Effectiveness of Occupational Therapy Interventions to Promote Social Participation and Quality of Life in Older Adults: A Rapid Systematic Review

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This systematic review discusses the evidence of 24 studies to identify the effectiveness of various evidence-based interventions that could be utilized within the scope of occupational therapy (OT), as they aim to improve social participation and health-related quality of life in adults over 60 years of age. Older adults often experience difficulty with social engagement, increasing their risk for social isolation which is correlated to decreases in health-related quality of life, functional mobility, as well as increased loneliness, cognitive declines, or other adverse physical and psychological effects. Social participation can facilitate increased health-related quality of life, mitigate loneliness, as well as slow cognitive decline and other adverse physical and psychological effects related to aging and late life transitions. Overall, this review found strong evidence for the effectiveness of physical activity interventions, moderate evidence for the effectiveness of emotional and personal based interventions, and mixed evidence for external support interventions that aim to improve social participation in older adults. Additional research should be conducted to further identify objective aspects (rather than typical subjective aspects) of evidence-based interventions that clinically correlate to increased health-related quality of life and well-being as related to social participation for therapeutic utilization within the domain of occupational therapy for older adults.

Focused Clinical Question

The purpose of this rapid systematic review was to search the literature and critically appraise and combine the applicable findings to address the following focused question: What is the evidence for the effectiveness of interventions to improve and maintain social participation and quality of life for older adults?

Key Terms

- Social participation
- Quality of life
- Well-being
- Autonomy
- Evidence-based practice
- Occupational therapy
- Older adults
- Social isolation
Outcome Definitions

There is limited high level research available regarding social participation interventions due to the subjectivity of social participation as a general outcome measure, especially when looking for occupational therapy led mediation. Many factors contribute to what constitutes health related quality of life, and where direct measures could not be taken for social participation, it can be correlated that the absence or decline of negative factors such as decreased social isolation, could facilitate improvements in health-related quality of life. For the purpose of this systematic review, our key outcome definitions include:

Social Participation: We have defined social participation as a key component of quality of life through declines in negative impacts including physical (i.e., frailty) and emotional factors (i.e., depression, fear of falling, loneliness), connection with others, and increases in occupational performance and participation.

Health Related Quality of Life (HRQoL): We had defined HRQoL as a broad concept including domains related to physical, mental, emotional, and social functioning. This definition expands beyond direct population health, life expectancy, and causes of death, yet focuses on the positive and negative effects health status has on overall quality of life. Well-being is a related concept of HRQoL which analyzes the potential aspects of a person’s life, including positive emotions and life satisfaction. Health professionals have utilized HRQoL and well-being as terms to measure the effects of chronic illness, treatments, and disabilities.

Statement of Problem and Background

As people age, many begin experiencing late life transitions such as loss of loved ones, retirement, change in housing status, and cognitive or physical decline related to aging or disease. This can often cause an increase in social isolation within this population as their communal circles shrink or they wish to prevent causing caregiver burden on younger family members who would need to provide for their care. Correlated with social isolation also comes a decrease in social participation, functional mobility, health related quality of life, and an increase in depressive symptoms and chronic illness. “Maintaining social relationships and remaining socially connected is critically important to health, quality of life, and well-being” (Czaja et al., 2018, p. 468). Therefore, as old age progresses, and quality of life decreases, in terms of physical health and psychosocial measures like social support and emotional well-being, elderly adults age 60 and older, (regardless of living situation) are at a higher risk of cognitive deficits, loss of social participation, health-related quality of life, and lack of functional mobility due in part to social isolation (Pedersen et al., 2017). Whether living at home or within a secluded facility, this trend is of greater prevalence now more than ever as Czaja et al. (2018) states, “by 2050, people aged 65 and older are projected to represent 21% of the U.S. population” (p. 467) and of this population “It is predicted that in the next 40 years, the number of people dependent on care will triple, from 101 million in 2010 to 277 million by 2050” (Sirerova, 2018, p. 1430). This places a higher demand on the healthcare system as individuals within the United States are able to live longer due to advances in medicine. With an increase of older adults becoming socially isolated, there is an increase in the likelihood of depression, anxiety, and chronic illness that decreases motivation to participate in daily occupations including activities of daily living (ADLs), instrumental activities of daily living (IADLs), or leisure activities. Czaja et al. (2018) states that “because of losses of mobility and health problems, changes in economic status, and loss of partners and friends due to death, social isolation is a problem for many older adults” (p. 467-468). Now especially, due to the global pandemic, there has been an increase in social distancing and restrictions resulting in even greater social isolation. It is important to address issues that older adults face in relation to social isolation to prevent adverse health outcomes. Hence, the use of occupation-based interventions that aim to socialize older adults can lead to improved overall health as well as reduce challenges that come with aging (Jones et al., 2019). Interventions included in this rapid systematic review include themes related to emotions, personal interests, physical activity, and external supports to promote overall social participation and health related quality of life.

Method for Conducting the Evidence-Based Review

This rapid systematic review evaluates interventions that may be implemented within the scope of occupational therapy practice to potentially improve social participation in older adults. A research group of occupational therapy students selected social participation as a critical outcome for older adults’ occupational performance and participation, which may affect their overall health and quality of life. An electronic literature search was conducted on published intervention studies in PubMed and PsycINFO databases. This search was conducted by review authors with guidance from the School of Health and Human Sciences and Department of Occupational Therapy librarians. Search terms included in this review were older adults, elderly, aged, social participation, social engagement, social citizenship, normalcy, health-related quality of life, occupations, leisure activity, community participation, community involvement, support groups, social isolation, and social exclusion. MeSH terms were used to group words and subjects associated with these search terms. Initially, 404 studies were imported into Covidence from PubMed.
A secondary search with 934 studies from PsycINFO was needed to retrieve more relevant articles. A total of 1338 articles were input into the Covidence software system and were screened by two reviewers for title and abstract relevance to our search. Articles that passed this search were then screened for eligibility in full text review for a focus on improving social participation and health related quality of life for older adults. The process of selecting articles was based ideally on the year of publication within the last 10 years. Other specific inclusion criteria were as followed:

- Participants were 60 years of age or older
- The interventions described are within the scope of occupational therapy practice and the outcomes supported older adult social participation
- The study type was Level I, II, or III evidence
- Any practice setting

This review excluded the following articles: systematic reviews, meta-analysis’, study types with Level IV and V evidence, cases of stroke or interventions targeting other specific medical conditions, and outcomes that do not meet the desired outcome measure criteria.

Level of evidence criteria used to determine the strength of evidence for each article within this review was from “Evidence-Based Medicine: What it is and What it isn’t” (Sackett et al., 1996). The strength of the evidence is based on the guidelines of the 2012 U.S. Preventive Services Task Force as adopted by The American Occupational Therapy Association (AOTA) (Grade Definitions, 2018).

**Level I** - Systematic reviews, meta-analysis, randomized controlled trials  
**Level II** - Two groups, nonrandomized studies (e.g., cohort, case control)  
**Level III** - One group, nonrandomized (e.g., before and after, pretest and posttest)  
**Level IV** - Descriptive studies that include analysis of outcomes (single subject design, case series)  
**Level V** - Case reports and expert opinion that include narrative literature reviews and consensus statements

There were 24 articles that met the inclusion criteria. Eight of these articles were hand selected and were additionally imported into Covidence to be passed through the extraction process. The articles were categorized into four intervention themes to improve the outcomes of social participation and health-related quality of life for older adults.

**Theme 1:** Emotional-Based Interventions  
**Theme 2:** Personal-Based Interventions  
**Theme 3:** Physical-Based Interventions  
**Theme 4:** External Support Interventions
Figure 1

PRISMA Flow Diagram

Note. PRISMA Flow Diagram generated from Covidence
Results

Out of the 24 remaining studies, all 24 were chosen for completion in the evidence table (see Appendix A - Table 1). After analyzing the studies chosen for this review, we identified four overarching themes: emotional, personal, physical, and external support interventions that were implemented across a wide variety of practice settings. Emotion-based interventions include drama/theatrical based interventions, as well as experienced based interventions such as Life-Review and Reminiscence therapy. Personal-based interventions include interventions that were interest/autonomy focused, as well as occupation-based cultural heritage interventions. Physical interventions include interventions that have some factor of physical activity, also including those that contain a confounding factor such as the addition of social activity or cognitive behavioral therapy. External support interventions included studies that contained interventions such as technology, general occupational therapy, or case-management. A total of 24 articles were included in this rapid systematic review based on their adherence to our criteria. Of these 24 articles, 15 were Level I Evidence, 7 were Level II Evidence, and were 2 Level III Evidence. From these studies, we identified two major outcomes targeted by occupation-based interventions and aimed at promoting life satisfaction in older adults. The results are as follows:

**Theme 1: Emotional-Based Interventions**

Emotional-based Interventions can be a therapy or program to enhance positive attitudes toward aging, improve memory, with emotional awareness and regulation as a means and end for therapy. Of these studies reviewed there were 3 level II studies and 1 level 1 study that addressed the effectiveness of emotion-based interventions for social participation or health-related quality of life outcomes.

**Theater/Dramatization**

A Level II cohort study (Yuen et al., 2011) provided evidence that the Seasoned Arts at the Samford for You (SAASY) program, a six-week acting course with included performances, improved general well-being and overall physical health, however, did not have an effect on various mental components of the participants.

A Level I randomized controlled trial (Keisari et al., 2020) found playback theatre with life review principles as a 12-week program and follow-up period to improve participant loneliness and satisfaction with relationships, in which positive psychological effects increase willingness and ability to socially engage.

**Life Review/Reminiscence Therapy**

A Level II quasi-experimental cohort study (Wren, 2016) showed evidence for a once-a-week life review group for 6-weeks with no follow-up to increase overall life satisfaction and improve outlook on social participation.

A Level II quasi-experimental cohort study (Siverová, J., & Bužgová, R., 2018) analyzed the effect of group narrative reminiscence therapy on cognition, quality of life, attitudes toward aging, and depressive symptoms through recalling of pleasant memories. Narrative group reminiscence therapy had a statistically significant positive effect on improving quality of life (particularly in terms of mental health and social participation), the reduction of depressive symptoms, and the improvement in attitudes of ageing in institutional care for the elderly.

There is overall moderate strength evidence to support the use of emotional-based interventions to improve well-being, physical health, life satisfaction, and quality of life regarding social participation. Effective interventions included SAASY program, playback theater, life review and narrative group reminiscence therapy.

**Theme 2: Personal-Based Interventions**

Personal-based Interventions can be a therapy or program that uses personal client factors such as cultural context and involvement in meaningful occupations to promote autonomy or social participation and improve quality of life. Of these studies reviewed there were 2 level III studies, 3 level II studies, and 1 level 1 studies that addressed the effectiveness of personal-based interventions for social participation or health-related quality of life outcomes.

**Occupation-Based Cultural Heritage Interventions**

A Level III two-group control study (Hersch et al., 2012) provided evidence on occupation-based cultural heritage intervention to analyze adaptation to long-term care facilities. Improvements were seen in quality of life, but no significant differences between groups were seen for activity engagement and social participation.

A Level II cohort study (Kirchen et al., 2014) found that occupation-based cultural heritage intervention-military version, a 1-hour group session that took place twice weekly for 4-weeks with no follow-up, had no significant effect on independence, depression scores, mental health perception and quality of life indices for veterans in long term care. Qualitative data indicates a positive trend towards improved social participation.
Interest & Autonomy-focused Interventions

A Level II cohort study (Savikko et al., 2009) found psychosocial interventions improved mediating factors for alleviating loneliness, including overcoming self-imposed limits and community involvement, which in turn increased self-confidence and social activation. However, all noted alleviating factors to loneliness is highly subjective evidence and further quantitative data is needed.

A Level II cohort study (Levasseur et al., 2016) found that participation in the Personalized Citizen Assistance for Social Participation (APIC) program, a 6-month intervention focused around participant assistance, increased general and mobility related functional autonomy, as well as increased social/leisure participation, motivation, connectedness, self-esteem, psychological and physical wellbeing.

A Level III case control (Polenick & Flora, 2013) provided evidence on personalized prompts and brief conversation as opposed to general prompting, which increases the level of positive social attention, increases social activity attendance for assisted living residents.

A Level I randomized controlled trial (Clark et al., 2012) provided evidence that participation in the occupation-based Lifestyle redesign program improves multiple aspects of health-related quality of life and social participation.

The studies above provide overall moderate evidence to support the use of personal-based interventions to alleviate loneliness, increase self-confidence and self-esteem, increase social participation and connectedness, functional mobility and autonomy, and health related quality of life including well-being. Effective interventions include psychosocial interventions, APIC, personalized prompts and brief conversation, and Lifestyle Redesign.

Theme 3: Physical-Based Interventions

Physical-based Interventions can be a therapy or program that uses some form of exercise as an intervention component. This theme also includes exercise-based interventions that compound a social activity aspect or cognitive behavioral therapy to improve various health outcomes or social participation. Of these studies reviewed there were 1 level II studies, and 8 level I studies that addressed the effectiveness of physical-based interventions for social participation or health-related quality of life outcomes.

Exercise Only Interventions

A Level II quasi-experimental retrospective cohort study (Harmar et al., 2013) presents evidence that participation in SilverSneakers decreases social and activity limitations and increases ADL performance compared to Medicare beneficiaries not enrolled in SilverSneakers - outcomes that can be linked directly to decrease in morbidity, accidental injury, health care costs, and potentially even mortality.

A Level I randomized controlled trial (Figueira et al., 2012) provided evidence for a physical activity governmental health program for 12 weeks including walking, hydrogymnastics, strengthening, and stretching on the effects of six facets of quality of life including sensorial functioning, autonomy, past/present/and future activities, social participation, perceptions of death and dying, and intimacy. The experimental group showed significant best results on the quality of life post-test on all facets except autonomy and intimacy.

A Level I randomized controlled trial (Kekäläinen et al., 2018) that provided evidence that resistance training is beneficial for environmental quality of life and sense of coherence, specifically, attending resistance training twice a week seems to be the most advantageous for these aspects of psychological functioning.

A Level I randomized controlled trial (VanSwearingen et al., 2011) provided evidence that participation in task-oriented motor sequence learning showed greater improvement in multiple areas of health-related quality of life and social participation when compared to an impairment oriented multicomponent exercise intervention.

Socially Driven Exercise or Sport-based Interventions

A Level I randomized control trial (Pedersen et al., 2016) found that participation in either a team-based training group or a resistance training group for 12 weeks resulted in improvements regarding psychological well-being, general quality of life, physical functioning, and health-related quality of life.

A Level I randomized controlled trial (Liu et al., 2014) provided evidence of Tai Chi (exercises that emphasizes body movements while maintaining tranquil, relaxed, periodic breathing and a concentrated mind) and Tai Chi in addition to cognitive behavioral intervention (aimed to increase self-confidence, physical wellness with regard to falling, and a sense of control over falling) to reduce fear of falling, encourage better social engagement, improve self-perceived personal wellbeing, and achieve better mobility. While there was a decrease in fear of falling, no other significant outcomes were found.

A Level I randomized controlled trial (Jones et al., 2016) did not show evidence for
were 5 level 1 studies that addressed the effectiveness of healthcare professionals. Of these studies reviewed there were no statistically significant differences between the study groups for depression, social supports, and general quality of life.

A Level I randomized controlled trial (Lorenz et al., 2012) provided evidence that participation in an exercise program that also includes personalized social activity improves everyday function in physical performance as a factor health related quality of life and social participation.

A Level I randomized controlled trial (Parry et al., 2016) that provides evidence that cognitive behavioral therapy (CBTi) delivered by health-care assistants (HCAs) had no impact on social participation and health related quality of life. However, it did significantly improve fear of falling and depression scores in older adults who were attending falls services.

There is overall strong evidence to support the use of physical activity-based interventions to improve social participation, quality of life, and functional fitness. Meaningful task-oriented interventions provided better outcomes related to the goal of improved health related quality of life. Socially driven additions to exercise provided better benefits than exercise alone.

Theme 4: External Support Interventions

External support-based interventions can be a therapy or program that uses some form external mediation such as additional technology platforms, general occupational therapy services or additional case-management by qualified healthcare professionals. Of these studies reviewed there were 5 level 1 studies that addressed the effectiveness of external support-based interventions for social participation or health-related quality of life outcomes for older adults.

Occupational Therapy

A Level I randomized controlled trial (Clark et al., 1997) that analyzed the effectiveness of preventive occupational therapy (OT) services specifically for independent-living older adults. Evidence shows significant benefits for the OT preventive treatment group were found across various health, function, and quality-of-life domains, further suggesting that preventive health programs based on OT may mitigate against the health risk of older adulthood.

Technology

A Level I randomized controlled trial (Czaja et al., 2018) presented the impact on social isolation, social support, loneliness, and well-being in addition to computer proficiency and attitudes toward technology of a specially designed computer program called the Personal Reminder Information and Social Management (PRISM) system. PRISM included E-mail, internet, a dynamic classroom, calendar, photos, and other opportunities to promote social connectivity. After 12 months, evidence showed a decrease in social isolation and loneliness with an increase in perceived social support and well-being.

A Level I randomized controlled trial (Slegers et al., 2008) provides evidence that using computers and the Internet neither positively nor negatively impact everyday functioning, well-being and mood, and the social network of healthy older individuals.

Case Management/External support

A Level I randomized controlled trial (Granbom et al., 2017) that provided evidence that frail older adults living in the community participating in a monthly case-management visit from a qualified health professional did not show improvement in social participations however it did show improvement in occurrence of important social leisure activities.

A Level I randomized controlled trial (Roets-Merken et al., 2018) that provided evidence that participation in a nurse supported self-management program for older adults living in a long-term care facility did not improve any of the 4 domains of social participation, however it did improve areas of IADLs.

There is overall strong evidence to support the use of general occupational therapy services and technological external support-based interventions to improve social participation in older adults. However, there is also strong evidence against the use of case-management to improve social participation. Therefore, we can conclude that based on these articles we have found mixed evidence for external support interventions to improve social participation or health related quality of life in older adults.

Discussions and Implications for Practice and Research

In this review, we have evaluated 24 different articles for possible effective interventions that can be implemented into occupational therapy practice to improve social participation or health-related quality of life in older adults. During our
search process, although we screened 1338 articles, we had difficulty finding a high number of relevant articles that fit within our strict inclusion criteria. Of the 24 articles that were included, only 15 were considered level 1 studies and of these articles 8 were physical activity-based interventions. This shows that physical activity-based interventions are the most widely studied, but it does not consider other possible avenues that could be just as- if not more effective in targeting social participation in older adults within the scope of occupational therapy practice. Although these studies ranged across different types of professions, very few had occupational therapists conducting interventions, which could indicate that very little high-level research is being conducted within the field of OT when looking at social participation as a primary outcome measure with older adults. The results from this rapid systematic review shows overall moderate evidence for personal-based and emotional-based interventions. It was also indicated that there was strong evidence for physical based and external support-based interventions. While there is mixed evidence to support the use of social participation as an intervention and interventions that facilitate social participation as an outcome, it is important that occupational therapists take into consideration the individual needs of the client and what is meaningful to them, as these factors will not only dictate which therapy interventions will be most useful, but will also help to shape overall motivation which is crucial to a number of the listed interventions above. Occupational therapy practitioners can adapt and implement these evidence-based interventions to promote social participation and health-related quality of life in older adults to further decrease social isolation and increase life satisfaction. Areas of practice these evidence-based interventions are applicable to include: community outreach programs, outpatient and inpatient care facilities, and long-term living facilities. With these interventions in mind, occupational therapists can implement better adaptive processes for life transitions, promote culturally sensitive care, and provide educational strategies for older adults all having an impact on the focused outcomes of this review. Occupational therapists should continue to carry out research that is socially driven to target increasing social participation in older adults. Additional research would be beneficial to substantiate reported study outcomes in different populations, for a longer time frame, and with larger sample sizes to further evaluate the generalizability and susttainment of positive impact.

Limitations

There were several limitations within this systematic review that were acknowledged. One of the primary limitations is having only analyzed 24 published articles rather than 25 which could indicate possible inclusion of other evidence. Three of the included articles were outside of our preferred publication date, indicating that the information may be outdated and/or could no longer be contextually relevant or significant. Several of the articles had sample sizes that were smaller than twenty participants, indicating that the overall outcomes could not be generalized to the entire population. Furthermore, some of the articles took place outside of the United States, which imposes the possibility of alternative cultural view differences related to general aging and caregiving related to older generations. Lastly, due to overall subjectivity of social participation as a concept, mixed evidence of qualitative and quantitative data is only available due to the lack of standardized measurements regarding social participation.

Conclusions

Strong evidence for socially driven physical activity interventions were identified with high levels of evidence within each of the articles. Occupational therapists would benefit from utilizing physical activity-based interventions with social components aside from just exercise alone as it improves social participation, quality of life, and physical fitness in general. It is important to note that meaningful, task-oriented interventions can provide better outcomes overall, indicating that this should be one of the primary factors occupational therapists take into consideration when implementing physical activity-based interventions. Strongest evidence was found for exercise-based interventions simply due to the high number of RCTs that were found compared to other intervention types. This could possibly be due to the accessibility of pre-existing standardized measurements for evaluation of exercise testing effects, leading to more trials being conducted. However as occupational therapists, we are expected to be client based in our approaches and our interventions should be occupation based in alignment with client-specific goals and outcomes. As we saw in two articles, exercise alone did not produce as great of results as exercise that was also tied to something meaningful to the client or also involved an aspect of which also shows a need to find or create more accessible standard measures for social participation. Since evidence has been found that there is a correlation between social isolation and decreased health-related quality of life in older people, it is important to find effective intervention avenues that accurately target improving social participation as a primary outcome measure. Future research should be conducted on more client-centered, occupation-based interventions, rather than exercise alone, in the form of RCTs to measure the impact that we as occupational therapists can make on older adult’s social participation and health related quality of life.

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References


*Indicates studies that were reviewed for this article.

*Indiana University Occupational Therapy*


Appendix A

Table 1. Evidence Table for Interventions to Promote Social Participation and Well-Being for Older Adults

<table>
<thead>
<tr>
<th>Author/Year</th>
<th>Level of Evidence/Study Design/Participants/Inclusion Criteria/Intervention and Control Groups</th>
<th>Outcome Measures</th>
<th>Results</th>
</tr>
</thead>
</table>
| Clark et al., (1997) | Level I - RCT N = 361 culturally diverse volunteers Intervention: Using a completely randomized design with computer-generated random numbers and blocking factor of 6, participants were assigned to 1 of 3 treatment groups: (1) an OT group (n= 122) Control: (2) A generalized group activity (“social”) control group (n= 120), or a nontreatment control group (n=119). | Main Outcome Measures  
- Physical and social function  
- Self-rated health  
- Life satisfaction  
- Depressive symptoms  
Primary Outcome Questionnaires  
- Functional Status Questionnaire  
- Life Satisfaction Index-Z  
- Center of Epidemiologic Studies (CES) Depression Scale  
- Medical Outcomes Study (MOS) Short Form General Health Survey  
- RAND 36-Item Health Status Survey, Short Form-36 (RAND SF-36) | Benefit attributable to OT treatment was found for the quality of interaction scale on the Functional Status Questionnaire (P=.03), Life Satisfaction Index-Z (P=.03), Medical Outcomes Study Health Perception Survey (P=.05), and for 7 of 8 scales on the RAND 36-Item Health Status Survey, Short Form: bodily pain (P=.03), physical functioning (P=.008), role limitations attributable to health problems (P=.02), vitality (P=.004), social functioning (P=.05), role limitations attributable to emotional problems (P=.05), and general mental health (P=.02). |
<table>
<thead>
<tr>
<th>Study</th>
<th>Design Level</th>
<th>Study Design (Crossover design trial)</th>
<th>Inclusion Criteria</th>
<th>Intervention</th>
<th>Primary Outcome Measures</th>
<th>Secondary Outcome Measures</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clark et al., (2012)</td>
<td>Level I</td>
<td>RCT</td>
<td>N = 460</td>
<td>Participation in the lifestyle redesign program, n=232</td>
<td>Perceived health</td>
<td>Cost-effectiveness</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Inclusion Criteria: 60 to 95 years, Residents of users of or visitors to the study recruitment sites, Demonstrated no overt signs of psychosis or dementia (based on a cursory screening procedure), Able to complete the study assessment battery (with assistance, if necessary), Completed the informed consent process prior to study entry</td>
<td>Control: Able to participate in the 2nd 6 months, n=228</td>
<td>Mental (vitality, social function, mental health, the mental health composite index, Life satisfaction and depressive symptomatology (psychosocial), Well-being</td>
<td></td>
<td>The results show that after using the PRISM program for 6 months, there was a decrease in perceived vulnerability (p &gt; 0.001, effect size 0.45), a decrease in social isolation (p &gt; 0.01, effect size)</td>
</tr>
<tr>
<td>Czaja et al., (2018)</td>
<td>Level I</td>
<td>RCT</td>
<td>N = 300 older adults at risk for social isolation who lived independently in the community</td>
<td>Intervention Group, n = 150 (ended with 119)</td>
<td>Friendship Scale (Social isolation), Loneliness Scale (Loneliness), Interpersonal Support Evaluation List (Perceived social support), Lubben Social</td>
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Control Group, n = 150 (ended with 105)

**M age = 76.15 years**

78% female

**Inclusion Criteria**
- Aged 65 or older
- Living alone in independent housing
- Spoke English
- Had at least 20/60 vision with or without correction
- Could read at a 6th grade level
- Minimal computer/Internet use
- Were not employed or volunteering more than 5 hour/week or spending than 10 hour/week at a senior center or formal organization

who were unable to control a mouse), a 19-inch LCD monitor, the PRISM software application, and a printer. The PRISM intervention itself included Internet access, an annotated resource guide, dynamic classroom feature, a calendar, a photo feature, E-mail, games, and online help.

**“Control” Binder condition** - Participants received a notebook with printed content similar to that within PRISM: a calendar, resource guide, games (e.g. word games), community information, and information/tip sheets on the same topics as the “classroom feature” of PRISM. Participants also received a sheet for listing contacts like family and friends.

**Secondary Outcome Measures**
- Technology Acceptance Questionnaire Center for Research and Education on Aging and Technology Experience (Computer proficiency and attitudes toward technology) at 6 and 12 months
- System Evaluation Questionnaire at 12 months

**Network Index (Social network size)**
- Quality of Life Scale (Perceptions of QOL)
- Perceived Vulnerability Scale (Perceived vulnerability)
- The MOS 36-item Short Form Health Survey (Changes in HRQOL and well-being) at 6 and 12 months

0.20), a decrease in loneliness (p > 0.1, effect size 0.17), and a decline in social isolation (p > 0.11, effect size 0.17). After 12 months, there was an increase in social support (p > 0.01, effect size 0.19), increase in energy per the Short Form - 36 (p < 0.05, effect size 0.22) and well-being (p < 0.02, effect size 0.27) in addition to decreases in perceived vulnerability (p > 0.001, effect size 0.38), social isolation (p > 0.01, effect size 0.21), and loneliness (p > 0.001, effect size 0.25). The Binder group presented similar findings, but not at the same extent as the PRISM program. While both the PRISM group and Binder group were effective, participants had highly significant scores within the outcome measures indicating technology is an effective treatment for older adults’ social
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<tr>
<td><a href="https://doi.org/10.1177/1403494812453885">https://doi.org/10.1177/1403494812453885</a></td>
<td>N = 70 elderly individuals from the same residential area</td>
<td>Governmental health/physical activity program - Performed twice a week respecting specific guidelines as moderate intensity and slow-to-moderate velocity</td>
<td>World Health Organization Quality of Life - OLD (WHOQOL-OLD) (Quality of Life) before and after the 12 weeks</td>
</tr>
<tr>
<td>Intervention group, n = 35</td>
<td>9 men, 26 women</td>
<td>Control</td>
<td>For the experimental group, improvement was found for every facet except for 2 and 6 (autonomy and intimacy). P-values are represented in Table 1 on page 419. Figure 1 represents the sample’s absolute delta and the inter- and intra group multiple comparison. The intragroup analysis showed that the experimental group had significant (p &lt; 0.05 with CI of 95%) at the post-test in facet 1 - sensorial functioning (p = 0.0001), facet 4 - social participation (p = 0.013), facet 5 - perception of death and dying (p = 0.009) and total score (TS) (p = 0.000).</td>
</tr>
<tr>
<td>Control group, n = 35</td>
<td>12 men, 20 women</td>
<td>Was advised not to engage in any physical activity within those 12 weeks</td>
<td>The experimental group showed significant best results on the post-test on sensorial functioning, social participation, perceptions of death and dying.</td>
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<tr>
<th>Inclusion Criteria</th>
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<tbody>
<tr>
<td>● Both genders (men and women volunteers)</td>
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<tr>
<td>● Over 60 years of age</td>
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<tr>
<td>● Suitable for physical activities according to the program’s multidisciplinary team expert opinion</td>
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</tbody>
</table>
and dying, and total score. Besides that, the experimental group in the pre-test presented a lower value in facet 5 - perception of death and dying (p = 0.005) and total score (p = 0.024). At the post-test, the experimental group showed significant improvement (p < 0.05) compared with the control group in facet 1 - sensorial functioning (p = 0.000), facet 6 - intimacy (p = 0.05), and total score (p = 0.004). Most importantly for our research purposes, it was observed that facet 4 - social participation of the control group and experimental group were quite similar in the pre-test phase, and after the physical activity program, the experimental group had a significant improvement (p < 0.05) in this area.

<p>| Granbom et al., (2017) | Level I - RCT | <strong>Intervention</strong> Monthly home visits | Social participation | Leisure activities and | This study shows that a case management |</p>
<table>
<thead>
<tr>
<th>Inclusion Criteria</th>
<th>N = 153</th>
<th>from a case manager/physical therapist n=80</th>
<th>rating of important leisure activities (performed at baseline, 3, 6, 9 and 12 months)</th>
</tr>
</thead>
<tbody>
<tr>
<td>● 65 years or older&lt;br&gt;● Living in ordinary housing in the study municipality&lt;br&gt;● Dependent on help in two or more ADLs (cleaning, grocery shopping, transportation, cooking, washing, showering/bathing, dressing, toileting, moving, feeding, drug administration, or ‘other’)● Have been admitted to hospital at least twice or had at least four registered visits to primary care centres during the last 12 months</td>
<td>Control One year trial/wait period to receive intervention n=73</td>
<td>program that only promotes physical activity is not enough to increase social participation. However, a statistically significantly greater proportion of participants in the intervention group performed and increased level of leisure activities in general, and important physical leisure activities, to a greater extent than the control group at the 3-month follow-up compared to baseline.</td>
<td></td>
</tr>
</tbody>
</table>

Hamar et al., (2013) https://doi.org/10.1089/pop.2012.0111 | Level II - Quasi-Experimental Study (Cohort Study) N = 27,930 | Intervention The treatment group (n= 5586) is composed of members who were | Primary Outcome Questionnaires: ● Health Status ● Health Status Change Functioning |
<p>| | | | Members who exercised less frequently had poorer health and functioning. Overall, |</p>
<table>
<thead>
<tr>
<th>Inclusion Criteria</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>● 65+ years old</td>
<td>● Quality of Life Index: Nursing Home Version and The Yesterday Interview (both administered before and after the intervention and served as outcome measures at pretest and posttest (4 weeks)).</td>
</tr>
<tr>
<td>● SilverSneaker fitness members who completed an annual survey</td>
<td>● Social limitations due to work, or activity limitations due to health</td>
</tr>
<tr>
<td>● Medicare</td>
<td>● Physical Health</td>
</tr>
<tr>
<td></td>
<td>● Emotional Health</td>
</tr>
<tr>
<td></td>
<td>● Activities of daily living</td>
</tr>
<tr>
<td></td>
<td>(Climbing stairs)</td>
</tr>
<tr>
<td>continually enrolled in the SilverSneakers fitness program from 2007 to 2010 and who completed an annual survey each year.</td>
<td>participation in the SilverSneakers program was associated with more favorable overall physical and social/emotional health status and fewer activity impairments, suggesting that the provision of senior-oriented group fitness programs may be a valuable approach to improve quality of life and reduce the burden associated with declining health and functioning as older adults age.</td>
</tr>
</tbody>
</table>

**Control**

The comparison group (n=22,344) was a matched sample of Medicare beneficiaries who participated in the 2007 and 2009 Medicare Health Outcomes Survey (HOS).

Hersch et al., (2012)

https://doi.org/10.5014/ajot.2012.002394

<table>
<thead>
<tr>
<th>Level III - Two-Group Control Study (Case Control)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 29 older adults relocated into a LTC facility</td>
</tr>
<tr>
<td>Intervention group, n = 16 6.3% male, 93.8% female</td>
</tr>
<tr>
<td>Control group, n = 13 30.8% male, 69.2% female</td>
</tr>
<tr>
<td>M age = Between 71 and 75 for both groups</td>
</tr>
</tbody>
</table>

Bottom line results show QOL (p = .011) Health and Function (p = 0.48) and Psychological/Spiritual (p = .008) subscales improved for BOTH groups; No significant differences between groups for the Social and Economic and Family subscales; Yesterday Interview (YI) examined social participation and activity engagement in which there were
### Inclusion Criteria
- 55+
- Relocation into the project site during the previous year
- Receiving licensed nursing care, but not in a hospice or locked unit
- White or African-American
- English-speaking
- Able to participate in interviews as determined by a score equal to or greater than 5 on the Short Portable Mental Status Questionnaire (SPMSQ)

### Control
Received usual activities determined by examining calendars of activities in the long-term care facilities such as structured exercise, poetry writing, current events, and crafts

<table>
<thead>
<tr>
<th>Jones et al., (2019)</th>
<th>Level I - RCT</th>
<th>Intervention</th>
<th>Demographics</th>
<th>Psychosocial Measures</th>
<th>Exercises in the intervention group only showed statistically significant improvements for functional fitness outcomes, but did not show any statistically significant improvements in hearing-related</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="https://doi.org/10.1136/bmjopen-2018-026169">https://doi.org/10.1136/bmjopen-2018-026169</a></td>
<td>N = 66 community dwelling, ambulatory older adults +65 with self-reported hearing loss</td>
<td>Functional fitness and socialisation/health education (SHE) + group auditory rehabilitation (GAR) (10-week intervention period, will follow-up at 11 weeks)</td>
<td>Collected at baseline (week 0)</td>
<td>Self-reported hearing-related quality of life (HHIE-25)</td>
<td>no significant differences between groups.</td>
</tr>
<tr>
<td></td>
<td>Intervention group, n = 35</td>
<td>Control</td>
<td>General quality of life (Rand SF-36)</td>
<td>Social and emotional</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Control group, n = 31</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Inclusion Criteria
- Eligibility requirements were in place but were never directly stated

- Loneliness (de Jong loneliness)
- Social support (the Medical Outcomes Trail-Social Support Survey)
- Depression (Geriatric Depression scale) were collected at baseline (week 0) and follow-up (week 11).

### Functional Fitness Outcomes
- Sit to stand
- Stand to sit
- Gait speed
- Balance
- Grip strength
- Functional reach

### GAR Evaluation Tool
- The International outcomes inventory-alternative interventions (IOI-AI) was used to identify the percentage of responses at follow-up (week 11).

- Quality of life and loneliness compared to the control group. Overall, the addition of exercise to GAR had no additional benefit for any of the psychosocial outcomes. So, when looking at exercise as an occupational intervention, this study showed lacking results in all areas except functional mobility, which may aid in increased quality of life within the home or community, but true benefits for total (p=0.012; ES=0.76), emotional (p=0.018; ES=0.71), and social (p=0.022; ES=0.69) hearing related quality of life and a decrease in de Jong total (p≤0.001; ES=1.16) and emotional (p=0.002; ES=0.96) loneliness were seen in the implementation of GAR, regardless of the study group. Participants who had the greatest attendance (≥80% of GAR sessions) and
Keisari et al., (2020)
https://doi.org/10.1037/aca0000354

Level I - RCT
N = 78 community dwelling older adults in adult day centers
Intervention group, n = 40
Control group, n = 38
M age = 80 years

Inclusion Criteria
- Score of 25 or more on the Mini Mental State Examination, which indicates a normal cognitive level for life review

Intervention
Playback theatre group with life review principles (12-week program with follow-up)

Control
Care-as-usual in adult day care centers

- Meaning in Life Questionnaire, short version of Ryff’s Psychological Well-Being Scale
- Short version of the Geriatric Depression Scale
- Satisfaction with Life Scale
- Self-Esteem Scale
- Positive Affect and Negative Affect Schedule
- Five Well-Being Index
- Revised version of the UCLA Loneliness Scale at pre- and post-intervention and at

There was a statistically significant improvement from T2 to T3 for the experimental group, but no statistically significant improvements for the control group. Further, however, only a main time effect was found for loneliness (p < .01), which means loneliness was high and then decreased, but increased again slightly at the follow-up assessment. This may be due to the higher (worse) baseline hearing-related quality of life had the greatest improvements in loneliness, participation restrictions, and activity limitations. There were also no statistically significant differences between groups for depression, social supports, or SF-36 measures (all p > 0.05).
participation
- An expressed interest in participating in a theater group and sharing their life stories with others
- Usual visits at the ADC
- An absence of a clinical diagnosis of major psychiatric disorders and drug/alcohol abuse

follow-up assessment (12-week program; data was collected at three time points for all study participants: before intervention (T1), after intervention (T2), and in a follow-up assessment (T3)).

termination of the group intervention which provided participants with social participation. So, while this study does not specifically explore the rates of social participation, it examines the factors that affect one’s social participation, such as loneliness and satisfaction with relationships. This intervention has the potential to have positive psychological effects for older adults, which affects their willingness and ability to socially engage.

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Inclusion Criteria</td>
<td>65-75 years old</td>
<td></td>
</tr>
<tr>
<td>Exclusion Criteria</td>
<td>Regular aerobic exercise (over 3 h/week)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RT experience</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BMI &gt; 37</td>
<td></td>
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<td></td>
<td>Previous testosterone-</td>
<td></td>
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</table>

Men and women aged 65–75 (N = 106) were randomized to four groups according to training frequency.

**Intervention**
Training groups RT1 (n = 26), RT2 (n = 27), and RT3 (n = 28)

**Control**
Non-training control group (n=25)

Quality of Life (QoL)- assed using the WHOQOL-BREF questionnaire, which is a shortened version of the WHOQOL-100

Sense of Coherence (SoC)- measured by Antonovsky’s 13-item scale

Depressive Symptoms (DS) - assessed with the

After 3 months, there was an intervention effect on environmental quality of life (group × time p = .048). Between 3 and 9 months, environmental quality of life decreased among RT1 compared to RT2 and RT3 (group × time p = .025). Between baseline and 9 months,
<table>
<thead>
<tr>
<th>Altering Treatment</th>
<th>Beck Depression Inventory II (BDI-II)</th>
<th>Environmental quality of life increased in RT2 compared to all other groups (group × time ( p = .011 )). Sense of coherence increased in RT2 compared to the control group and RT3 (group × time ( p = .032 )).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serious cardiovascular disease that may lead to complications during exercise</td>
<td>Aerobic Exercise - Strength and Functional Capacity - A bilateral leg press one-repetition maximum (1-RM) was used to assess maximum strength</td>
<td></td>
</tr>
<tr>
<td>Use of pharmaceuticals that affect the neuromuscular or endocrine systems</td>
<td>Functional capacity was assessed by time to complete 7.5 m forward and backward walk, timed-up-and-go (TUG), and loaded 10-stair climb tests.</td>
<td></td>
</tr>
<tr>
<td>Use of walking aids</td>
<td>The intervention showed to have no statistical significance for all of the measures. From pre- to post-test, there was no significant improvement in depression scores, independence, mental health perception, and quality of life in all indices: health and finances, social, psychological and physical, and family. However, while there were not statistically significant p scores for the quality of life measures, there is a</td>
<td></td>
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<tr>
<td>Smoking.</td>
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</tbody>
</table>

**Kirchen et al., (2014)**

https://doi.org/10.3109/02703181.2014.939801

**Level II - Cohort Study**

\( N = 11 \) older adult male U.S. veterans 60+ transitioning and residing in long-term care settings

**Inclusion Criteria**

- Male
- Minimum of 60 years
- Score of 5 or better on the cognitive screen (SPMSQ) which indicates no memory deficits
- Having been admitted to a state veteran’s home within 12

**Intervention**

Occupation-based cultural heritage intervention-military version (OBCHI-MV) (8, 1-hour group sessions that took place twice weekly for 4 weeks, no follow-up)

**Control**

N/A

- The Short Portable Mental Status Quotient (SPMSQ; cognitive deficits)
- Geriatric Depression Scale-Short Form
- Sheltered Care Environmental Scale (domains of social climate including relationship, personal growth, and system maintenance/change)
- Standard Form-12 (physical and mental health status)
- Quality of Life Index-Nursing Home Version (subscales of health and function, social and economic,
months or less from start of study

- Yesterday Interview (engagement in activities and social relationships) at pre- and post-intervention

- Psychological/spiritual, and family

- Positive trend toward clinical significance due to the effect sizes of the psychological/physical and family subtests. In addition, analyses indicate there was a moderate effect size for self-exploration and physical health perception. Based on the YI, “themes of social participation and occupational engagement in leisure activities were noted to be positive characteristics of the intervention by 91% of the participants. In fact, a greater time was spent in leisure participation following the intervention. Specifically, there was a 24% increase from pre- to post-test in leisure-time activities” (Kirchen et al., 2014). In addition, the post-intervention participant surveys revealed qualitative data on how “91% of the participants agreed they thought
“more about home and participation in leisure activities,” which can mean participants may find more ways to engage in leisure-time activities (Kirchen et al., 2014). Also, “91% agreement that they thought about the military lifestyle more since participating in the groups,” which can increase social participation amongst other veterans about military experiences (Kirchen et al., 2014). Overall, the qualitative data from the survey and interview reveals OBCHI-MV may have the potential to improve social participation for veterans in long-term care, but more quantitative data is needed.

Levasseur et al., (2016)  
http://dx.doi.org/10.1016/j.archger.2016.01.001  

<table>
<thead>
<tr>
<th>Level II - Cohort Study (A mixed-method concurrent triangulation design)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 16 (aged 66-91 years)</td>
</tr>
</tbody>
</table>

**Intervention**  
Participation in the Personalized Citizen Assistance for Social Participation (APIC) program. This consisted of a 6mo

- Functional autonomy (measured by SMAF questionnaire, consisting of communication, daily activity, mobility, cognitive

Comparisons of the pre-/post-questionnaires indicated an increase in functional autonomy related to mobility and general,
| Intervention Group | Intervention period where each participant was matched with an assistant where for 3hrs a week, they would assist them with activities involving goal setting/targeting socially related goals, graded “mobilization of personal/environmental resources”, and community engagement, as well as provided participation encouragement. Each participant completed questionnaires regarding functional autonomy, social participation, leisure and quality of life before and after the intervention period, as well as completed semi-structured interviews.  

**Control**  
N/A |
| Exclusion Criteria | Not explicitly mentioned |

**Inclusion Criteria**  
- Moderate to severe loss of autonomy  
- Normal cognitive functions  
- Live in conventional or residential home for independent or semi independent seniors  
- Be able to communicate orally  
- Those who had a disability and lived at home  

Liu et al., (2014)  
Level I - RCT  
**Intervention**  
Tai Chi - Each  

**Primary Outcome**  
- Fear of falling  

as well as identified an increase in social participation (related to social accomplishment) and leisure participation (specifically frequency of leisure participation). Post semi-structured interviews reported increased shared feelings of improved motivation, connectedness, self-esteem, psychological and physical wellbeing as a result of the intervention’s primary focus on the participants personal/environmental factors and increased social participation.
N = 128 older adults from four district elderly community centers

<table>
<thead>
<tr>
<th>Intervention Group, n = 58 (ended with 43)</th>
<th>Control Group, n = 64 (ended with 53)</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.80% male, 86.20% female</td>
<td>12.50% male, 87.50% female</td>
</tr>
<tr>
<td>M age = 74.5</td>
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</tbody>
</table>

Inclusion Criteria
- Aged 65 and older
- Had to have fallen at least once within the previous 12 months and have experienced at least some fear of falling
- CFES-I of 23 or above
- Physical condition had to be stable and able to stand on one leg for at least 5 seconds to allow them to perform daily Tai Chi practice
- Able to

Session included a 5 minute warm up, 50 minutes of Tai Chi practice (exercises that emphasize body movements while maintaining tranquil, relaxed, periodic breathing and a concentrated mind), and 5 minutes of cool-down exercises

“Control” Tai Chi plus cognitive behavioral intervention (CBI) which aimed to increase self-confidence, physical wellness with regard to falling, and a sense of control over falling. Three strategies were used to accomplish the aims of the CBI: (1) re-structuring misconceptions to promote an understanding of the fear and risk of falling as controllable, (2) setting realistic goals for safely increasing activity (personal capabilities were taken into account), and (3) shifting from

Secondary Outcome
- Self-perceived personal wellbeing

Other Secondary Outcomes
- Social participation (measured by 5 questions about the frequency of participating in social activities during the previous 12 months p. 319), gait, and balance

Assessments
- Chinese Fall Efficacy Scale-International (CFES-I) (Fear of falling)
- Tinetti’s balance and gait tests (Physical well-being and overall mobility, balance, and gait)
- Personal Wellbeing Index-Chinese Version (PWI-CV) (Perceived / subjective wellbeing)

That was measured, and showed a downward trend or decrease in mean for the CFES-I (fear of falling test) in both groups two months after completion of the intervention. The trend came down to 22.93 with a standard deviation (SD) of 2.89 in the Tai Chi group and 23.60 with a SD of 3.16 in the Tai Chi plus CBI group. The MEM showed significant reduction of the CFES-I scores of participants over time. To elaborate, there was a significant difference between the baseline and both the week 8 and week 16 follow-ups in both groups (p < 0.00 for all), but no significant difference between the two interventions. Self-perceived personal well-being was the secondary outcome where there was no significant difference found on group effect for all secondary outcomes. A
communicate in Cantonese to ensure they would understand the instructions

negative thoughts to positive responses with concrete activities such as exercise and recognizing and eliminating environmental hazards related to falls.

significant group difference was found on the PWI-CV (i.e. perceived, subjective well-being) scores measured at week 8 ($p < 0.03$) but none found at week 16 and no significant changes found on PWI-CV scores between groups. Other secondary outcomes included social participation, gait, and balance which the MEM did not show any significant differences in either social participation scores or Tinetti’s total scores (i.e. participants’ gait and balance) when compared between groups and the changes over time. Results were reported for each outcome in each study group (Tai Chi and Tai Chi plus CBI) at each interval (week 8 and week 16). The main conclusion from the findings is that Tai Chi both with and without CBI has a similar effect on
reducing community-dwelling older adults’ fear of falling (limited to moderate evidence about the effectiveness of Tai Chi reducing fear of falling) but only the Tai Chi plus CBI intervention had a positive effect on participant’s self-perceived personal well being, and Tai Chi both with and without CBI has no effect on participants’ self-perceived social participation and mobility. Neither group presented with any improvements in self-perceived social engagement. Key points from this study suggest there is preliminary evidence that combining CBI has no effect on modifying Tai Chi’s effect on reducing fear of falling in community-dwelling older adults.

<table>
<thead>
<tr>
<th>Lorenz et al., (2012)</th>
<th>Level I - RCT</th>
<th><strong>Intervention</strong></th>
<th>• Everyday function was measured by the Nursing Home Physical Performance Test (A decline in everyday Function (including markers for health related quality of life) was seen in the UC)</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="https://doi.org/10.1097/JGP.0b013e318246b807">https://doi.org/10.1097/JGP.0b013e318246b807</a></td>
<td>N = 119</td>
<td>Intervention 1- Exercise n=37</td>
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<tr>
<td></td>
<td>Inclusion Criteria</td>
<td>Intervention 2 -</td>
<td></td>
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<tr>
<td>Parry et al., (2016)</td>
<td>Level I - RCT</td>
<td><strong>Intervention</strong></td>
<td>Primary Outcome Measure</td>
</tr>
<tr>
<td>---------------------</td>
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<td>-------------------------</td>
</tr>
<tr>
<td>N = 415</td>
<td></td>
<td>A computer-generated blocked allocation was used to allocate patients in a 1:1 ratio to intervention and control</td>
<td>Fear of falling measured by change in FES-I scores at 12 months</td>
</tr>
<tr>
<td>Inclusion Criteria</td>
<td></td>
<td></td>
<td>Secondary Outcome Measures</td>
</tr>
<tr>
<td>● 60+ years old</td>
<td></td>
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<tr>
<td>● Excessive or undue fear of</td>
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</table>

**Inclusion Criteria**

- Age 55 years or older (all were above 65 years old)
- A Mini-Mental State Examination (MMSE) score of 4–29 (severe to mild or no cognitive impairment)
- Less than 7 hours of total nighttime sleep and 30 minutes or more of daytime sleep during 5 days–5 nights of actigraphy
- 2 weeks or more of residence in LTC
- Able to stand with little or no assistance
- Stable doses of all medications and no planned change during the next 7 weeks

Exercise and social activity

- n=22
- Intervention 3 - Individualized social activity
- n=32

**Markers for health related quality of life**

- The Cumulative Illness Rating Scale–Geriatrics (CIRS-G)
- Nighttime sleep was measured by attended polysomnography

**Control**

Usual activity for 7 weeks

n=28

Function improved in the E and ESA groups. There were statistically significant differences between the groups that were seen in a relatively short period of time. No a relationship was found between change in everyday function and change in sleep.
<table>
<thead>
<tr>
<th>Falling per Falls Efficacy Scale-International (FES-I) score of &gt; 23</th>
<th>Control</th>
<th>Intervention</th>
<th>Results of the study indicated significant differences regarding physical function (p = &lt;.001). Other significant findings included improvements in psychological well-being, general quality of life, and health-related quality of life</th>
</tr>
</thead>
<tbody>
<tr>
<td>415 participants were recruited, 210 randomized to the CBTi and 205 to usual care groups</td>
<td>Falls</td>
<td>Various subsets of physical function (i.e. arm curls, chair stand, “up-and-go”’s)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Injuries</td>
<td>Self-perceived health (i.e. physical functions, physical pain, physical limitations, general health, energy, psychological well-being, general quality of life, and health-related quality of life)</td>
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<tr>
<td></td>
<td>Anxiety/depression [Hospital Anxiety and Depression Scale (HADS)]</td>
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<tr>
<td></td>
<td>Quality of life</td>
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<td></td>
<td>Social participation</td>
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<td></td>
<td>Loneliness</td>
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<tr>
<td></td>
<td>Physical function</td>
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</tbody>
</table>

**Pedersen et al., (2017)**

https://doi.org/10.1111/sms.12823.
centers within the Municipality of Copenhagen
- Within the ages of 67-87 years
- Having the ability to walk without aides
- Were untrained (specifically regarding exercise training)

Exclusion Criteria
- Severe cardiovascular/neurodegenerative diseases
- Severe cognitive disorders

the team-based training group (n=13) engaged in three different types of ball sport games which were either 3 vs 3 or 4 vs 4. Training sessions were organized via intervals. Per week, it was noted that the training group completed 2.2 ± 0.3. Those within the resistance training group (n=19) were asked to engage in three training sessions a week that consisted of strengthening exercises. This group was able to complete 1.9 ± 0.4 training sessions a week.

Control
N/A

Level III - Case Control Study (A cohort design - Counterbalanced within-subjects design)
N = 8 assisted living residents aged 78 to 90 (3 participants with dementia)
M age = 84.38 (SD = 4.63)

Intervention
Two prompt procedures: 4-5 weeks of personalized prompts alone (PP) followed by 4-5 weeks of personalized prompts combined with brief conversation (PP + BC)

Interviews and activity preference assessments were routinely used by activity staff for reference during treatment about each participant’s interests. These participation preferences were recorded and used for delivery of personalized prompts. Activity attendance, or the participant’s physical presence in the designated

The results of this study indicate personalized prompts and positive social attention can increase social activity attendance for residents in assisted living facilities. Despite all conditions as effective for increasing social
75% female, 25% male

Intervention Group 1, n = 4

Intervention Group 2, n= 4

Control Group, n = 8
(same participants as non-randomized intervention groups, but baseline data varied due to 3 participants being newly admitted)

Inclusion Criteria

- Able to clearly indicate likes/dislikes
- Enjoy watching/listening to others and/or visiting/being around others during social activities

**Control**

General prompts (baseline and during treatment prompts)

**Note**

Each group received both prompt procedures, just in reverse sequence, and continued to receive general prompts

activity time, was recorded. Weekly social activity attendance percentages were calculated based on the number of available activities each week. These percentages were calculated for both following treatment prompts and general prompts.

activity attendance, there was no statistically significant difference between conditions, in which the personalized prompts paired with brief conversation did not have any additional benefit when compared to the personalized prompt condition. With the exception of the eighth participant, one or both treatment conditions increased overall attendance. “For the sample of participants, the difference in mean attendance following treatment prompts during the PP condition (M = 37.97%, SD = 23.75) and the PP + BC condition (M = 32.45%, SD = 17.43) was not significant, t(7) = 1.08, p = .314, 95% CI [–6.53, 17.57]. Out of the 6 participants for whom follow-up data were available (Participants 1, 2, 3, 5, 6, and 8), mean overall attendance at
Follow-up increased from baseline means in 4 participants (Participants 1, 3, 5, and 6)" (Polenick & Flora, 2013). For the two participants who had lower levels of attendance at follow-up compared to baseline, it is indicative of requiring long-term continuation of prompting procedures. Overall, the study has a low level of evidence to suggest this intervention increases social activity attendance in assisted living residents, which further increases their opportunity for social interaction with other residents and staff.

<table>
<thead>
<tr>
<th>Study</th>
<th>Design</th>
<th>Sample Size</th>
<th>Inclusion Criteria</th>
<th>Intervention</th>
<th>Primary Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roets-Merken et al., (2018)</td>
<td>Level I - RCT (Cluster)</td>
<td>N = 89</td>
<td>Dual sensory impaired older adults, Aged 55 years or over (all were over 65)</td>
<td>Nurse-supported self-management program. N=54</td>
<td>Social participation using a participation scale adapted for visually impaired older adults (IADLS, social-cultural activities, high physical-demand and low-physical-demand leisure)</td>
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<td>Control</td>
<td>Usual care N=35</td>
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<td></td>
<td>Primary Outcome</td>
<td>Analysis showed that Self-management had no significant impact on social participation or leisure within this population. However, significant differences were seen in IADLs problem management.</td>
</tr>
</tbody>
</table>
- A hearing impairment measured by pure tone audiometry of ≥ 40 dB (best ear, mean of frequencies 1000, 2000 and 4000 Hz)
- A visual impairment with a best-corrected visual acuity ≤0.3 diopter or, if additional visual problems were present, a visual acuity of ≤0.5 diopter, following the criterion standards for hearing and visual impairment 29-30 and
- Written informed consent

Secondary outcomes
- autonomy, control, mood and quality of life and nurses’ job satisfaction.

Savikko et al., (2010)
https://doi.org/10.1111/j.1748-3743.2009.00191.x

| Level II - Cohort Study | Intervention | Favorable processes of the psychosocial intervention groups, and “mediating factors that alleviate loneliness.” Data was collected via:
- Group leaders diaries
- Post-intervention interviews
- Custom feedback |
<table>
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<tbody>
<tr>
<td>N =117 subdivided between 3 intervention categories (art, n=17; exercise, n=46; writing, n=24) 74% women, 81% lived alone.</td>
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<tr>
<td>Groups consisting of either 7-8 (consisting of either 1-2 group leaders) individuals had met 12 times, once a week for 3 months to participate in the various activities related to</td>
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<tr>
<td>Inclusion Criteria</td>
<td></td>
<td>Results indicated that across all intervention subgroups, favorable processes included having choice over what they participated in, sharing a common interest with peers</td>
</tr>
</tbody>
</table>
- Feeling of loneliness
- Willingness to participate in the intervention

**Exclusion Criteria**
- Those with severely impaired hearing or vision
- Those with moderate/severe dementia
- Those with severe heart/lung disease

The participants overall interest involving lunch/breakfast, socially focused activities of interest, and transportation to and from intervention. In each group, the participants had the potential to influence parts of the intervention based on preference.

**Control**
Information was not discussed.

Post interventions concluded that 95% and having opportunities to discuss the experiences, which led to an overall increase in feelings of kinship, motivation and prolonged participation. Noted mediating factors that alleviate loneliness included opportunities to overcome “self-imposed limits” which in turn increase a sense of mastery within their own life/ increased self-esteem, as well as having increased community involvement facilitate an intrinsic desire for change (noted by more active role participation within their own life).

Lastly, active participation in the groups and with each group members promoted equality, empoweredness, and friendship, all of which lead to an increase in participation.
**Siverová, & Bužgová, (2018)**  
https://doi.org/10.1111/inm.12442

<table>
<thead>
<tr>
<th>Level II - Quasi-Experimental Study (Cohort Study)</th>
<th>Intervention</th>
<th>Assessments</th>
<th>After the intervention, participants from the intervention group exhibited improvements in seven domains of quality of life. Narrative group reminiscence therapy was confirmed to have had statistically significant positive effect on the following domains of quality of life: physical health, mental health, environment, global quality of life, past/present/future activities, and social participation. Participants also showed fewer depressive symptoms, an increased MMSE</th>
</tr>
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</table>
| N = 116 older adults who completed the second (post-test) questionnaire from two long-term care centers in the Czech Republic | Reminiscence therapy - 40 to 60 minute sessions where participants recalled their memories of a specific theme (1) the place where I come from (2) childhood games and favorite activities (3) school years (4) first loves (5) first job (6) favorite meals and dining (7) social life (leisure time) (8) holiday celebrations | - Mini Mental State Examination (MMSE) (Cognitive impairment)  
- The World Health Organization Quality of Life-BREF (WHOQOL-BREF) (Quality of life)  
- The World Health Organization Quality of Life-OLD (WHOQOL-OLD) (Quality of life)  
- Attitude of Aging Questionnaire (AAQ) (Attitudes toward aging)  
- Geriatric Depression Scale (GDS) (depressive symptoms) - For intervention participants to take 7 days after their decision to participate in the | |
| Intervention group, n = 59  
25.4% male, 74.6% female | Control | |
| Control group, n = 57  
24.6% male, 75.4% female | |
| M age = 79.6  
25% male, 75% female | |
| Inclusion Criteria  
- Being 60 years of age or over  
- Presenting cognitive | | | |
| | | | |
| Impairment (scoring between 24 and 10 in an MMSE test) | Showing willingness to participate in the study | Being recommended by a doctor to participate in reminiscence therapy | Study and 7 days before reminiscence therapy (pretest). | Members of the control group were asked to complete the questionnaires 7 days after their decision to participate in the study (pretest). Both groups completed these at completion of the 8-week period (post-test). | Score, and a change in attitude toward ageing. Outcome measures did not change statistically over time for the participants in the control group except for global health, attitudes toward physical changes, and MMSE score (cognitive). A statistically significant difference was found in quality of life in the following domains: Mental health and social participation, attitudes toward ageing, and GDS score. After reminiscence therapy, the participants showed a greater improvement and change in mental health, social participation, attitudes toward psychological losses, and physical changes, and a reduction in depressive symptoms. The reduction in depressive symptoms after intervention was associated with an... |
improvement in quality of life in the domain of social relationships. Enhanced cognitive function in the elderly after therapy was associated with a reduction in depressive symptoms and improvements in quality of life in the domains of intimacy and life fulfillment. Table 2 on page 1435 bolded the statistically significant values: physical health ($p < 0.001$), mental health ($p < 0.001$), environment ($p = 0.044$), global quality of life ($p = 0.023$), past/present/future activities ($p = 0.041$), social participation ($p < 0.001$), psychological losses ($p = 0.034$), psychological growth ($p < 0.001$), GDS ($p = 0.003$), and MMSE ($p < 0.001$). Bottom line results show group narrative reminiscence therapy can be used as an intervention for improving quality of life.
<table>
<thead>
<tr>
<th>Slegers &amp; Jolles (2008)</th>
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<tbody>
<tr>
<td><a href="https://doi.org/10.1093/geronb/63.3.p176">https://doi.org/10.1093/geronb/63.3.p176</a></td>
</tr>
</tbody>
</table>

**Level I - RCT**
- N = 191

**Inclusion Criteria**
- Healthy participants between the age of 64 to 75

**Exclusion Criteria**
- A general mental functioning in a range that might be indicative of a cognitive disorder (score < 24 on the Mini-Mental State Examination, or MMSE)
- No prior active computer experience

Participants were randomly assigned a group of 191 participants to an intervention group, a training-no intervention group, or a no training-no intervention group. A fourth group consisted of 45 participants with no interest in computer use.

- Physical well-being measured by including the physical component of the 36-item Short-Form Health Survey (SF-36) - questionnaire on general health and quality of life
- Social well-being measured by using the loneliness questionnaire and 4 items to measure the nature and frequency of the participants’ social networks
- Emotional well-being measured psychological functioning by using the psychological component of the SF-36
- Measures of mood were provided by three subscales of the Intensive interaction with a personal computer with standard software applications had no effect on cognitive measures; no differences in changes in cognitive parameters over time were found between groups.
<table>
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<tr>
<th><strong>Symptom Check List (SCL-90): depression, anxiety, and sleep complaints</strong></th>
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<tbody>
<tr>
<td><strong>Two subscales of the Eysenck Personality Questionnaire:</strong> neuroticism and extraversion</td>
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<tr>
<td><strong>Development and activity measured through question and answer/ self-reported data</strong></td>
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<tr>
<td><strong>Autonomy - three measures of (perceived) autonomy</strong></td>
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<tr>
<td><strong>A scale for instrumental activities of daily living, which measures functional capacity by assessing whether people need any help with everyday activities such as bathing and dressing</strong></td>
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<tr>
<td><strong>Belief in External Control scale to measure locus of control (internal or external)</strong></td>
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<tr>
<td><strong>Mastery scale to ask participants about their perceived level of control over life</strong></td>
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<tr>
<td><strong>Computer use</strong></td>
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<tr>
<td>Study</td>
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<tr>
<td>VanSwearingen et al. (2011)</td>
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**Inclusion Criteria:**
- Older adults with slow and variable gait
- Eligibility was based on the ability to walk independently with or without a cane
- Medical safety, including a personal physicians approval to participate in a low- to moderate-intensity exercise program
- Adequate cognitive function to provide informed consent and participate in the exercise interventions
- Mini-Mental State Examination

**Intervention:**
- Intervention 1 - Task-oriented, motor sequence learning exercise (TO), 12 weeks
- Intervention 2 - Impairment oriented, multicomponent exercise (IO), 12 weeks

**Control:**
- N/A

**Measures:**
- Measures of activity (gait speed over an instrumented walkway)
- Daily physical activity measured with an accelerometer
- Confidence in walking determined with the Gait Efficacy Scale
- Physical function determined with the total, basic lower-extremity, and advanced lower-extremity components of the Late-Life Function and Disability Instrument (Late-Life FDI) and participation (disability limitation dimension and instrumental role [home and community task performance] domain components of the Late-Life FDI) were recorded before and after the intervention
- Energy cost of walking was measured through self-reported data.
<table>
<thead>
<tr>
<th>Wren (2016)</th>
<th>Level II - Quasi-Experimental Study (Cohort Study)</th>
<th>Intervention</th>
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</thead>
<tbody>
<tr>
<td>N = 9 nursing home residents, 65 and older with no cognitive impairments</td>
<td>Life review group (once weekly for 6 weeks, no follow-up)</td>
<td>Mini Mental State Exam (MMSE) established baseline cognitive eligibility for patient recruitment (score of 24-30 is functional cognitive ability for people with dementia, so inclusion criteria for this study looking at non-diagnosed older adults was equal to or greater than 25)</td>
</tr>
<tr>
<td>Exclusion Criteria</td>
<td>Control N/A</td>
<td>Life Satisfaction Index-Z (LSI-Z) measures satisfaction with life for pre- and post-intervention, which is a standardized assessment that is reliable and valid for assessing overall life satisfaction in older adults. A higher score indicates a higher overall life satisfaction, which this quantitative data based on the</td>
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<tr>
<td>● Cognitive impairments (i.e., residents in the memory care unit)</td>
<td></td>
<td>The LSI-Z mean score pre-intervention was 12 (SD = 7.5) and post-intervention was 21 (SD = 11.6). All nine participants at the individual level had increased scores from pre- to post-intervention. The LSI-Z pre-test scores ranged from six to 18, with the six-point change assigned to the participants who had been living at the facility for the shortest periods of time and the 18-point change assigned to the participant who had been living at the facility for the longest period of time. The LSI-Z post-test scores ranged from 15 to 24, indicating a nine-point range between the participants. Based on the</td>
</tr>
<tr>
<td>● A score less than 25/30 on the MMSE</td>
<td></td>
<td>Based on the</td>
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</table>

The MMSE [score of 24]
- Quantitative evidence of mobility difficulties, defined as slow and variable gait determined

Wren (2016)
https://doi.org/10.1080/02703181.2016.1268236

Medium: Level II - Quasi-Experimental Study (Cohort Study)
N = 9 nursing home residents, 65 and older with no cognitive impairments

Inclusion Criteria
- English speaking residents
- 65 years old or older
- A score equal to or greater than 25/30 on the Mini Mental State Exam (MMSE)

Exclusion Criteria
- Cognitive impairments (i.e., residents in the memory care unit)
- A score less than 25/30 on the MMSE
- Residents

Intervention
Life review group (once weekly for 6 weeks, no follow-up)

Control
N/A

Mini Mental State Exam (MMSE) established baseline cognitive eligibility for patient recruitment (score of 24-30 is functional cognitive ability for people with dementia, so inclusion criteria for this study looking at non-diagnosed older adults was equal to or greater than 25)

Life Satisfaction Index-Z (LSI-Z) measures satisfaction with life for pre- and post-intervention, which is a standardized assessment that is reliable and valid for assessing overall life satisfaction in older adults. A higher score indicates a higher overall life satisfaction, which this quantitative data based on the...
scheduled for discharge prior to the end of the 6-week intervention period

- All other data for this study was qualitative using a pre- and post-intervention survey with open-ended self-reported questions related to self-perceived social participation. While quantitative data is only reported for overall life-satisfaction, correlations between life satisfaction and increased perception of social participation can be assumed, however it is a low level of evidence.

is gathered from closed-ended statements pre- and post-intervention

- qualitative data, it was indicated the participants outlook on social participation improved. Only one participant did not report having a positive change in the level of involvement pre- and post-intervention. It was stated that “participants reported enjoying the sessions and having made friends and new relationships. Several comments during session six indicated feelings of acceptance and resolve of past conflicts” (Wren, 2016). So, while quantitative data showed weak improvement in life satisfaction, the participant feedback or qualitative data added additional support of the psychosocial benefits of life review. There were no p-values or confidence intervals reported to indicate statistical significance and
<table>
<thead>
<tr>
<th>Yuen et al., (2011)</th>
<th>Level II - Cohort Study</th>
<th>Intervention</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="https://doi.org/10.1002/oti.327">https://doi.org/10.1002/oti.327</a></td>
<td>N =12 (11 women)</td>
<td>“Seasoned Arts At the Samford for You” (SAASY) - Participants completed a 6 week program consisting of acting classes that meet once a week for 2 hours, along with four public productions. This intervention was facilitated by 2 professional acting instructors. Participants completed the General Well-being Schedule and Medical Outcomes Study 36-Item Short-Form Health Survey before and after the interventions, as well as completed semi-structured interviews regarding their overall experience.</td>
<td>N/A</td>
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<tr>
<td>Inclusion Criteria</td>
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<tr>
<td>● Participants had functional mobility</td>
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<td>General well being (psychological, general health, self control, and validity)  ● Physical and mental components (role competency, bodily pain, mental health, and role functioning)</td>
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<tr>
<td>● Between 62-88 years of age</td>
<td></td>
<td>Results of the study indicated from the quantitative analysis significant increase in general wellbeing (p=.002), along with significant improvement in overall physical health (p=0.3) There was no change noted regarding mental components within the quantitative data, however results form the semi-structured interviews (qualitative data) reported improved social experiences as one of the main themes from each participant due to the welcoming environment and the experience of meeting other people from other facilities. Other noted improvements consisted of self worth, conquered limitations, and</td>
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<td>● Alert and able to have conversations</td>
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advocacy, as well as agreed upon subjects such as having improved courage as a result of trying something new, resulting in newly found self-confidence.

*Note. RCT = Randomized controlled trial; LTC = Long-term care*