Interventions for Improving Mental Health and Quality of Life of Older Adults with Mental Illness in Long-term Care: A Systematic Review and Meta-analysis

Benjawan Ngamwongwiwat, Vineekarn Kongsuwan, Praneed Songwathana*

Abstract: Various mental health interventions have been provided to older adults living in long-term care facilities, but the overall effectiveness of these interventions in improving mental health and quality of life remains inconclusive. This study is the first systematic review and meta-analysis to investigate and report interventions' effects on improving mental health and quality of life among this population. A comprehensive search was conducted from January to February 2022 using PubMed, CINAHL, ProQuest, Web of Science, and Cochrane databases to identify eligible intervention studies published in English from December 2011 to December 2021. The inclusion criteria required studies to measure mental health and quality of life as outcomes in individuals aged 60 years and older with mental illness living in long-term care facilities. Studies that measured only mental health or quality of life were excluded. The PRISMA guidelines were used to guide the study's method and report. Two reviewers independently evaluated the included studies' methodological quality and extracted data. A third reviewer resolved discrepancies.

Six randomized controlled trials and two quasi-experimental studies were included for systematic review, of which five studies qualified for meta-analysis involving 658 participants. Due to high heterogeneity, subgroup analysis with a fixed effects model was conducted. The interventions integrating active social interactions reduced depressive symptoms (low certainty of the evidence). Additionally, reminiscence-based interventions improved the quality of life of older adults with mental illness (low certainty of evidence). Although the effectiveness of interventions remains inconclusive due to high heterogeneity, a limited number of studies in the meta-analysis, and low-quality evidence, this review suggested that nursing care and activities promoting active social interactions and reminiscence should be implemented in living in long-term care facilities to enhance the quality of life and mental health of older adults with mental illness. However, the types and components of interventions should be adjusted based on available resources and contextual factors. Further research with larger sample sizes and higher methodological quality is warranted to strengthen the evidence base in this area.

Keywords: Interventions, Long-term care, Mental health, Meta-analysis, health, Older adults, Quality of life, Systematic review

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Introduction

Nowadays, every country is experiencing rapid growth of aging in the population. One-sixth of people

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worldwide will be ≥60 in 2030. The global population aged ≥60 years will double by 2050 (2.1 billion), while the life expectancy of older adults worldwide over 65 years will increase by 19 years.[1,2] However, some older adults who live longer cannot stay in their place at home due to the decline of their physical, mental, and social functions.[3] In some countries, rapid urbanization can lead to children leaving their parents behind.[4] As a result, intergenerational relations have weakened, and the shortage of elderly caregivers has increased.[5] These problems, particularly an inability to care for themselves and the lack of caregivers, cause older adults to live in long-term care facilities (LTCFs).[6] Therefore, LTCFs for caring for older people with disabilities or those who are homeless, poor, abused, or neglected have been set up in many countries to improve their quality of life (QoL).[7]

LTCFs aim to provide residents with personal care and health services and support individual needs for those diagnosed with dementia and those with challenging needs.[8,9] However, there is a high need for mental health support among older adults with mental disorders living in LTCFs.[10] Even though on-site mental health services were offered to residents in nursing homes in the USA, nearly 80% of nursing homes delivering mental health care to meet the needs of the mentally ill remained a challenging problem in small or rural facilities.[11] Poor access to specialist mental health services, especially psychologists and psychological treatment, and inadequate training of healthcare providers in identifying mental illness were barriers to such access.[12] A recent study revealed that nursing homes with many older adults with serious mental illness had lower staffing levels, including nurses, social workers, and other activity staff.[13] Evidence showed that specialized care, particularly by mental health workers, was positively correlated with the well-being of older adults with mental disorders living in LTCFs.[14]

One of the implicit goals of care for older adult residents living in LTCFs is to improve the QoL and maintain the highest possible physical, mental, and psychological well-being of residents and older adults with mental illness.[14,15] Key components of mental health include emotional, psychological, and social well-being.[16] Mental health is defined as the symptoms of mental illness (negative mental health) and subjective well-being (positive mental health).[17] To date, world-leading health institutes have highlighted the importance of QoL and well-being as a goal at every stage of life,[18,19,20] including institutionalized seniors who have a mental illness.[14,15] QoL is a multidimensional concept consisting of objective and subjective elements. Objective element involves people's living conditions, such as housing and finance, whereas subjective factors are related to an individual's life evaluation, which refers to well-being and satisfaction.[21,22,23] Studies have reported that older adult residents with mental illness had decreased QoL and well-being.[14,24] Although older adult residents had received mental health and psychiatric services, some still had not received mental health services as needed.[11]

In recognition of the poor health outcomes associated with older residents with chronic mental illness living in LTCFs, several interventions have been developed to improve this population's mental health and QoL. Especially many interventions aiming to alleviate depression were conducted for older adults with specific mental health conditions such as dementia and depression.[25,26] In depression treatment for elderly residents with depression, a recent systematic review revealed that non-pharmacological treatments could reduce the depressive symptoms of these elderly. Specific non-pharmacological approaches for this population include animal-assisted therapy,[26] social group activity,[27] problem-solving therapy,[28] and reminiscence therapy.[29] Additionally, evidence showed that cognitive behavioral therapy effectively lessened depressive symptoms among older adult residents with depression and dementia.[30] Concerning the QoL outcomes, previous studies revealed that reminiscence therapy and music therapy-singing effectively improved the QoL of long-term care residents with dementia and Alzheimer's.[31,32] A previous study demonstrated that the social robot intervention could decrease depression and loneliness

and improve the QoL among older adults with depression in LTCFs.[33] However, few previous intervention studies aimed to improve mental health and QoL among older adult residents with mental illness. Notably, as to the researchers' knowledge, no studies have investigated and synthesized the studies and program interventions to improve mental health and QoL of older adults with mental illness living at LTCFs. Healthcare professionals must apply feasible, specific, and effective interventions to improve mental health outcomes and QoL among older adult residents with mental illness, as they are the desired care outcomes for this population.

Review Aim

This systematic review and meta-analysis aimed to evaluate the effectiveness of interventions provided to older adults with mental illness living in LTCFs on mental health and QoL and synthesize the current evidence on specific interventions in improving mental health and QoL among this population.

Method

The PICO framework was used to select the studies to evaluate the interventions' effectiveness. PICO was defined as P: older adults aged 60 years old and older with mental illness living in LTCFs; I: interventions provided to older adults aged 60 years old and older with mental illness living in LTCFs; C: control (usual care) or no control group; O: mental health outcomes and QoL. The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA 2020) statement guidelines were used as a guide to reporting this systematic review. The PRISMA statement consists of a 27-item checklist and a four-phase flow diagram.[34] This review protocol study was registered on the PROSPERO database (CRD42022372207).

Inclusion criteria: research study-published articles were included in this review if they met the following criteria: (1) the studies were conducted in older adults with mental illness, ≥60 years old, and living in LTCFs, (2) the studies were randomized controlled trials (RCT), quasi-experimental design studies, retrospective studies, cohort studies, or case-controlled studies, (3) the studies aimed at improving both QoL and mental health outcomes of older adults with mental illness, (4) the studies used quantitative tools to measure the QoL and mental health outcomes, (5) health care professionals or specialist interventionists performed the studies' program interventions or the program interventionists were trained by specialist interventionists to deliver an intervention, and (6) the studies provided full-text articles published in English. Studies were omitted if the study participants were younger than 60 years and the studies reported either QoL or mental health outcomes.

Data sources and search strategy: The researchers reviewed the studies published from December 2011 to December 2021 in five databases: PubMed, CINAHL, ProQuest, Web of Science, and Cochrane. The searches were undertaken between January and February 2022. The search strategy included MeSH terms and keywords "older adults, mental illness, intervention, mental health, quality of life, long-term care." Keywords and search limits used for searching in each database are presented in **Appendix, Table 1.**

Study selection and quality appraisal: The studies were screened for eligibility based on the inclusion criteria. Two reviewers independently reviewed titles and abstracts for eligibility, reviewed the full-text articles to determine if they produced the desired intervention outcomes, and evaluated methodological quality. A third reviewer adjudicated the discrepancies in case of disagreement in the review.

Data extraction: The Cochrane Data Extraction Form was used to extract the relevant information from each article.[35] Two reviewers independently extracted data from included studies. Extracted data consisted of authors, year, country, setting, study design, number and type of facilities, study participants, number of

participants, mean age, instruments, types of intervention, theory/conceptual framework, intervention strategies, providers, mode of delivery, dosages, and time of measurement. The third reviewer was invited to arbitrate if any discrepancy in extracted information existed.

Assessment of risk of bias: Two reviewers independently assessed the studies' risk of bias using The Cochrane Collaboration's tool for assessing risk of bias in randomised trials (CCAR).[36] If there was any inconsistency in the assessment, it was solved by the third reviewer. The CCAR tool covers seven domains, including random sequence generation, allocation concealment, blinding of participants and personnel, blinding of outcome assessment, incomplete outcome data, selective reporting, and other sources of bias. The scores of risks of bias were categorized into one of three categories: 1) high risk of bias, 2) low risk of bias, and 3) unclear risk of bias. According to Iwano[37], reviewers categorized each study as "high quality" if all domains had a low risk of bias. If a study was classified as "low quality," all domains were rated as high risk of bias. If a study did not provide sufficient information, it was classified as an "unclear risk of bias."

Data synthesis and analysis: A meta-analysis was performed to evaluate the interventions' effectiveness on the outcomes of included studies by using Revman 5.4.1 software. In exploring the heterogeneity of meta-analysis, the pooled effect size is expressed as standardized mean differences (SMD) with a 95% confidence interval (CI) for continuous data. The standard chi-squared and I^2 tests were used to assess heterogeneity between the studies. For significant heterogeneity ($I^2 > 75\%$ and $p < 0.1$), the random-effects model was used to compute the mean effect size, whereas the fixed-effect model was used for no significant heterogeneity between studies.[38,39] In this study, five studies measuring QoL and four studies measuring depression as a mental health outcome provided mean differences and standard deviations between T1 (pre-intervention) and T2 (post-intervention). Therefore, QoL and depression were analyzed separately to compute standardized mean differences (SMD) (in the explored heterogeneity meta-analysis) and weighted mean differences (WMD) in the meta-analysis with a 95% confidence interval (CI). If there was heterogeneity, sensitivity analysis was performed to assess the sources of heterogeneity. The leave-one-out method was used to examine the influence of individual studies on the overall effect size estimates and to identify influential studies.

Intervention strategy subgroup analysis with a fixed effects model was performed to evaluate the effect of different intervention types on QoL and depression. A narrative synthesis was also used to synthesize all available evidence to make formal comparisons, report research findings, and help explain the meta-analysis results. Moreover, the narrative synthesis was conducted in the studies where researchers could not extract data for the effect size calculation. The description of the intervention's core components, including theory/conceptual framework, intervention strategies, providers, mode of delivery, dosages, time of measurement, and results of each study, was explored for study synthesis.

Quality of evidence: The Jadad scale was applied to assess the quality of included studies, which are RCTs. Two reviewers independently assessed the quality of included studies. If there was any inconsistency in the assessment, it was solved by the third reviewer. The Jadad scale commonly used to assess the methodological quality of RCTs consists of three items assessing randomization, double blinding, and information regarding withdrawals and dropouts. The score for each item is 2, 2, and 1, respectively. The total Jadad score of 5 points is classified into two levels: 0-2 points reflecting a low-quality level and 3-5 points reflecting a high-quality level.[40,41] Furthermore, the Newcastle-Ottawa Scale (NOS) was utilized to assess the quality of quasi-experimental design studies. The NOS scale consists of three domains assessing selection (4 points), comparability of groups (2 points), and ascertainment of exposure (3 points).[42] Based on the quality assessment for individual studies using CCAR, Jadad scale, and NOS, GRADE (Grading of Recommendations, Assessment, Development, and Evaluations)[43] was applied to summarize the evidence

in the meta-analysis and make clinical practice recommendations. Based on GRADE, the quality of evidence (confidence in the estimated effects) was assessed for depression and QoL meta-analysis and categorized as high, moderate, low, and very low.

Review Findings

Search Results

A total of 2,212 studies were identified through five databases. After duplicates were removed, 1950 articles remained for screening. Based on the title and abstract screening, 1918 records were excluded. Of 32 full-text articles assessed for eligibility, eight studies met the final inclusion criteria for the review, and 24 studies were excluded due to different study designs (n = 9; e.g., mixed methods, causal models), different populations (n = 4; younger than 60 years old), different outcomes (n = 8; either the QoL or mental health outcomes measured), and different settings (n = 3; in daycare setting), as shown in **Figure 1.**

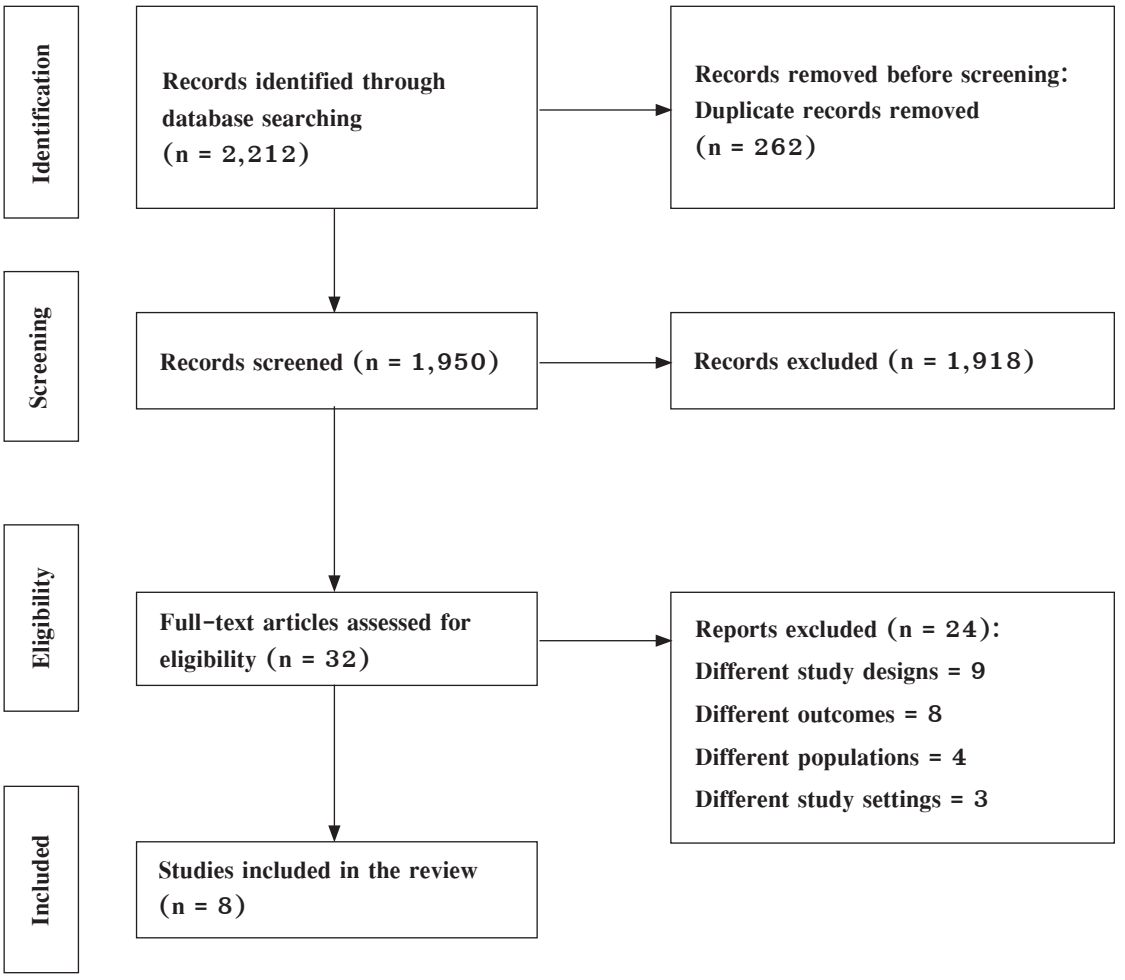

Figure 1. Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) diagram

Study Characteristics

The characteristics of the included studies are displayed in **Appendix, Table 2.** All eight included studies were published between 2011 and 2019. Six studies[44,45,46,47,48,50] used an RCT design, and two studies[49,51] used a quasi-experimental design with a pretest-posttest and control group. Each study was conducted in each of the following countries: the Netherlands, Argentina, the United Kingdom, China, Australia, Hong Kong, Ireland, and Indonesia.

This review included 1,707 participants living in 94 long-term care facilities. Of the eight studies, six involved participants with dementia and Alzheimer's disease, one with depression, and one with mood problems. The sample sizes ranged from 60 to 601 people. Most participants were female (n = 1,213, 71.06%), and the mean age ranged from 81 to 86.1 years.

Intervention Characteristics

The summary of intervention characteristics of all included studies is displayed in **Appendix, Table 3.** Intervention characteristics include the conceptual framework used in the study, intervention approach, frequency and duration of intervention, mode of delivery and providers, and outcome measures.

Theory/Conceptual Framework

Although most included studies did not state the theory/concepts that guided program development, three used a theory/theoretical framework to guide their intervention. One study[50] focused on the person-centered care principle incorporating subjective viewpoints; the other two used theories to develop interventions for individuals with specific mental illnesses, namely Kitwood's person-centered theory for people with dementia[46] and Lewinsohn's behavioral theory of depression.[47]

Intervention Approach and Strategies

Concerning the intervention approach, each study applied different approaches: life-story,[50] enriched care planning,[44] person-centered care and person-centered care environment,[45] creative expressions,[46] behavioral,[47] religious,[49] and theatre[51] approaches. Furthermore, two studies[48,50] focused on reminiscence therapy. In all eight studies, there were various intervention strategies. Two studies applied reminiscence therapy: one[50] utilized a discussion of meaningful events in residents' life, and the other[48] employed psychoeducation on dementia in which reminiscence strategies were embedded for the staff and incorporated reminiscence strategies into residents' care plans. Additionally, the other studies implemented different strategies across the research studies: assisting facility staff in solving problems for residents,[44] person-centered interactions,[45] improving home environment,[45] encouraging imagination and self-expression,[46] participating in pleasant activities,[47] Qur'anic recital listening and preaching,[49] and participation in theatre activity.[51] Among strategies used in the program interventions, care planning, including person-centered care planning, enriched care planning, and care planning embedded with reminiscence strategies, was the most commonly used, in which three studies applied it.[44,45,48] Scheduling pleasant activities and providing individualized occupational activities were the second most commonly utilized in two studies.[44,47] Additionally, two studies[46,47] used similar strategies, e.g., encouraging imagination and self-expression in group participation and participating in pleasant activities. These group participation activities can be organized into active social interaction strategies.

Frequency and Duration of Intervention

The frequency of intervention sessions ranged from one[51] to 39 sessions,[49] while two studies[44,45] did not specify the number of sessions. The duration of the intervention varied from 1 day[51] to 18 months.[44] Each session lasted around 20-60 minutes. Twice-weekly sessions were the most frequent intervention sessions found in two studies.[46,50]

Mode of Delivery and Providers

In the included studies, the format of delivery modes of interventions was a group. There were two types of intervention providers: non-interdisciplinary and interdisciplinary teams. Regarding non-interdisciplinary teams, five studies[44,46,48,50,51] used specialist interventionists or interventionists trained by specialist interventionists, such as psychologists, psychotherapists, nurses, and

other staff. Two studies[45,47] featured interdisciplinary teams, such as social workers, nurses, nursing assistants, recreation therapists, occupational therapists, and physiotherapists. One study[49] featured religious leaders. In all eight studies, psychologists and psychotherapists were the most frequently key interventionists for older adults with mental illness, as found in two studies.[46,50]

Outcome Measures

This review defined mental health as the symptoms of mental illness (negative mental health) and subjective well-being (positive mental health),[17] consisting of three vital components; emotional, psychological, and social well-being.[52,53] Outcome measures in this review included positive mental health and QoL.

Regarding mental health outcomes, six studies[44,45,46,47,48,49] measured depression, whereas one[51] measured mood and the other[50] measured social engagement and well-being as primary or secondary mental health outcomes. Most studies employed standard tools developed specifically for health conditions and populations. To measure depression, three studies[45,46,48] used the Cornell Scale for Depression in Dementia (CSDD), while the other three[44,47,49] applied the Geriatric Depression Scale (GDS). One study[50] measured social engagement and well-being by using the Social Engagement Scale (SES) and Well-being/Ill-being Scale (WIB). Additionally, the other study[51] measured mood with the FACE scale.

Regarding the QoL outcome, all eight studies measured QoL using different scales, which were disease-specific in all trials. The Quality of Life in Alzheimer's Disease (QOL-AD) was used in three studies.[44,46,48] Two studies[45,51] used dementia-specific tools to measure the QoL: the Dementia Quality of Life Instrument (DEMQOL) and the QUALIDEM, which is a dementia-specific quality of life instrument for persons with dementia in residential settings. Other studies measured QoL using measurement tools, including the World Health Organization Quality of Life – BREF (WHOQOL-BREF)[47,49] and the Self-Reported Quality of Life Scale (SRQoL).[50]

Risk of Bias in Included Studies

Revman 5.4.1 software was utilized for assessing the risk of bias **Appendix, Figures 2 and 3** show an overall risk of biased judgment for each included study. All studies showed a high risk of bias because of inadequate blinding. Due to the real-life nature of those living in long-term care settings and the features of clinical trials, blinding trial participants and researchers was impossible. Six trials[45,46,47,49,50,51] were rated as having a high risk of bias on random sequence generation. Moreover, six trials[44,45,46,47,49,51] were rated as having a high risk of bias in allocation concealment, while two trials[48,50] had an unclear risk of bias in allocation concealment. However, five studies[45,46,48,50,51] reported details of assessors being blinded to treatment assignment. Nevertheless, two studies[44,45] had significantly higher dropout rates. Interestingly, seven studies[44,46,47,48,49,50,51] reported the results entirely and objectively. Additionally, five studies[44,45,46,48,50] were rated as low risk in other biases.

The Evidence Quality Assessment

For individual studies' quality assessment, six randomized controlled trials were assessed for their quality by using the Jadad scale. The overall evidence quality revealed that five trials[45,46,47,48,50] were judged as low quality, whereas only one study[44] was high. For the quality of two non-randomized studies[49,51] assessed by NOS, the overall evidence quality was relatively poor. The common causes included participants and interventionists being not blinded and inappropriate random sequence generation. The individual studies' quality assessment results are shown in **Appendix, Table 2.** However, based on individual studies' quality assessment and meta-analysis, GRADE evidence quality assessment for included studies in the subgroup meta-analysis showed low certainty of the evidence for depression and QoL outcomes **(Appendix, Table 4)**.

Meta-analysis and Synthesis Results

As previously mentioned, six studies[44,45,46,47,48,49] measured depression, whereas one study[51] measured mood and one[50] measured social engagement and well-being as primary or secondary mental health outcomes. All eight studies measured the QoL as

a primary and secondary outcome. However, only five studies reported means and SDs as continuous data of these outcomes were used for meta-analysis to determine the effects of interventions in improving mental health and QoL among older adults with mental illness. A narrative synthesis was conducted for those studies, which were not possible for meta-analysis, to complement the results of the meta-analysis.

Mental Health Outcome

Of the six studies in this review measuring depression, four[46,47,48,49] reported means and standard deviations of depression scores. However, one study[48] showed no significant difference in depression scores. Therefore, three studies were included in the meta-analysis. The pooled data included 213 participants, and a high heterogeneity was found among the included studies. The random-effects model was used to calculate the standardized mean differences (SMD) in this heterogeneity exploration. The analysis showed that the interventions could improve the depressive symptoms of participants after the interventions, compared to control groups (SMD = −1.86; 95% CI = −3.57 to −0.15, p = 0.03; I^2 = 96%) (**Figure 4**). However, the results cannot be trusted and generalized due to the high heterogeneity. Sensitivity analysis was then conducted to leave a study influencing the high heterogeneity out, resulting in two studies left for the analysis. These two studies[46,47] were homogenous, particularly in their intervention. As a result, an intervention strategy subgroup analysis was performed. These two studies that applied active social interaction strategies involving 153 participants were included in the subgroup analysis. Since the overall between-group mean difference was zero, the fixed-effect model was used to compute the mean effect size, reported with the weighted mean difference (WMD). The meta-analysis results showed that interventions integrating active social interaction decreased the depressive symptoms of the participants, compared to control groups (WMD = −1.19, 95% CI = −1.35 to −1.04, p < 0.00001, I^2 = 0, low certainty of evidence) (**Figure 5**).

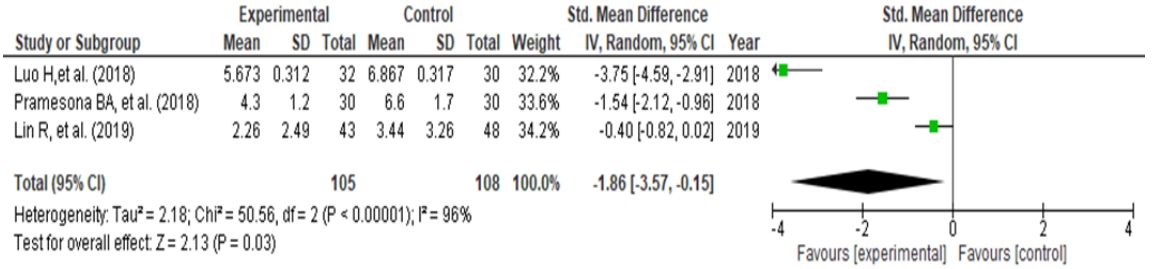

Figure 4. The effect on depression after different types of interventions at post-intervention

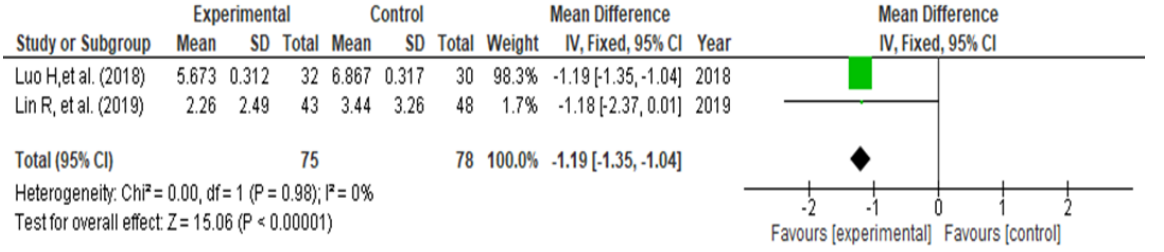

Figure 5. Subgroup analysis: the effect of interventions integrates active social interaction on depression at post-intervention

Since the meta-analysis of three studies showed high heterogeneity and some studies measured different mental health outcomes, the narrative synthesis was conducted. It was found that overall, four studies[44,46,47,49] reported a reduction in depressive symptoms, and two studies[45,48] reported that depression scores did not change in the experimental group. One study[50] revealed increases in social engagement, but well-being did not increase after the intervention. One study[51] reported that mood scores did not change in the experimental group. Among four studies that showed a statistically significant reduction in depression scores, one randomized trial[44] demonstrated a significant group-by-time interaction for depressive symptoms ($p = 0.003$). One study[46] reported a significant reduction in depression in the intervention group at post-intervention and week four post-intervention ($p < 0.05$). One randomized trial[47] showed a significant treatment-by-time interaction for GDS-15 scores ($p = .006$) after the intervention at week 12. One non-randomized trial[49] reported significantly lower GDS scores 12 weeks after religious intervention ($p < 0.001$).

Quality of Life

Although six studies demonstrated positive outcomes on QoL, only five[46,47,48,49,50] provided means and standard deviations of QoL of older adults with mental health illness; therefore, five studies that included 553 participants were included in this meta-analysis. In exploring the heterogeneity, a random-effect model was used to compute the standardized mean differences (SMD). The meta-analysis showed that the interventions could improve the participants' QoL compared to control groups (SMD = 1.63, 95% CI = 0.65-2.61, p = 0.001, $I^2 = 96\%$) (**Figure 6**). Nevertheless, a high level of heterogeneity presented low reliability on this outcome and could not be generalized. Sensitivity analysis was then performed, but the heterogeneity remained high. As a result, the intervention strategy subgroup analysis was performed.

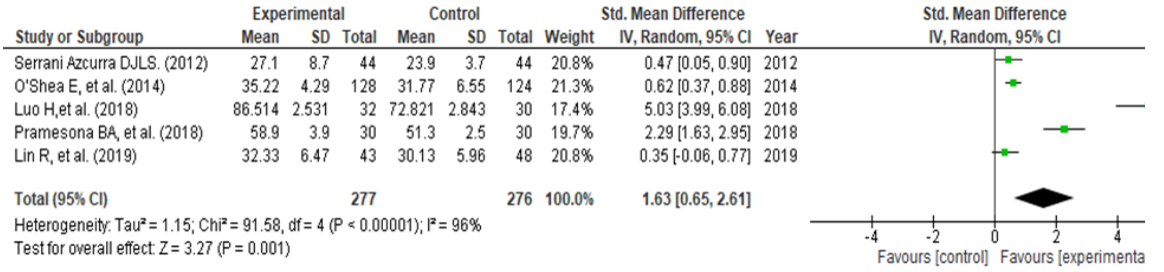

Figure 6. The effect on quality of life after different types of interventions at post-intervention

Two studies[48,50] using the reminiscence-based approach that included 340 participants were included in the subgroup analysis. The overall between-group mean difference was zero. Therefore, the fixed-effects model was used to compute the mean effect size, reported with the weighted mean difference. The meta-analysis results showed that reminiscence-based interventions improved the QoL of the participants, compared to control groups (WMD = 3.40, 95% CI = 2.17-4.63, $p < 0.00001$, $I^2 = 0$, low certainty of evidence) (**Figure 7**). The results of narrative synthesis showed that of six studies with improved QoL, two[47,49] revealed that the intervention group had significant improvements in QoL at 12 weeks post-intervention. Furthermore, one randomized controlled trial[46] reported significantly higher QoL scores for the intervention group at six weeks post-intervention and one-month follow-up ($p < 0.05$). The other two studies[48,50] in the subgroup analysis, utilizing reminiscence therapy and education-based reminiscence, showed a significant group-by-time interaction for QoL. In addition, one study[44] used enriched care planning; the results showed that residents' self-rated QOLAD improved significantly over time ($p < 0.001$).

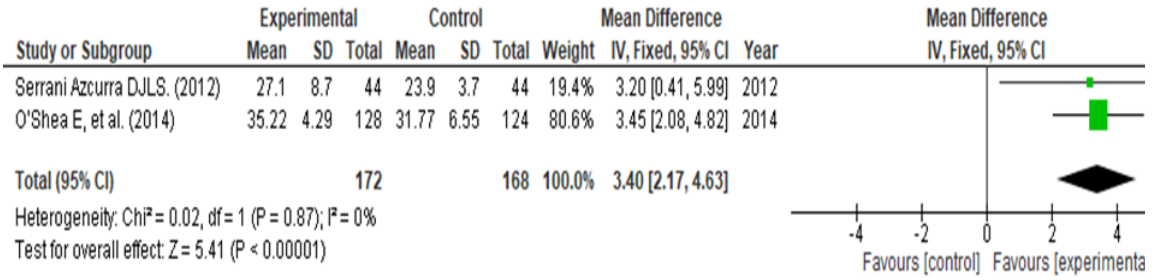

Figure 7. Subgroup analysis: the effect of reminiscence-based interventions on quality of life at post-intervention

Discussion

This study is the first systematic review and meta-analysis to report interventions' effects on improving mental health and QoL among older adults with mental illness living in LTCFs. The crucial point to note is that this systematic search was undertaken to identify all the relevant studies aiming to measure both mental health and QoL within the same study. It is a worthwhile evidence synthesis to consider the specific characteristics of the interventions that could improve both mental health and QoL as parallel outcomes. There are four key findings in this review: 1) there was high heterogeneity among included studies in the meta-analysis, 2) the interventions based on theories focusing on mental health care and treatment provided positive outcomes in improving mental health and QoL, 3) most effective interventions were implemented by intervention specialists or the interventionists trained by intervention specialists, and 4) the interventions were effective at reducing depressive symptoms and improving QoL. However, the evidence quality of the studies was relatively low and only two RCTs were included in the meta-analysis for both outcomes.

The heterogeneity was high for the included studies of both outcomes. The causes of high heterogeneity included the studies conducted in different populations (eight different countries), sample size ranging from 60-601 participants in 94 LTCFs, different approaches, therapies, and strategies of program interventions, range of intervention sessions (1 to 39 sessions; 1 day to 18 months), and various measurement tools. However, despite high heterogeneity, the interventions based on theories focusing on mental health care and treatment and the interventions implemented by intervention specialists or the interventionists trained by intervention specialists provided positive outcomes in improving mental health and QoL. Of all three theoretical-based therapy interventions, including person-centered principles incorporating subjective viewpoint with reminiscence therapy,[50] Kitwood's Theory (person-centered dementia care) emphasizing various positive interactions in sequential procedures to promote the residents' participation with others and maintain their personhood,[46] and Lewinsohn's behavioral theory of depression to develop a positive mood and active living program,[47] helped improve QoL,[46,47,50] depressive symptoms,[46,47] and social engagement.[50] In addition, the intervention specialist called "EOP Locksmith" leading the enriched opportunities program for 18 months as well as educating staff about person-center dementia care and enriched care planning helped the residents with dementia improve scores in QoL more positively over time and decrease depression symptom scores.[44] The creative expression therapy led by accredited psychotherapists could reduce depressive symptoms and improve QoL in older adults with dementia.[46] Moreover, the intervention of having nurses and care assistants trained in incorporating reminiscence strategies into residents' care plans by experienced nurse educators led to a significant effect in QoL among residents with dementia.[48] Lastly, the reminiscence intervention delivered by trained

psychologists significantly improved QoL and social engagement.[50] It can be summarized that theory-based interventions focusing on person-centered care, reminiscence therapy, and behavioral therapy effectively improved the mental health and QoL of older people with mental illness living in LTCFs. In addition, the interventions led by specialists or trained interventionists can promote intervention program integrity and professional care, enhancing the care outcomes.

The subgroup meta-analysis and narrative synthesis results indicated that the reminiscence-based approach as one of the intervention approaches could significantly improve QoL compared to control groups. However, the subgroup meta-analysis and narrative synthesis are limited in result generalization because only two trials with 340 samples were included to investigate QoL, and there was low certainty of evidence. In addition, only one trial reported that the reminiscence program intervention positively impacted QoL at 1-month follow-up. Nevertheless, other reviews on reminiscence therapy for older adults with mental illness also observed this positive outcome. Reminiscence therapy interventions positively affected QoL in long-term care residents with dementia. They thereby reduced the depressive and behavioral, and psychological symptoms of dementia (BPSD) in older adults with mild to moderate dementia.[54,55] Additionally, the meta-analysis demonstrated that the interventions, including active social interaction, e.g., engagement in pleasant and creative expression activities, positively affected depression. The frequency of such activities was 2 to 3 days per week, and the intervention duration was 6 to 12 weeks. The results revealed a significant decrease in depressive symptoms among older adult residents. Similarly to the QoL meta-analysis, only two trials,[46,47] with 153 samples, were included to investigate depression. The meta-analysis result for depression with low certainty of the evidence is also limited for generalization. However, this review's findings agreed with a previous study revealing that the interaction effect of engaging in enjoyable activities with co-residents and face-to-face contact frequency among older adult residents was associated with depressive symptoms rather than the effect of face-to-face contact frequency alone.[56] Furthermore, these findings were consistent with a previous study of elderly persons with dementia receiving 12 sessions of group music therapy, which included listening to music, singing with musical accompaniment, playing instruments, and having hand function with musical instruments. The results indicated that the CSDD scores of intervention groups were significantly lower than those of the control group at post-intervention, but the improvement of depressive symptoms was not maintained at the 1-month follow-up.[57]

All included studies in this review did not report an adverse effect from interventions. This meta-analysis and systematic review indicated that person-centered care, reminiscence-based interventions, and interventions for promoting social interactions positively impacted QoL and depression in long-term residents with mental illness. However, the overall evidence quality in the meta-analysis was relatively low due to the nature of the settings and institutionalized residents with mental illness, causing a high risk of study bias. In addition, only two studies were included in each subgroup analysis; publication bias was suspected. In this study, the authors did not identify unpublished and grey studies. As a result, based on this review, the authors recommend that interventions aiming to improve QoL and mental health of older adults with mental illness living at LTCFs should be person-centered care, reminiscence-based interventions, and interventions for promoting social interactions. These interventions should be theory-based and led by specialists or interventionists trained by specialists. The types and components of interventions should be adjusted based on available resources and contextual factors. More studies in this respect are needed to support these findings.

Suggestions for Future Research

As mentioned above, this review included only studies that measured mental health and QoL within the same study. As a result, future research should

investigate all relevant studies that measured QoL and mental health outcomes to thoroughly review the outcomes of interventions and existing evidence to synthesize the strength of existing evidence and better suggest clinical recommendations. Due to the high risk of bias in randomization, blinding in sample selection and allocation, small sample size, and low certainty of evidence reported in this review and meta-analysis, future studies, both intervention and review studies, should address such issues and minimize bias to ensure the validity and reliability of research findings. There are few studies on the effect of interventions on other components of mental health, such as social engagement, happiness, well-being, and life satisfaction. Therefore, these components need to be concerned in future studies.

Limitations

Grey literature and unpublished studies were not searched for relevant studies. This review included only eight studies from five research databases, high heterogeneity across studies, and low uncertainty of evidence presented. Possibly, some studies may have been left out of the review. The review was also confined to studies published in English. It means that not all cultural practices or countries are represented. Therefore, the results may apply only to the countries where evidence was sought. Moreover, the inclusion criteria for eligible studies included in this review focused on the studies aiming to measure both mental health and QoL within the same study as parallel outcomes, resulting in a small number of included studies. Therefore, the results of the review might be questionable. In addition, most studies were of low quality. They had a high-risk bias for randomization and blinding in sample selection and allocation, commonly occurring in studies conducted in real-life healthcare facility settings. Therefore, researchers and program interventionists should consider the limitations of these findings and each reviewed study and adjust the study design and intervention accordingly to the culture, available resources, and population contexts.

Conclusion

This systematic review demonstrated that some interventions positively affected QoL and depression of older adults with mental illness in LTCFs. This review highlighted that reminiscence-based interventions improved the QoL, and interventions to facilitate social interactions decreased depressive symptoms of institutionalized older people with mental illness. There was high heterogeneity among the included studies, and overall evidence quality was relatively low. As a result, writing a clear conclusion about the effectiveness of such interventions and generalization of the results was limited. More review and intervention studies with high integrity of randomization and blinding sample selection and allocation are needed. Notably, the description of studies to be included for review should be clear to prevent aggregation of low-quality studies that lead to poor results.

Implications for Nursing Practice

In clinical practice, nurses and health care providers should utilize theoretical frameworks, which are especially related to mental health illness, for the intervention programs aiming at improving the mental health and QoL of older adults with mental health illness living at LTCFs. Before implementing interventions, the health care providers should receive adequate training to implement an intervention effectively. Importantly, person-centered care, reminiscence-based interventions, and interventions to facilitate social interactions should be well-planned and adjusted accordingly to the available resource and contexts of LTCFs for residents with mental illness to improve their QoL and mental health.

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Appendix

Table 1. Keywords and inclusion criteria used for searching the studies in each database

Databases	Main Search	Limit	Search found (N)	Meet criteria (N)
PubMed	("older adults" OR elderly OR geriatrics OR aged OR aging) AND ("mental illness" OR "mental disease" OR "mental disorder") AND (intervention OR program) AND ("mental health" OR "well-being" OR "subjective well-being" OR "psychological well-being" OR "emotional well-being" OR "social well-being" OR happiness OR "life satisfaction" OR "mental wellness" AND ("quality of life") AND ("long-term care" OR "long-term care facilities" OR "nursing home" OR "aged care home" OR "aged care facility" OR "care home" OR "residential care" or "residential home")	- Year: December 2011 to December 2021 - Full text - English - Aged: 45-64 years and 65+ years	268	2
CINAHL	("older adults" or elderly or geriatrics) AND ("mental illness" OR "mental disease" OR "mental disorders") AND (intervention or program or therapy) AND ("mental health" or "well-being" or "well being") AND ("quality of life") AND ("long-term care" or "nursing home" or "residential care" or "care home")	- Year: December 2011 to December 2021 - Full text - English - Academic journal - Age: 45-64 years and 65+ years	213	18
Web of Science	("older adults" OR "elderly" OR "geriatric" OR "seniors" OR "aged" OR "aging") AND ("mental illness" OR "mental disease" OR "mental disorder" OR "psychiatric illness" OR "geriatric psychiatry" OR schizophrenia OR bipolar OR depression OR anxiety) AND ("intervention" OR "program" OR "therapy") AND ("mental health" OR "well-being" OR "subjective well-being" OR "psychological well-being" OR "emotional well-being" OR "social well-being" OR happiness OR "life satisfaction" OR "mental wellness") AND ("quality of life") AND ("long-term care" OR "long-term care facilities" OR "nursing home" OR "care home")	- English - Full-text - Year: December 2011 to December 2021	121	4
Proquest	("geriatrics" OR "elderly" OR "older adults") AND ("mental illness" OR "mental disease" OR "mental disorders" OR "psychiatric illness") AND ("intervention" OR "program" OR "therapy") AND ("mental health" OR "well-being" OR "well-being") AND ("quality of life") AND ("long-term care" OR "long-term care facilities" OR "nursing home" OR "aged care home")	- English - Full-text - Scholarly journal - Year: December 2011 to December 2021	1,278	5
Cochrane Library	("older adults" OR elderly OR seniors OR aged) AND ("mental illness" OR "mental disease" OR "mental disorder" OR schizophrenia OR bipolar OR depression OR anxiety) AND (intervention OR program OR therapy) AND ("mental health" OR well-being OR "subjective well-being" OR "psychological well-being" OR "emotional well-being" OR "social well-being" OR "quality of life") AND ("long-term care'' OR "long-term care facilities" OR ''nursing home'' OR "aged care facility" OR ''care home" OR "residential home")	- Year: December 2011 to December 2021	332	3

Appendix

Table 2. Study characteristics of included studies and their quality ratings

Study	Study designs	Country of facility	Number and type of facility	Study participants	No. of participants	Mean Age (SD)	Gender (%female)	Type of intervention	Instruments	Quality ratings (JADAD/ NOS)
Brooker DJ, et al. (2011)[44]	Cluster RCT	United Kingdom	10 extra care housing schemes	Residents with dementia or other significant mental health problem	Total = 293 Intervention = 144 Active Control = 149	IG = 81 (8.2) AC = 82 (7.9)	IG = 77% AC = 74%	IG: enriched care planning approach AC: full-time senior staff member support worker in improving activities	- QoL in Alzheimer's Disease (QOL-AD) - Geriatric Depression Scale (GDS) - Duke Social Support Index (DSSI) - Dementia Care Mapping (DCM) observation	JADAD 3
Chenoweth L, et al. (2014)[45]	Cluster RCT	Australia	38 residential aged care homes	Residents with dementia	Total = 601 Intervention = 150 Active control (group 1) = 155 Active control (group2) = 154 Passive control = 142	The mean age of all groups of participants = 84-86	IG = 70% AC (group1) = 67% AC (group2) = 66% PC = 77%	IG: person-centered care and person-centered care environment AC (group1): person-centered care and person-centered care planning AC (group2): person-centered care environment PC: usual care	- Dementia Quality of Life Questionnaire (DEMQOL) - Cornell Scale for Depression in Dementia (CSDD) - Cohen-Mansfield Agitation Inventory (CMAI) - Emotional Responses in Care (ERIC) Observations - Quality of Interactions Schedule (QUIS)	JADAD 1
Lin R, et al. (2019)[46]	Non-blinded RCT	China	3 nursing homes	Residents with dementia	Total = 91 Intervention = 43 Control = 48	84.33 (SD = 7.17)	IG = 55.8% AC = 68.8%	IG: Creative expression (CE) therapy CG: standard cognitive training	- Quality of Life-Alzheimer's Disease (QOL-AD) - Cornell Scale for Depression in Dementia (CSDD) - Mini-Mental State Examination (MMSE) - Functional Assessment of Communication Skills (FACS) - Observed Emotion Rating Scale (OERS)	JADAD 2

Table 2. Study characteristics of included studies and their quality ratings (cont.)

Study	Study designs	Country of facility	Number and type of facility	Study participants	No. of participants	Mean Age (SD)	Gender (%female)	Type of intervention	Instruments	Quality ratings (JADAD/ NOS)
Luo H, et al. (2018)[47]	Cluster RCT	Hong Kong	7 long-term care nursing homes	Residents with at least a mood problem	Total = 68 Intervention = 34 Control = 34	IG = 85.94 (7.14) CG = 84.37 (9.51)	IG = 76.7% CG = 84.4%	IG: pleasant activity scheduling intervention CG: usual care	- Geriatric Depression Scale 15 (GDS-15) - Hong Kong version of World Health Organization QoL scale-BREF (WHOQoL-BREF)	JADAD 2
O'Shea E, et al. (2014)[48]	Single-blinded cluster RCT	Ireland	18 long-term care nursing homes	Residents with dementia	Total = 304 Intervention = 153 Control = 151	IG = 85.2 (7.1) CG = 85.7 (7.1)	IG = 72% CG = 66%	IG: structured education-based reminiscence program CG: usual care	- QoL-Alzheimer's Disease (QOL-AD) - Cornell Scale for Depression in Dementia (CSDD) - Cohen-Mansfield Agitation Inventory - Modified Zarit Burden Interview scale	JADAD 1
Pramesona BA, Taneepanichskul S. (2018)[49]	Quasi-experimental two-group design	Indonesia	3 nursing homes	Residents with mild to moderate levels of depression	Total = 60 Intervention = 30 Control = 30	NR	IG = 41.7% CG = 35%	IG: religious approach CG: usual care	- Indonesian version of the GDS questionnaire - World Health Organization QoL (WHOQOL)-BREF Indonesian version	NOS 6
Serrani Azcurra DJLS (2012)[50]	Single-blinded, parallel-groups RCT	Argentina	2 long-term care nursing homes	Residents with Alzheimer's disease	Total = 135 Intervention = 45 Active control = 45 Passive control = 45	85.7 (SD=4.8)	IG = 66.5% AC = 60% PC = 65.5%	IG: life-story approach AC: counseling and informal social contacts PC: unstructured social contact	- Self-reported QoL scale (SRQoL) - Social Engagement Scale (SES) - Zarit Burden Interview short version (ZBI) - Well-being/Ill-being Scale (WIB) - Instrumental Activities of Daily Living (IADLs)	JADAD 2
van Dijk AM, et al. (2012)[51]	Quasi-experimental three-group design	Netherlands	13 nursing homes	Residents with dementia	Total = 155 Intervention (group1) = 69 Intervention (group2) = 31 Control = 55	IG (group1) = 84.4 (7.9) IG (group2) = 85.6 (5.9) CG = 86.1 (6.2)	IG(group1) = 73.9% IG (group2) = 93.5% CG = 83.6%	IG (group1): living-room theatre activity offered by trained professional caregivers IG (group2): living-room theatre activity offered by professional actors CG: usual reminiscence group activity	- The INTERACT - FACE scale - dementia-specific QoL instrument (QUALIDEM)	NOS 6

Appendix

Table 3. Summary of the interventions

Study	Intervention components							
	Theory/Theoretical framework	Type	Intervention strategies	Provider	Mode of delivery	Dosages	Time of measurement	Summary of key outcomes
Brooker DJ, et al. (2011)[44]	Not stated	Enriched care planning approach	- Identifying and planning occupations and activities that were feasible and enjoyable for an enriched life - Using an enriched care planning - Assisting facility staff in identifying problems and proposing possible solutions to assist the residents	Specialist staffs	Group	Duration: 18 months	Baseline, 6th month, 12th month, and 18th month	Improved QoL and reduced depressive symptoms
Chenoweth L et al. (2014)[45]	Not stated	Person-centered care and person-centered care environment	- Interacting with residents in a person-centered way - Using person-centered care planning - Improving home environment to increase access to social spaces	Interdisciplinary team (trained care manager, registered nurse, nursing assistants, and recreation therapist)	Group	Duration: 6 months	Baseline, 6th month, and 8th month post-intervention	No change in QoL and depression
Lin R et al. (2019)[46]	Kitwood's Theory (Person-centered care for dementia)	Creative expression approach	- Encouraging imagination and self-expression	Accredited psychotherapists	Group	12 sessions (One hour twice weekly sessions for 6 weeks)	- Communication, cognition, depression, and QoL (baseline, 6th weeks, and 4th weeks post intervention) - Emotion (3rd and 6th weeks)	Improved QoL and reduced depressive symptoms
Luo H, et al. (2018)[47]	Lewinsohn's behavioral theory of depression	Behavioral approach	- Scheduling of pleasant activities - Engaging in pleasant activities following the created enactment plan	Interdisciplinary team (trained social workers, program workers, personal care workers, nurses, occupational therapists, and physiotherapists)	Group	36 sessions (3 times a week for 12 weeks)	Baseline, 6th week, and 12th week	Improved QoL and reduced depressive symptoms
O'Shea E, et al. (2014)[48]	Not stated	A structured education-based reminiscence approach	- Using a structured education reminiscence-based program for staff - Incorporating reminiscence strategies into residents' care plan	Trained nurses and care assistant	Group	18 sessions (18 weekly sessions for 18 weeks)	Baseline, and at the 18th week	Improved QoL and no change in depressive symptoms

Table 3. Summary of the interventions (cont.)

Study	Intervention components							
	Theory/Theoretical framework	Type	Intervention strategies	Provider	Mode of delivery	Dosages	Time of measurement	Summary of key outcomes
Pramesona BA, Taneepanichskul S. (2018)[49]	Not stated	Religious approach	Participating in Qur'anic recital listening and preacher	The preacher (Muslim religious leader recognized by the community and also a licensed psychiatric nurse)	Group	39 sessions - Qur'anic recital (3 times a week lasting 20-25 minutes each session for 12 weeks) - Attending a sermon by a preacher (once a month lasting for 50-60 minutes/ session)	Baseline, 4th week, 8th week, and 12th week	Improved QoL and reduced depressive symptoms
Serrani Azcurra DJLS (2012)[50]	Person-centered principle incorporating the subjective viewpoint	Life-story approach	- Discussing meaningful events in residents' life	Trained psychologists	Group	24 sessions (One hour twice weekly sessions for 12 weeks)	Baseline, 12th week, and 6th month post-intervention	Improved QoL and social engagement
van Dijk AM, et al.(2012)[51]	Not stated	Theatre approach	Participating in Living-room theatre activity in which communication and reciprocity are used	Trained professional caregivers	Group	1 session (45 minutes)	Baseline, during an intervention, and two hours after intervention	No change in QoL and mood

Appendix

Table 4. Summary of GRADE evidence quality assessment for depression and QoL outcomes

No. of studies	Design	Limitations (RoB)	Indirectness of patients, intervention, and comparator	Inconsistency[1]	Imprecision[2]	Other considerations[3]	Quality of evidence	Strength of recommendation
Interventions integrating active social interaction on depression								
2 studies (n = 153)	RCTs/ high quality	high RoB/ low quality	high selection bias/ low quality	Low inconsistency/ high quality	Low imprecision/ moderate quality	Moderate to high reporting bias/low-quality	Low ⊕⊕◯◯	Weak for intervention ↑?
Reminiscence-based interventions on quality of life								
2 studies (n = 340)	RCTs/ high quality	high RoB/ low quality	high selection bias/ low quality	Low inconsistency/ high quality	Low imprecision/ moderate quality	Moderate to high reporting bias/low-quality	Low ⊕⊕◯◯	Weak for intervention ↑?

[1] There is homogeneity among studies in the analysis of both outcomes.

[2] Low imprecision of studies (narrow WMD ranges of both outcomes)

[3] Only two studies in each subgroup analysis; publication bias is suspected. The authors did not identify unpublished and grey studies.

Appendix

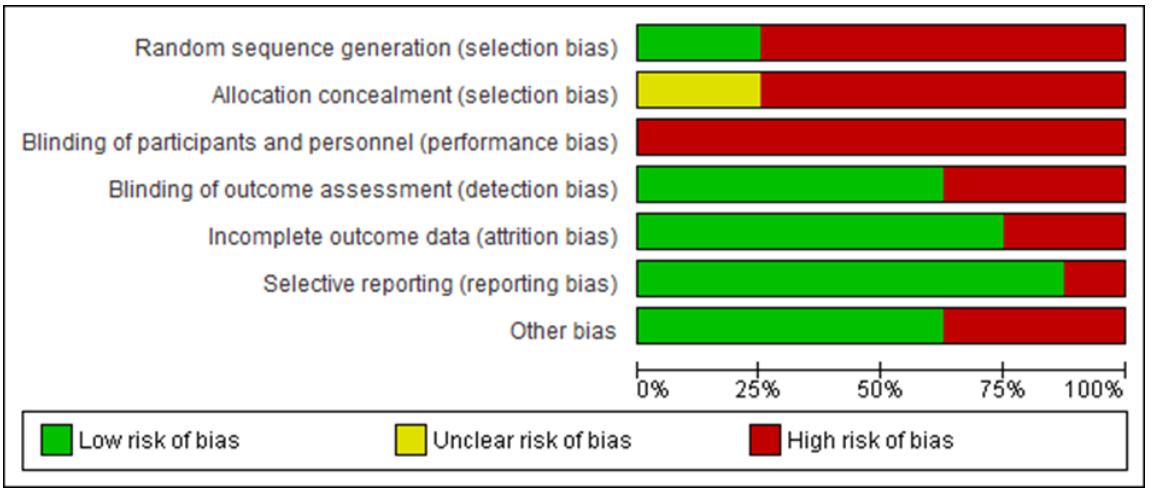

Figure 2. Risk of bias graph: review authors' decisions on each risk of bias item using RevMan 5.4.1

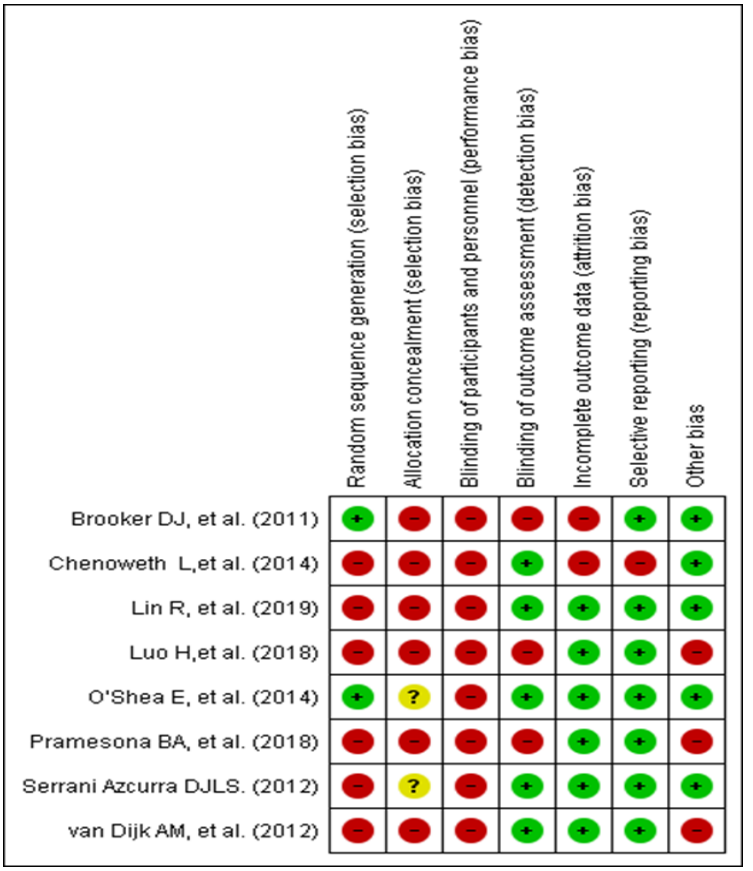

Figure 3. Risk of bias summary using RevMan 5.4.1

โปรแกรมเพื่อส่งเสริมสุขภาพจิตและคุณภาพชีวิตของผู้สูงอายุที่มีภาวะเจ็บป่วยทางจิตในการดูแลระยะยาว: การทบทวนวรรณกรรมอย่างเป็นระบบและการวิเคราะห์อภิมาน

เบญจวรรณ งามวงศ์วิวัฒน์ วินีกาญจน์ คงสุวรรณ ประณีต ส่งวัฒนา*

บทคัดย่อ: มีการจัดโปรแกรมเพื่อส่งเสริมสุขภาพจิตหลายรูปแบบให้กับผู้สูงอายุที่อาศัยอยู่ในสถานดูแลระยะยาว แต่ประสิทธิภาพโดยรวมของโปรแกรมเหล่านี้ในการส่งเสริมสุขภาพจิตและคุณภาพชีวิตยังคงไม่สามารถสรุปได้ การศึกษาวิจัยนี้เป็นการทบทวนวรรณกรรมอย่างเป็นระบบและการวิเคราะห์อภิมานชิ้นแรกเพื่อศึกษาและรายงานผลของโปรแกรมต่อการส่งเสริมสุขภาพจิตและคุณภาพชีวิตของประชากรกลุ่มนี้ การสืบค้นงานวิจัยที่ครอบคลุมได้ดำเนินการตั้งแต่เดือนมกราคมถึงกุมภาพันธ์ พ.ศ. 2565 โดยใช้ฐานข้อมูล PubMed, CINAHL, ProQuest, Web of Science และ Cochrane เพื่อระบุงานวิจัยตามเกณฑ์การคัดเลือก โดยเป็นงานวิจัยที่ตีพิมพ์เป็นภาษาอังกฤษตั้งแต่เดือนธันวาคม พ.ศ. 2554 ถึงธันวาคม พ.ศ. 2564 เป็นการศึกษาเพื่อวัดผลลัพธ์คือสุขภาพจิต และคุณภาพชีวิตในบุคคลอายุ 60 ปีขึ้นไปที่มีภาวะเจ็บป่วยทางจิตในสถานดูแลระยะยาว ซึ่งไม่รวมการศึกษาวิจัยที่วัดผลลัพธ์เฉพาะสุขภาพจิตหรือคุณภาพชีวิต The Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) ถูกนำมาใช้เพื่อเป็นแนวทางในการศึกษาและรายงานผลการวิจัย ผู้วิจัยสองคนประเมินคุณภาพของการศึกษาเชิงระเบียบวิธีวิจัยและข้อมูลที่เกี่ยวข้องอย่างเป็นอิสระต่อกัน ผู้วิจัยคนที่สามแก้ไขความแตกต่าง

งานวิจัยเชิงทดลองแบบสุ่มที่มีกลุ่มควบคุม 6 เรื่องและงานวิจัยกึ่งทดลอง 2 เรื่องได้ถูกนำมาทบทวนอย่างเป็นระบบ ซึ่งมีงานวิจัย 5 เรื่องมีคุณสมบัติเหมาะสมสำหรับการวิเคราะห์อภิมานจากกลุ่มตัวอย่างจำนวน 658 คน เนื่องจากมีความแตกต่างของงานวิจัยที่นำมาศึกษาสูง ผู้วิจัยจึงทำการวิเคราะห์กลุ่มย่อยโดยใช้โมเดลแบบคงที่พบว่า โปรแกรมที่ผสมผสานการมีปฏิสัมพันธ์ทางสังคมแบบแอคทีฟ ทำให้อาการซึมเศร้าของผู้สูงอายุลดลง (หลักฐานมีความเชื่อมั่นต่ำ) นอกจากนี้ โปรแกรมโดยใช้การระลึกความหลังเป็นฐานช่วยปรับปรุงคุณภาพชีวิตของผู้สูงอายุ (หลักฐานมีความเชื่อมั่นต่ำ) แม้ว่าประสิทธิผลของโปรแกรมยังคงไม่สามารถสรุปได้เนื่องจากมีความแตกต่างของงานวิจัยที่นำมาศึกษาสูง มีจำนวนการศึกษาค่อนข้างจำกัดในการวิเคราะห์อภิมาน และหลักฐานคุณภาพต่ำ จากการทบทวนนี้ผู้วิจัยเสนอแนะว่า การพยาบาลและกิจกรรมที่ส่งเสริมปฏิสัมพันธ์ทางสังคมและการระลึกความหลังควรนำมาใช้ในการดูแลผู้สูงอายุที่อาศัยอยู่ในสถานดูแลระยะยาวเพื่อยกระดับคุณภาพชีวิตและสุขภาพจิตของผู้สูงอายุที่มีภาวะเจ็บป่วยทางจิต อย่างไรก็ตาม ควรปรับเปลี่ยนประเภทและองค์ประกอบของโปรแกรมตามทรัพยากรที่มีอยู่และปัจจัยทางบริบท การวิจัยเพิ่มเติมที่มีขนาดกลุ่มตัวอย่างใหญ่ขึ้นและคุณภาพของระเบียบวิธีวิจัยที่สูงขึ้นจะเสริมความแข็งแกร่งให้กับหลักฐานเชิงประจักษ์ในประเด็นการดูแลนี้

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