

ORIGINAL ARTICLE

Mediating Role of Self-Efficacy on the Relationship between Loneliness and Depression among Community-Dwelling Older Persons at Na Khayat Subdistrict, Thailand

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ABSTRACT

Introduction: The ageing population has brought along various health implications, with an increasing prevalence of depression among older persons, particularly those experiencing loneliness. This study aimed to determine the mediating role of self-efficacy on the relationship between loneliness and depression among older persons. **Methods:** A total of 450 older persons aged 60 and older were randomly recruited from Health Promoting Hospitals in the three zones under the Na Khayat Subdistrict. Confirmatory factor analysis (CFA) was conducted to verify the factor structure of the observed variables, with the interrelationship between variables studied using structural equation modelling (SEM). A mediation analysis was completed via Bootstrap Analysis. **Results:** From the study, at least one in every 10 participants (10.4%) experienced depressive symptoms. Three-quarters (75.1%) of them had low levels of loneliness while 10.4% had depressive symptoms with loneliness. The CFA results showed acceptable indices of the structural model ($\chi^2 = 1133.414$, $df = 342$, Relative $\chi^2 = 3.314$, GFI = 0.833, AGFI = 0.801, CFI = 0.807, RMSEA = 0.072). The path analysis showed that seven variables had significant causal relationships with depression ($R^2 = 0.441$, $p < 0.05$), including employment, source of household income, living arrangement, social support, perception of health, self-efficacy, and loneliness. The mediation regression analysis showed a partial mediation effect of self-efficacy on the relationship between loneliness and depression. **Conclusions:** Self-efficacy plays a major role in preventing the development of depression among older persons with loneliness. Self-efficacy interventions should be integrated into various programmes to prevent depressive symptoms.

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INTRODUCTION

Globally, many countries are facing a growing number of ageing population as a result of a longer life expectancy brought on by medical and technological advancement. According to the United Nations (1), in 2020, there were at least 727 million people aged 65 years old and the number is expected to double to almost 1.5 billion people by 2050. Compared to other regions, Asian countries are experiencing a more rapid phase of population ageing, whereby one in four people in Asia and the Pacific regions will be over 60 years old by 2050. Thailand is one of the Asian countries experiencing rapid population ageing. According to the national report by

the Department of Older Persons in Thailand (2), the population of older persons in the country has increased to 12.47 million in 2020, accounting for 18.86% of the total population. Prior to the COVID-19 pandemic, Thailand was predicted to become “a completely aged society” by 2022. However, it might have been slightly delayed due to the higher mortality suffered by older persons during the pandemic (3).

The epidemiological transition and rapid increase in ageing population have led to numerous health, social, and economic consequences in terms of the pattern of disease burden, the delivery and organisation of health and social services, employment, social security, family structure, as well as social and care support systems. Globally and domestically, the physical and mental health of older persons is an important implication of the ageing population. Depression is one of the most common mental health problems among older persons.

Depression is a significant contributor to the global disease burden, affecting people of all ages across the world (4). In a recent study, the cumulative prevalence of depression among older persons in developing countries is higher (40.78%) than in developed countries (17.05%) (5). In Thailand, a developing country in the Asian region, 18.24% of older persons aged 60 and above were reported to have depressive disorders (6) with those in the 70-79 years group recording the highest prevalence of depression at 2.6% (7). Depression can affect the quality of life (QOL) of older persons (8) and their life satisfaction (9). More seriously, depression can lead to suicide or suicidal attempts. Phattalung province was one of the top five provinces with the highest suicide rate (11.81 per 100,000 population) in Thailand (10). A depression screening survey in the Province revealed that one in five (20.65%) of every older person was at risk of developing depression in Na Khayat subdistrict (11), the highest proportion compared with other subdistricts in the Khuan Khanun district, Phattalung Province.

Loneliness has been identified as one of the most risk factors for development of depression (12). Loneliness is a prevalent phenomenon in later life as a result of the life transition that occurs following retirement (13-14). Loneliness has been associated with negative mental health effects among older persons. People with loneliness are less pleasant, less satisfied, have more negative attitudes, and suffer from more depressive symptoms than people who are not experiencing loneliness (15). The significant relationship between loneliness and depression has been reported in numerous research both globally (12, 16) and in Thailand (17-18). Therefore, besides being a common problem among older persons, loneliness is also a significant phenomenon in view of its contribution to the development of depression.

The ability to achieve positive mental health is mostly dependent on an individual's self-efficacy (19). In the literature, self-efficacy has been reported as a predictor of depression (20), as well as a protective factor against depression (21-23). It plays an important role in the relationships between various variables such as social relations (24), stress (25), stressful life events (26), and depression among older persons. However, there is limited evidence on the role of self-efficacy in the prevention of mental health problems. This study aimed to determine the mediating role of self-efficacy on the relationship between loneliness and depression, as well as identify the associated factors of depression among community-dwelling older persons based on The Self-Efficacy Theory of Motivation (27).

MATERIALS AND METHODS

Study area and design

A cross-sectional study was conducted to determine the mediating role of self-efficacy on the relationship between loneliness and depression among older persons

aged 60 and over, registered under the Subdistrict Health Promoting Hospitals in all three zones in the Na Khayat subdistrict, Thailand. Stratified proportionate-to-size probability sampling was conducted. The three zones in the Na Khayat subdistrict identified by the Public Health Office in Phattalung served as the strata. Simple random sampling was conducted in all three zones according to the calculated proportion based on the estimated total sample size. For this study, the sample size was calculated using the online calculator of Soper D.S. (28) by setting the moderate effects to 0.3, with the desired p-value at 0.05 and the desired statistical power level at 80%. There were ten observed variables and five latent variables. The calculated sample size was inflated by 10% to account for potential non-response. Therefore, this study recruited 450 older persons aged 60 and older with acceptable cognitive function assessed by Mini-Mental State Examination Thai Version 2002 (MMSE-T2002). By using MMSE-T2002, uneducated older persons with scores higher than 14, those with primary education and scoring more than 17, as well as those with higher primary education and scoring more than 22 were eligible for the study. In contrast, those with physical function deficit scores of ADL (Thai version) less than 12 were excluded. From November 2021 to January 2022. A face-to-face interview was conducted with each participant by the researcher, and the village health volunteers, who are assistants of public health officers from the three Subdistrict Health Promoting Hospitals. All data collectors received prior training from the researcher to ensure standardisation of information being delivered to the participants. Each interview lasted about 20-30 minutes to complete the questionnaire in the Thai language.

Study tool

A validated and pre-tested structured questionnaire was used for this study. It comprised seven sections: 1) Sociodemographic factors, which included age, gender, education, employment status, household income, source of household income, living arrangement, family type, marital status, and the number of children; 2) Presence of comorbidity, which included the number of present comorbidities, and their perception of their health status; 3) Social supports, which was based on the ten questions developed by the researcher asking about help or support that older persons received from family and peers rated on three levels, i.e. most (3 scores), moderate (2 scores), and low (1 score). The total score was categorised into three groups: low (10-17), moderate (18-24 scores), and high (25-30 scores); 4) Loneliness status, consisting of 20 items that assessed an individual's feelings of loneliness and social isolation. Each item was rated as 4 = "I often feel this way", 3 = "I sometimes feel this way", 2 = "I rarely feel this way", and 1 = "I never feel this way" based on the UCLA Loneliness scale (Version 3) that was translated into Thai language using back-to-back translation. The total score was categorised as low (20 – 40 scores), moderate (41 –

60 scores), and high (61 – 80 scores); 5) Depression, as determined using a self-answering questionnaire of “yes” or “no” for each item in the Thai Geriatric Depression Scale (TGDS-15) (29). The total score of TGDS-15 was ranked from 0-15 based on 15 questions and categorised as no depression (0-5 scores), suggestive for depression (6-10 scores), and depression (11-15 scores); 6) Knowledge on the negative impact of loneliness and depression, which was developed by the researcher. A total of ten items were measured using three choices of “Yes”, “Do not know”, or “No”. The total score was categorised as poor (0-5 scores), moderate (6-8 scores), good (9-10 scores), and lastly; 7) Self-efficacy to reduce the risks of loneliness and depression, which was also developed by the researcher, consisting of five items using a five-point Likert scale rating from 1 (low) to 5 (high). The total score ranged from 0-25 scores and would be categorised into as low (5-4 scores), moderate (15-20 scores), and high (21-25 scores).

Three experts from related fields were involved in the content validity of the questionnaire. The reliability of the questionnaire was examined in a pilot study involving 45 older persons having similar criteria. The results were analysed for reliability using Cronbach’s Alpha Coefficient. Cronbach Alpha values of more than 0.7 were obtained for the six sections, except the depression section (0.67). However, the construct reliability (CR) of the depression was more than 0.7 and thus, the depression construct was deemed as meeting the construct reliability according to Hair et al. (30).

Data Analysis

The descriptive analysis was conducted using the IBM Statistical Package for the Social Sciences (SPSS) software. The interrelationship between variables was examined by Structural Equation Modelling (SEM) using the IBM SPSS AMOS Graphics software. Additionally, the test of a mediation effect was done through a bootstrap analysis with a confidence interval of 95%. A sample of 5,000 times was used in the analysis. A p-value of less than 0.05 level was deemed as statistically significant.

Ethical Approval

This study involved human subjects as the researchers obtained identifiable private data through interviews. Ethical approval was obtained from the Thaksin University Research Ethic Committee, Human Subject of Research and Development Institute, Thaksin University, Phatthalung Campus (COA. No. TSU 2020-010, REC No. 0023). Informed consent was obtained from each participant in the study and all the information was kept confidential.

RESULTS

Prevalence of loneliness and depression

Table I shows the prevalence of loneliness and depression among the study participants. Depressive

Table I: Distribution of demographic characteristics (N = 450)

Variables	n	%
	Mean ± SD	
Sex		
Male	172	38.2
Female	278	61.8
Age (years)	69.92 ± 6.94	
60 – 69	230	51.1
70 – 79	180	40.0
80 – 93	40	8.9
Marital Status		
Single	10	2.2
Married	338	75.1
Widow/ Divorced	96	21.4
Separated	6	1.3
Occupation		
Unemployed	104	23.1
Agricultural	269	59.8
Merchant	32	7.1
Retired government official	25	5.6
Employee	20	4.4
Education		
uneducated	5	1.1
Primary school	376	83.6
Junior High school	25	5.6
Senior High school/Voc. Cert	17	3.8
Dip./ High Voc. Cert	6	1.3
Bachelor degrees or upper	21	4.7
Household income		
Sufficient and saving	212	47.1
Sufficient and no saving	168	37.3
Insufficient and No debt	40	8.9
Insufficient and debt	30	6.7
Source of household income		
Received from others only	160	35.6
Work and received from others	290	64.4
Number of children	2.28 ± 1.04	
0	17	3.8
1	47	10.4
2	248	55.1
≥3	138	30.7
Perceived health status		
Good	237	52.7
Poor	213	47.3
Number of comorbidities	0.80 ± 0.90	
None	209	46.4
≤ 2	219	48.7
> 2	23	4.9
Diseases		
Hypertension	178	49.4
Diabetes	56	15.6
heart and coronary	19	5.3
Asthma	8	2.2
Arthritis	18	5.0
Dyslipidemia	63	17.5
Other: Gout, Kidney Disease, Allergy, Gastritis, and Thyroid	18	5.0
Living arrangement		
In nuclear family: living alone, with spouse, with child, or with grandchild	403	89.6
In extended family: living with spouse or without spouse and child and grandchild	47	10.4
Knowledge	6.13±1.85	
Poor (< 60%: 0 – 5 scores)	30	6.7
Moderate (60 -80%: 6 – 8 scores)	241	53.5
Good (>80%: 9 – 10 scores)	179	39.8
Social support	23.27±3.90	
Low (< 60%: 10 – 17 scores)	30	6.7
Moderate (60 -80%: 18 – 24 scores)	241	53.5
High (>80%: 25 – 30 scores)	179	39.8

Table I: Distribution of demographic characteristics (N = 450) (continued)

Variables	n	%
	Mean ± SD	
Self - efficacy	19.18±3.44	
Low (< 60%: 5 – 14 scores)	30	6.7
Moderate (60 -80%: 15-20 scores)	207	60.0
High (>80%: 21-25 scores)	150	33.3
Loneliness	34.49±8.70	
Uncommon	112	24.9
Common	338	75.1
Level of loneliness		
Low (< 60%: 20 – 40 scores)	338	75.1
Moderate (60 -80%: 41-60 scores)	111	24.7
High (>80%: 61-80 scores)	1	0.2
Depression	2.66±2.78	
No	403	89.6
Yes	47	10.4
Level of Depression		
No depression (0 – 5 scores)	403	89.6
Suggestive for depression (6 - 10 scores)	41	9.1
Depression (11 - 15 scores)	6	1.3

Voc.: Vocational Certificate; Dip. /High Voc. Cert.: Diploma/High Vocational Certificate

symptoms were present among 9.1% of the participants while 1.3% suffered from depression. Specifically, 75.1%, 24.7%, and 0.2% of them had, low, moderate, and high levels of loneliness respectively while 10.4% of the participants reported the presence of depressive symptoms and loneliness. Moreover, 7.1% of the older persons with a low loneliness level also developed depressive symptoms. The prevalence of depression increased to 19.8% among those with moderate levels of loneliness and 100% among those experiencing high levels of loneliness (Table II).

Demographic characteristics of the participants

A total of 450 older persons participated in this study. The majority of the participants were females (61.8%), aged 60 to 93 years old (69.92 ± 6.94), married (75.1%), employed (76.9%), had primary school education level (83.6%), living in a nuclear family (89.6%), and having household income by working and receiving from others (64.4%). Nearly half of them had sufficient household income and savings (47.1%). Less than half of them had two or fewer comorbidities (48.7%), in

Table II: Distribution of loneliness by depression (N = 450)

Loneliness		Depression		Total n (%)
		No depression n (%)	Depressive symptoms n (%)	
Low	Within loneliness	314 (92.9)	24 (7.1)	338 (100)
	Total	(69.8)	(5.3)	
Moderate	Within loneliness	89 (80.2)	22 (19.8)	111 (100)
	Total	(19.8)	(4.9)	
High	Within loneliness	0 (0)	1 (100)	1 (100)
	Total	(0)	(0.2)	
Total		403 (89.6)	47 (10.4)	450 (100)

which hypertension was reported as the commonest comorbidity (49.4%). Additionally, more than half of them had two children (55.1%), perceived good health status (52.7%), and had moderate levels of social support (53.5%). Most of them also had some knowledge related to the negative impact of loneliness and depression (58.4%), as well as the role of self-efficacy (60.0%).

Structural model of the SEM

Based on the SEM, acceptable values of indices criteria of the structural model were obtained (Chi-Square = 1133.414 (df = 342), Relative Chi-Sq = 3.314 (p < 0.001), GFI = 0.833, AGFI = 0.801, CFI = 0.807, IFI = 0.808, NFI = 0.747, TLI = 0.786, RMSEA = 0.072, and AIC = 1261.414). As for the model fit criteria, Relative Chi-Sq (3.314) and RMSEA (0.072) met the model fit criteria while GFI (0.833), CFI (0.807), and IFI (0.808) marginally met the model fit criteria. Overall, the values of the indices of the structural model were acceptable.

Causal paths of depression

Table III shows the results of testing causal paths for personal and social environmental factors on depression. Employment (β = -0.202, p < 0.001), source of household income (β = 0.129, p < 0.05), living arrangement (β = -0.105, p < 0.05), social support (β = -0.232, p < 0.05), perception of health status (β = 0.257, p < 0.001), self-efficacy (β = -0.211, p < 0.05), and loneliness (β = 0.216, p < 0.05) showed significant causal paths with depression. Therefore, employment, social support, perception of health status, self-efficacy, and loneliness, collectively explained 41.1% (R = 0.641, R² = 0.411) of

Table III: Test for causal paths of personal and social environmental factors on depression

Causal path	B	SE	Beta	CR	P
Age → Depression	0.000	0.033	0.000	0.009	0.993
Gender → Depression	0.056	0.044	0.060	1.267	0.205
Edu → Depression	-0.205	0.205	-0.047	-0.998	0.318
EM → Depression	-0.218	0.054	-0.202	-4.017	< 0.001**
HI → Depression	0.006	0.024	0.011	0.242	0.809
SI → Depression	0.073	0.027	0.129	2.665	0.008*
LA → Depression	-0.156	0.071	-0.105	-2.195	0.028*
MS → Depression	0.052	0.050	0.049	1.039	0.299
NCh → Loneliness	0.018	0.029	0.029	0.605	0.545
PH → Depression	0.155	0.032	0.257	4.916	< 0.001**
NPC → Depression	-0.014	0.030	-0.022	-0.459	0.646
Knowledge → Depression	0.035	0.053	0.039	0.656	0.512
Self-Efficacy → Depression	-0.172	0.049	-0.211	-3.497	< 0.001**
Social support → Depression	-0.174	0.055	-0.232	-3.136	0.002*
Loneliness → Depression	0.041	0.014	0.216	2.873	0.004*

R = 0.641, R² = 0.411, B: Unstandardized regression coefficients weights; S.E: Standard Error; Beta: Standardized regression coefficients weights; C.R: Critical Ratio for regression weight; P: Level of significance, ** p < 0.001; * p < 0.05; Edu: Education; EM: Employment status; HI: Household income; SI: Source of household income; LA: Living arrangement; MS: Marital status; NCh: Number of children; PH: Perceived health status; NPC: Number of Presence comorbidity.

the variance in depression among older persons.

Direct, indirect, and total effects of loneliness and depression

According to Figure 1, the total effect of loneliness on depression (Total Beta = 0.123) was the combination of the direct (Direct Beta = 0.456) and indirect (Indirect Beta = 0.329) effects. Therefore, the higher the level of self-efficacy, the less depressive the older persons would be.

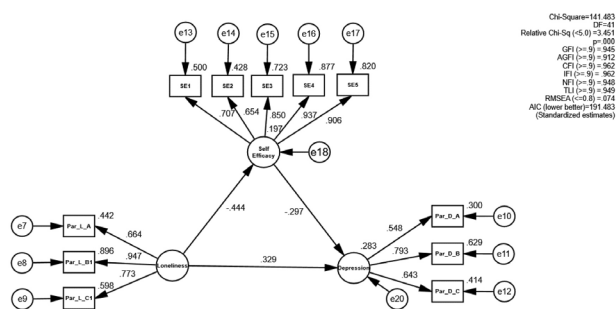


Figure 1: Direct, indirect and total effects of loneliness on depression

Test for mediation effect of self-efficacy on the relationship between loneliness and depression

The main objective of this study was to determine the mediating role of self-efficacy on the relationship between loneliness and depression. According to Table IV, significant effects were detected between loneliness and depression in both the direct model (Beta = 0.456, $p < 0.001$) and the mediation model (Beta = 0.329 $p < 0.05$). The standard indirect effect (SIE) (the total effect between loneliness and depression with self-efficacy as a mediating factor) was also significant (Beta = 0.123, $p < 0.001$). Meanwhile, the placement of zero from the standard indirect effect component was outside the range of Lower Bound (0.081) and Upper Bound (0.197). The kappa squared (K2) was 0.099.

DISCUSSION

Based on the findings, the majority of the older persons in this study did not suffer from depression, i.e. nearly 90% of them were free from depressive symptoms. Only about one-tenth showed some symptoms of depression (9.1%) and another 1.3% had depression. This could be attributed to the fact that more than half (51.1%) of

Table IV: Mediating role of self-efficacy on relationship between loneliness and depression

Model/ Hypothesized Paths			95% CI BC		K ²
	Beta	P	LB	UB	
Direct Model	0.456	< 0.001			
Loneliness → Depression					
Mediation Model					0.099
Loneliness → Depression	0.329	< 0.001			
Standardized Indirect Effect (SIE)	0.123	< 0.001	0.081	0.197	

LB: Lower Bounds; UB: Upper Bounds; BC: Bootstrap; K²: Kappa squared

them were still in the age group of 60-69 years old with considerably good energy levels and mobility. Therefore, they remained active in daily activities and had good self-perceived health (52.7%). Advanced age is reported to be associated with a higher level of depression (31-33), especially among those with physical impairments (31) or those who were less active in daily activities (18). Therefore, considerably good physical health among the younger age group of older persons could enable them to actively interact with others and participate in social activities, indirectly preventing them from developing depression (33-34).

In addition, the study reported that three-quarters of the older persons (75.1%) had a low level of loneliness, of which 7.1% experienced depressive symptoms. This is in concordance with other studies whereby older persons with a higher level of loneliness exhibited more depressive symptoms (17, 35-36). As the level of loneliness was considerably low in this study, the study participants were less depressed. Moreover, the study showed good social support among older persons, with almost all (93.3%) receiving support from family and peers at a moderate level or more, enabling them to feel supported and connected to society. Social support is a vital component in fulfilling the physical, mental, and social needs of older persons (37), resulting in life satisfaction. Furthermore, as this study was conducted in a rural area, the study participants likely received constant care and support from others in the community in line with the cultures and lifestyles in rural areas, thus further improving their life satisfaction (38).

Further analysis was performed to identify factors associated with depression status. Employment, source of household income, living arrangement, social support, perception of health status, self-efficacy, and loneliness were significantly associated with depression. With regard to employment status, older persons who were still actively working would have more daily interactions and social connections and hence, less depression. A recent study also highlighted the fact that better social interactions contribute to fewer depressive symptoms (39). Another local study revealed that unemployment among older persons was significantly associated with depression in rural Thailand (32). Additionally, employment status was closely linked to the source of household income which also had a significant relationship with depression. In a previous study, older persons who were financially dependent on their children or others were more likely to develop depression (40), likely because they were more self-reliant. Furthermore, living arrangements also played a role in the availability of social support, another factor that was significantly related to depression in this study. Older persons living with their extended family under the same roof had a lower risk of depression. The support from their family provides them with a sense of warmth and attention. On the other hand, living alone could

predispose to depression among older persons due to a lack of ties and interaction with family members (41).

Social support is commonly acknowledged as a protective factor against depression. In certain countries, people living in rural areas often meet and visit their neighbours regularly. They share foods, household items, as well as news and information with one another. A prior study found that depression was more common among those who received fewer visits from their neighbours (42). In addition, the presence of social support among unmarried or widowed older persons could decrease the impact of functional disabilities and depression (43). This highlights the crucial role of social support in reducing depression among older persons. With social support comes a sense of love and attention for older persons, including emotional support and practical assistance that they need. Numerous studies in the literature have reported that social support was the strongest predictor of depressive symptoms (22) whereby older persons with higher levels of social support often suffered less from depression (17, 32, 34, 44).

Furthermore, the perception of health status also had a significant relationship with depression. A self-perception of poor health status could compromise the daily lives and mental health of older persons. For instance, older persons with physical health problems would be limited from performing daily activities and they may feel powerless to control their own lives (31). Some older persons were reported to have a good perception of their health although they had chronic diseases, indicating that the disease had not seriously threatened their daily lives. In contrast, poor perception of health might be reported among older persons without underlying disease, especially among those with energy deficits due to difficulty sleeping or loss of appetite. Overall, having underlying diseases could significantly affect the level of depression among Thai older persons (33, 45). Similarly, older persons who perceived poor health status would also be more likely to have more depression (23, 34, 45).

As abovementioned, there was a positive correlation between loneliness and depression. Loneliness can be defined as the feeling of being alone. It can happen when being alone and having no one close to you, or even when being among a crowd of people. Loneliness leads to social isolation, which in turn manifests as a lack of social support that can ultimately cause depression (15). Older persons are more likely to face losses and changes, especially in their later life, predisposing them to loneliness (17). Apart from the impact on social life, loneliness can also compromise an individual's confidence and health (46). Loneliness is one of the most common predictors of depression among older persons, as reported in previous studies (12, 35, 47). Thus, lonely older persons were more likely to be depressed than those who were not lonely (17, 35-36).

Another aim of this study was to examine the mediating role of self-efficacy in the relationship between loneliness and depression. We found that self-efficacy was a partial mediator in the relationship between loneliness and depression, as indicated by the medium effect size. The partial mediating role of self-efficacy could be due to the direct association between loneliness and depression with the possibility of loneliness reducing the self-efficacy effect on depression. In other words, loneliness and depression were partially mediated by self-efficacy because loneliness was significantly related to depression and self-efficacy while self-efficacy also showed a significant relationship with depression.

On the other hand, there was a significantly negative correlation between loneliness and self-efficacy. Older persons with a higher level of loneliness were more likely to have low self-efficacy compared to those who were not lonely (46, 48). This could be attributed to the fact that those with loneliness lacked social contact and were less likely to receive positive encouragement from others. Moreover, individuals with poor social skills were more likely to be lonely due to ineffective social interactions, negating any positive reinforcement from the environment (49). As a result, they might not be confident to deal with their own lives, leaving them to devalue themselves and take action to escape rejection (50).

Self-efficacy was shown to be a protective factor against depression, in alignment with previous studies (20, 21, 23). The majority of the study participants (93.3%) showed moderate and high levels of self-efficacy. Those who have better self-efficacy tend to cope well with depression because they have the confidence and ability to solve problems and adapt to the situation, thus preventing the development of depression. Previous experience in successful problem-solving contributes to self-efficacy (19). The ability to achieve positive mental health is highly dependent on an individual's self-efficacy. It can be assumed that self-efficacy plays a crucial role in loneliness and depression. Therefore, the better the self-efficacy of older persons, the less likely they would develop depression. Self-efficacy was found as a mediator of the effects of stressful life events among those with depression (26). Thus, poorer self-efficacy strongly predicts more severe symptoms of depression. Moreover, self-efficacy has also been reported as a partially mediating role in the relationship between stress and depression (25). A path analysis involving self-efficacy indicated that self-efficacy plays a mediating role in maintaining healthy functioning during the aging years (21) as it can boost the self-belief and confidence of older persons. Therefore, improving self-efficacy among older persons, particularly those who experience loneliness, will decrease the likelihood of depression.

However, there are several limitations to this study. Firstly, the cross-sectional nature of the study limits the

establishment of a direct causal relationship between the variables. Additionally, social desirability bias could occur because older persons might answer questions in the manner that they think the interviewer would prefer to hear. Furthermore, due to the nature of Thai older persons, they tend to say no and decline because they are afraid to express their weakness. However, the researcher attempted to overcome this by preparing interview training to guide the enumerators during the data collection.

CONCLUSION

In this study, employment, source of household income, living arrangement, social support, perceived health status, self-efficacy, and loneliness showed significant causal relationships with depression based on the SEM model. However, self-efficacy was found to only partially mediate the effect on the relationship between loneliness and depression among older persons. Thus, effective approaches to reduce depression among older persons should focus on increasing social support by family and peers, improving self-efficacy and perception of health status, as well as retaining their employment. Additionally, enhancing self-efficacy to reduce loneliness can reduce depression, particularly among older persons who experience loneliness. Therefore, the findings of the study provide important guidance for the relevant agencies and policymakers to develop appropriate programmes or interventions in the prevention and management of loneliness and depression among community-dwelling older persons.

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