</th>
<th>Very much</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.</td>
<td>How well are you able to concentrate?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8.</td>
<td>How safe do you feel in your daily life?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9.</td>
<td>How healthy is your physical environment?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

The following questions ask about how completely you experience or were able to do certain things in the last four weeks.

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>A little</th>
<th>Moderately</th>
<th>Mostly</th>
<th>Completely</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.</td>
<td>Do you have enough energy for everyday life?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11.</td>
<td>Are you able to accept your bodily appearance?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12.</td>
<td>Have you enough money to meet your needs?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13.</td>
<td>How available to you is the information that you need in your day-to-day life?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14.</td>
<td>To what extent do you have the opportunity for leisure activities?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Very poor</th>
<th>Poor</th>
<th>Neither poor nor good</th>
<th>Good</th>
<th>Very good</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.</td>
<td>How well are you able to get around?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
### EVALUATING THE RELATIONSHIP BETWEEN QUALITY OF LIFE AND EXERCISE IN OLDER ADULTS

<table>
<thead>
<tr>
<th>Question</th>
<th>Very dissatisfied</th>
<th>Dissatisfied</th>
<th>Neither satisfied nor dissatisfied</th>
<th>Satisfied</th>
<th>Very satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. How satisfied are you with your sleep?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17. How satisfied are you with your ability to perform your daily living activities?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18. How satisfied are you with your capacity for work?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19. How satisfied are you with yourself?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20. How satisfied are you with your personal relationships?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>21. How satisfied are you with your sex life?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>22. How satisfied are you with the support you get from your friends?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>23. How satisfied are you with the conditions of your living place?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>24. How satisfied are you with your access to health services?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>25. How satisfied are you with your transport?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

The following question refers to how often you have felt or experienced certain things in the last four weeks.

<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>Seldom</th>
<th>Quite often</th>
<th>Very often</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>26. How often do you have negative feelings such as blue mood, despair, anxiety, depression?</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

**How has participating in an exercise class affected your life?**

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