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Prevalence and Determinants of Loneliness among Older Adults in Bangladesh

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Abstract

Background: The prevalence of loneliness confirms its commonness among older adults which leads to further functional declination, of physical and mental health along with disability and the last result is to be death. Thus, this study was undertaken with a view to examining the potential risk factors for loneliness in aging population in Bangladesh which is responsible for its prevalence. Methods: Data gathered for this cross-sectional study from 517 older adults' older adults in Meherpur district, Bangladesh. The level of loneliness was assessed using short version (6-items) of De Jong Gierveld Loneliness Scale and the depression was measure with the help of 15-items geriatric depression scale (GDS). Chi-square test was run to find out the possible associated factors for loneliness and multivariate multinomial logistic regression model was performed to predict the significant risk factors. Results: The overall prevalence of loneliness found 54.3% whereas 41% felt 'sometimes' and 13.3% had feeling of 'always' loneliness. In bivariate model, except place of residence, all other selected characteristics were significantly associated with increasing of loneliness. In adjusted analysis, gender, marital status, living status, hearing-visual impairment, depression, concern about falling were found as the statistically significantly risk factors for causing of different degrees of loneliness. Conclusion: Study connotes the prevalence of loneliness among aged people of Bangladesh and their associated risk factors. Results of this study would be assistive to reduce the prevalence of loneliness and helpful for geriatric policy implications.

Keywords:
Loneliness
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1. Introduction

Social capital as a means of social relationships and social support is urgently needed for all stages of people because of it directs payoff of emotional fulfilment and development over the life span. However, due to development in modern sciences and technology, human beings become very self-centred where social-media separating us from physical interaction with families and friends. Consequently, people are becoming very alone, if it continues it can predict we will be all alone one day. Feeling loneliness has been extremely encountering this problem force to proclaim it is public health issue.

Loneliness may occur in different years of age but loneliness in aging people is very common phenomenon which is responsible for diminishing longevity (Aartsen & Jylhä, 2011; Holmé, Ericsson, & Winblad, 1994;

Van Tilburg, Havens, & De Jong, 2004). It may lead to depression, functional declination, nursing home admission, disability and death (Aartsen & Jylhä, 2011; Buchman et al., 2010; Elsayed, El-Etreby, & Ibrahim, 2019). Previous studies confirm that 10.5% (Beutel et al., 2017) to 55% (Musich, Wang, Hawkins, & Yeh, 2015) aging citizens suffer from different degrees of loneliness whereas around 5% (Savikko, Routasalo, Tilvis, Strandberg, & Pitkälä, 2005) to 28% (Musich et al., 2015) of the older adults endure always or major loneliness. Therefore, loneliness has become a serious concern in many countries in the world (Holt-Lunstad, Smith, Baker, Harris, & Stephenson, 2015) not only in developed countries but also in developing countries like Bangladesh.

Loneliness has defined as an unpleasant experience and feeling of emptiness which are the cause of lacking of social relationship (Perlman & Peplau, 1981). Although social isolation may lead to feeling of loneliness, it is not the sole factor for loneliness (Shankar, McMunn, Banks, & Steptoe, 2011). Loneliness is a qualitative, subjective term which is closely related to psychological satisfaction with the quantity and closeness of contacts (De Jong & Havens, 2004). One may feel lonely with a bundle of social connections. It is the outcome of both physical and mental conditions such as perceived ill-health, dietary inadequacies, depression and personality disorder (De Jong, 1998). Hence, to properly determine loneliness, one must examine an individual's values, needs, wishes and feelings. The aging people often experience age related problems and consequences, like functional limitations, psychological disorder, changes in social status, loss of confidence, loss of physical heath, these processes of late life may bring loneliness (Prince, Harwood, Blizard, Thomas, & Mann, 1997). However, living alone (Beutel et al., 2017; Grenade & Boldy, 2008; Havens, Hall, Sylvestre, & Jivan, 2004; Hellström, Persson, & Hallberg, 2004; Savikko et al., 2005; Steed, Boldy, Grenade, & Iredell, 2007; Wenger, Davies, Shahtahmasebi, & Scott, 1996; Zhong, Liu, Chen, Chiu, & Conwell, 2018) advancing of age (Hellström et al., 2004; Savikko et al., 2005; Zhong et al., 2018) gender (Hellström et al., 2004; Jylhä, 2004; Stessman et al., 1996) level of education (Savikko et al., 2005; Zhong et al., 2018), place of residence (Savikko et al., 2005; Zhong et al., 2018) visual and hearing impairments (Mullins, Elston, & Gutkowski, 1996; Savikko et al., 2005; Zhong et al., 2018) widowhood (Grenade & Boldy, 2008; Hellström et al., 2004; Savikko et al., 2005; Stessman et al., 1996) co-morbid illness (Hellström et al., 2004) and depression (Beutel et al., 2017; Chrostek, Grygiel, Anczewska, Wciórka, & Świtaj, 2016; Pinquart & Sorensen, 2001; Sündermann, Onwumere, Kane, Morgan, & Kuipers, 2014; Switaj, Grygiel, Anczewska, & Wciórka, 2014) have been found highly significantly associated with loneliness in older adults in previous studies. The portion of older citizens has been increasing worldwide and Bangladesh is not exception of this. Since geriatric population will represent almost seventeen percent of total population by 2050 in Bangladesh, researchers pointed out that aging would be an emerging serious problem in this country (Kabir et al., 1998). Beyond its ordinariness it is not possible to avoid in the advanced age. Therefore, identifying risk factors for loneliness might be helpful for understanding the causes and problems of old aged people that would be conducive to geriatric policy implications. Notwithstanding, such type of study in Bangladesh had not found. Thus, this study was carried out to identify the determinants of loneliness in aging people in Bangladesh.

2. Methods

Study participants and sampling: Data gathered for this cross-sectional study from sixty-five years or above aged community dwelling older adults in Meherpur district, Bangladesh. For this study, 517 participants were included and their information were collected through applying convenience sampling technique. Face-to-face interview technique was applied by trained enumerator in the home of the respondents. The data were collected from Meherpur district in Bangladesh.

Response variable: Loneliness in older adults was the outcome variable in this study. The magnitude of loneliness was assessed with the help of a short version (6-items) of De Jong Gierveld Loneliness Scale (Gierveld & Van Tilburg, 2010) which is applicable and reliable regarding geriatric population (Penning, Liu, & Chou, 2014). Of the 6 items, 3 items represent emotional loneliness and other 3 items indicate social loneliness (Gierveld & Tilburg, 2006; Gierveld & Van Tilburg, 2010). Also, the scale is comprised of three positive items including 'there are enough people I feel close to', and three negative items- 'I miss having people around me'. On the positive items, the neutral and negative answers were scored as '1' (Yes=0, More or less = 1, No =1), in contrast on the negative items, the neutral and positive answers were scored as '1' (Yes=1, More or less = 0, No =0). Item scores are ranged from 0 to 6 and as by suggested loneliness was categorized as 'normal' (0-2), 'sometimes loneliness' (3-4) and 'always loneliness' (5-6) (De Jong, Keating, & Fast, 2015; Gierveld & Van Tilburg, 2010).

Covariates: The selected predictor variables were: sex (male, female); place of residence (urban, rural); age (65-70 years, 71-79 years, 80 or above years); marital status (currently married, widowed/divorced), living status (living with someone, living alone); number of chronic illness (none, 1, ≥2); visual impairment (no, yes); hearing impairment (no, yes); fall in 1 year (no, yes); level of depression (none, mild, moderate, severe); concern about falling (no, somewhat, fairly, very). Depression was measured with 15-items Geriatric Depression Scale (GDS-15) (Greenberg, 2007) while short form (seven items) of Falls Efficacy Scale-International (Kempen et al., 2007) was utilized to assess fear of falling.

Statistical analysis: In Bivariate mode, Chi-square test of association was applied to determine the associated factors of loneliness. And then the significant factors which bivariate model uphold then inserted into multivariate multinomial logistic regression model to predict the risk factors for loneliness using SPSS.23.

3. Results

In this present study, 517 respondents ((≥65 years old) were participated where 41% felt 'sometimes' loneliness and 13.3% had feeling of 'always' loneliness. Table 1 depicts the background information of the participants as well as the prevalence of loneliness according to the categories of the predictor variables. The majority (60%) of the respondents were women and around 66% lived in rural communities. About 28% of the respondents were widowed/divorced. More than 80% older adults lived with someone and nearly 34% had fall history within a year. Nearly two-thirds of the respondents had vision problem while one-fourth had hearing impairment. Respondents' mean year of age was around 70 (SD ±4.52). Almost half of the respondents had some degrees of depression and more than two-third had some fear of falling.

Table-1. Background characteristics and the prevalence of different level of loneliness among participants.

Characteristics	All participants; n (%)	Level of loneliness; n (%)			$\chi 2$	*p*-value
		Normal	Sometimes	Always		
Age (years)					22.14	0.000**
65-70	234 (45.3)	121 (51.7)	83 (35.5)	30 (12.8)		
71-79	248 (48.0)	107 (43.1)	114 (46.0)	27 (10.9)		
80 or above	35 (6.8)	8 (22.9)	15 (42.9)	12 (34.3)		
Sex					17.04	0.000**
Male	206 (39.8)	116 (56.3)	72 (35.0)	18 (8.7)		
Female	311 (60.2)	120 (38.6)	140 (45.0)	51 (16.4)		
Place of residence					4.04	0.132
Urban	177 (34.2)	70 (39.5)	81 (45.8)	26 (14.7)		
Rural	340 (65.8)	166 (48.8)	131 (38.5)	43 (12.6)		
Marital Status					79.20	0.000**
Currently Married	370 (71.6)	208 (56.2)	137 (37.0)	25 (6.8)		
Widowed/Divorced	147 (28.4)	28 (19.0)	75 (51.0)	44 (29.9)		
Living Status					43.40	0.000**
Living with someone	416 (80.5)	219 (52.6)	152 (36.5)	45 (10.8)		
Living Alone	101 (19.5)	17 (16.8)	60 (59.4)	24 (23.8)		
Number of chronic illness					27.87	0.000**
None	282 (54.5)	149 (52.8)	105 (37.2)	28 (9.9)		
1	117 (22.6)	50 (42.7)	56 (47.9)	11 (9.4)		
≥ 2	118 (22.8)	37 (31.4)	51 (43.2)	30 (25.4)		
Visual impairment					63.28	0.000**
No	174 (33.7)	122 (70.1)	39 (22.4)	13 (7.5)		
Yes	343 (66.3)	114 (33.2)	173 (50.4)	56 (16.3)		
Hearing impairment					5.68	0.048*
No	387 (74.9)	188 (48.6)	152 (39.3)	47 (12.1)		
Yes	130 (25.1)	48 (36.9)	60 (46.2)	22 (16.9)		
Fall in 1 year					13.10	0.001**
No	340 (65.8)	172 (50.6)	133 (39.1)	35 (10.3)		
Yes	177 (34.2)	64 (36.2)	79 (44.6)	34 (19.2)		
Level of depression					48.30	0.000**
None	258 (49.9)	147 (57.0)	92 (35.7)	19 (7.4)		
Mild	102 (19.7)	48 (47.1)	38 (37.3)	16 (15.7)		
Moderate	87 (16.8)	29 (33.3)	43 (49.4)	15 (17.2)		
Severe	70 (13.5)	12 (17.1)	39 (55.7)	19 (27.1)		
Concern about falling					53.71	0.000**
No	167 (32.3)	79 (47.3)	75 (44.9)	13 (7.8)		
Somewhat	170 (32.9)	100 (58.8)	60 (35.3)	10 (5.9)		
Fairly	104 (20.1)	37 (35.6)	46 (44.2)	21 (20.2)		
Very	76 (14.7)	20 (26.3)	31 (40.8)	25 (32.9)		

*p-value<0.05; ** p-value<0.01.

Except place of residence, all other selected characteristics were significantly associated with loneliness. The prevalence of both sometimes and always feeling of loneliness was significantly higher in female (45% and 16.4%) than their male counterparts (35% and 8.7%).

Besides, the rate of always feeling of loneliness was highest (34.3%) in 80 or above years old participants whereas the prevalence of sometimes loneliness was highest (46%) in the 71-79 years old elderly. Both the prevalence of sometimes and always loneliness was higher in widowed/divorced older adults. Similarly, the prevalence of loneliness was significantly higher in the participants who lived alone compared with those who lived with someone (χ^2=43.40; p<0.001). The overall prevalence of loneliness was increased with increasing number of chronic illness. Always feeling of loneliness was more than 8% higher in older adults with vision problem than their counterparts. Moreover, both the sometimes loneliness and always loneliness was higher among individual with hearing problem compared with those who had not hearing problem (χ^2=5.68; p=0.048). Additionally, the percentage of sometimes loneliness and always loneliness found as higher in fallers group than non-fallers. Further, the prevalence of both the sometimes and always loneliness was increased with the increasing level of depression. For instance, the rate of sometimes loneliness was highest (55.7%) in participants who were suffering from severe depression, similarly the rate of always loneliness was highest (27.1%) in this group of population. Always feeling of loneliness was highest (32.9%) in the elderly who had very concern about falling.

The results of the multivariate logistic regression are presented in Table 2 which denotes the associated risk factors for increasing feeling of different level of loneliness.

Table-2. Multinomial logistic regression analysis for different level of loneliness.

Characteristics	Odds ratio (95% CI) of different level of loneliness	
	Sometimes loneliness	Always loneliness
Age group (years)		
65-70 (ref.)	-	-
71-79	1.66 [0.54-5.08]	1.95 [0.53-7.16]
80 or above	1.66 [0.55-5.08]	0.75 [0.35-1.58]
Sex		
Male (ref.)	-	-
Female	2.36 (1.50-3.72)**	3.21 [1.53-6.70]**
Marital Status		
Currently Married (ref.)	-	-
Widowed/Divorced	2.12 [1.10-4.07]*	10.78 [4.43-26.19]**
Living Status		
Living with someone (ref.)	-	-
Living alone	3.10 [1.43-6.72]**	1.29 (0.46-3.60)
Number of chronic illness		
None (ref.)	-	-
1	1.34 [0.76-2.34]	0.60 (0.22-1.65)
≥ 2	1.33 [0.70-2.49]	2.11 [0.84-5.29)
Visual impairment		
No (ref.)	-	-
Yes	1.39 [0.83-2.32]	4.45 [1.94-10.15]**
Hearing impairment		
No	-	-
Yes	2.46 [1.43-4.25]**	0.46 [1.94-10.15]
Fall in 1 year		
No (ref.)	-	-
Yes	1.39 [0.42-1.38]	0.51 (0.19-1.36)
Level of depression		
None (ref.)	-	-
Mild	1.08 [0.48-2.45]	2.09 (0.79-5.54)
Moderate	2.32 [1.20-4.49]*	2.20 (0.77-6.32)
Severe	4.77 [2.04-11.15]**	5.69 (1.72-18.80)**
Concern about falling		
No	-	-
Somewhat	0.62 [0.36-1.03]	0.46 (0.16-1.28)
Fairly	0.92 [0.46-1.83]	1.50 (0.50-4.45)
Very	1.08 [0.48-2.45]	2.76 (0.84-9.06) *

*p-value<0.05; **p-value<0.01. Reference category: Normal.

In this study, after adjusting all possible confounders, female gender (OR=2.36, 95% CI =1.50-3.72); being widowed or divorced (OR=2.12, 95% CI=1.10-4.07), living alone (OR=3.10, 95% CI =1.43-6.72); having hearing impairment (OR=2.46, 95% CI =1.43-4.25); moderate depression (OR=2.32, 95% CI=1.20-4.49) and severe depression (OR=4.77, 95% CI: 2.04-11.15) were found as the associated risk factors for feeling sometimes loneliness while female gender (OR=3.21, 95% CI=1.53-6.70), being widowed or divorced (OR=10.78, 95% CI=4.43-26.19), visual problem (OR=4.45, 95% CI=1.94-10.15),moderate depression (OR=2.20, 95% CI: 0.77-6.32), severe depression (OR=5.69, 95% CI=1.72-18.80) and very concern about falling (OR=2.76, 95% CI=0.84-9.06) were significant determinants of always loneliness.

4. Discussion

Analysed findings pointed out that overall prevalence of loneliness among participants 54.3% which is align to the previous study (Musich et al., 2015). Among the 54.3% lonely respondents, 41% felt 'sometimes' loneliness and 13.3% had feeling of 'always' loneliness.

Previous studies also found that between 5% (Savikko et al., 2005) to 28% (Musich et al., 2015) suffer from always loneliness. The feeling of loneliness was more common among female gender, widowed or divorced, individuals who lived alone, hearing and visual impaired older adults, elderly with depressive disorder and elderly having fear of falling.

Current study did not confirm that age is the risk factor for increasing loneliness which is dissimilar to the previous studies, where researchers found age increased degrees of loneliness (Hellström et al., 2004; Savikko et al., 2005; Zhong et al., 2018).

Coherent findings had found in some previously done studies where researchers had not found any association between age and the enhancement of loneliness (Holmé et al., 1994; Holmén, Ericsson, Andersson, & Winblad, 1992; Mullins et al., 1996; Victor, Scambler, Bowling, & Bond, 2005).

This would be due to existence of social and familial relationship, in addition, religion may be the cause. Because in Bangladeshi context children of aged people are much more careful for their parents, also grandchildren of aged people are very fond of living with their grandfather/mother so there is no way to be feeling loneliness.

Gender had found as the statistically significant predictor for increasing the extent of loneliness. It has found in the present study that women were more likely to be suffered from loneliness in different degrees than male. In accordance with previous studies (Hellström et al., 2004; Jylhä, 2004; Stessman et al., 1996) this study confirms that female possess high risk of suffering from loneliness.

This is may be because of traditionally the women in Bangladesh are bound to live in home while men often may participate in different the social events and can join with their friends and neighbors at different small shop (e.g. Tea-stall) which may entertain them.

In addition, aged people of Bangladesh frequently go to mosque for taking prayer, consequently they get company with others which help them to pass time with worship and gossip.

Therefore, in Bangladeshi context male possess less likely to be feeling loneliness comparing to female. Another, reason may be characteristically, women in Bangladesh own high life expectancy which drive them to experience a bundle of losses and to widowhood.

Present study had found that widowed or separated elderly were 2.12 times and 10.78 times more likely to feel sometimes and always loneliness than the currently married persons. In line with previously taken studies (Grenade & Boldy, 2008; Hellström et al., 2004; Savikko et al., 2005; Stessman et al., 1996) this study supports this finding that marital status is intrinsically linked with enhancing different extent of loneliness. Study assumes that this would be widowed or separated women does not possess much social security and cooperation which make them feeling so much loneliness.

Another, causes may be married women can get support from their husband but widowed women not had this facility. Therefore, study suggests that government and NGOs should come forward to helping this woman with social-safety net programmes.

Present study affirmed that living alone is the highly statistically significant associated risk factor for developing loneliness among aged people. In accordance with previous studies (Beutel et al., 2017; Grenade & Boldy, 2008; Havens et al., 2004; Hellström et al., 2004; Savikko et al., 2005; Steed et al., 2007; Wenger et al., 1996; Zhong et al., 2018) this study endorsed this finding. This is may be because of man is a social animal s/he cannot live alone so living alone may create dangers for people who live alone.

The current study denotes that hearing and visual impairment are the two highly significant risk factors for increasing different degrees of loneliness among Bangladeshi people.

This finding is supported by the previously done studies (Mullins et al., 1996; Savikko et al., 2005; Zhong et al., 2018) where researchers found hearing and visual impairment influenced to increase extent of loneliness among aged people. The prime reason might be decreasing number of social contacts. Because the capacity to keep up with social contacts decreases when someone suffers from health deterioration including hearing or visual impairments (Savikko et al., 2005).

Depression syndrome is another prime associated risk factor for the feeling of loneliness which this study established. In agreement with previous studies (Beutel et al., 2017; Cacioppo, Hughes, Waite, Hawkley, & Thisted, 2006; Chrostek et al., 2016; Pinquart & Sorensen, 2001; Sündermann et al., 2014; Switaj et al., 2014; Victor & Yang, 2012) this study assured this finding.

In relation to previous studies this study therefore, assumes that loneliness and depression might bidirectional (Aartsen & Jylhä, 2011; Victor et al., 2005). In this study, the elderly having very concern about falling ran around 2.76 times higher risk for developing always feeling of loneliness.

A study showed a strong relationship between loneliness and fear of falling (Zali, Farhadi, Soleimanifar, Allameh, & Janani, 2017). However, we did not find any study where fear of falling was a risk factor for loneliness. Therefore, it is suggested that to confirm the effect of fear of falling (FOF) on loneliness, the variable FOF should include in future researches.

The study has some several strengths. First, it focused on diverse risk factors including socio-demographic and psychological variables.

Second, most of variables had no missing cases, hence missing values had no impact on the analyses. Third, loneliness, depression, fear of falling were operationalized using established scales. Forth, in the multinomial regression model, all possible confounders were considered.

Finally, to the best knowledge, this is the first study that investigates the determinants of loneliness in Bangladesh, which would help the geriatric policy implication and would encourage researchers to concentrate in this field as well.

There are also several weaknesses in this study. First, this study includes some recall bias as we used convenience sampling. Second, we measured number of chronic diseases based on self-report.

Third, this is a cross-sectional study; longitudinal study might helpful to reveal exact results. Last but not least, some variables including education status, family income, anxiety, and suicidal ideation did not consider which might be associated with loneliness (Beutel et al., 2017; Zhong et al., 2018).

5. Conclusions

The entire paper was attempted to examine a newly adapted issue which has not yet discussed in Bangladeshi researchers. In order to determine the extent and associated risk factors for loneliness this study was undertaken in Bangladeshi social settings.

Obtained findings uphold that above fifty-four per cent older aged has been suffering from different levels of loneliness. Socio-demographic and self-reported morbities were taken into account for predicting the statistically significantly risk factors for increasing loneliness.

Both the bivariate and multivariate adjustment confirms several factors which are keenly related to enhancing loneliness among advanced aged people. The prevalence of loneliness upholds there is urgent need to take further detailed study. Therefore, study recommends how loneliness negatively impacting on older adults that needs to be justified by scientific detailed studies.

References

Aartsen, M., & Jylhä, M. (2011). Onset of loneliness in older adults: Results of a 28 year prospective study. *European Journal of Ageing*, *8*(1), 31-38. Available at: https://doi.org/10.1007/s10433-011-0175-7.

Beutel, M. E., Klein, E. M., Brähler, E., Reiner, I., Jünger, C., Michal, M., & Tibubos, A. N. (2017). Loneliness in the general population: Prevalence, determinants and relations to mental health. *BMC Psychiatry*, *17*(1), 1-7. Available at: https://doi.org/10.1186/s12888-017-1262-x.

Buchman, A. S., Boyle, P. A., Wilson, R. S., James, B. D., Leurgans, S. E., Arnold, S. E., & Bennett, D. A. (2010). Loneliness and the rate of motor decline in old age: The rush memory and aging project, a community-based cohort study. *BMC Geriatrics*, *10*(1), 1-8. Available at: https://doi.org/10.1186/1471-2318-10-77.

Cacioppo, J. T., Hughes, M. E., Waite, L. J., Hawkley, L. C., & Thisted, R. A. (2006). Loneliness as a specific risk factor for depressive symptoms: Cross-sectional and longitudinal analyses. *Psychology and Aging*, *21*(1), 140-151.

Chrostek, A., Grygiel, P., Anczewska, M., Wciórka, J., & Świtaj, P. (2016). The intensity and correlates of the feelings of loneliness in people with psychosis. *Comprehensive Psychiatry*, *70*, 190-199. Available at: https://doi.org/10.1016/j.comppsych.2016.07.015.

De Jong, G. J. (1998). A review of loneliness: Concept and definitions, determinants and consequences. *Reviews in Clinical Gerontology*, *8*(1), 73-80.

De Jong, G. J., & Havens, B. (2004). Cross-national comparisons of social isolation and loneliness: Introduction and overview. *Canadian Journal on Aging*, *23*(2), 109-113. Available at: https://doi.org/10.1353/cja.2004.0021.

De Jong, G. J., Keating, N., & Fast, J. E. (2015). Determinants of loneliness among older adults in Canada. *Canadian Journal on Aging*, *34*(2), 125-136. Available at: https://doi.org/10.1017/S0714980815000070.

Elsayed, E. B. M., El-Etreby, R. R., & Ibrahim, A. A. W. (2019). Relationship between social support, loneliness, and depression among elderly people. *International Journal of Nursing Didactics*, *9*(1), 39-47. Available at: https://doi.org/10.15520/ijnd.v9i01.2412.

Gierveld, J. D. J., & Tilburg, T. V. (2006). A 6-item scale for overall, emotional, and social loneliness: Confirmatory tests on survey data. *Research on Aging*, *28*(5), 582-598. Available at: https://doi.org/10.1177%2F0164027506289723.

Gierveld, J. D. J., & Van Tilburg, T. (2010). The De Jong Gierveld short scales for emotional and social loneliness: Tested on data from 7 countries in the UN generations and gender surveys. *European Journal of Ageing*, *7*(2), 121-130. Available at: https://doi.org/10.1007/s10433-010-0144-6.

Greenberg, S. A. (2007). How to try this: The geriatric depression scale short form. *AJN the American Journal of Nursing*, *107*(10), 60-69. Available at: https://doi.org/10.1097/01.NAJ.0000292204.52313.f3.

Grenade, L., & Boldy, D. (2008). Social isolation and loneliness among older people: Issues and future challenges in community and residential settings. *Australian Health Review*, *32*(3), 468-478. Available at: https://doi.org/10.1071/AH080468.

Havens, B., Hall, M., Sylvestre, G., & Jivan, T. (2004). Social isolation and loneliness: Differences between older rural and urban Manitobans. *Canadian Journal on Aging*, *23*(2), 129-140. Available at: https://doi.org/10.1353/cja.2004.0022.

Hellström, Y., Persson, G., & Hallberg, I. R. (2004). Quality of life and symptoms among older people living at home. *Journal of Advanced Nursing*, *48*(6), 584-593. Available at: https://doi.org/10.1111/j.1365-2648.2004.03247.x.

Holmé, K., Ericsson, K., & Winblad, B. (1994). Loneliness and living conditions of the oldest old. *Scandinavian Journal of Social Medicine*, *22*(1), 15-19. Available at: https://doi.org/10.1177/140349489402200103.

Holmén, K., Ericsson, K., Andersson, L., & Winblad, B. (1992). Subjective loneliness a comparison between elderly and relatives. *Care in the Nordic Countries*, *12*(2), 9-13. Available at: https://doi.org/10.1177%2F010740839201200203.

Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., & Stephenson, D. (2015). Loneliness and social isolation as risk factors for mortality: A meta-analytic review. *Perspectives on Psychological Science*, *10*(2), 227-237. Available at: https://doi.org/10.1177%2F1745691614568352.

Jylhä, M. (2004). Old age and loneliness: Cross-sectional and longitudinal analyses in the tampere longitudinal study on aging. *Canadian Journal on Aging*, *23*(2), 157-168. Available at: https://doi.org/10.1353/cja.2004.0023.

Kabir, Z. N., Szebehely, M., Tishelman, C., Chowdhury, A. M. R., Höjer, B., & Winblad, B. (1998). Aging trends--making an invisible population visible: The elderly in Bangladesh. *Journal of Cross-Cultural Gerontology*, *13*(4), 361-378. Available at: https://doi.org/10.1023/A:1006536217913.

Kempen, G. I., Yardley, L., Van Haastregt, J. C., Zijlstra, G. R., Beyer, N., Hauer, K., & Todd, C. (2007). The short FES-I: A shortened version of the falls efficacy scale-international to assess fear of falling. *Age and Ageing*, *37*(1), 45-50. Available at: https://doi.org/10.1093/ageing/afm157.

Mullins, L. C., Elston, C. H., & Gutkowski, S. M. (1996). Social determinants of loneliness among older Americans. *Genetic, Social, and General Psychology Monographs*, *122*(4), 453-473.

Musich, S., Wang, S. S., Hawkins, K., & Yeh, C. S. (2015). The impact of loneliness on quality of life and patient satisfaction among older, sicker adults. *Gerontology and Geriatric Medicine*, *1*, 2333721415582119. Available at: https://doi.org/10.1177%2F2333721415582119.

Penning, M. J., Liu, G., & Chou, P. H. B. (2014). Measuring loneliness among middle-aged and older adults: The UCLA and de Jong Gierveld loneliness scales. *Social Indicators Research*, *118*(3), 1147-1166. Available at: https://doi.org/10.1007/s11205-013-0461-1.

Perlman, D., & Peplau, L. A. (1981). Toward a social psychology of loneliness. *Personal Relationships*, *3*, 31-56.

Pinquart, M., & Sorensen, S. (2001). Influences on loneliness in older adults: A meta-analysis. *Basic and Applied Social Psychology*, *23*(4), 245-266. Available at: https://doi.org/10.1207/S15324834BASP2304_2.

Prince, M. J., Harwood, R. H., Blizard, R. A., Thomas, A., & Mann, A. H. (1997). Social support deficits, loneliness and life events as risk factors for depression in old age. *The Gospel Oak Project VI. Psychological Medicine*, *27*(2), 323-332.

Savikko, N., Routasalo, P., Tilvis, R. S., Strandberg, T. E., & Pitkälä, K. H. (2005). Predictors and subjective causes of loneliness in an aged population. *Archives of Gerontology and Geriatrics*, *41*(3), 223-233. Available at: https://doi.org/10.1016/j.archger.2005.03.002.

Shankar, A., McMunn, A., Banks, J., & Steptoe, A. (2011). Loneliness, social isolation, and behavioral and biological health indicators in older adults. *Health Psychology*, *30*(4), 377-385. Available at: http://dx.doi.org/10.1037/a0022826.

Steed, L., Boldy, D., Grenade, L., & Iredell, H. (2007). The demographics of loneliness among older people in Perth, Western Australia. *Australasian Journal on Ageing*, *26*(2), 81-86. Available at: https://doi.org/10.1111/j.1741-6612.2007.00221.x.

Stessman, J., Ginsberg, G., Klein, M., Hammerman-Rozenberg, R., Friedman, R., & Cohen, A. (1996). Determinants of loneliness in Jerusalem's 70-year-old population. *Israel Journal of Medical Sciences*, *32*(8), 639-648.

Sündermann, O., Onwumere, J., Kane, F., Morgan, C., & Kuipers, E. (2014). Social networks and support in first-episode psychosis: Exploring the role of loneliness and anxiety. *Social Psychiatry and Psychiatric Epidemiology*, *49*(3), 359-366. Available at: https://doi.org/10.1007/s00127-013-0754-3.

Switaj, P., Grygiel, P., Anczewska, M., & Wciórka, J. (2014). Loneliness mediates the relationship between internalised stigma and depression among patients with psychotic disorders. *International Journal of Social Psychiatry*, *60*(8), 733-740. Available at: https://doi.org/10.1177%2F0020764013513442.

Van Tilburg, T., Havens, B., & De Jong, G. J. (2004). Loneliness among older adults in the Netherlands, Italy, and Canada: A multifaceted comparison. *Canadian Journal on Aging*, *23*(2), 169-180. Available at: https://doi.org/10.1353/cja.2004.0026.

Victor, C. R., Scambler, S. J., Bowling, A. N. N., & Bond, J. (2005). The prevalence of, and risk factors for, loneliness in later life: A survey of older people in Great Britain. *Ageing & Society*, *25*(6), 357-375. Available at: https://doi.org/10.1017/S0144686X04003332.

Victor, C. R., & Yang, K. (2012). The prevalence of loneliness among adults: A case study of the United Kingdom. *The Journal of Psychology*, *146*(1-2), 85-104. Available at: https://doi.org/10.1080/00223980.2011.613875.

Wenger, G. C., Davies, R., Shahtahmasebi, S., & Scott, A. (1996). Social isolation and loneliness in old age: Review and model refinement. *Ageing & Society*, *16*(3), 333-358. Available at: https://doi.org/10.1017/S0144686X00003457.

Zali, M., Farhadi, A., Soleimanifar, M., Allameh, H., & Janani, L. (2017). Loneliness, fear of falling, and quality of life in community-dwelling older women who live alone and live with others. *Educational Gerontology*, *43*(1), 582-588. Available at: https://doi.org/10.1080/03601277.2017.1376450.

Zhong, B. L., Liu, X. J., Chen, W. C., Chiu, H. F. K., & Conwell, Y. (2018). Loneliness in Chinese older adults in primary care: Prevalence and correlates. *Psychogeriatrics*, *18*(5), 334-342. Available at: https://doi.org/10.1111/psyg.12325.