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Effectiveness of a Community-Based Mental Health Promotion Program for Older Adults in Reducing Depression Symptoms and Loneliness at Lat Lum Kaeo Hospital, Pathum Thani Province

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Abstract

This quasi-experimental one-group pretest-posttest study aimed to examine changes in depressive symptoms, loneliness, and quality of life following participation in the program of a community-based mental health promotion in reducing depression and loneliness among older adults at Lat Lum Kaeo Hospital, Pathum Thani Province. The sample consisted of 40 older adults with Thai Geriatric Depression Scale-15 (TGDS-15) scores of 5-11, selected by simple random sampling. Participants completed a 12-week program comprising four components: physical and mental health enhancement, emotional and stress management skill development, social network building, and promotion of meaning in life. Research instruments included the TGDS-15, a loneliness scale, and the Thai version of the WHOQOL-BREF quality of life measure. Data were analyzed using descriptive statistics and paired t-test. Finding reveal that following the 12-week intervention, the mean depression score decreased significantly from 6.3 (SD = 2.2) to 2.6 (SD = 2.3), (-4.9, 95% CI: -6.3, -3.6). Mean loneliness scores declined significantly from 65.7 (SD = 7.7) to 58.9 (SD=10.7) (MD=-6.8, 95% CI: -8.1, -5.6), while mean quality of life scores improved significantly from 88.4 (SD = 17.1) to 101.3 (SD = 14.9) (MD = 12.9, 95% CI: 11.5, 14.3). These preliminary findings support further controlled evaluation with a larger sample and longer-term follow-up before broader implementation is considered.

Keywords: Depression and Loneliness, Mental Health Promotion, Older adults

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Introduction

Thailand is undergoing rapid population ageing, with adults aged 60 years and older accounting for 20.5% of the total population in 2025, a figure projected to rise to 28.0% by 2030.[1] This demographic shift has elevated mental health problems among older adults to a critical public health concern. The World Health Organization has noted that older adults may be vulnerable to mental health and psychosocial concerns, including depressive symptoms and loneliness, which adversely affect quality of life, physical functioning, and chronic disease morbidity.[2] The prevalence of depression among older adults is approximately 10–15% in the general population and rises to 30–40% in those with comorbid chronic conditions.[3] Depression in this age group is associated with increased mortality, declining physical function, and higher healthcare expenditure. Loneliness a subjective experience distinct from objective social isolation has been identified as a significant risk factor for depression, cardiovascular disease, and dementia.

In Pathum Thani Province, a peri-urban area adjacent to Bangkok, approximately 17.8% of the population are older adults.[4] Lat Lum Kaeo District is characterized by a rapidly evolving mixed community comprising both long-established and newly settled residents. Accelerating social change has left older adults socially isolated, as family members spend extended hours away from home, leaving older adults alone during daytime hours. The number of older adults receiving services for documented mental health concerns increased from 16.3% in 2024 to 20.4 in 2025, representing a 23.5% increase from the previous year in older adults presenting with psychiatric complaints, predominantly depression and anxiety.[5]

Current approaches to mental health prevention and promotion among older adults emphasize holistic care and community participation.[6] Community-based mental health promotion programs have demonstrated effectiveness in reducing depression and improving quality of life in this population. A cluster randomized controlled trial by Chen et al.[7] found that a collaborative/integrated care model reduced depressive symptom severity among older adults with comorbid hypertension in rural China; however, this trial targeted a clinically distinct population and delivered care through primary care providers rather than a community-based psychoeducational format. Primary prevention is a key strategy in older adults' mental health care, emphasizing the promotion of psychological resilience and the development of protective factors before problems arise. A network meta-analysis by Dong et al.[8] similarly reported reductions in depressive and anxiety symptoms following mind–body exercise (e.g., tai chi, qigong) among older adults. As both studies differ from the present intervention in population, delivery format, or intervention type, their findings should not be interpreted as directly comparable. However, evidence remains limited regarding culturally adapted, multicomponent mental health promotion programs for older adults at risk of depression in peri-urban Thai communities. Therefore, this study aimed to examine changes in depressive symptoms, loneliness, and quality of life following participation in a 12-week community-based mental health promotion program among older adults of Lat Lum Kaeo District, Pathum Thani Province.

Methods

Study design and samples

This study was single-group pretest–posttest quasi-experimental design. The population study comprised 4,856 older adults residing in the catchment area of Lat Lum Kaeo Hospital, Pathum Thani Province, as recorded in the civil registration database as of January 1, 2024.[4]

Sample size and sampling

The sample size was calculated based on the primary outcome of depressive symptom score measured by TGDS-15, using the paired t-test formula for a one-group pretest–posttest design, calculated with $n = [(Z_{\alpha}/2 + Z_{\beta})^2 \times \sigma d^2] / d^2$.[9] The standard deviation of difference scores (4.5) and the minimum detectable difference (2.5 points) were derived from the study by Lertsuwan K.[10] A significance level of 0.05

($Z_{-\alpha}/2$ = 1.96) and a statistical power of 80% ($Z_{-\beta}$ = 0.84) were applied. The minimum required sample size was 26 participants. After adjusting for a 35% anticipated dropout rate and rounding up to facilitate group-based activities, the final sample size was set at 40 participants.

A simple random sampling method was used to recruit participants. Older adults residing in Lat Lum Kaeo District who met the preliminary eligibility criteria were identified from the district's civil registration data.[4] Eligible individuals were randomly selected using a computer-generated random number sequence and subsequently screened using the TGDS-15. Selected individuals were contacted by home visit and enrolled after providing written informed consent. The sample selection criteria were: aged 60 years or older; residing in the catchment area for at least 6 months; eligibility screening (TGDS-15, score 5–11)[11] was conducted 2 days before baseline assessment; the interval may account for score changes outside this range; physical eligibility for participation was defined as the ability to walk independently or with assistive devices (e.g., cane, walker); medical suitability for light group exercise as determined by a physician prior to enrollment and providing voluntary informed consent with commitment to attend all sessions across the 12-week program.

Exclusion criteria were: psychiatric diagnoses and history of mental health service use were identified; uncontrolled chronic illness or physical limitations precluding participation; receipt of antidepressants or participation in any psychosocial intervention within the preceding 3 months; and concurrent enrollment in another health education program.

Instruments

1) A personal information record form was used to collect data including sex, age, marital status, education, occupation, income, living arrangement, underlying conditions, and mental health service history.

2) The Thai version of the 15-item Geriatric Depression Scale (TGDS-15),[11] adapted from Sheikh & Yesavage,[12] was used to screen for depressive symptoms; higher scores indicate greater severity. A cutoff of 5–11 was applied, corresponding to the mild-to-moderate depression range of the original GDS-15 classification with normal (0–4), mild (5–8), moderate (9–11), and severe (12–15) consistent with the validated cutoff of ≥5 reported for detecting major depressive disorder among Thai geriatric outpatients (sensitivity 92%, specificity 87%).[11] Participants scoring in the severe range (12–15) were excluded as potentially requiring more intensive clinical care. The TGDS-15 is a screening instrument and does not independently establish a diagnosis of major depressive disorder.

3) The UCLA Loneliness Scale Version 3 (Thai version),[13] a 20-item instrument rated on a 4-point Likert scale with total scores ranging from 20 to 80, where higher scores indicate greater loneliness (20–34 = low; 35–49 = moderate; 50–64 = moderately high; 65–80 = high).

4) Quality of life was measured using the WHOQOL-BREF-THAI,[14] a 26-item instrument comprising four domains: physical health, psychological health, social relationships, and environment. Domain scores were calculated and reported according to the standard WHOQOL scoring method. In addition, the total score (range 26–130) was classified into three levels poor (26–60), moderate (61–95), and good (96–130) based on the validated Thai scoring criteria.

5) The community-based mental health promotion program for older adults consisted of 12 weekly group sessions, each lasting 100–160 minutes, delivered over a continuous 12-week period.

Data collection

1) The principal investigator trained the research assistants and multidisciplinary team before participant recruitment and baseline data collection.

2) The researcher trained a multidisciplinary research team comprising a community psychiatrist, psychiatric and mental health nurses, a clinical psychologist, a physical therapist, a social worker, a public health officer, and village health volunteers (VHVs) on program delivery procedures, health education techniques for older adults, basic symptom observation, and health assessment methods.

3) Prior to program enrollment, the researcher introduced the study, explained its objectives and procedures, and obtained written informed consent from all participants. Baseline assessments of personal characteristics, depression, loneliness, and quality of life were then conducted using the prepared instruments.

4) The program was developed based on a review of the literature on community-based mental health interventions for older adults and mapped to the Orem's Self-Care Theory,[15] social support theory and the Department of Mental Health's guidelines for mental health promotion among older adults.[16] The draft program content was reviewed by 5 experts in geriatric psychiatry, community nursing, health promotion, yielding a content validity index (CVI) of 0.86. The program consisted of 12 weekly group sessions, each lasting 100–160 minutes, delivered over 12 consecutive weeks at the Older Adults Club, Lat Lum Kaeo District, Pathum Thani Province. The 40 participants were divided into 4 groups of approximately 10 participants each, to facilitate group activities. Each session was led by nurse and a research assistant. Participants were required to attend at least 80% of the total sessions to be included in the outcome analysis. The activities included in each session were as follows:

Session 1: Building Relationships and Understanding Mental Health in Older Adults to help participants understand the meaning and importance of mental health in older adults, recognize risk and protective factors for depression, and perform a basic self-assessment of their own mental health.

Session 2: Understanding and Managing Depression, Loneliness, and Daily Stress to help participants understand the symptoms and causes of depression and loneliness, distinguish normal feelings from those requiring professional help, identify available support resources, learn basic stress management strategies, and practice relaxation techniques.

Session 3: Positive Thinking, Gratitude, and Progressive Muscle Relaxation to help participants understand the effects of positive thinking on mental health, learn to reframe negative thoughts, practice gratitude and appreciation, understand the relationship between psychological stress and muscle tension, and learn progressive muscle relaxation techniques.

Session 4: Nutrition and Exercise for Mental Health to help participants understand the role of nutrition in mental health, identify foods that promote or impair mental well-being, plan a mental health-supportive diet, learn appropriate exercise for older adults, and practice safe and correct physical activity.

Session 5: Problem-Solving and Decision-Making to help participants learn a systematic approach to problem-solving, practice analyzing and evaluating options, and build confidence in making decisions.

Session 6: Art Therapy Colors of Life to help participants understand the mental health benefits of art therapy, express emotions through artistic creation, and produce personally meaningful artwork.

Session 7: Review and Encouragement to help participants review their learning from the first six weeks, assess their own progress, and build motivation to continue.

Session 8: Quality Sleep, Meaning, and Purpose in Life to help participants understand the importance of sleep for mental health, learn the causes of and solutions to sleep problems, practice pre-sleep relaxation techniques, explore personal meaning and life purpose, recognize their own value and roles, and set meaningful life goals.

Session 9: Giving, Volunteerism, and Thai Wisdom in Mental Health Care to help participants understand the mental health benefits of altruism, identify ways to engage with the community, plan volunteer activities, learn Thai traditional wisdom related to mental health, connect Thai ways of life with self-care, and preserve local wisdom.

Session 10: Music Therapy and Group Singing to help participants understand the effects of music on mental health, express emotions through song, and experience joy through collective singing.

Session 11: Coping with Loss to help participants understand healthy grieving processes, learn adaptive coping strategies following loss, and find new meaning

after bereavement.

Session 12: Preparing for the Future and Giving Back to the Community to help participants learn to plan for post-retirement life, prepare psychologically for the future, envision a fulfilling life, apply their learning in daily practice, share happiness with the community, and cultivate a sense of self-worth and belonging.

5) After the participants had completed all twelve sessions of the program, the researcher asked them to complete the Thai version of the TGDS-15, loneliness scale, quality of life scale and satisfaction with the program. Postintervention assessment was conducted within one week after completion of the 12-week program by assessor, who was independent from the intervention delivery team.

Statistical analysis

The primary outcome of this study was depressive symptom score, as measured by the TGDS-15, which was also the outcome used for sample size calculation. Loneliness and quality of life were assessed as secondary outcomes.

All statistical analyses were performed using SPSS version 26.0 (IBM Corp., Armonk, NY). Quantitative data analysis, including personal characteristics, depression levels, loneliness levels, and quality of life level was conducted using frequency, percentage, mean, median, standard deviation, maximum value, and minimum value. A significance level of $\alpha = 0.05$ was used for all analyses. Normality of the distribution of difference scores for each outcome was assessed using the Shapiro–Wilk test prior to conducting paired t-tests. Paired t-tests were used to compare preintervention and postintervention scores, with results reported as t statistics with degrees of freedom, 95% confidence intervals, and Cohen's d_z as the effect size measure.

Ethics consideration

Ethical approval was granted by the Human Research Ethics Committee of Sirindhorn College of Public Health, Yala Province, on January 14, 2026 (SCPHYLIRB-2568/1023).

Recruitment and data collection took place between Feb-March, 2026. Written informed consent was obtained by research assistance prior to participation. Participant data were kept confidential through coding of identifying information and secure, password-protected storage. A clinical safety protocol was established prior to implementation. Participants identified during screening or throughout the program as having a TGDS-15 score indicating severe symptoms, expressed thoughts of self-harm, or noticeably worsening psychological symptoms were assessed by nurse and referred to the psychiatric outpatient clinic at the Lat Lum Kaeo hospital for further evaluation. Referred participants were followed up by contact at 1 month to monitor symptom status in coordination with the receiving facility and, where applicable, family caregivers.

Results

Of the 40 participants, the majority were female (65.0%). The mean age was 69.6 years (SD = 7.8), with most participants aged 60–69 years (60.0%), followed by 70–79 years (22.5%) and 80 years or older (17.5%). Over half of participants were married (52.5%), while the remainder were widowed (47.5%). Regarding education, half had completed primary school (50.0%), 35.0% had secondary school education or higher, and 15.0% had no formal education. More than half were retired or not currently employed (57.5%). Median monthly income was 8,000 THB (range: 600–50,000 THB); most participants (70.0%) reported a monthly income below 10,000 THB. Nearly all participants lived with family or others (97.5%), with only one participant (2.5%) living alone. Most participants (87.5%) reported at least one underlying condition, most commonly hypertension (68.6%), followed by hyperlipidemia (42.9%) and diabetes mellitus (34.3%); some participants had more than one condition. The majority (82.5%) had no prior history of mental health service use, as shown in Table 1.

Table 1 Demographic and clinical characteristics of participants (n = 40)

Characteristics	n	%
Gender		
Female	26	65.0
Male	14	35.0
Age		
60-69	24	60.0
70-79	9	22.5
80+	7	17.5
Mean (SD)	69.6	7.8
Median (Min: Max)	66.5 (60: 83)	
Marital status		
Married	21	52.5
Widowed	19	47.5
Education level		
No formal education	6	15.0
Primary school	20	50.0
Secondary school or higher	14	35.0
Occupation		
Retired / Not employed	23	57.5
Currently employed	17	42.5
Monthly income (THB)		
<10,000 THB	28	70.0
≥10,000 THB	12	30.0
Mean (SD)	13,177.5	13,916.4
Median (Min: Max)	8,000 (600: 50,000)	
Living arrangement		
Living with family/others	39	97.5
Living alone	1	2.5
Underlying conditions		
None	5	12.5
Underlying conditions (Some participants had more than one underlying condition)	35	87.5
- Hypertension	24	68.6
- Hyperlipidemia	15	42.9
- Diabetes mellitus	12	34.3
History of mental health service use		
None	33	82.5
Prior contact/ treatment	7	17.5

Among the 40 participants found that depression level preintervention was mild depression in 100.0% with the lowest score of 5 and the highest score of 11. Postintervention, 82.5% had no depression, with the lowest score of 0 and the highest score of 9. The pretest and posttest average scores of depressions were 6.3 (±2.2) and 2.6 (±2.3), respectively. This showed that the depression scores were significantly lower after entering the program (-4.9, 95% CI [-6.3, -3.6]).

Regarding loneliness level preintervention, 47.5% of the samples had a moderately high level and high level, with the lowest score of 45 and the highest score of 79. After participating, 47.5% of the samples had a moderately high level and 35.0% of high level, with the lowest score of 35 and the highest score of 77. The average loneliness score has decreased from 65.7 to 58.9, which is also statistically significant (MD = -6.8, 95% CI [-8.1, -5.6])

For quality of life level preintervention, 60.0% of the samples had a moderate level and 32.5% of good level, with the lowest score of 54 and the highest score of 126. After participating, 62.5% of the samples had a good level and 37.5% of moderate level, with the lowest score of 67 and the highest score of 127, The average score of quality of life was found to have increased from 88.4 to 101.3, which is a statistically significant difference after intervention (MD = 12.9, 95% CI [11.5, 14.3]) as shown in table 2.

Discussion

The community-based mental health promotion program at Lat Lum Kaeo Hospital depressive symptom scores decreased following participation in the 12-week program; however, the absence of a control group limits causal interpretation symptoms over the 12-week intervention. Among the 40 participants, mean depression scores decreased significantly from 6.3 to 2.6, and the proportion of participants whose TGDS-15 scores fell within the normal range increased from 0% to 82.5% (-4.9, 95% CI [-6.3, -3.6]). These findings align with Beck et al.'s Cognitive-Behavioral Theory, which posits that modifying distorted negative thinking patterns effectively reduces depressive symptoms[17], as the program

Table 2 Number and percentage of the sample group, classified by depression symptoms, loneliness, and quality of life pre and post intervention (n = 40)

Outcome	Intervention		Mean change, (95% CI)	t (df)	Cohen's dz	p value
	Pre	Post				
Depression Symptoms						
Mean (SD)	6.3 (2.2)	2.6 (2.3)	-4.9 [-6.3, -3.6]	t=19.8 (39)	1.2	< .001
Normal range (0-4)	0 (0.0%)	33 (82.5%)	-	-	-	-
Moderate (5-11)	40 (100.0%)	7 (17.5%)	-	-	-	-
Loneliness						
Mean (SD)	65.7 (7.7)	58.9 (10.7)	-6.8 [-8.1, -5.6]	t =10.9 (39)	1.7	<0.001
Moderate	2 (5.0%)	7 (17.5%)	-	-	-	-
Moderately High	19 (47.5%)	19 (47.5%)	-	-	-	-
High	19 (47.5%)	14 (35.0)	-	-	-	-
Quality of life						
Mean (SD)	88.4 (17.1)	101.3 (14.9)	12.9 [11.5, 14.3]	t=18.8 (39)	3.0	<0.001
Poor	3 (7.5%)	0 (0.0%)	-	-	-	-
Moderate	24 (60.0%)	15 (37.5%)	-	-	-	-
Good	13 (32.5%)	25 (62.5%)	-	-	-	-

Note: Cohen's dz was calculated as the mean difference divided by the standard deviation of the difference scores, appropriate for paired-samples designs. Mean differences are calculated consistently as postintervention minus preintervention scores.

incorporated cognitive restructuring and emotional regulation skill-building as core components. The results are also consistent with Kabat-Zinn's[18] Mindfulness-Based Stress Reduction (MBSR) approach, which has demonstrated effectiveness in reducing depression among older adults, particularly within Buddhist-influenced cultural contexts that align closely with the lifestyle of the Thai participants. These findings are further supported by Nitaya Yuangdechkla and Apinya Tancharoen[19] found that elderlies with depression who received a mental health education program had significantly lower depression scores than the control group at the 0.05 level of significance. Additionally, a network meta-analysis by Dong et al.[8], encompassing 42 RCTs and 2,974 participants, demonstrated that structured mind-body exercise programs particularly those integrating mindfulness-based movement such as Tai Chi and Qigong significantly reduced depressive symptoms in older adults (SMD =−0.52, 95% CI [−0.71, −0.34]), with program duration and session frequency identified as key determinants of effectiveness. It should be noted that this evidence pertains specifically to mind–body exercise interventions, which differ substantially in content and delivery format from the psychosocial and educational program used in the present study; therefore, these findings should not be interpreted as directly comparable evidence for the present intervention. Nonetheless, the identification of program duration and session frequency as determinants of effectiveness may offer a general, cross-modality consideration relevant to the design of structured, multi-session interventions for older adults.

Although the mean loneliness score decreased significantly following the intervention (from 65.7 to 58.9), 22 of 40 participants (55.0%) remained in the moderately high or high loneliness categories at postintervention, compared with 35 participants (87.5%) at baseline. This important finding suggests partial rather than complete improvement; additional or longer-term support may therefore be required to achieve more

substantial and sustained reductions in loneliness among this population. The observed reduction is consistent with Cobb's[20] and House et al.,[21] Social Support Theory, which describes social support as a buffering mechanism against the adverse effects of stress and isolation on mental health. The program's group activities and peer support networks were designed in accordance with Weiss's Social Needs Theory,[22] which identifies social integration and attachment as essential conditions for reducing loneliness. These findings are corroborated by Suriyawong et al.,[23] whose quasi-experimental study evaluating the Together We Thrive program a 12-week, culturally adapted, group-based psychosocial intervention among older adults in Northern Thailand demonstrated significant improvements in loneliness ($p = .037$, $\eta^2 = .104$), social network scores ($p = .031$, $\eta^2 = .109$), and quality of life ($p = .026$, $\eta^2 = .114$) in the experimental group compared to controls, supporting the effectiveness of structured group-based community programs in addressing loneliness among older adults. This finding suggest that a brief intervention may be insufficient to fully reverse established patterns. Future studies should examine whether longer programs or follow-up booster sessions produce more sustained improvements, particularly given the finding that loneliness scores, while significantly reduced, remained elevated for most participants at postintervention.

With respect to quality of life, mean scores increased significantly from 88.4 to 101.3, and the proportion of participants with good quality of life rose from 32.5% to 62.5% (MD = 12.9, 95% CI [11.5, 14.3]). These findings align with Ryff's Psychological Well-being Model,[24] which identifies self-acceptance, purpose in life, and positive relationships as key determinants of quality of life in older adults. They are further consistent with Yuangdetkla N et al., [19] who found significant improvements in quality of life scores following a group mental health promotion program (p-value <0.05). This collectively suggesting that reductions in depressive symptoms and loneliness may be associated with improved quality of life; however, this relationship was not formally tested. Future studies with larger sample sizes should consider mediation analysis to examine whether changes in depressive symptoms and loneliness explain the observed improvement in quality of life.

Strengths and limitations

This study has several limitations. First, the one-group pretest–posttest design without a control group precludes causal inference; observed changes may be attributable to regression to the mean, maturation, repeated testing, concurrent usual care, participant expectations, or attention from the research team, rather than the intervention itself. Second, the relatively small, single-site sample limits generalizability. Third, program duration was fixed at 12 weeks, and the study did not compare different program durations or the addition of booster sessions. Future studies should employ controlled designs, larger and multi-site samples, and longer follow-up periods to confirm these preliminary findings.

Conclusion

This study evaluated the preliminary outcomes of a community-based mental health promotion program for older adults. Following the 12-week intervention, mean depressive symptom scores decreased from 6.3 to 2.6, and loneliness scores declined from 65.7 to 58.9; quality-of-life scores also increased. However, as this study used a one-group pretest–posttest design without a control group, these findings cannot confirm the effectiveness of the program or establish a causal relationship between the intervention and the observed changes. Although loneliness scores decreased, most participants continued to report elevated loneliness, suggesting that additional or longer-term support may be required. These findings suggest that a program integrating physical and mental health promotion, emotional and stress management skills, social network support, and meaning-in-life enhancement may be a promising approach for community-based mental health care for older adults; controlled studies are needed to confirm these preliminary observations.

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