Determinant Factors related to the Mental Health of Older Adults Living Alone in Urban Communities: A Systematic Review Protocol

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ABSTRACT

Objectives: There is a limited understanding about the factors that are related to the mental health of older adults living alone in urban communities. All available evidence was synthesized to better understand the factors related to the mental health of this group of older adults.

Method: A systematic search of the following databases in Medline, Web of Science, Cochrane Library, CINAHL, PsycINFO, and TCI databases was carried out from January 2010 to May 2021. Observational studies, which had investigated older adults (60 years of age and over), who were living alone in urban communities were eligible for review. Two reviewers independently screened and selected the data; one reviewer extracted the data, while the second checked the extracted data. A narrative synthesis described the quality and content of the evidence. The included studies were appraised using the relevant Joanna Briggs Institute checklist.

Results: Our findings suggested that there is a potential association between socio-economics, health status, physical activities, social isolation, social support, loneliness, living alone, and mental health, which was found in the studies. Our findings were limited given that the number of studies, which were included, was low and the quality of evidence varied across the studies.

Conclusion :

The results showed that all included studies found socio-economics, including gender, health status, income, educational level, social support, and social isolation had been associated with the mental health of older adults living alone. Consequently, social welfare policies should focus on those for support services enhanced quality of life for these groups.

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Introduction

Among older adults, the number of individuals living alone is likely to continue to rise globally. Older adults living alone are more likely, particularly with advancing age, to have negative experiences. Feelings of loneliness and social alienation have been recorded by many. Older adults living alone were more likely to exhibit depressive symptoms. Those living alone appeared to be lonelier and suffer greater functional loss. Moreover, it was found that women, who live alone, are more at risk of poverty, especially with regard to income. Nearly 90% of older individuals, who live alone, expressed a strong desire to preserve their freedom. Many fear that they may become too reliant on others and want to continue to live alone, despite their feelings of loneliness.[1] To help them retain their independence, it is necessary to offer more social services to older adults. Therefore, physicians should encourage them to participate in daily physical activities and social activities and should provide social work referrals to help them continue to do so. Living alone has become more common in today's societies. The number of people living alone is likely to continue to increase globally among both older people and working adults.[2]

The definitions of living alone or being single may vary. Presently, official marital status no longer necessarily reflects an individual's living arrangements given that single, divorced, and widowed individuals may live alone or with other people, such as a partner, children, parents, or other non-related people. Thus, it is more than the official marital status because living arrangements may best describe one's social bonds. In addition, people living alone do not constitute a uniform group. For people living alone, they may be in very different stages of life depending on their ages, genders, educational levels, and the status of their work. Moreover, living arrangements can change several times during the course of an individual's life. For this review, living alone is understood as only one person, living in a household at the time of the research. In other words, the household size is just one person. As Jamieson et al. stated[3], the essence of living alone is simple: nobody else lives in the same living space or routinely shares everyday domestic life. Earlier studies have produced conflicting results concerning the association between living alone and mental health. According to some studies, living alone does not constitute a risk factor to mental health[4]. Conversely, some authors have reported associations with having depression, having a poorer experience of health and quality of life, and having experiences of loneliness. Furthermore, research has shown that people living alone face challenges that may place a potential burden on their mental well-being, such as facing financial difficulties and higher living costs since they

do not have the scale advantage of those living with another adult [5]. There is therefore a need to synthesized to better understand the factors related to the mental health of this group of older adults.

In policy and academic literature, the term, 'mental health,' is often considered, used, and understood to be interchangeable with the term, 'mental well-being.'[6] Furthermore, in research, both of these concepts have sometimes been operationalized under the concept of subjective well-being.[7,8] In this review, mental health is understood as being interchangeable with mental well-being or subjective well-being.

Mental health is based on the assumption that mental health is something positive, is comprised of well-being, and is more than the absence of mental illness. It is recognized as a key resource for health and well-being. Mental health is associated with mortality, physical health, social functioning, and academic achievement, as well as with mental illness. It is currently receiving increased attention in research, policymaking, and clinical practice, and has been recognized as an area of priority for research in public mental health.[9] Mental health includes individual resources, such as self-esteem, optimism, and a sense of mastery and coherence; the ability to initiate, develop and sustain mutually satisfying personal relationships; and the ability to cope with adversities.

Objectives

1. To establish the determinant factors, which are related to the mental health of older adults, who live alone in urban communities.

2. To explore the evidence of determinant factors, which are related to the mental health of older adults, who live alone in urban communities.

Methods

Search strategy and study selection

This systematic review followed the PRISMA guidelines and a review protocol was registered on PROSPERO. A systematic search of the literature was conducted using the electronic databases PsycINFO, Embase, MEDLINE, and Web of Science to identify relevant studies from their inception up to 29th June 2021, using the search terms in Table 1. The search was limited to those studies, which had been published in peer-reviewed journals in both the English and Thai languages.

Studies were eligible for inclusion if they had reported original research and if the studied population had included older adults (60 or more years of age), who were living alone at the time of the study. Living alone could be covered by belonging to one of the following categories: 1) 'living alone, 2) 'living in a single

household', 3) 'a household size of one person', 4) Mental health or Subjective Well-being / Mental Health Well-being, and 5) Urban Communities. Only fully-published, peer-reviewed papers, which had been published in English or in Thai, were included.

The exclusion criteria included studies in which the participants had been diagnosed with a co-morbid neurological or psychiatric condition, which may have impaired their cognitive abilities, and those studies that published in languages other than English and Thai that were not from peer-reviewed journals. In addition, studies, in which the types of mental health were not stated; studies, which did not make clear distinctions in the analyses of the factors that were related mental health; and studies, in which the full texts were not available in either the English or the Thai language; were excluded.

Titles and abstracts were screened against the inclusion criteria by two reviewers to exclude the irrelevant papers. Full texts were obtained for all potentially relevant studies, and two authors independently examined the papers to determine whether or not they would meet the specified inclusion criteria. All discrepancies were resolved by a third reviewer.

Information sources and the literature search

The literature search was performed by an information specialist during October and November of 2020. Databases were searched from 2010 to 2020 to identify English and Thai language publications. The main databases consisted of Medline, The Cochrane Library, Pubmed, Sciencedirect, CINAHL, PsycINFO, Scopus, Proquest Dissertation& Theses, Web of Science, The Cochrane Library, TCI, and Thalis. The search strategy was developed with the team's professional Health Science librarian, and search algorithms were tailored for each database. The searches were piloted, and as a result, broader descriptions of living alone and those factors related to mental health were used to ensure that coverage would be as wide as possible in the review. The final strategy consisted of two search aspects: (1) search terms related to older adults living alone: living alone, single-living, one-person households, singlehood, single people, single persons, single men, and single women; and (2) search terms factors related to mental health: mental health, subjective well-being.

1) Articles related to Factors associated with Mental Health in Older Adults, Who Live Alone in Urban Communities

2) Articles in both the English and Thai Languages between 2010-2020

3) Databases from Medline, Cochrane Library, Pubmed, Sciencedirect, CINAHL, PsycINFO, Scopus, Proquest Dissertations & Theses, Web of Science, The Cochrane Library, TCI, and Thailis

The screening and selection procedure

Two researchers independently carried out the screening process. Any discrepancies were discussed until there was a consensus. The screening took place in two steps. In Step 1, all titles and abstracts were screened for relevance and eligibility. Those articles, which were not relevant or did not meet the inclusion criteria, were removed. Articles that had insufficient information in the title and the abstract to determine their relevance were screened in Step 2. The full texts of the remaining articles were reviewed for relevance in light of the inclusion criteria.

Data collection

A data extraction form was developed to enable the collection of data. One review author extracted the data (with the assistance of the Atlas. ti data analysis software), and the second author checked the extracted data. The following information was extracted from each study: (1) study identification features: authors, title, country, and year; (2) study characteristics: aims/objectives, study design, data source, and the data collection method; (3) population characteristics: age, gender, and sample size; (4) outcome results: measured positive mental health, scales used, and key findings; and (5) the study's limitations and strengths.

Quality assessment

To assess the risk of bias in individual studies, a methodological quality critical appraisal checklist, which had been proposed by the Joanna Briggs Institute (JBI) systematic review methods manual, was used. In observational studies, this tool, which is used to report the prevalence data, considers the following: sample frame appropriateness, recruitment appropriateness, sample size, descriptions of subjects and settings, coverage of data analysis, ascertainment and measurement of the condition, the thoroughness of reporting statistical analysis, and the adequacy and management of the response rate. Regarding bias, each domain was judged as having a high, low, or unclear risk of bias. Two reviewers independently assessed the studies. Discrepancies were discussed and resolved through finding consensus. The results of the appraisal were used to inform the synthesis and to interpret the review results.

Data analysis

The data from each study (e.g., the study characteristics, context, participants, outcomes, and findings) were used to build evidence tables to yield an overall description of the included studies. Given that the studied populations and data sources had differed between the included studies, a quantitative analysis was considered to be inappropriate. Instead, a narrative synthesis was conducted.

Results

The search identified 1,017 records. Of these, 45 full texts were examined and then 35 of them were excluded. Accordingly, ten studies were included. A PRISMA flowchart documenting the process of study selection is shown in Fig. 1.

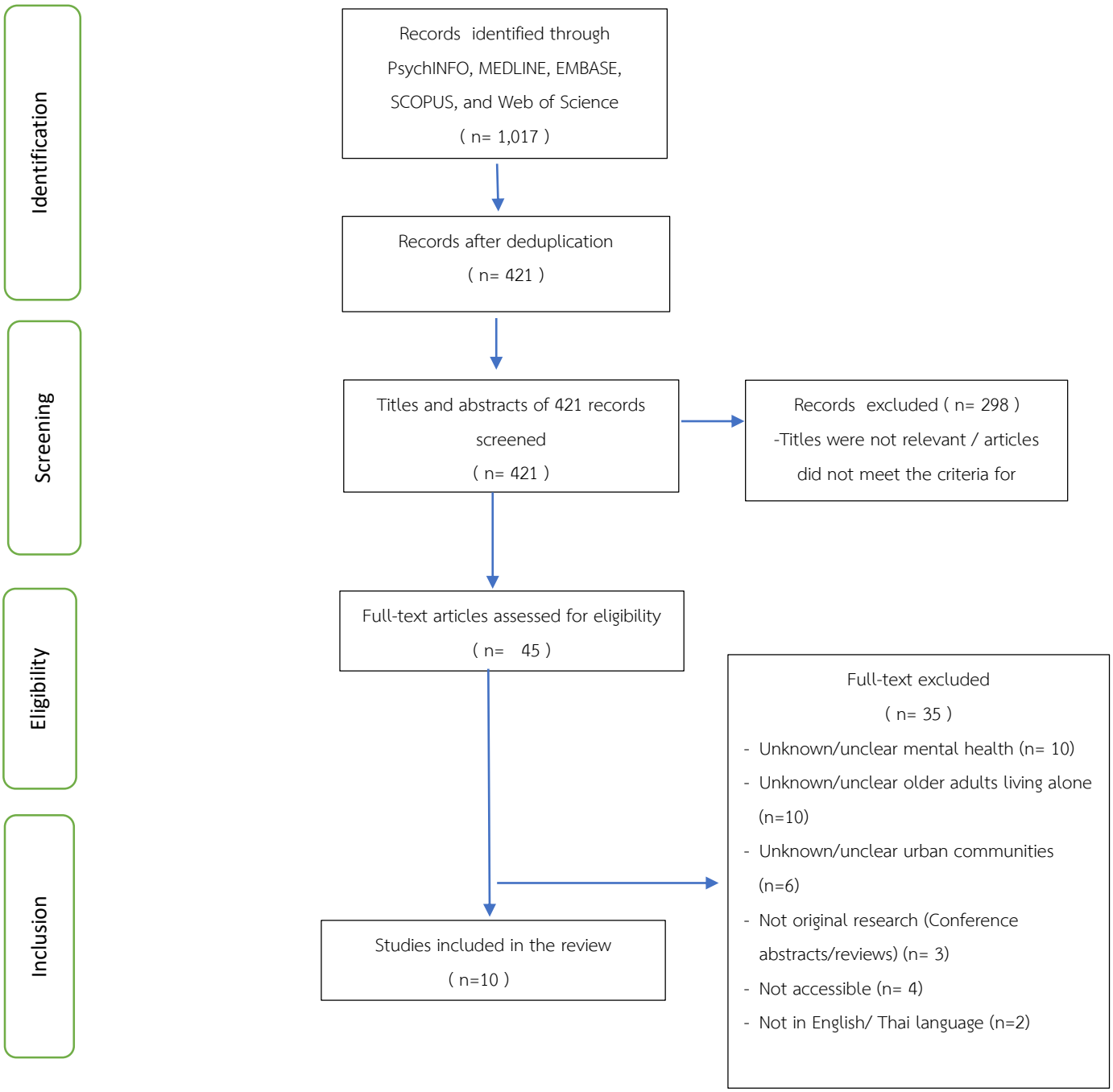

Figure 1. The PRISMA flowchart of the study selection processes

Results

Table 1. Study findings and conclusions

Author, year	Study design	Study population, sample size, setting	Data sources, Types of tools	Quality rating	Factors	Key findings
Boonpha et al.(2019)	Descriptive correlational design	Participants aged 60 years or older described as living alone in urban communities, Thailand		Moderate	Personal factors and social support with health status among community-dwelling older people living alone	Correlation analysis revealed that income was correlated with the perceived physical health (r= .181, p= .003) and happiness (r= .136, p= .028). Social support was correlated with perceived physical health (r= .148, p= .016) and happiness (r= .489, p< .001).
Khakhuen et al. (2020)	Descriptive correlational design	Participants aged 60 years or older were described as living alone in the urban communities, Thailand		High	The mental health of older adults and to examine the relationship between personal factors and mental health of older adults living alone	Most older adults (57.75%) had mental health scores better than average. Mental health is affiliated with related personal factors, including educational levels, sufficient incomes, occupations, health insurance, illnesses, and having fall factors, which are associated with the mental, physical, and financial health of older adults.
T. Noguchi et al. (2021)	Descriptive correlational design	Participants aged 60 years or older were described as living alone in urban communities and being community-dwelling.		High	The association between living alone and mental health and the moderating effects of having face-to-face and having no face-to-face social contacts.	The participants' mean age was 73.0 years, 51.3% were female, and 16.0% lived alone. Living alone was significantly associated with poorer mental health. Regarding loneliness and low happiness, having face-to-face and having no face-to-face contacts more than once a week alleviated the adverse

						association of living alone (loneliness: face-to-face contacts, P ¼ 0.020; no face-to-face contacts, P ¼ 0.028; happiness: face-to-face contacts, P ¼ 0.020; no face-to-face contacts, P ¼ 0.001
Yu et al.(2019)	Descriptive correlational design	Participants aged 60 years or older described as living alone in an urban community in China		Moderate	Socio-demographic data, social networks, functional ability, cognitive function, and depression level	Depression (β = 0.361, p < 0.001) and monthly income (β = −0.159, p = 0.025) were identified as significant predictors of self-neglect, accounting for 27.1% of the variance. Understanding self-neglect and its predictive factors are essential to providing culturally relevant and tailored interventions to enhance the confidence and self-care abilities of older adults in order to maintain their health and well-being.
Hana et al, (2019)	Descriptive correlational design	older adults living alone in an urban city in South Korea	The UCLA Loneliness Scale, Short Form Geriatric Depression Scale - Korean version, ENRICHD Social Support Instrument (ESSI), the Mini-Mental	High	Gender, socio-economic status, health status, cognitive function, social support, physical activity, loneliness, and depression related to the quality of life	77.8% were women and the mean age was 77.38 years (men = 74.65, women = 78.16). Women had a lower socio-economic status and health status than the men. Men felt more lonely, depressed, and had suicidal thoughts more frequently than women. Women had greater needs regarding care, residential environment, movement, connection, and emergency services than men. In men, depressive symptoms,

			State Examination Standard Version (MMSE-2SV), and Health-Related Quality of Life (EQ-5D).			suicidal thoughts, loneliness, and right-hand grip strength were identified using the EQ-5D. The EQ-5D was also used to explain the depressive symptoms, suicidal thoughts, cognitive function, and the physical activity of the women.
Yuko Yooshida et al, (2021)	A cross-sectional descriptive correlational design was used	Participants were 314 community-dwelling Japanese individuals (158 women, 156 men) aged 70–84 years		High	Leisure activities and mental health in older adults living alone.	The proportion of people living alone was 22.9% (*N* = 72), and the mental health score was mean ± SD, 14.2 ± 7.2. Multiple regression analysis showed that the subjective economic status (β = −0.177), instrumental activities of daily living (β = 0.167), living arrangements (β = −0.142), and the leisure activities (β = 0.481) had been associated with mental health. The interaction TEMPeffect between living arrangements and leisure activity on mental health was found to be significant (β = 0.112).
Amanda et al, (2014)	A cross-sectional descriptive correlational design was used	1036 adults were randomly selected from rosters of New York City public housing residents aged 65 and older.		Moderate	Race/ethnicity, age, gender, health, housing type, and income correlated with mental health.	Nearly one-third (31.3%) reported use. Older adults living alone, at risk of depression, or living in specialized senior housing had the greatest use of centers. The use of Senior centers varied by race/ethnicity, and English-speaking Hispanics had a higher prevalence of use

						than Spanish-speaking Hispanics (adjusted prevalence ratio [PR]=1.69, 95% CI: 1.11-2.59).
Ning Liu et al,(2020)	cross-sectional study	442 elderly Chinese individuals, who lived alone in an urban community in southern Shaanxi Province, China		Moderate	Sex differences, age, educational level, occupational, marital status, smoking history, alcohol use, health-related, lifestyle factor, comorbid disease, and quality of life	Women were more likely to report better mental health than men. Factors, which were significantly associated with reduced mental health scores, had been old age, having never been married or being divorced, having a history of cancer, urinary tract disease, fractures, or gastrointestinal disorders. Factors associated with physical health were having never been married or being divorced and having hypertension.
Karen et al, (2021)	cross-sectional study	Adults (N = 226) aged 69+ completed a brief survey assessing their living situation, social contact with different social partners (in person, by phone, or electronically), and their emotions during the morning, afternoon, and evening the previous day.		Moderate	The current study examined demographics including gender, education, ethics, marital status, daily social contact variables, which had been associated with daily social contact and emotional well-being among older adults during the pandemic.	Older adults, who lived alone, had been less likely to see others in person or to receive or provide help. Living alone was associated with more positive emotions concurrent with in-person contact. In contrast, phone contact was associated with higher levels of negative affect among those living alone, but not among those, who were living with others. Older adults, who were living alone were more likely to have contact with friends (rather than family).
Karoline et al,(2017)	Cross-sectional study	3602 participants (50.6% women) aged 65-90 years (mean	The WHO-5 is the short scale for the	High	To investigate the risk factors associated with	Low SWB was significantly higher in women than in men (23.8% versus 18.2%; $p < 0.0001$). The

age 72.8 years, SD ± 5.8) from the population-based KORA-Age study conducted in 2008/2009	measurement of positive subjective psychological well-being [20] and measures the hedonic, as well as the eudaimonic aspects of well-being	low subjective well-being	logistic regressions analyses revealed low income, physical inactivity, multi-morbidities, depression, anxiety, and sleep problems, which had been associated with low SWB in both sexes. Living alone increased the odds of having low SWB in women, but not in men. Depression and anxiety were the strongest risk factors of low SWB among men (depression: OR: 4.19, 95% CI: 1.33-13.17, $p < 0.05$; anxiety: 8.45, 5.14-13.87, $p < 0.0001$) and women (depression: 6.83, 2.49-18.75 $p < 0.05$; anxiety: 7.31, 5.14-10.39, $p < 0.0001$). In both sexes, anxiety had been the highest population-attributable risk (men: 27%, women: 41%)

The characteristics of the studies

Factors including gender, educational level, income , health status , low levels of social support, coping strategies, family relationship were associated with mental health status in older adults, who were living alone in urban communities. Various factors are associated with mental health status in older adults living in urban communities, which can be modified and are important for healthy aging. Interventions, which specifically increase instrumental, emotional, and informational support in the home, and which increase the frequency of social support and coping strategies, may lead to better health outcomes and to the enhancement of a good mental health status for older adults.

Income, and poor health status were found to be related to mental health status. This is because older adults without much physical deterioration, had been able to provide themselves with good self-help even when they were ill with a chronic disease and/or when they had health problems due to age-related changes. As a consequence of gender-related differences in the average age at marriage and life survivorship, more elderly women were found to live alone than men, with more women than men making the transition into living alone following institutionalization or death of a partner.

(Razak,Kabila, & Samuel, 2020). Research on living alone in later life, which was conducted in several countries, has shown that, among the non-institutionalized older population, living alone is associated with higher income, good health, and being married and having children. (Razak,Kabila, & Samuel, 2020 ; Pinquart & Sorensen, 2000 Sunisa, et al., 2020 ;Wee et al, 2014). This indicates that the capacity to live alone in old age is influenced by, among other factors, the ability to purchase professional services and the availability of adult children since these are two of the primary sources of informal support. In the United States, it was found that the socio-economic composition of the unmarried (45–63 years of age), who are not necessarily living alone, varied by marital status and gender. Moreover, widowed women and men, who had never been married were found to be the most economically disadvantaged in terms of educational level, employment, income, and health insurance. (Jacob , Haro & Koyanagi, 2019; Margolis and Verdery, 2017).

In addition, this study showed that coping strategies and family relationships had been significantly related to mental health status. This finding was consistent with results from previous studies in that there are several factors that are associated with the mental health status of the older adults, which are gender, age, marital status, educational level, income sufficiency, family relationships, and social support. When members of the older adult population experienced poor physical and mental health, it was revealed that they would be more likely to develop anxiety. Chronic diseases and economic problems are the major causes of stress among the older adults. Moreover, long term stress and anxiety can also lead to depression and suicidal tendencies among the older adults. (Hu , Zhao, Gong , Zhao , Li , Sun, 2020). Studies in South Korea and Denmark found that higher levels of perceived stress were associated higher mortality. (Campagne, 2019; Lee & Kim, 2014). The literature compliments our findings on how chronic illnesses might affect an individual's level of stress.

In addition, our analysis found that social support was associated with the mental health status of older adults, who live alone. Many studies have indicated that older adults with less social support, had a significantly exhibited higher rate of the occurrence of depressive symptoms. The risk factors for depressive symptoms in older adults living alone included the following: educational level, religious beliefs, self-rated health status, number of chronic illnesses, and social support. (Pao-Chen & Hsiu-Hung , 2011; Gur-Yaish, Shulyaev; Zisberg, 2021; Liu, Wei, Peng, & Guo, 2021). Similarly, among 3,157 older Chinese immigrants to the United States, having strong social networks was associated with lower depression (Li, & Kong, 2021). This explains that those living alone may have circles of

friends and family with whom they can participate in activities. However, they may need more support in the following areas: household chores, local transportation, or asking for advice or just having someone to talk to about their worries. Studies have shown that older adults, who live alone, can benefit from having a reliable person to contact in emergency situations (Hu , Zhao, Gong , Zhao , Li , Sun, 2020). Therefore, focusing on providing social support with household and emotional needs may be more important than attending activities outside of their homes.

Discussion

All the reviews conducted in this area are inconsistent because they have focused on various socio-cultural contexts.[11-19] Due to inconsistent definitions of mental health/well-being and living alone, these reviews are, to one degree or another, biased studies. The results of this systematic review can present a more accurate definition of mental health/well-being and living alone for those researchers, who are seeking to conduct new primary and secondary studies on this subject. Furthermore, the results can play an important role in improving the internal consistency of future evidence.

Some gender differences were found in the study findings: four of the studies found associations in women, but not in men[12-19]. However, differences in the mental health scores between women and men were not found. It is worth noting that none of these studies distinctly classified those individuals, who were living alone. Interestingly, research has found that having a strong social support system is associated with mental health in older adults, who live alone. Compared to married individuals, people, who live alone, had higher odds of psychological distress and psychiatric disorders. These puzzling results may suggest that the correlates of mental health may differ from the correlates of mental illness, which may call for further investigations into the positive factors that are related to mental health outcomes in this group.

It is, therefore, interesting to note that given the traditional preference of the Thai elderly population to live with their adult children, especially with their daughters, living alone did not appear to have had a profound effect on mental health and functioning as had been expected. Most probably, the case is that given the same collectivist culture that emphases family togetherness, living alone may not greatly diminish the close kinship of family members and their moral obligations for psycho-social support, even though the numbers of nuclear families are increasing. In Thailand, public

policies and tangible incentives are emphasized to encourage nuclear families to live in close proximity to elderly parents, who are living alone. This proximity can help to alleviate any detrimental effects to their psychological and subjective well-being.

These findings help to better explain the inconsistencies in findings, which have been reported in previous studies on the effects of the elderly living alone. In different studies, the populations of older people, who live alone, may vary with respect to the proportions of those, who felt lonely, depending on the ecological context of social support and cohesions.

Conclusions

The review findings permitted a limited look at the associations between the determinant factors, which were related to the mental health of older adults living alone in urban communities. Therefore, it is clear that more research needs to be conducted in study samples of appropriate sizes. Since the number of older adults, who are living alone is likely to continue to increase, it is recommended that this issue be investigated on a much greater scale. For example, it would be appropriate to study the associations of mental health in large population studies. Living alone, which is a highly important issue in society, and its determinant factors, which are related to mental health, have been recognized as key resources for the well-being of older adults living alone. Moreover, it may not only have a beneficial influence just on health and quality of life, but also it may have an influence on social functioning and productivity. New knowledge, which can be generated through vigorous research, can be of use in policy development and in decision-making with respect to those living alone and their mental health.

The limitations of the review

This review has several limitations, which have affected its validity. Firstly, due to the available resources, our systematic search only focused on articles that had been published in English and Thai, which could have possibly left unidentified studies, which had been published in other languages, outside of the scope of the review. Similarly, grey literature and unpublished articles were not systematically searched, which could possibly contribute to publication bias. In order to minimize the effect of this limitation and to ensure as broad a coverage as possible for the review, a high number of databases were searched, and broader descriptions of the key terms were utilized. Secondly, since

the studied populations were diverse, two different measures were used to assess mental health, thus affecting the applicability of this review. However, these types of studies can provide evidence of the health status of a specific population group that exists in a certain location at a given time. Thirdly, all the included studies involved self-reporting by the participants, either by answering a questionnaire or being interviewed, which can lead to information bias.

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