Examining the Effects of Aging in Place on Quality of Life Compared to a Long-Term Care Facility: A Rapid Systematic Review

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Key Words

- Occupational Therapy
- Aging in Place
- Long-term Care
- Quality of Life
- Occupational Performance
- Older Adults

Abstract

As individuals age, they face impacted occupational performance which present as challenges performing activities of daily living (ADLs) and instrumental activities of daily living (IADLs) independently. This rapid systematic review seeks to investigate the effectiveness of existing occupational therapy (OT) interventions for older adults who are both aging in place and residing in long term care facilities through examining the evidence of 29 studies. Occupational therapy interventions investigated through this study were found to have common themes related to quality of life, occupational performance, self-efficacy, and psychological well-being. Common limitations found among studies include lack of randomization, small sample sizes, and lack of generalizability to different populations. Findings reveal that OT interventions with a focus on client-centered care contribute to improved occupational performance, participation, and quality of life for older adults. This systematic review supports implementing OT interventions for older adults aging in place and in long term care facilities. However, further research is needed to increase generalizability of conclusions and further examine the differences in outcomes between settings.

Focused Clinical Question

The purpose of this rapid systematic review was to search the literature and critically appraise and review applicable findings to address the following focused clinical question: In individuals aged 60 and above, what is the effect of OT intervention on quality of life and occupational performance for those living in long-term care facilities compared to those living in the home?

Statement of Problem and Background

As individuals age, they may experience changes in quality of life in response to life transitions such as increased prevalence of chronic health conditions, physical decline, mental decline, loss of loved ones, retirement, and housing changes. The Centers for Disease Control and Prevention (2019) defines quality of life as "an individual or group's perceived physical and mental health over time." It can include components of emotional well-being, absence of distressing physical symptoms, quality of interpersonal relationships, participation in social activities, and physical and cognitive status. Studies have shown a negative relationship between increased age and overall quality of life (Gündoğdu et al., 2019). The National Center for Chronic Disease Prevention and Health promotion released a report which states that quality of life has decreased in the United States population as a whole from 1993 to 2001 (Zahran et al., 2005). Due to increased life expectancy the population of older adults has risen, with currently one in eight Americans being over age 65 (PRB, 2001). The decline of overall quality of life and the increasing older adult population indicates the need to examine interventions that focus on increasing quality of life for this population.

Occupational performance is defined as "the accomplishment of the selected occupation resulting from the dynamic transaction among the client, their contexts, and the occupation" (OTPF-4, 2020). Older adults' ability to participate in meaningful occupations decreases due to normal aging factors like cognitive and physical decline. "In 2009, close to 30% of Medicare beneficiaries over age 65 living at home reported difficulty in performing one or more activities of daily living, and an additional 12.7% reported difficulties with instrumental activities of daily living" (AOTA, 2016). Increased occupational performance issues and barriers should be addressed in both long term care and aging in place settings.

A decision that many older adults have to make is the choice between staying in their home and moving into a long-term care facility. In the United States, a larger percentage of older adults choose to age in place and stay within their community. Only 4.5 percent of older adults live in nursing homes, 2 percent live in assisted living facilities, and 93.5 percent live in their communities (IOM, 2010). Occupational therapists provide services to the older adult population in both settings to enable independent living and continued participation in activities (AOTA, n.d.). There is limited research comparing the effectiveness of OT intervention on quality of life and occupational performance between aging in place and long term care settings. Research on this topic can guide and inform occupational therapists working with the older adult population.

Method for Conducting the Evidence-Based Review

This rapid systematic review examined studies that assessed the effectiveness of OT interventions for improving quality of life and occupational performance of older adults aging in place, and in long term care facilities.

Throughout the process of finding articles for this rapid systematic review, articles were selected based on inclusion criteria. Articles had to include participants who were older adults at least 60 years of age and had to be receiving OT intervention while residing in either their home or a long term care facility. Long term care facilities included assisted living facilities and skilled nursing facilities. Participants who resided in their home were referred to as "aging in place" and they received occupational therapy within their homes as well as in outpatient facilities. Articles included in this review were selected considering AOTA's guidelines for level of evidence (AOTA, 2020). Level I, Level II, or Level III studies were included in this systematic review. Articles with Level I evidence only included randomized controlled trials. We excluded the following articles: systematic reviews, meta-analyses, descriptive studies, and case reports. Other exclusion criteria were as follows:

- Participants under the age of 60 years
- Studies not conducted by occupational therapists
- Articles not in English

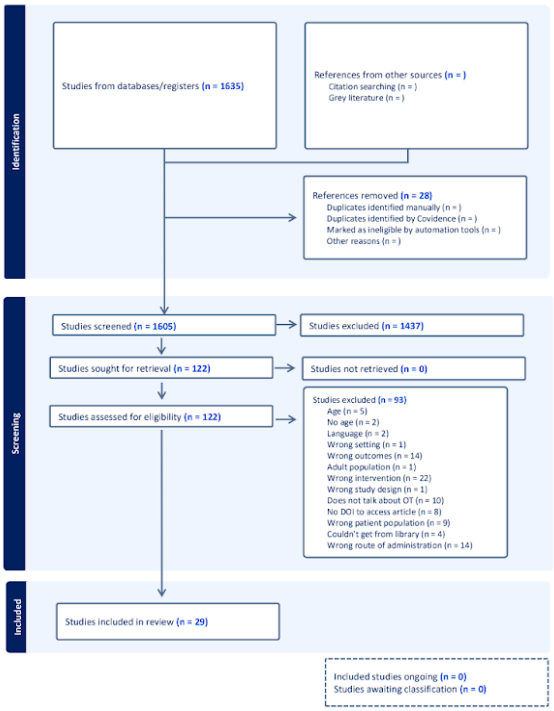
After determining the level of evidence required, articles were selected using Covidence. Articles were imported into Covidence from both PubMed and CINAHL. A summary of this process can be seen in *Figure 1* and Appendix B. Reviewers began the screening process by first looking at titles and abstracts to quickly determine if articles were relevant to our overall focus. Articles were then moved on to the full

text review where reviewers took a more in-depth look at the articles to select ones that would help us answer our clinical question. Lastly, 29 articles were extracted to be included in our final rapid systematic review (See Appendix A).

The articles that were found to be the appropriate level of evidence and which met the inclusion criteria were further categorized into five main outcomes:

Outcome 1: Quality of Life
Outcome 2: Occupational Performance
Outcome 3: Self-efficacy
Outcome 4: Physiological Well-being

Figure 1.
PRISMA table generated from Covidence.



Results

A total of 75 articles were found to match the criteria specified for the search. Through continued review, 29 articles were selected for this rapid review due to their relevance with intent to measure quality of life within older adults. The goal of the review was to determine the evidence for effectiveness of occupational therapy on quality of life for elderly adults with an aim to compare results from those experiencing "aging in place" while living at home with those living in long-term care facilities. The final 29 studies' outcomes fit into four categories, all of which contribute to quality of life: self-efficacy, psychological well-being, and occupational performance (ADL & IADL). The 29 studies reviewed included: 14 Level I RCT, 2 Level II, and 13 Level III.

Quality of Life

A Level I randomized control trial found that all participants who received either home-based OT services or services provided in an independent living center (ILC) had an increase in quality of life (p=0.77) (Borrows, A. & Holland, R. 2013). Participants in both groups made use of AE, had increases in quality of life (QoL) and had more independence in ADLs at the post-test.

A Level II study showed a statistically significant increase in participants' sense of purpose and meaning in life after engaging in an intervention called the Living Legends program (p<0.0001) when compared to those in the control group (Chippendale & Boltz, 2015). The effect size between the treatment and the control group was very large at 1.24. The Legends Program was especially beneficial for those older adults who had a lower score on the MLQ-Presence to begin with (p=0.004). The study also found qualitative data that showed many therapeutic benefits of the program including cognitive stimulation, social support, positive views of the youth, and the ability to inspire the next generation.

A Level I, randomized controlled trial, utilized an in-home assessment of daily activities in the context of the environment, client-family collaboration to achieve mutual goals, provision and training in assistive device use, design and implementation of home modifications, removal of environmental hazards, medication management training, education in adaptive and compensatory strategies to improve safety and independence (Sheffield et al., 2013). Results found that the intervention produced improvements in home safety (p<.0005, b=-15.87), HRQoL (p=.03, b=0.08), and in fear of falling (p<.05, b=2.22). The results did not indicate improvement in functional status or reduced falls.

A Level I Randomized Control Trial (Stark et. al., 2021) found no statistically significant difference in reported fall hazards between the intervention group and the control group. The study did find that the program reduced the rate of falls among community-dwelling older adults by 38% when compared to the control group (p=0.03). This intervention was also a cost effective intervention. Lastly, there were no statistically significant differences in daily activity performance (p=0.60), falls self-efficacy (p=0.84), or quality of life (p=0.35).

A Level II Non-Randomized Control Trial found that long-term continuous in-home OT sessions with client-centered interventions may help improve quality of life (QoL) and ADLs within the geriatric population. The rehabilitation group showed statistically significant improvements in quality of life. Presence of interests/hobbies p-value equals 0.023. Remaining consistent and providing services for a year in one's home builds rapport with the client and allows for a fuller scope of one's occupational profile (Imanishi, M., Tomohisa, H. and Higaki, K., 2017).

A Level I Cluster-Randomized Trial and Mixed-Methods study found an increased well-being and decreased dependency in nursing homes after delivery of systematic pain assessment intervention (as measured by Katz-ADL measure). However, no significant changes were noted in pain and well-being between comparison and intervention groups.Through the implementation of systematic pain assessment intervention, a variety of measures demonstrated significant changes from baseline to follow-up. The Katz-ADL measure demonstrated increased well-being and decreased dependency in occupational participation with a p-value of <0.011 among individuals in the intervention group. The ADCS-ADL, which measured physical and cognitive ability, resulted in higher dependency in the comparison group. No significant differences in scores between comparison and intervention group were noted with QUALID, WHO-5 wellbeing index, or proxy-NRS measures. There was a ≥ 30% increase in pain scores for 17/44 participants who reported pain scores. 13/44 who reported pain scores identified decreased pain scores. No significant changes were indicated in pain and wellbeing between comparison and intervention groups (Mamhidir et al., 2017).

Occupational Performance

A Level III study implemented the CAPABLE program; results showed difficulty with ADLs was reduced among 75% of participants. Difficulty with IADLs decreased in 65% of participants and depressive symptoms improved in 53% of participants. Overall, the CAPABLE program demonstrated improved physical functioning and reduction in disability for low-income older adults participating in this study (Szanton et al., 2016).

The results of a single-blind pilot cluster randomized controlled trial by Nagayama et al. (2016) showed no significant difference between baseline and post-intervention outcomes in either the Aid for Decision-making in Occupation Choice (ADOC) or control group. The ADOC is an iPad application that the occupational therapist and participants use alongside one another to identify meaningful occupations and set goals based on those occupations. However, the ADOC group did have a significant higher change in the Barthel index score compared to the impairment based control group ($p=0.027$) with a medium effect size of $d=0.71$.There were more participants who had improved Barthel Index scores, (43.5%) in the experimental group than in the control group (4.8%). This ADOC application is useful for OTs and clients to set goals that are meaningful and occupation based as 78.6% of participants set occupation based goals in the ADOC group and only 19.2% set occupation based goals in the control group.

Another Level III study found the basic ADL (BADL) performance and BADL capacity were not significantly different ($p = 0.128$); however the participants rated IADL capacity significantly higher than IADL performance ($p < 0.01$). This gap in IADL performance and capacity is thought to occur due to environmental limitations. This study emphasizes the importance of environmental adaptations for persons with mild dementia in improving their QOL (Nakanishi et al., 2022).

A Level I study done by Sondell et al. (2018) had an exercise activity group and social activity group delivered to residents in nursing homes. The exercise group participants experienced high/very high motivation in 61% of sessions and no/low motivation in 11.5% of sessions. Social activity group experienced high/very high motivation in 62.6% of sessions and no/low motivation in 10% of sessions. Significant differences in motivation were found among groups before a session and during a session. For 36.2% of exercise group sessions, motivation during session exceeded motivation prior to group. The social activity group experienced a similar trend with 27.9% of sessions facilitating increased motivation within session when compared to prior to session. No overall difference in motivation during activity sessions was detected between groups, but overall motivation for the exercise group throughout the course of the study increased and the social activity group experienced decreased motivation by the end of the study.

A Level III, mixed method study with pre- and post-intervention quantitative data done by McNamara et al., (2016) indicates the intervention program can result in enhanced health and well-being of community-dwelling older adults. The authors of the study concluded that the program was successful in enhancing the health and well-being of community-dwelling older adults, but they do not highlight the translation of the intervention program into actual practice. Results from the SF-36 Health Survey found that participants at stage 2 (post-intervention)

score increases were observed in all eight dimensions. The greatest improvement was shown in the social function score which was similar to the age-relevant 1995 population norms. Program participants reported better health, social function and mental well-being, greater enjoyment in household and leisure activities, and increased enjoyment and confidence through participating in the program.

A Level II study included a No Help and Previous Help group, which resulted in participants reporting improvements in ADL ability (Winkel et al., 2015). A Level III study implemented a physical-cognitive training, health education, and reablement (PCHER) intervention, which demonstrated improvement in ADLs and occupational performance through a group training session with a focus on mobility, cognition, ADLs, and lower extremities. The Canadian Occupational Performance Measure (COPM) administered through this study resulted in increased overall participant satisfaction in areas measured through the assessment (Song et al., 2021). Another study which delivered Intensive Client-Centered Occupational Therapy (ICC-OT) also demonstrated increases in COPM performance by 1.86 points whereas the usual-practice group improved by 0.61 points The p-value for the COPM results was 0.001 indicating a significant statistical difference between groups (Nielsen et al., 2019).

Other studies measured ADL performance related to occupational performance through other types of assessments. The Activity and Daily Life Satisfaction Scale for the Elderly (ADLSS) demonstrated increased ADL satisfaction scores at follow-up ($p = .005$) (Takagi et al., 2022). Another Level II study used the Functional Independence Measure (FIM) in studies to measure ADL performance; the rehabilitation group in this study showed statistically significant improvements in quality of life and ADLs. However, the non-rehabilitation group showed almost no effects or significant changes post-study. FIM score p-value equals 0.024. Presence of interests/hobbies p-value equals 0.023. (Imanishi et al., 2017).

A study by (Borrows, A., & Holland, R. (2013) found participants in both groups appeared to make use of similar equipment, while the intervention group (LTC) did have a slightly higher number of participants using toileting and bathing equipment at the 3-month follow-up. On average, the CDI (community dependence) increased at 3 months, for both the intervention group and control group (home), by two to three units on the CDI measure.

A Level III pre-post design study examined the effectiveness and costs of occupation-based practice for frail elderly individuals (68 years or older). 26 participants were involved, and the intervention involved client-centered goal setting and observation of real-life situations. The Japanese version of the FAI was used to evaluate IADL, with significant improvements found in all items except work ($P<.05$ and effect size r: .67-.93). 15 out of 26 participants showed improvement in ADL (57.7%) The study suggests that occupation-based interventions can improve IADL in frail elderly individuals with limited intervention frequency, while remaining cost-effective in a short timeframe. This evidence can guide occupational therapists in their interventions with older adults aging in place (Nagayama et al., 2018).

A pilot Level I RCT compared the 3-Step Workout for Life to resistance exercises alone in promoting ADL independence in community-dwelling older adults (mean age 73 years). 52 inactive older adults (mean age=73) recruited from subsidized senior housing communities with muscle weakness and difficulty in ADL were randomized into the control and intervention group. The 3-Step Workout for Life intervention combined resistance exercise, functional exercise, and ADL exercise, led by an interventionist three times a week for 10 weeks. The primary measure was the Motor Skills Scale of the AMPS. Results showed that the 3-Step Workout for Life improved ADL performance and slowed disability progression compared to resistance exercise alone. Limitations include a sample limited to subsidized senior housing communities. Overall, occupational therapy practice can improve the quality of life of community-dwelling older adults, as evidenced by the valuable findings of this study (Liu, C. J. et al., (2017).

After the study, the rehabilitation group showed statistically significant improvements in ADLs. FIM score p-value equals 0.024 (Imanishi, M., Tomohisa, H. and Higaki, K., 2017).

EMR is more effective and dependent on participants having higher levels of executive functioning. E-MR interventions show significant improvements in functional outcomes in older adults when compared to standard of care (Ercal, B., Rosebaugh, T. L., Bland, M. D., Barco, P., Lenard, E., Land, C., et al., 2021).

(Lenze, E. J. et al., 2019) findings suggest that EMR is effective in improving functional recovery (in the short-term) for older adults in post-acute rehabilitation in SNFs; a 25% improvement can be seen compared to traditional standard of care. Improving functional capabilities and active time during therapy is important for those receiving rehabilitation services in a SNF and can improve patient engagement and volition

as well as their motivation to continue rehabilitation services, ultimately increasing QoL and participation in occupations.

This Level I Randomized Control Trial found the intervention group improved daily activity performance over a twelve-month period compared to the sham control group. The intervention process was delivered to all participants with 90% accuracy. Overall adherence rate reported by participants at twelve months was 91% (Stark et al., 2018).

This Level 1 Randomized Control Trial found CAPABLE participation in the intervention group resulted in a 30% reduction in ADL disability scores at 5 months (relative risk 0.70;95% CI, 0.54-0.93; P=.01) vs control participation. Participants in the intervention group were more likely to report that the program made their life easier compared to the control group (82.3% vs 43.1%; p<.001), helped them take care of themselves (79.8% vs 35.5%; <.001), and helped them gain confidence in managing daily challenges (79.9% vs 37.7%, P<.001) (Szanton et al., 2019). After the CAPABLE program, difficulty with ADLs was reduced among 75% of participants (Szanton, S. L., Leff, B., Wolff, J. L., Roberts, L., & Gitlin, L. N. (2016).)

A Level III mixed-methods design by Arthanat and Vroman (2014) implemented technology in intervention through seeking to improve information communication technology training in the home using iPad resources through client centered interventions delivered by coaches; throughout the intervention process, participants reported increased participation in activities, with the most significant increases in leisure activities. Increased participation in health management and social connection were found; however, these changes were not considered statistically significant.

A Level I Randomized Control Trial found the CAPABLE program could significantly impact the quality of life and functional performance of community-dwelling older adults. This study shows the importance of assessing clients, providing education, and collaborating with your client to problem solve deficits in occupational performance and strategies to improve. This study also shows the effectiveness of home modifications and how OTs can assess the home environment for any barriers to occupational performance and participation. It could be an effective and affordable intervention to address both the person and their environment (Szanton et. al., 2014).

A Level II, non-randomized clinical trial study in Norway found that there were significant treatment effects found in the COPM-Performance and COPM-Satisfaction for the rehabilitation group compared with the control group. The mean differences between groups at 10 weeks (MD), 1.61, 95% confidence interval (CI), 1.13, 2.10 and MD 1.47, CI 0.98, 1.97, respectively), and at 6 months (MD 1.42; CI 0.82,2.02 and MD 1.37; CI 0.77,1.98, respectively). There were also significant treatment effects in the SPPB-subscales for balance and walking after 6 months, in the total SPPB score and in the subscale for sit-to-stand after 12 months. In the EQ-5D-5 L assessment, significant treatment effects were found in the subscales for mobility, and for usual activities and health after 6 months. Reablement had significant effects on activity performance, satisfaction with performance and many other health outcomes after 6 months (Langeland et al., 2019).

Self-Efficacy

A Level I randomized control trial concluded that the participants in group occupational therapy services had a significant improvement in self-efficacy compared to those in individual occupational therapy services, who showed a decrease in reported self-efficacy compared to their baseline score (Toledano-González et al., 2018).

A Level I randomized control trial investigated the effectiveness of the Lifestyle Redesign Program that included the following interventions: patient education, direct experience and self-reflection (Juang et al., 2017). Results showed an increase in indirect effects on self-efficacy including client's perception of choice and improved activity frequency and significance, as well as improved social connectedness.

Psychological Well-Being

A Level III mixed-methods design examined the impact of Lifestyle Redesign on the health, social participation, leisure, and mobility of 16 French-Canadian participants over the age of 65 with normal cognitive function (Levasseur et. al., 2019). The study suggests that Lifestyle Redesign has the potential to be an effective intervention for older adults living in the community. The intervention showed positive effects on mental health (p=.02), interest in leisure(p=.02), and social participation (p=.03) for those with disabilities. This intervention program has the potential to offer occupational therapists a unique intervention to promote meaningful healthy activities for older adults aging in place.

A study by Masayuki et al. (2022) showed the Activity and Daily Life Satisfaction Scale for the Elderly **(**ADLSS) scores at follow-up was significantly higher than at pretest (p = .005) after group OT sessions and the use of an occupational diary. The K-I score at follow-up was also significantly higher than at pretest (p < .001).

The LSI-Z score at follow-up was significantly higher than at pretest ($p < .001$). This demonstrates that the use of an occupational diary paired with group sessions had positive effects on the sense that life is worth living and life satisfaction.

A Level III Qualitative Pre-Posttest Design, found that residents had a desire to feel useful in their living space, maintaining a sense of purpose and autonomy. Many residents felt as though they were bored and confined to activities below their functional level or out of their interest, finding their interests to be considered "dangerous" by nursing home (NH) staff like chopping vegetables, etc. This study shows how residents experience time differently within the NH, and that the performance of meaningful activities helps residents to occupy their time and feel useful. It is important to develop activity programs based on the residents' own preferences, needs and abilities. These results can be applied to the development of activity programs by nurses for residents with varying capabilities (Palacios et al., 2016).

Limitations

Although this systematic review included fourteen studies classified as Level I evidence, ten studies identified limitations in the type of randomization due to not having a control group, not being randomized, or not being randomized at an individual level. Lack of randomization in multiple studies impacts the overall quality of evidence found through the systematic review. Another common limitation includes small sample sizes identified in eleven out of twenty-nine studies, which impacts overall generalizability. Another common limitation was lack of generalization to different populations, due to participant characteristics such as gender, diagnosis, ethnicity, and location of study. Limitations were also found in recruitment of participants where some studies recruited volunteers while other studies experienced lack of participation. Another common limitation across many studies was a lack of follow-up measures or continual assessment, which may have interfered with the quality of data collected through these studies and would not have measured long-term outcomes. Many studies included self-report measures which may have contributed to individuals reporting data that is not fully accurate.

Conclusions

The field of occupational therapy offers unique and impactful ways to provide older adults with interventions to improve their occupational performance, QOL, self-efficacy, and psychological well-being. Several articles within this systematic review discuss the importance and vitality of client-centeredness in facilitating OT sessions. A client-centered approach is crucial in developing treatment goals and implementing interventions that create lasting change in a clients life. This approach should be considered by occupational therapists as it relates to successful and productive aging whether in a long-term care facility or aging in place. Individualized plans of care help to develop effective therapeutic relationships with clients while also emphasizing the person's volition, motivation, persistence, achievement, and self-efficacy. By collaborating with patients to create goals, this allows them to be involved in their own treatment plan which is more meaningful and can lead to improved mobility, functional independence, and ADL/IADL performance in older adults.

Several articles also discussed the impact of group therapy and activity-based occupational interventions such as using an occupational diary and participating in a 3-Step Workout for Life exercise program in improving self-efficacy, psychological and physical wellbeing, and life satisfaction in community-dwelling older adults. This encouraged and promoted increased social participation with peers, client learning, self-reflection, and direct application. Another factor important to long-term care facilities was interdisciplinary care and collaboration. Dialogue and co-treatment between healthcare professionals allows interventions to be delivered appropriately and effectively for the specific client. By implementing these practices, those in long-term care facilities demonstrated increased ADL and IADL performance and rated their QOL higher.

For those aging in place, occupational therapy showed to be effective in providing environmental modifications, reducing fall risk, implementing technology, facilitating education on adaptive equipment, and creating client-centered goals in collaboration with the patient. Making environmental modifications in the homes of those aging in place reduced the overall number of falls in older adults and decreased safety hazards. Equipping older adults with the tools to implement technology such as an iPad in their everyday lives showed increased participation in ADLs and IADLs while creating positive implications for QOL in those who were aging in place. Through education on adaptive equipment and client-centered OT sessions, patients demonstrated increased ADL and IADL performance with decreased depression symptoms.

Occupational therapy practitioners should strongly consider the evidence from these studies when providing interventions to older adults aging in place or residing in a long-term care facility. Although there is not one particular setting that proved to be more effective than the other, it remains important to be client-centered across both settings in helping to improve older adults occupational performance, QOL, self-efficacy, and psychological well-being.

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Appendix A

Table 1: Long Term Care Facilities				
Author/Year	**Level of Evidence/Study Design/Participation /Inclusion Criteria**	**Intervention and Control Groups**	**Outcome Measures**	**Results**
Borrows, A., & Holland, R. (2013).	Level I Pragmatic, pilot RCT, following a parallel group design **Participants:** N=36 Female: 69.4% Male: 30.6% **Inclusion Criteria:** Clients referred to Great Yarmouth Borough Community OT service, who were screened as being a lower priority referral, e,g, an individual who is finding it difficult to negotiate their stairs. **Exclusion Criteria:** Clients who required an urgent review or who were unable to provide consent themselves were	**Intervention:** (Independent Living Center -- ILC) Visits started with an initial interview to establish an individual's needs, and then an exploration of the options available to meet these needs. These could include education about equipment and adaptations, or teaching coping strategies N=18, OTA administered, at community center, one session, mean of 1.5 hours long **Control:** same initial interview to establish an individual's needs as with the other group, but could provide ongoing support and directly provide equipment or adaptations since they were in the natural environment of the home N=18, in participant home, one session, mean of 1.5 hours long, OT or OTA administered	**Community Dependence:** Community Dependence Index (CDI) (Eakin and Baird, 1995) **Quality of Life:** EQ-5D (Brooks, 1996; Rabin and de Charro, 2001)	Results found no difference between the two forms of care (small sample size). At 12 months, both groups EQ-5D scores had improved with no between-group difference observed (P=0.77). The participants in both groups appeared to make use of similar equipment, while the intervention group did have a slightly higher number of participants using toileting and bathing equipment at the 3-month follow-up. On average, the CDI increased at 3 months, for both the intervention group and control group, by two to three units on the CDI measure.

	excluded from this study. Children under the age of 16 years were also excluded			
Ercal, B., Rosebaugh, T. L., Bland, M. D., Barco, P., Lenard, E., Land, C., et al. (2021).	Level I Randomized Control Trial **Participants:** N=229, 34.9% RMale, 65.1% Female (77% White, 22.3% Black, 0.4% > 1 race) **Inclusion Criteria:** 65 years of age and older, admitted from an acute hospital, requiring at least 2 weeks of PT and OT **Exclusion Criteria:**	**Intervention:** Physical and Occupational Therapists provided the standardized therapy of Enhanced Medical Rehabilitation, or E-MR, in a skilled nursing facility. E-MR uses simple messaging and tools. It's main three goals are to be patient-directed, link activities to personal goals with frequent feedback, and to optimize intensity of therapy to maximize effort. Its goal is to overcome cognitive and affective barriers to rehabilitation participation to increase patient motivation. **Control:** Participants received standard of care by physical and occupational therapists not trained in E-MR in a skilled nursing facility.	**Barthel Index (BI):** Measures a person's ability to perform 10 categories of mobility or basic ADLs. The scale is from 0-100 and the higher the score, the higher the function. **Short Blessed Test (SBT):** This measures cognitive impairment to assess orientation, registration, and attention. The higher the score, the more severe the impairment. **Pittsburgh Rehabilitation Participation Scale (PRPS):** This measure assesses how active a patient is and how they are engaging throughout a therapy session.	Researchers found that executive function of participants significantly predicted functional status at discharge from a Skilled Nursing Facility. It was found that those with lower executive functioning showed a lower effectiveness of E-MR than those with higher executive functioning. This proved that E-MR is most effective and dependent on the patient having intact executive functioning. It was found that a higher baseline clock drawing score was associated with an improvement in Barthel Index score in patients who received the E-MR intervention in comparison to the control group ($p=0.03$. There was not a significant effect of treatment group or clock drawing score on Barthel Index scores at discharge ($p=0.1$).
Lenze, E. J., Lenard, E., Bland, M., Barco, P., Miller, J. P., Yingling, M., Lang, C. E., Morrow-Howell, N., Baum,	Level I Double-blind, parallel group, randomized clinical trial **Participants:** N=228 Female: 34.9%	**Intervention:** Patients receiving EMR from trained therapists, 114 participants, daily sessions with average of 37.7 minutes per session **Control:** Patients received traditional therapy post-acute care, 114 participants, administered by non-trained therapists, daily sessions	**Functional Recovery:** Barthel Index **Rehospitalization rates (secondary)**	This trial's findings suggest that EMR is effective in improving functional recovery (in the short-term) for older adults in post-acute rehabilitation in SNFs; a 25% improvement can be seen compared to traditional standard of care. Improving functional capabilities and active time during therapy is important for those

C. M., Binder, E. F., & Rodebaugh, T. L. (2019).	Male: 65.1% **Inclusion Criteria:** Age 65 years or older, admitted from an acute care hospital and requiring 2 or more weeks of rehabilitation with the potential to return to the community **Exclusion Criteria:** Individuals already residing in long-term care facilities before hospitalization; language, visual, or hearing barriers to participation; medical illness preventing study participation (including metastatic cancer, ongoing cancer treatment, hemodialysis, hospice care, or highly unstable cardiac illnesses with anticipated rehospitalization); moderate to severe cognitive impairment (demonstrated by medical record diagnosis of dementia and/or Short Blessed Test36 score >13); or	with average of 39.9 minutes per session	**Discharge to home vs institution (secondary)**	receiving rehabilitation services in a SNF and can improve patient engagement and volition as well as their motivation to continue rehabilitation services, ultimately increasing QoL and participation in occupations.

	psychotic disorder			
Mamhidir, A.-G., Sjölund, B.-M., Fläckman, B., Wimo, A., Sköldunger, A., & Engström, M. (2017)	Level I Cluster-randomized trial and mixed-methods approach **Participants:** N=213; 31.46% Male, 69.54% Female; primarily Swedish **Inclusion:** Reside in nursing home permanently for ≥ 1 month **Exclusion:** Reside in nursing home short term (<1 month) or in palliative care	**Intervention:** The intervention was delivered to 130 nursing home residents in Sweden and began with four, 4-hour days of staff theoretical and practical training about chronic pain, drugs, nursing care measures, and assessments of physical and cognitive abilities. Assessment scales were implemented throughout the intervention period to assess pain, ADL performance, and QoL. Additional staff such as OTs, PTs, and physicians delivered interventions and services throughout. **Comparison:** 83 residents received treatment as usual within nursing homes in Sweden and did not receive the intervention of the intervention group.	**QUALID-scale:** This measures the quality of life of individuals with severe dementia. It measures behaviors and moods over the course of a week. The lower the score, the higher the level of QoL. **WHO-5** (self-report wellbeing index): Wellbeing is the outcome measured. It scores five items regarding feelings experienced in the past 2 weeks, with a scale of 1 (not present) to 5 (constantly present). **Proxy-NRS:** Pain is the outcome measured; it is a numeric 11-point scale measuring pain experienced in the last 24 hours used with both groups. **Doloplus-2 Scale:** Pain is the outcome measured for individuals with cognitive impairment. It consists of ten items between somatic, psycho-motor, and psychosocial subgroups. Items are ranked from 0 (normal behavior) to 3 (highest level of pain behavior).	Through the implementation of systematic pain assessment intervention, a variety of measures demonstrated significant changes from baseline to follow-up. The Katz-ADL measure demonstrated increased well-being and decreased dependency with a p-value of <0.011 among individuals in the intervention group. The ADCS-ADL, which measured physical and cognitive ability, resulted in higher dependency in comparison groups. No significant differences in scores between comparison and intervention group were noted with QUALID, WHO-5 wellbeing index, or proxy-NRS measures. There was a ≥ 30% increase in pain scores for 17/44 participants who reported pain scores. 13/44 who reported pain scores identified decreased pain scores. No significant changes were indicated in pain and wellbeing between comparison and intervention groups.

			Katz-ADL hierarchical scale: This measures ADL dependency in bathing, dressing, toileting, transfers, continence, and feeding. It was scored between 0 (independent) and 6 (more dependence). **ADCS-ADL-sev. Scale:** This measures ADL-dependency in individuals with moderate to severe dementia. Scores range from 0 to 54 with 54 being higher functioning.	
Palacios-Ceña, D., Gómez-Calero, C., Cachón-Pérez, J. M., Velarde-García, J. F., Martínez-Piedrola, R., & Pérez-De-Heredia, M. (2016).	Level IIIB Qualitative pre-posttest design **Participants:** N= 38 Female: 52.63% Male: 47.36% **Inclusion Criteria:** Nursing home residents from Madrid (Spain), age 60 or older, having a functional impairment (Barthel index <90), with no cognitive impairments, and who were able to verbally communicate in Spanish.	**Intervention:** The first stage of data collection was unstructured interviews, using the open-ended question: "What is your experience with meaningful activity in Nursing Homes?" It was necessary to include a second stage of data collection. The researchers decided to include new residents in order to avoid conditioning or influencing the interviews. The second stage consisted of semi-structured interviews based on a questions guide, in order to obtain information regarding specific topics of interest. In participants' rooms, one time, 30-60 minutes	**Feeling the passage of time** **(see results for more specific information)**	Researchers found that residents had a desire to feel useful in their living space, maintaining a sense of purpose and autonomy. Many residents felt as though they were bored and confined to activities below their functional level or out of their interest, finding their interests to be considered "dangerous" by NH staff like chopping vegetables, etc. This study shows how residents experience time differently within the NH, and that the performance of meaningful activities helps residents to occupy their time and feel useful. It is important to develop activity programs based on the residents' own preferences, needs and abilities. These results can be applied for the development of activity programs by nurses for residents with varying capabilities.

	Exclusion Criteria: Residents who only attended the NH during the day (i.e. those who slept in their homes), residents without functional decline (Barthel index >90), residents with cognitive decline or psychiatric disorders producing disorders of consciousness and/or of cognitive capacity, and those who were unable to verbally communicate in Spanish.			
Sondell, A., Rosendahl, E., Sommar, J. N., Littbrand, H., Lundin-Olsson, L., & Lindelöf, N. (2018)	Level I Cluster-randomized controlled trial **Participants:** N=186; 25% Male, 75% Female; primarily Swedish **Inclusion:** dementia diagnosis according to the DSM-4, 65 years of age and older, dependence in personal ADLs as	**Exercise Program:** Exercise activity was delivered to 93 participants in nursing homes in Sweden with 3-8 participants per group. Participants attended 5 sessions every two weeks for four months (40 sessions total). This program was based on the High-Intensity Functional Exercise (HIFE) Program, which seeks to improve lower limb strength, mobility, and balance through implementing high-intensity functional exercises. 39 exercises included in the program that were separated into categories of static and dynamic balance exercises with LL	**Motivation Scale (Likert scale based on Eagerness scale):** Motivation was measured through a scale from 0 (no motivation) to 4 (very high motivation) taking into consideration level of participation **Average motivation scale (Likert scale):** This measures average motivation across activity sessions using a 5-point scale from 0 (very negative and unmotivated) to 4 (very positive).	Study participants exhibited varying levels of motivation among groups. Exercise group experienced high/very high motivation in 61% of sessions and no/low motivation in 11.5% of sessions. Social activity group experienced high/very high motivation in 62.6% of sessions and no/low motivation in 10% of sessions. There was not a significant difference in motivation among groups. When considering differences in motivation before a session and during a session, significant increases in motivation were found among groups. For 36.2% of exercise group sessions, motivation

	defined in Katz Index, able to stand from chair with armrests with assistance of only one other person, Mini-Mental State Examination (MMSE) score of ≥ 10, able to hear and understand Swedish language, and physician approval **Exclusion:** no diagnosis of dementia, younger than 65 years of age, being independent in personal ADLs defined in Katz Index, requiring 2 or more people to stand up from chair with armrests, MMSE score of less than 10, severely impaired hearing, unable to understand Swedish, and lack of physician approval	strength, dynamic balance in walking, static and dynamic balance in standing, and LL strength with continual balance. Group sessions begin with sitting group warmup activities. Some activities neared the limits of postural stability, so activity leaders ensure safety of participants. Medium to high intensity strength exercises. **Social Activity:** Social activity was delivered to 94 participants in nursing homes with 3-8 participants per group. Participants attended 5 sessions every 2 weeks for 4 months (40 sessions total). Sessions were implemented around meaningful topics for older adults with dementia, such as holidays, wildlife, bakery, leisure, and crafts. During sessions the group participated in activities such as conversation, listening to music/poetry, singing, and looking at pictures and objects related to the session topic. Activity leader played the role of encourager and shared experiences. No physical activity involved.		during session exceeded motivation prior to group. Social activity groups experienced a similar trend with 27.9% of sessions facilitating increased motivation within session when compared to prior to session. No overall difference in motivation during activity sessions was detected between groups, but overall motivation for the exercise group throughout the course of the study increased and the social activity group experienced decreased motivation by the end of the study.
Nakanishi, K., Yamaga, T., & Ikeya, M. (2022).	Level III evidence Cross-sectional study **Participants:** N=35 **Male:** 8	**Intervention group:** All participants were allocated to the intervention group in which the goal was to distinguish between ADL performance and ADL capability using the Hyogo Activities of Daily Living Scale (HADLS).	**The Hyogo Activities of Daily Living Scale (HADLS):** Evaluates basic ADL (BADL) and instrumental ADL (IADL) performance. BADL covers toileting, feeding, dressing,	The BADL performance and BADL capacity were not significantly different ($p = 0.128$); however the participants rated IADL capacity significantly higher than IADL performance ($p < 0.01$). This gap in

	Female: 27 **Ethnicity:** Japanese **Diagnosis:** Dementia **Inclusion criteria:** Those in a day care center for at least one month, age > or = to 65 yrs who had been diagnosed with dementia using the long-term care insurance system of Japan, enrolled if they had a global clinical dementia rating (CDR) of either 1 or 0.5 and were mobile indoors without the use of a wheelchair **Exclusion criteria:** If they lived alone, had a severe neurological or musculoskeletal disorder that interfered with physical activity, severe problems with cardiopulmonary or circulatory function, severe vision or hearing loss, or a history of aggressive or violent behavior noted by the care staff		grooming, washing, brushing teeth (or cleaning dentures), and bathing whereas IADL covers range of mobility, telephoning, shopping, preparing meals, cleaning, futon (bed) management, cleaning up after meals, laundry, handling (open) flames, handling switches, and money management **Global Clinical Dementia Rating (CDR):** Measures the severity of dementia on a 6-point scale from 0-5, ranging from mild to severe. The participants in this study who were diagnosed with dementia were assessed as 0.5 and 1 on the global clinical dementia rating (CDR) which is defined as mild dementia **The Mini-Mental State Examination (MMSE):** Assesses cognitive function and checks for cognitive impairment (problems with communication, understanding, memory, and thinking)	IADL performance and capacity is thought to occur due to environmental limitations. Therefore, this study emphasizes the importance of environmental adaptations for persons with mild dementia in improving their QOL.
Masayuki	Level III evidence	**Intervention group:** All participants in	**Activity and Daily life**	The ADLSS score at follow-up was

Takagi, Naruko Goami, Peter Bontje. (2022).	Before-and-after comparison study and case-control study **Participants:** N=144 **Male:** 40 (24.1%) **Female:** 104 (75.9%) **Ethnicity:** Japanese **Inclusion criteria:** Age > or = 65 yrs, living independently, able to answer the questionnaire on their own **Exclusion criteria:** Living in a care facility or being hospitalized	this study were allocated to the intervention group. The intervention involved the participants using an occupational diary and attending group sessions. They were to use the diary at home every day and choose the activity that influenced their daily satisfaction the most. Next, they were to choose what element of that activity made it satisfying (effort, enjoyment, connection, affirmation, progress, recovery, contribution, acquisition, and/or success). The group sessions included 3 elements: 1) lectures, 2) exercises, and 3) sharing the plans that were made and the results of executing those plans.	**Satisfaction Scale for the Elderly (ADLSS)** Used to measure satisfaction with occupation. The respondents rated four items on a 5-point scale ranging from 1 (not applicable at all) to 5 (very applicable). **The K-I** Used to measure the sense that life is worth living. The respondents rated 16 items on a 3-point scale (0 5 no; 1 5 not sure; 2 5 right), with total scores ranging from 0 to 32; higher scores indicated a higher sense that life is worth living. **The LSI-Z** Used to measure life satisfaction. The respondents rated 13 items on a scale ranging from 0 to 2. Total scores could range from 0 to 26; higher scores indicated higher satisfaction. **Self-administered questionnaire** Was used to investigate whether the participants continued to use the diary after the program ended	significantly higher than at pretest ($p = .005$). The K-I score at follow-up was also significantly higher than at pretest ($p < .001$). The LSI-Z score at follow-up was significantly higher than at pretest ($p < .001$). This demonstrates that the use of an occupational diary paired with group sessions had positive effects on the sense that life is worth living and life satisfaction.
Nagayama, H., Tomori K., Ohno, K.,	Level II Single-blind pilot	**Intervention Group:** The experimental group used the Aid for Decision-making in Occupation Choice (ADOC) within	**Short Form-36 (SF-36):** The Short Form-36 measures quality of life (QoL) in participants. It	The results showed no significant difference between baseline and post-intervention outcomes in

Takahashi, K., Ogahara, J., Sawada, T., et al. (2016).	cluster randomized controlled trial **Participants:** N=54; 14.8% Male, 85.2% Fema **Inclusion Criteria:** Had stable constitutional symptoms, no major communication or cognitive deficits, and individual training twice a week. Had to have lived within the facility for more than three months. Never have used a goal-setting tool and had impairments-based approach twice a week. **Exclusion Criteria:** Participants who scored less than 10 on the MMSE, had communication deficit, cardiac or progressive disease, judged unable to receive occupational therapy by their physician.	six Geriatric Health Service Facilities in Japan. The ADOC is an iPad application that the occupational therapist and participants use alongside one another to identify meaningful occupations and set goals based on those occupations. Some common goals included success in hobbies, mobility, self-care tasks, and social activities. The OT observed the participants performing the occupations and assessed each participant. Many assessments were used to measure QoL and performance in ADLs. The intervention took place over 4 months every two weeks with a total of 32 sessions each lasting 20 minutes. **Control Group:** The control group took place within six Geriatric Health Services Facilities in Japan and participants experienced impairment based evaluations. This was done through physical and cognitive testing. The therapist did not use any goal setting tools like the COPM but instead focused on restoring capacities as in muscle strength exercises or cognitive Training. There were 32 sessions lasting 20 minutes twice a week over 4 months.	measured perceived health status in the general and specific health populations. This study used it to calculate quality-adjusted life years (QALY). It was used at baseline and at the 4 month mark to determine change in quality of life over time. **Barthel Index (BI):** The Barthel Index measures independence in ADLs on a 10-item scale rated 0-100 in 5 point increments. This was used at baseline and at the 4 month mark in both the experimental and control groups. **Occupational Performance Autonomy:** This measure is relevant to occupational therapy because of what it is measuring; however it was created for this study and therefore has not been determined to be reliable or valid yet.	either the ADOC or control group. However, the ADOC group did have a significant higher change in the Barthel index score compared to the impairment based control group ($p=0.027$) with a medium effect size of $d=0.71$.There were more participants who had improved Barthel Index scores, (43.5%) in the experimental group than in the control group (4.8%). This ADOC application is useful for OTs and clients to set goals that are meaningful and occupation based as 78.6% of participants set occupation based goals in the ADOC group and only 19.2% set occupation based goals in the control group.
Toledano-González, A.,	Level 1	**Intervention:** Group therapy focusing on personal independence training	**Self-Efficacy:** General self-efficacy scale (GSE) by	Results showed that those who participated in group therapy

Labajos-Manzanares, T., & Romero-Ayuso, D. M. (2018).	Randomized Control Trial **Participants:** N=70 Female: 77.1% Male: 22.9% **Inclusion Criteria:** The inclusion criteria were being able to read, having normal cognitive function, scoring > 22 on the Mini Mental Scale Examination. **Exclusion Criteria:** The exclusion criteria established were health conditions that contraindicate or prevent treatment such as hearing loss, fear of animals, acute visual impairment, intermittent claudication or repeated failure to perform during the study.	(ADLs), sensory-motor stimulation activities, cognitive stimulation (attention, memory, language, and executive function) and animal-assisted therapy (AAT). Also received psychosocial skills training. N=35 3x/weekly, 45 minute sessions **Control:** The patient works independently, focusing on enhancing capabilities like sustained attention, concentration, or specific activities that need continuous supervision from therapist N=35 3x/weekly, 45 minute sessions	Schwarzer and Jerusalem (1995) adapted to Spanish **Psychological Wellbeing:** General self-efficacy scale (GSE) by Schwarzer and Jerusalem (1995) adapted to Spanish. Measures perceived psychological well-being which includes self-acceptance, interpersonal relations, autonomy and life satisfaction.	improved on all aspects of psychological well being and self-efficacy; those in individual therapy showed a decrease in reported self-efficacy and psychological well being. The authors concluded that the group members that participated in group occupational therapy services had a significant improvement in psychological well-being and self-efficacy compared to those in individual occupational therapy services.

Table 2: Aging in Place

Author/Year	**Level of**	**Intervention and Control Groups**	**Outcome Measures**	**Results**

	Evidence/Study Design/Participation/ Inclusion Criteria			
Annette Winkel, Henning Langberg & Eva Ejlersen Wæhrens (2015).	Level II Non-randomized design **Participants:** N= 91 Male: 30 Female: 61 **Inclusion Criteria:** Participants were citizens ≥65 years old living in two local districts of Copenhagen applying for home care services or for an increase in home care services. The no help group (NH) have not received home care services within 12 months prior to inclusion in the present study. The previous help (PH) received home care services at time of inclusion. **Exclusion Criteria:** Admission to nursing, total dependence in ADL, and poor	**Control Group: No Help (NH)** This group had not received home care services within 12 months prior to inclusion in present study. The reablement program consisted of three 1-h home visits by an occupational therapist in combination with sessions of 45 min per week for a period of 12 weeks at home-by-home carers. The therapist and the home carer met with the participant at all three home visits. The reablement approach was based on principles to support the participant's sense of coherence and feeling of self-management. The participants were encouraged to pursue his/her goals and were supported and stimulated to participate throughout the reablement process. **Intervention group:** Previous help groups (PH) received home care services at the time they were included in the study. Everything else done for the intervention group was done for this group.	ADL-Interview (ADL-I) was administered by occupation therapists within the first week of program, first week after end of reablement program and conducted at follow-up >1 year after finishing the reablement program. This was developed using Rash measurement methods and is constructed based on the 31 personal ADL and 16 instrumental ADL items of the ADL taxonomy. The purpose was to identify the ADL task performance problems and measure the change of ADL ability.	The study found that in both groups there was a self-reported increase in participants' ADL ability. Both groups benefited from the reablement program. There was a significant change found over time $F=3.244$, $p=.04$. The post-hoc /-tests revealed a significant change between the first and second ADL-1 [/(185) =—2.045, $p = 0.042$], but no significant difference between the second and the third ADL-I [/(185) = —0.421, $p= 0.674$]". There was also a moderate effect size between first and second ADL-I for the 63 participants completing both interviews.

	cognitive functioning.			
Chippendale, T. & Boltz, M. (2015).	Level II Mixed-methods design combining RCT with connected qualitative component **Participants:** N=39; 10.3% Male, 89.7% Female **Inclusion Criteria:** community dwelling older adults defined as living in apartment and not senior housing or assisted living, 60 years of age or older, English speaking, negative for dementia through assessment of the Mini-Cog **Exclusion Criteria:** positive for dementia based on Mini-Cog, those unable to recall, write, and share their life stories	**Intervention: Living Legends Program** The Living Legends Program is an intervention for older adults that incorporates a writing workshop where older adults write about their life experiences and then share that knowledge with health science students. This incorporates reminisce and life review as well as an intergenerational exchange all into one program. **Control: Writing Workshop** The control group composed of the writing workshop which focused only on life review and reminiscence without the added layer of intergenerational sharing.	**Mini Cognitive:** This outcome measured cognitive status to rule out dementia among participants. It was used for baseline cognitive screening before the intervention started. **Meaning in Life Questionnaire (MLQ-Presence):** This outcome measured the participant's sense of purpose and meaning of life at baseline, after the writing workshop, and at the end of the intergenerational program. **Geriatric Depression Scale:** This is a 30 item scale that measures depressive symptoms at baseline, after the writing workshop, and at the end of the intergenerational program. **Baseline Questionnaire:** Age, gender, ethnicity, education level, self-rated health, assistance needed with ADLs and IADLs **Feedback Forms:** Used to gain qualitative data on the participants' perspectives on the program.	The study showed a statistically significant increase in participants' sense of purpose and meaning in life after engaging in the Living Legends program ($p<0.0001$). It was especially beneficial for those older adults who had a lower score on the MLQ-Presence to begin with ($p=0.004$). The study also found qualitative data that showed many therapeutic benefits of the program including cognitive stimulation, social support, positive views of the youth, and the ability to inspire the next generation.
Arthanat, S., Vroman, K. G., & Lysack, C. (2014).	Level III Mixed-methods design combining quasi-experimental	**Interventions:** The intervention delivered was a training program that focused on information communication technology (ICT) use. The training program began with an	**Internet Breadth Index created by expansion of questionnaire which was developed by Shklovski, Kraut and Raine:** This is a questionnaire that measures history, breadth, and	Throughout the intervention process, participants reported increased participation in activities, with the most significant increases in leisure activities. Increased participation in

	design and observations/focus group **Participants: N=** 13; 7.7% Male, 92.3% Female **Inclusion Criteria:** living within 25 miles of site, having a basic knowledge of computer, availability for focus group and intervention session, and 60 years of age and older **Exclusion Criteria:** individuals with a cognitive impairment, and/or living in a nursing home or long-term care, and younger than 60 years old	interview and orientation, which gathered data about participant acceptance and priorities surrounding ICT activities. Participants were given an iPad for the intervention process. Personal coaches delivered one monthly home visit each month for three months. The first visit allowed participants to become familiar with iPad setup/settings/apps, and online safety. The second and third visits targeted client priorities with applications and addressed participant concerns. Throughout the intervention, coaches were available weekly to address participant questions.	frequency of technology use; assessed purpose for why people used internet; 27 ICT activities from original measure and 25 added based on the Areas of Occupation in the Occupational Therapy Practice Framework **Survey of Technology Use:** This questionnaire measured participants' previous technology experience as well as their personal and social qualities **Questionnaire based on activities in the 5 areas of Occupational Therapy Practice Framework:** Measured perceived independence in ADLs, IADLs, leisure, work, social participation	health management and social connection were found; however, these changes were not considered statistically significant. No changes were noted in total activities performed in the areas of travel, finances, and shopping. However, around the holiday season, shopping and travel became more important to participants. The data collected were analyzed to compare baseline data to the rate of participation in different activities.
Juang, C., Knight, B. G., Carlson, M., Schepens Niemiec, S. L., Vigen, C., & Clark, F. (2017).	Level I Randomized Control Trial **Participants:** N=460; 34.1% Male, 65.9% Female Ethnicity: White	**Intervention:** The intervention was delivered to 232 individuals. It was called Lifestyle Redesign, which included a combination of participant education/learning, exchanges among peers, direct experience, and self-reflection. This intervention allowed participants to explore activities as they relate to healthy habits, routines and wellness.	**Center for Epidemiologic Studies Depression Scale:** Frequency of depressive symptoms within the last week is the outcome measured. It is composed of 20 self-rated items about depression symptoms from a scale of 0 to 3 from least frequent to most frequent. **Meaningful Activity Participation**	The intervention group experienced reduced depressive symptoms when compared to the control group. The study also found that the intervention led to an increase in indirect effects such as activity frequency and an improved perception of activity significance. When considering psychological variables related to activity engagement, improved

	(37.4%), Black/African American (32.4%), Hispanic or Latino (20%), and Other ethnicities (9.8%) **Inclusion Criteria:** Individuals between 60 and 95 years of age, who were community dwelling, living in metropolitan area, exhibited no signs of psychosis, and able to complete study assessment battery **Exclusion Criteria:** Individuals younger than 60 or older than 95 years of age, individuals in long term care or nursing homes, individuals who exhibited signs of psychosis, and could not complete the study assessment battery	Participants attended weekly small group sessions of 8-10 participants, up to 10 individual sessions, which were composed of modules. These modules addressed topics related to activity, aging, health, transportation, safety, relationships, culture, and finances. Participants also attended monthly outings to facilitate application of module content learned through sessions. **Control:** No treatment was delivered to this group of 228 participants. However, after 6 months they received the same intervention as group 1 (results after they received the intervention are not included). However, during the time of this study, the control group completed the same questionnaires as the intervention group.	**Assessment-Frequency (MAPA-f):** Frequency of meaningful activity engagement is measured in this questionnaire. It measures participation in 29 activities over the past couple months using a scale of 1 (no participation) to 7 (everyday). **Activity Significance and Perception of Engagement assessment (ASPEn):** The outcome measured was individual perception of how much everyday activities impact health and wellness. Activity significance is assessed through rating 13 items from 1 (not at all) to 4 (a great deal). **Lubben Social Network Scale:** Social integration and connectedness were the outcomes measured with this questionnaire. This is a 10-item scale, with most questions asked on a 6-point scale. A higher score indicates greater social connection.	social connectedness and perceived control were also related to reduced symptoms of depression. P-values of <0.05 and effect sizes (Cohen's d) of 0.22 and above were indicated for depression, activity frequency, and activity significance. However, perceived control and social connections did not have statistically significant p-values. This study concluded that increasing activity frequency paired with increasing social connectedness predicted fewer symptoms of depression. The study also concluded that through OT intervention, increased perceived activity significance paired with increased perceived control reduced depressive symptoms.
Langeland, E., Tuntland, H., Folkestad, B. *et al.* (2019).	Level III Non-randomized clinical trial **Participants:** N= 828	**Intervention Group:** Included a reablement program that created a dialogue to identify activities that were meaningful for the participant to improve upon. Based on the identified goals a	**COPM:** To measure the participants' performance of daily activities and satisfaction with performance. This instrument measures a person's	The study found that there were significant treatment effects found in the COPM-Performance and COPM- Satisfaction for the rehabilitation group compared with the control group. The mean

	Male=252 Female= 575 **Inclusion Criteria:** Home-dwelling, understood Norwegian, decently had experienced functional decline **Exclusion Criteria:** Required institution-based rehabilitation or nursing home placement, if they were terminally ill, or cognitively impaired.	rehabilitation plan was developed tailored to the subject. This took place in the participant's homes with a member of the multidisciplinary reablement team delivering the intervention and COPM interview (occupational therapist, physiotherapist, nurse). Assessed at baseline, 10 weeks, 6 months, and then 12 months. For a majority of participants this intervention lasted 4 to 6 weeks with training 5 times a week (48%) and 3 to 4 times a week (33%). **Control Group:** Received standard care and also underwent the COPM interview within participant's homes. They were also assessed at baseline, 10 weeks, 6 months, and then 12 months. No time limitation and persisted longer than ten weeks intervention period if needed.	self-perception of activity performance within three occupational performance areas: self-care, productivity, and leisure **Short Physical Performance Measure Battery (SPPB):** To measure physical function and aims to identify people at risk of functional decline, and is a screening test for mobility. **European Quality of Life Scale (EQ-5D-5L):** Measure the health-related quality of life and comprises a questionnaire and a visual analog scale (VAS). The questionnaire has five main domains (mobility, self-care, usual activities, pain/discomfort, and anxiety/depression) which are scored on an ordinal scale from 1 to 5 where score of 1 is best.	differences between groups at 10 weeks (MD), 1.61, 95% confidence interval (CI), 1.13, 2.10 and MD 1.47, CI 0.98, 1.97, respectively), and at 6 months (MD 1.42; CI 0.82,2.02 and MD 1.37; CI 0.77,1.98, respectively). There were also significant treatment effects in the SPPB-subscales for balance and walking after 6 months, in the total SPPB score and in the subscale for sit-to-stand after 12 months. In the EQ-5D-5 L assessment, significant treatment effects were found in the subscales for mobility, and for usual activities and health after 6 months. Reablement had significant effects on activity performance, satisfaction with performance and many other health outcomes after 6 months.
Liu, C. J., Xu, H., Keith, N. R., & Clark, D. O. (2017).	Level I Randomized Control Trial **Participants:** N= 52 Female: 43 Male: 9	**Intervention:** 3-step Workout for Life Group met three times per The 3-Step Workout for Life Group met three times per week for 10 weeks under the direction of a therapist. For the first five weeks of the program, small	**Dynamometer Testing:** To be able to assess muscle strength which was used in the screening process. **Motor Skills Scale of the Assessment of Motor and Process Skills (AMPS):**	The study found the 3-Step Workout for Life Group (intervention group) showed improvement on the AMPS, but was not greater than the Resistance Exercise Only Group (control group), As a change of .5 logits had been reported which is a clinically meaningful difference.

	Inclusion Criteria: Subjects are 60 years old or older, have muscle weakness of upper or lower extremity, and report having difficulty performing one or more basic activities of daily living **Exclusion Criteria:** Showing three or more errors on six item cognitive impairment screener, engaging in any moderate-intensity exercises two or more times per week, receiving rehabilitation services or other intensive medical treatment, reporting any terminal illness, cardiovascular, neurological, psychiatric, or orthopedic impairments that are contraindications to exercise, and planning to move away in 6 months.	groups of four or six people engaged in progressive resistance strength training three times per week in a community area. By week six, only one day per week of strength training remained. The program included individualized activities of daily living exercise 1 day per week at each participant's house as well as 1 day per week of one-on-one functional exercise. Using the Borg-10 Rating of Perceived Exertion, the exercise intensity was maintained within the moderate intensity range (somewhat hard or hard).29 workout periods happened on separate days. Elastic tubing was used in both practical exercise and progressive resistance strength training. The participants engaged in two to three sets of 12 repetitions for each muscle group or movement pattern. Resistance strength exercise focuses on strengthening nine major muscle groups of the upper and lower extremity that are for weight-bearing and lifting. **Control Group:** Resistance exercise only group performed progressive strength exercise three times a week for 10 weeks in small groups. The exercise content was the same as to the exercise that was a part of the 3-Step Workout for Life Program.	It was conducted by two Occupational Therapists. This was a standardized observational evaluation of 16 motor skills and 20 process skills when an individual performs familiar activities of daily living. The administration of AMPS started with an interview with each participant to identify challenging ADLs for the subject to perform. The measure was also based on the observation of the performance of the selected activities in each of the participant's home. Outcome was administered at baseline, post intervention, and 6 months after intervention. **Box and Blocks Test:** Measured manual dexterity **Timed Up and Go Test:** Measured functional mobility by requiring the participant to stand up from a chair, walk three meters, turn around, walk back, and sit down.Time was measured in seconds with no physical assistance given.	The control showed a significant decline 6 months post intervention (mean change from baseline=-.25, P=.01) while the intervention group showed a superior effect (group mean difference= .37 and P<.01).

Mélanie Levasseur, Johanne Filiatrault, Nadine Larivière, Jordane Trépanier, Marie-Hélène Lévesque, Maryke Beaudry, Manon Parisien, Véronique Provencher, Yves Couturier, Nathalie Champoux, Hélène Corriveau, Hélène Carbonneau, Fuschia Sirois (2019).	Level III Mixed- Method Design **Participants:** N=16 Male=6 Female= 10 **Inclusion Criteria:** >65 years, normal cognitive functions, residence in a conventional or senior home, French speaking **Exclusion Criteria:** Younger than 65 years, not French speaking, impaired cognitive functions, no residence a conventional or senior home	**Intervention:** French-Canadian 6 month version of Lifestyle Redesign. The goal of this intervention is to help individuals develop useful routines and habits that will lead to a healthier way of living. The data collection process was done through interviews at the participants' homes. The Occupational Therapists delivered this intervention 2 hours per week for a 6 month period. **No control group was present**	**Short Form Health Survey (SF-36):** Consists of 36 items covering eight domains related to physical and mental health: physical functioning, role physical, bodily pain, general health, vitality, social functioning, role emotional, and mental health. **Life-Space Assessment (LSA):** Measures life-space mobility, specifically the range, independence, frequency of movement over the preceding 4 wk; higher scores indicate better mobility **Leisure Profile:** Assesses involvement in leisure activities, attitudes toward leisure, and difficulties that might influence leisure activities	The study found that this intervention had beneficial effects on participants' mental health (p=.02) and interest in leisure (p=.02), social participation (p=.03) and attitudes towards leisure (p=.04). The participants reported a positive impact on all those factors and showed that having an occupational routine improved health.
Nagayama H, Kobayashi N, Ishibashi Y, Kobayashi R, Murai C, Yamauchi K. (2018).	Level III Pre-Post Design Study **Participants:** N=26 **Inclusion Criteria:** Subjects had been certified as having	**Intervention:** The intervention takes place in Japan and was an occupation-based practice involving establishing client centered goals, observation of real living circumstances, and offering guidance on the individual problem of real occupation. Therapists offered guidance/advice regarding the	**Frenchay Activities Index (FAI)-Japanese version:** Evaluates the Instrumental Activities of Daily Living (IADL). The FAI evaluates each of the 15 items in IADL based on a score of 0-3 according to frequency of activity of 3 months. The Japanese version of the FAI calculated the total score and	The FAI score before and after the intervention showed significant improvements in all items except work (P<.05, effect size [r]: .67-.93). A total of 15 people out of 26 (57.7%) showed improvement in ADL. The results show that occupation-based practice has the potential to increase IADL in the

	frailty according to KCL, were ≥65 years old, had difficulty performing IADL, and were only receiving home services. **Exclusion Criteria:** Subjects were receiving home services as well as day-care or other services. Also, if the primary care doctor or occupational therapist determined that the participants were unable to receive rehabilitation treatment.	specified real-life occupation for each subject. Occupational Therapists delivered the intervention by conducting interviews at the participants' homes. The therapists observed real-life activities at home and evaluated the progress in physical and cognitive functioning as well as the potential to change the environment. 3.7 mean frequency of interventions and one intervention per 2-week period. The duration of the intervention is 7.4 weeks. **No control group**	sub score for each of the items: indoor housework, outdoor housework, outdoor activities, hobbies, work area score.	elderly who are frail, within a brief period of time with low frequency of intervention at no additional cost. The results of this pilot study can be translated to future clinical studies for frail elderly. The study suggests that the results are verified with a well-designed RCT.
Song, C.-Y., Lin, P.-S., & Hung, P.-L. (2021).	Level III Controlled before and after study **Participants:** N=28; 28.57% Male, 71.43% Female; Chinese; Mild to moderate mobility deficits **Inclusion:** 65 years of age and older, scoring	**Experimental Group:** This group of 16 individuals in Taiwan attending adult day services received PCHER intervention. Each week participants engaged in 2.5 hours of intervention. 1.5 hours of the session was a group course, which focused on physical/cognitive training, and health education to address common daily challenges encountered by older adults. The last hour of the sessions was individualized reablement training, where participants created a	**DEMMI:** 15-item unidimensional instrument; mobility is measured from being bed bound to independently mobile; higher scores indicate more independent mobility **Saint Louis University Mental Status (SLUMS) Examination-Chinese version:** 3 point questionnaire that measures cognitive outcomes of orientation, memory, attention, and executive function.	At baseline, pre-intervention scores were similar between both groups. However, they displayed differences in SPPB, walking, and sit-to-stand measures. No significant differences were found at post-intervention between groups. The PCHER group did experience significant improvements in DEMMI, SLUMS, BI, SPPB, and COPM satisfaction measures post-intervention. Marginally significant improvement was found for the PCHER group in

	39-67 on de Morton Mobility deficits, and a gait speed of less than or equal to 1 meter per second. **Exclusion:** younger than 65 years of age, having a moderate to severe cognitive impairment (Clinical Dementia Rating score of greater than or equal to 2)	care goal in collaboration with therapists to address challenges in self-care and meaningful activities. **Control Group:** This group of 12 individuals in Taiwan attending adult day services received PCHE intervention, which included 1.5 hours of group courses. They also received 1 hour of placebo treatment where they sat and chatted with therapists instead of participating in reablement training.	**Barthel Index (BI):** 10 item tool that measures ADL function; the higher the score indicates more independence **Short Physical Performance Battery (SPPB):** Measures physical performance (standing balance, walking, sit-to-stand); higher scores indicate better function **Canadian Occupational Performance Measure (COPM):** Semi-structured interview that measures self-perceived activity performance and satisfaction in self-care, leisure, and productivity; higher scores indicate higher performance and satisfaction	COPM satisfaction scores. Study revealed a combination of individual reablement and group training session for PCHER group had a greater impact on various dimensions of function such as mobility, cognition, ADLs, and lower extremities.
Stanton, S. L., Wolff, J. W., Leff, B., Thorpe, R. J., Tanner, E., E., Boyd, C., et al. (2014).	Level I Randomized Control Trial **Participants:** N=300 **Inclusion Criteria:** 65 years of age or older, cognitively intact based on the Short Portable Mental Status Questionnaire, difficulty with minimum of one ADL or 2 IADLS, federal	**Intervention:** The CAPABLE Program involves assessment, education, and interactive problem solving that ensures client-centered intervention based on the participant's interests. OTs completed an interview in the first couple of sessions to identify which performance areas were difficult for participants. The OT then observed the participant's performance and noted barriers and supports to performance. The participants were given a notebook with educational materials. The OTs assessed the home environment for safety and provided a list of assistive devices and home modifications to	**Self Reported Activity of Daily Living:** This measured whether or not participants had difficulty performing one or more of eight ADLs including walking across a small room, bathing, upper body and lower body dressing, eating, toileting, bed mobility, and grooming. Scored from 0-2 with 0 being completely independent **Self Reported Instrumental Activities of Daily Living:** Measures ability to complete IADLs such as using the phone, shopping prepping food, housekeeping, laundry, etc.	This program could significantly impact the quality of life and functional performance of community-dwelling older adults. It could be an effective and affordable intervention to address both the person and their environment.

	income of 200% or less of the Federal Poverty Level, stand up with or without assistance **Exclusion Criteria:** been in hospital more than 3 times in the past 12 months, receiving in-home PT, OT, or nursing services, terminal diagnosis or receiving active cancer treatment, apartment living or planning to move within 1 year	the handyman to implement> The OT and participants collaborate to identify strategies to attain functional goals. The OT then provides training to generalize skills to other areas. **Control:** The goal of the control group was to mirror the social attention provided to older adults through the intervention program without receiving the intervention. They engaged in reminiscent and sedentary activities of their choice such as scrapbooking, card games, or listening to music with a trained research assistant. They also received education on fall prevention, exercise, and home modifications.	Performance was rated from 0 to 2 with 0 being completely independent in performing activity. **Short Physical Performance Battery (SPPB):** Measured physical function including walking speed, repeated chair stands, and standing balance in various positions.	
Stark, S., Keglovits, M., Somerville, E., Hu, Y., Barker, A. Sykora, D. & Yan, T. (2021).	Level 1 Randomized Clinical Trial **Participants:** N=310, 22% Male, 78% Female **Inclusion Criteria:** 65 years of age or older, Had to self-report 1 or more falls in the past 12 months or a concern about falling, Had to be receiving services from AAA.	**Intervention:** OTs performed home hazard identification and removal. This consisted of 4 total sessions. In the first session the OT identified environmental hazards and behaviors that were unsafe. A plan was then created and implemented to remove hazards. The second session involved installing home medications such as grab bars or non-skid tape in the bathtub. The third session was done if additional installation was needed and for training purposes. Lastly, a booster session was provided 6 months later to identify new home hazards and address any possible issues with home modifications or strategies. Secondary outcomes of the study were also collected via the	**Westmead Home Safety Assessment:** Identifies 72 possible environmental hazards and unsafe behaviors within the home. **OARS ADL Scale:** This is a self-reported measure that focuses on daily activity performance and independence including 7 basic ADLs and 7 basic IADLs. **Falls Efficacy Scale International Short Form:** Measured confidence in performing 10 daily activities without falling. Scored by the sum of the items being rated from 1 to 10 with 1 being very confident and 10 being not confident at all.	There was no statistically significant difference in reported fall hazards between the intervention group and the control group. The study did find that the program reduced the rate of falls among community-dwelling older adults by 38% when compared to the control group ($p=0.03$). This intervention was also a cost effective intervention. Lastly, there were no statistically significant differences in daily activity performance ($p=0.60$), falls self-efficacy ($p=0.84$), or quality of life ($p=0.35$).

	Exclusion Criteria: Living in an institution, Cognitively impaired or unable to follow directions or report falls (Short Blessed Test > 10)	phone through self reported measures. These secondary outcomes looked at ADL performance and independence. Other outcomes included self-efficacy and health-related quality of life. **Control:**Participants received "usual care" which the study defined as usual care within the AAA including annual assessments and referrals to community services. These included home repairs, medication review, and fall education.		
Szanton, S. L., Leff, B., Wolff, J. L., Roberts, L., & Gitlin, L. N. (2016).	Level III Before and after comparison study **Participants:** N=281 **Male:** 17% **Female:** 83% **Ethnicity:** 80% African American **Inclusion criteria:** Eligible for Medicare and Medicaid; reported difficulty in performing an average of 4/8 ADLs; living in a house; cannot be cognitively impaired, receiving skilled home health care services, or have been hospitalized four or	**Intervention Group:** All participants in this study were allocated to the intervention group as there was no control group. The participants engaged in a five-month program facilitated by an occupational therapist (six visits), a nurse (four visits), and a handyman who provided up to a full days work doing home repairs, making home modifications, and installing assistive devices depending on the participants' needs. The participants collaborated with the therapist and nurse to create three goals and discuss barriers in achieving those goals.	**ADL performance scale** Person did not have difficulty and did not need help (0), did not need help but had difficulty (1), or needed help regardless of difficulty (2) **IADL performance scale** Scored the same as listed above **Patient Health Questionnaire-9** Diagnoses depression & determines severity of depression	After the CAPABLE program, difficulty with ADLs was reduced among 75% of participants. Difficulty with IADLs decreased in 65% of participants and depressive symptoms improved in 53% of participants. Overall, the CAPABLE program demonstrated improved physical functioning and reduction in disability for low-income older adults participating in this study. However, because there was no control group, it cannot be concluded that the results of this study were solely due to the CAPABLE program.

	more times in the previous year; age 65+ **Exclusion criteria:** The CAPABLE program was made available to all eligible residents except those from the wealthiest neighborhoods in Baltimore, Maryland			
Imanishi, M., Tomohisa, H. and Higaki, K. (2017).	Level II Non-randomized controlled intervention trial **Participants:** N=200 **Male:** 79 **Female:** 121 **Ethnicity:** Japanese **Inclusion criteria:** Started their service between April and May of 2013; without significant handicaps in communicative ability or cognitive function **Exclusion criteria:** Clients who scored <24 points on the	**Intervention Group:** Participants in the rehabilitation group received a 60 minute weekly visit by a licensed OT or PT. These sessions included ADL, IADL, and leisure activities. **Control Group:** Participants in the non-rehabilitation group received one to five weekly visits lasting 60-90 minutes by nurses or care workers. No interventions were provided but rather services such as measuring blood glucose levels, managing medicine, or nursing care services like cleaning, cooking, or toileting assistance.	**Philadelphia Geriatric Center Morale Scale (PGC)** Measures participant QOL, assessed through a questionnaire, higher score indicates higher QOL **Functional Independence Measure (FIM)** Assesses current ADLs, evaluates motor & cognitive functions. Higher score indicates higher ADL function.	After the study, the rehabilitation group showed statistically significant improvements in quality of life and ADLs. However, the non-rehabilitation group showed almost no effects or significant changes post-study. FIM score p-value equals 0.024. Presence of interests/hobbies p-value equals 0.023.

	Mini-Mental State Examination			
Nielsen, T. L., Andersen, N. T, Petersen, K. S., Polatajko, H., & Nielsen, C. V. (2019).	Level I Randomized Controlled Trial **Participants:** N=119 **Ethnicity:** Danish **Inclusion Criteria:** Adults aged 60 + experiencing occupational performance problems who could speak and communicate in Danish; participants had to be receiving homecare services or have applied for them **Exclusion Criteria:** Older adults with alcohol or drug abuse, severe mental illness or intellectual disability, dementia, tetraplegia, and those with severe pain and/or rapidly progressive diseases such as cancer or motor neuron disease as ascertained by a physician. Also excluded were those	**Intervention Group:** The intervention group received intensive client-centered occupational therapy (ICC-OT) in which the occupational therapists facilitated a client-centered approach and allowed the older adults the freedom to choose what they wanted to work on. Both the participants and the occupational therapists collaborated on creating goals and tailored therapy sessions to their lifestyles and desires. **Control Group:** The other group received usual practice in which the participants would be referred to homecare re-ablement if they qualified. This program would last 3 weeks and take place in the home. In usual practice, a municipal occupational therapist may have come to the participants' homes to deliver sessions; however, they were oftentimes facilitated by homecare assistants instead. Rather than using a client-centered approach, the homecare reablement program was limited and confined to areas of household management and self-care. The participants did not have the ability or freedom to choose what they wanted to work on.	**Danish version of the Canadian Occupational Performance Measure (COPM)** Assesses occupational performance issues and change. Participants chose five performance problems and then scored their ability to perform each of these occupations using the numerical, 10-point rating scale of the COPM **Assessment of Motor and Process Skills (AMPS)** Measures the degree to which a person's task performance is free of increased clumsiness or physical effort, decreased efficiency, safety risk, and/or need for assistance **Standardized 36-item short-form health survey (SF-36)** Measures the participants general health, physical health, and mental health using a scale ranging from 0 to 100	The ICC-OT group significantly improved their performance from baseline to the three-month assessment in comparison to the usual practice group as evidenced by the COPM, AMPS, and SF-36 results. The p-value for the COPM results was 0.001 indicating a significant statistical difference between groups. There was a 95% confidence interval for COPM performance, COPM satisfaction, the AMPS, and the SF-36. After 3 months, the ICC-OT group improved their COPM performance by 1.86 points whereas the usual-practice group improved by 0.61 points.

	who had previously participated in a homecare reablement program, had received a rehabilitation plan from a hospital, and/or were living with a participant already in the study			
Stark, S., Somerville E., Conte, J., Keglovits, M., Hu, Y., Carpenter, C., Hollingsworth, H., Yan, Y. (2018).	Level 1 Evidence Randomized Control trial **Participants:** 92 **Ethnicity**: N/A **Inclusion Criteria:** Participants had to be adults 65 yr or older, living in the community, difficulty with 2 or more ADLs, and with a history of falling within six months of the study start date. **Exclusion Criteria:** Participants could not be younger than 65 yr old, live in a nursing home, and have no prior falling history. Falls could not be caused by syncope. Participants could not have moderate to	**Intervention Group:**The intervention goal is addressing ADL limitations by implementing environmental support to recompense for functional impairment. The first step of the tailored home modification intervention is completion of a performance-based assessment, and identification of the participant's 10 most problematic activities and barriers in the home environment. Next the competence-press framework is used to create possible environmental solutions, and the solutions are refined using a clinical reasoning algorithm. The final set of solutions are created using a clinical decision analysis (CDA) worksheet. The CDA worksheet includes outcomes, benefits, and liabilities of all potential environmental solutions. The interventionists then present the CDA solutions to the participant and then final home modification interventions are solidified, obtained, and installed. **Control Group:** For the control	**In-Home Occupational Performance Evaluation:** This measure quantified the problematic activities, current performance level and satisfaction with performance, and objective activity performance in the home environment. **Re-AIM Framework:** This measure quantifies the reach of the intervention, effectiveness of activity performance, adoption of the intervention, and implementation of the intervention.	The study found the intervention group improved daily activity performance over a twelve-month period compared to the sham control group. The intervention process was delivered to all participants with 90% accuracy. Overall adherence rate reported by participants at twelve months was 91%.

	severe memory problems or chronic alcohol abuse. Participants could not have limitations ambulating independently or a neurological condition diagnosis.	group, interventionists provided home modification services that were not theory-driven. The sham intervention did not include utilization of the competence-press framework or the clinical reasoning algorithm worksheet. The sham control group received standardized kits of adaptive equipment for fine motor tasks.		
Sheffield, C., Smith, CA., & Becker, M. (2012).	Level 1 Randomized Control Trial **Participants**: 71 Female: 57 Male: 14 **Ethnicity:** Hispanic 7%, non-hispanic 93% **Inclusion Criteria**: Individuals included in this study were aged 65 or older, receiving a form of agency service, involved in either public agency, community dwelling, had the ability to speak English, had adequate ability to move within the home, had significant cognitive capacity for	**Intervention group:** The intervention group received a detailed assessment from a person-environment perspective and provision of adaptive equipment and home modifications where appropriate The intervention included an in-home assessment of daily activities in the context of the environment, client-family collaboration to achieve mutual goals, provision and training in assistive device use, design and implementation of home modifications, removal of environmental hazards, medication management training, education in adaptive and compensatory strategies to improve safety and independence **Delayed Intervention Control Group:** This group received an initial assessment but no intervention for three months Detailed assessment from a person-environment perspective and provision of adaptive equipment and home modifications where	**Functional Independence Measure:** Measured functional status, detailed seven levels of independence/dependence **The Short Falls Efficacy Scale-International:** The outcome measured is participant's fear of falling **Health Related Quality of Life:** The outcome measured is HRQoL through a health status index value. Client domains of mobility, self-care, performance of usual activities, pain/discomfort, and anxiety/depression are measured.	The study found that the intervention produced improvements in home safety ($p<,0005$, $b=-15.87$). Improvements were also shown in the HRQoL ($p=.03$, $b=0.08$), and in fear of falling ($p<.05$, $b=2.22$). The results did not indicate improvement in functional status or reduced falls. There was a 39% reduction in recommended hours of personal care which if implemented may save on costs.

	participation in the intervention and had significant impairments in ADL performance. **Exclusion Criteria**: Individuals were not included in this study if they were less than 65 years of age, not receiving a form of agency service, not involved in either public agency, non-community dwelling, did not have the ability to speak English, did not have adequate mobility to move within the home, did not have significant cognitive capacity for participation in the intervention and and had no significant impairments in ADL performance.	appropriate The intervention included an in-home assessment of daily activities in the context of the environment, client-family collaboration to achieve mutual goals, provision and training in assistive device use, design and implementation of home modifications, removal of environmental hazards, medication management training, education in adaptive and compensatory strategies to improve safety and independence		
Szanton, S. L., Xue, Q. L., Leff, B., Guralnik, J., Wolff, J. L., Tanner, E. K., & Gitlin, L. N. (2019).	Level I Randomized Control Trial **Participants:** 300 **Ethnicity**: White (40), Black (259),	**Attention Control Group:** Participants in the attention control group received one-on-one, in-home visits from an attention visitor. The visits were designed to match the amount of social engagement that the intervention group received. The research assistant helped participants	**Self-report measure** which predicts future morbidity. Functioning on each task was classified from 0 to 2, depending on whether in the previous month the person did not have difficulty and did not need help (0), did not need help but had	The CAPABLE participation in the intervention group resulted in a 30% reduction in ADL disability scores at 5 months (relative risk 0.70;95% CI, 0.54-0.93; P=.01) vs control participation. Participants in the intervention group were more likely to report that the program made their

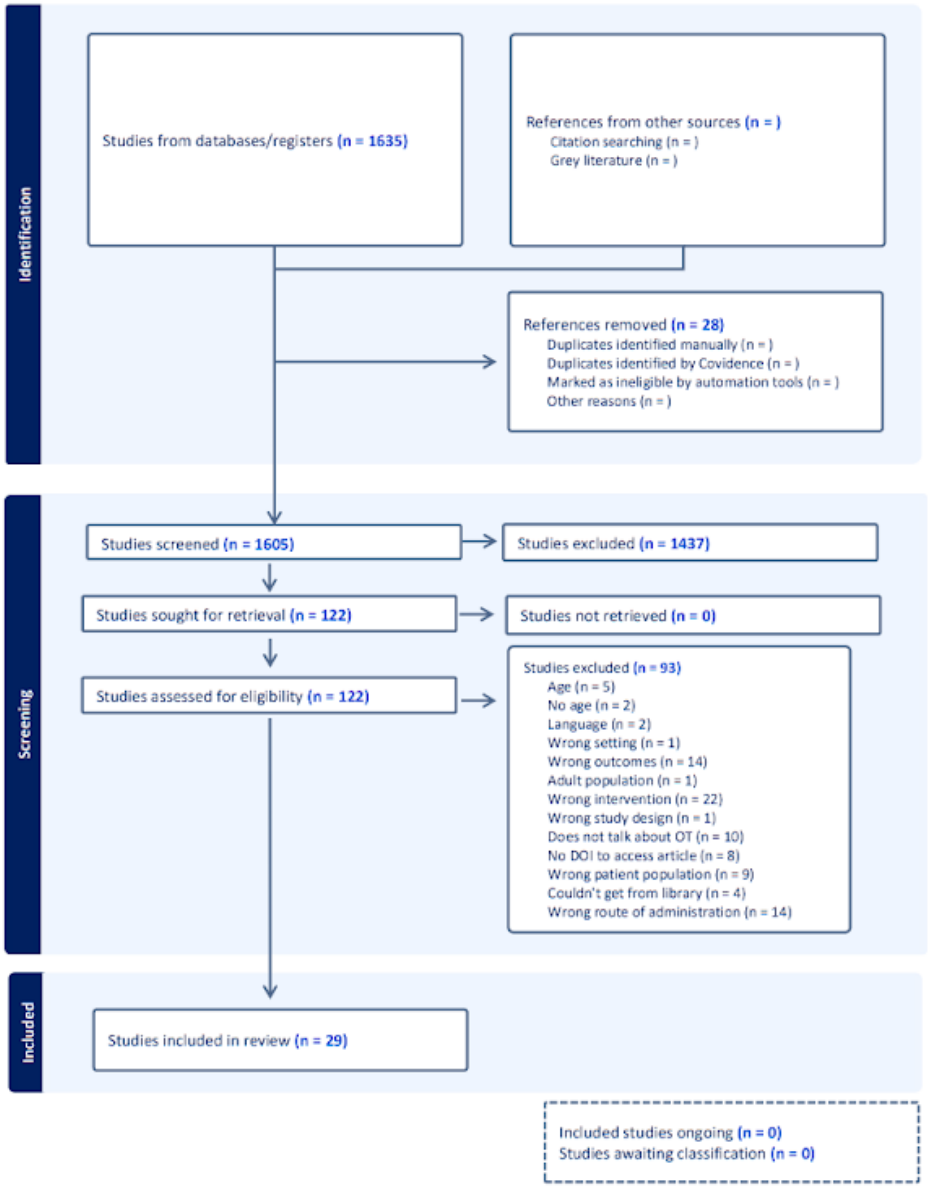
	Asian (1). **Inclusion Criteria**: Participants in this study had to be age 65 or older, report difficulty with at least 1 ADL or 2 IADLs, have a self-reported income at or below 200% of federal poverty level, and be able to stand with or without assistance **Exclusion Criteria**: Participants were excluded from this study if they were below age 65, they did not report difficulty with at least 1 ADL or 2 IADLs, did not have a self-reported income at or below 200% of federal poverty level, not able to stand with or without assistance, if they had cognitive impairment, hospitalized 3 times in the prior year, if they were receiving in-home nursing, occupational therapy, or physical therapy, if they were receiving	select sedentary activities they would like to learn or enjoy. **Intervention Group:** Participants in the intervention group received the CAPABLE treatment which addressed participant's self-identified functional goals by enhancing individual capacity and the home environment. The CAPABLE treatment includes a multi-disciplinary assessment administered by an OT, who evaluates functional disability and home safety risks and inquiries about functional goals, a RN, who inquires about participants goals regarding pain level, depression, medication comprehension, primary care practitioner communication, and strength and balance. Then an integrated plan based on individual assessments and participants goals is developed and strategies are implemented. Home repair, environmental modifications, and medical equipment to support client-centered goals are implemented.	difficulty (1), or needed help regardless of difficulty (2). A summary disability score for the 8 items ranged from 0 to 16 points **Self-report measure** which predicts future morbidity. Functioning on each task was classified from 0 to 2, depending on whether in the previous month the person did not have difficulty and did not need help (0), did not need help but had difficulty (1), or needed help regardless of difficulty (2). A summary disability score for the 8 items ranged from 0 to 16 points **Perceived program benefits:** A survey adapted from previous trials was used, it contained ten questions: (1) How much benefit did you perceive from the CAPABLE program? (2-9) How much did the pro- gram help you ... take care of yourself? keep living at home? make life easier? make home safer? gain confidence in man- aging daily challenges? be less upset, distressed, or over- whelmed? take care of others? help others in similar situations? (10) Did the study require too much work or effort? All questions could be answered by 1 of 3 responses: not at all, some, or a great deal.	life easier compared to the control group (82.3% vs 43.1%; p<.001), helped them take care of themselves (79.8% vs 35.5%; <.001), and helped them gain confidence in managing daily challenges (79.9% vs 37.7%, P<.001).

	cancer treatment, if they lived in an apartment, if they had a terminal diagnosis, or if they planned to move from their current residence within the year.			
McNamara, B., Rosenwax, L., Lee, EA., & Same, A. (2014).	Level III Mixed Methods Study with pre- and post-intervention quantitative data **Participants:** 32, male (8), female (24). **Ethnicity:** N/A **Intervention Criteria:** Participations in this study had to be eligible for HACC, live within the community, and have an ongoing functional disability that impacts on activities of daily living. **Exclusion Criteria:** Individuals could not participate in this study if they were ineligible for HACC, do not live in the	**Intervention Group:** The intervention program focused on age-appropriate exercises delivered by trained instructors for example 'heart moves', belly dancing, line dancing, and Feldenkrais movement. It also included a social component (morning tea and social interaction).	**PARTS/M:** The PARTS/M measures perceived satisfaction, importance, and degree of choice for each major life activity. The outcome measured is participation in occupation. **Activity Card Sort-Australia:** The outcome measured is changes in participation in a range of activities of daily living over time for older adult populations. Interview pro formas were developed and used at each stage of the study. Interviews provided information about motivation for attending, perceived benefits from participation and perceived changes to function and well-being.	Results from the SF-36 Health Survey found that participants scored lower on all eight scales in stage 1 (pre-intervention) than the 1995 Australian population norms. At stage 2 (post-intervention) increased scores were observed in all eight dimensions. The greatest improvement was shown in the social function score which was similar to the age-relevant 1995 population norms. Individuals who only completed the pre-intervention had lower scores across all dimensions of the SF-36 Health Survey than people who completed both pre- and post-interventions. This shows that people who dropped out of the program were frailer than the individuals who completed the program. Program participants reported better health, social function and mental well-being, greater enjoyment in household and leisure activities, and increased enjoyment and confidence through participating in the program.

	community, and do not have a functional disability that impacts ADLs.			
Ann Johansson & Anita Björklund (2016).	Level III Quasi-Experimental Design with a non-equivalent control group combined with semi-structured interviews **Participants:** 40, Male (2), Female (38) **Ethnicity:** N/A **Inclusion Criteria:** Participants included in this study had to be over age 65, be community dwelling, and receive no homecare services. **Exclusion Criteria:** Participants were excluded from this study if they were under age 65, were not community dwelling, and were receiving homecare services.	**Intervention Group:** For the intervention in this study, three groups of older community dwelling adults were provided health-promoting interventions and individual interventions. The interventions were occupational therapist led. Each participant received a home visit, an interview formatted needs assessment which was conducted to develop the program based on the participant's individual meaningful and challenging occupations. After the program was developed, the participants were presented with the program and each group selected the topics they wanted to focus on. The groups met at a community center, the overall aim of the program was giving the participants the opportunity to reflect on their occupational lives and become aware of their own general health, well-being, and independence in ADLs. The program layout was: information/lecture on the session theme, group discussion and exchange of experiences, and ended with a related activity. In follow-up home visits, the occupational therapist aided participants in furthering their knowledge and	**Short Form 36:** The SP-36 was used to measure self-experienced general health **Life Satisfaction Index Z (LSI-Z (37)):** The LSI-Z (36) measured participant's perception of psychological well-being. The instrument reflects zest for life, resolution, fortitude, congruence between desired and achieved goals, positive self-concept and optimistic mood. **Meaningful Activity Participation Assessment (MAPA):** The MAPA measures meaningfulness of activity Qualitative group interviews were conducted with an interview guide based on the occupational adaptation model. The aim of the group interviews was to record participant's experience in the program and how participants used their knowledge and strategies from the program.	A Mann-Whitney U-test was run to determine baseline differences between the intervention and control group according to the SF-36 subscales. No significant differences were shown ($p > 0.01$). A positive change in five of eight SF-36 subscales was shown at four-month follow-up. Two of the subscales, vitality ($p=0.01$) and mental health ($p=0.03$) showed significant change. The subscales role-physical, social functioning, and role-emotional showed a positive change but was not significant. The MAPA showed a positive change within the intervention group at four-month follow-up, the results were close to statistically significant. The control group showed a negative change, and there were no significant differences between the intervention group and the control group. Results from the LSI-Z had decreased in both the intervention group and control group at four month-follow up, but there was less negative change in the intervention group. There were not statistically significant differences between the intervention group and the control group. The qualitative data was structured in relation to

		translating their knowledge into daily life. **Control Group:** The participants in the control group received occasional occupational therapy intervention such as prescription of adaptive devices, and did not take part in any group interventions		independence, belonging to a group, self-esteem, change in occupational behavior, and change in occupational approach categories.

Appendix B


Identification
Studies from databases/registers (n = 1635)
References from other sources (n =)
Citation searching (n =)
Grey literature (n =)
References removed (n = 28)
Duplicates identified manually (n =)
Duplicates identified by Covidence (n =)
Marked as ineligible by automation tools (n =)
Other reasons (n =)
Screening
Studies screened (n = 1605)
Studies excluded (n = 1437)
Studies sought for retrieval (n = 122)
Studies not retrieved (n = 0)
Studies assessed for eligibility (n = 122)
Studies excluded (n = 93)
Age (n = 5)
No age (n = 2)
Language (n = 2)
Wrong setting (n = 1)
Wrong outcomes (n = 14)
Adult population (n = 1)
Wrong intervention (n = 22)
Wrong study design (n = 1)
Does not talk about OT (n = 10)
No DOI to access article (n = 8)
Wrong patient population (n = 9)
Couldn't get from library (n = 4)
Wrong route of administration (n = 14)
Included
Studies included in review (n = 29)
Included studies ongoing (n = 0)
Studies awaiting classification (n = 0)