DETERMINANTS OF LONELINESS AMONG MID-AGED AND OLDER ADULTS

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ABSTRACT

Loneliness is a growing public health and societal concern, its prevalence being more common and at an elevated degree among older adults, imposing greater risk on cognitive function, psychosocial wellbeing, and quality of life. This study investigated the determinants of loneliness among mid-aged and older adults in Malaysia. Data were obtained from the Malaysia Ageing and Retirement Survey (MARS) conducted in 2018-2019, a nationally representative sample consisting of 5613 respondents aged 40 years and over. Loneliness was measured using a 5-point Likert scale on a single self-rated statement about how often the respondents feel lonely which was grouped into a dichotomous variable, often feel lonely and rarely or never feel lonely. About 32% of the respondents reported they often experienced loneliness. Chi-square tests were performed on the experience of loneliness across socio-economic and demographic characteristics, health conditions, family, and social connectedness, followed by logistic regression analysis incorporating these variables as possible predictors. The results showed that factors contributing to the likelihood of experiencing loneliness include being a female compared with male, ethnic Indian and other Bumiputera compared with Chinese, experience of feeling depressed and having diagnosed illnesses compared with respondents having no such experience and staying with other family members as opposed to living alone. In contrast, having a spouse, being more educated, being employed, having good self-reported health, good perceived family relationships and high social connectedness, and having young children living with the respondents were associated with significantly less likely to experience loneliness compared with their respective counterparts. The findings suggest the need for policies and strategies that would promote participation in the labour market, healthy living, strengthen family relationships and social connectedness. These factors are important considerations as the country is heading towards an aged population status.

Keywords: MARS, loneliness, social isolation, older Malaysians

INTRODUCTION

Loneliness has emerged as a growing public health and societal concern in recent years because of its impact on health and wellbeing, particularly affecting the ageing societies throughout the world. Although feelings of loneliness can occur at any phase in an individual's life, it is more common and at an elevated degree among older adults, imposing greater risk on cognitive function, physical and psychosocial wellbeing, and quality of life (Yang & Victor, 2011, Luo & Waite, 2014; Huang et al., 2021). With longer life expectancy, older individuals may experience life changes such as relocation, widowhood, and disability that are associated with increased vulnerability to loneliness and its prevalence hence increasing the burden of loneliness as well as its impact on them (Beal, 2006; Singh & Kiran, 2013). Without early and effective interventions, this could affect one's emotional and mental wellbeing as well as other health outcomes which can be costly (Stall, Savage & Rochon, 2019; Huang, Chi, Kuo, Wu & Chuang, 2021). Additionally loneliness was found to be one of the symptoms of psychological disorders such as depression

(Cacioppo, Fowler & Christakis, 2019) and that loneliness and social isolation have been cited as risk factors for all-cause morbidity and mortality (Fakoya, McCorry & Donnelly, 2020; Stall, Savage & Rochon, 2019; Luo & Waite, 2014).

There are variations as to what constitutes loneliness in the literature. De Jong-Gierveld (1987) defined loneliness as a state in which a person experiences an unpleasant or short of certain social relationships. Loneliness has also been conceptualized as differences that exist between the desired social contact and the actual counterpart. It is also the way how people define their experiences in the situation of lacking interaction with people and being alone or isolated (Weiss & Bowlby, 1973; Ernst & Cacioppo, 1999; Poscia et al., 2018; Russell, Peplau & Cutrona, 1980; The University of York Centre for Reviews and Dissemination, 2014). Subsequently Stall, Savage & Rochon (2019) described loneliness as an emotional state of perceived social isolation having impacts on three major dimensions namely affect, cognition and behaviour. Affect refers to feelings of desperation, boredom and self-deprecation while cognition consists of negative attitudes toward self and others, and a sense of hopelessness and futility. In contrast, behaviour relates to being self-absorbed, socially ineffective and passive (Heinrich & Gullone, 2006). As cited by Fakoya, McCorry & Donnelly (2020) and Huang et al. (2021), loneliness constitutes social and emotional loneliness in which the former refers to a subjective negative feeling associated with a perceived lack of a wider social network and the latter is about the absence of a specific desired companion. Hence loneliness is often used interchangeably with social isolation although the two terms are quite distinct but interrelated through a common component of social loneliness.

Numerous studies have been conducted on the determining factors of loneliness, more so involving older persons. Generally, the factors can be classified into situational and internal factors with the former encompasses when a person is physically isolated, dwelling in a new place, divorced, or widowed while the latter refers to an individual's internal self (Sbarra, 2015) while De Jong Gierveld, Keating & Fast (2015) expanded the determinants of loneliness into four pillars consisting of personal characteristics, deprived living conditions, social network or social engagement, and satisfaction with network contact. Socio-demographic characteristics which include gender, age, health, marital status, place of residence, ethnicity, employment, income status, and educational attainment were found to contribute to feelings of loneliness during late life (Rahman, Rahman & Rahman, 2019; De Jong Gierveld, Keating & Fast, 2015; Niedzwiedz et al., 2016; Dahlberg, Andersson, McKee, & Lennartsson, 2014) and that loneliness is more common among females than males (Aartsen & Jylha, 2011; Beal, 2006; Singh & Kiran, 2013). Widowed, divorced, separated, and a never-married person is more likely to experience loneliness when they grow older (Rahman, Rahman & Rahman, 2019; De Jong Gierveld, Keating & Fast, 2015). Older people are more likely to experience a higher degree of loneliness as they age further due to the fact that ageing adversely indicates deprivation in health conditions and physical abilities (Rahman, Rahman & Rahman, 2019; De Jong Gierveld, Keating & Fast, 2015; Lennartsson & Lundberg, 2006; Schön & Parker, 2008; Penning, Liu & Chou, 2014).

Social capital is a crucial element in ensuring the quality of life and wellbeing of older people (Litwin, 2010; Pinquart & Sorensen, 2001). Studies have posited that older people who are socially active are more likely to have good mental wellbeing (Bowling, 1994; Schwartz & Litwin, 2017). Determinants of social capital include social network strength or frequency of participation in social activities (Milligan et al., 2015). Bosma, Jansen, Schefman, Hajema, & Feron (2015) echoed that older people who have less participation in social activities are more likely to experience loneliness. Social support received by older adults has been found to influence the wellbeing of older people (Bowling, 1994). Social support comprises living arrangement, perceived family relationships, monetary support, and social connectedness. Rahman, Rahman & Rahman (2019) and Huang et al. (2021) highlighted that older people living alone are more likely to feel lonely while De Jong Gierveld et al. (2015) narrated that having close relatives and friends reduces the risk of loneliness. Subsequently, a scoping review was conducted by Fakoya, McCorry & Donnelly (2020) to describe the range of interventions in terms of intervention conceptualisation, categorisation, and components, to reduce loneliness and social isolation among older adults.

Malaysia too is heading towards an aged population status. The population aged 60 and older accounted for 11.1% of the total population in 2020 and projected to increase to 19.2% by 2040 (Department of Statistics Malaysia). The increasing number of older persons and recognizing that loneliness is becoming a major psychosocial issue during old age because of its detrimental impact on various aspects of health, wellbeing, and quality of life have generated interests to research on this important topic (Syed Elias, 2018; Teh, Tey & Ng, 2014; Abolfathi Momtaz, Hamid & Ibrahim, 2013; Hussein, Ismail & Bakar, 2021; Aung, Nurumal & Wan Bukhari, 2017). For example, Syed Elias (2018) and Aung, Nurumal and Wan Bukhari (2017) examined the prevalence of loneliness, anxiety and depression among older adults living in a long-term care facility and nursing home, respectively, while a study by Hussein, Ismail and Bakar (2021) focused on loneliness and health outcomes among older adults in one community-dwelling. Except for Teh, Tey and Ng (2014), all these studies were conducted on a small scale involving a specific locality or community. Using 2004 Malaysian Population and Family Survey data, Teh, Tey & Ng (2014) found that more than 50% of the respondents (53.4%) experienced loneliness and that ethnicity has a significant influence on the level of loneliness among the older cohort. While the sample in their study consisted of older adults aged 60 and over, it was restricted to those with children only. It is the interest of this paper to examine the prevalence of loneliness and its determining factors using a more recent nationally representative data that could provide a deeper insight on this important concern as the country has been experiencing a shift in its major population age structure.

DATA AND METHOD

Data were drawn from the Malaysia Ageing and Retirement Survey (MARS) conducted in 2018-2019. MARS is a nationally representative sample consisting of 5613 respondents aged 40 years and over with a response rate of 84%. Sample selection was done by the Department of Statistics Malaysia (DOSM) based on the 2010 Population and Housing Census sampling frame with urban/rural stratification in both Peninsular and East Malaysia. Data collection was carried out using face-to-face Computer Assisted Personal Interview (CAPI) by trained enumerators in four different languages namely Malay, English, Mandarin and

Tamil. MARS is a longitudinal survey to be carried out every three years by the Social Wellbeing Research Centre (SWRC), University of Malaya with technical support from the Survey Research Center (SRC), University of Michigan,. Data analysed in this study were from MARS Wave-1.

The variable of interest was loneliness measured using a 5-point Likert scale on a single self-rated question "How often did you experience loneliness?". The responses consisted of 1=Never, 2=Rarely, 3=Sometimes, 4=Often, and 5=Always. The responses were then re-grouped into two with 1=Never/Rarely, and 2= Sometime/Often/Always converting loneliness into a dichotomous variable, 'Did not experience loneliness' if the respondents answered '1=Never/Rarely' and 'Experienced Loneliness' if the response was '2=Sometimes/Often/Always'. The single measurement of loneliness was also used by Huang et al. (2021) to analyse data from the Taiwan Longitudinal Survey on Aging (TLSA). The advantage of using a single self-rated question is in terms of simplicity, ease of understanding and age-friendly. The data set contained demographic and socio-economic variables, health related variables, family support and social connectedness. Except for social connectedness, all the variables were either dichotomous or categorical.

The demographic and socio-economic variables consisted of Gender (Male, Female); Age (40-49, 50-59, 60-69, 70 and older); Ethnicity (Chinese, Malay, Indian, Indigenous Sabah and Sarawak); Place of residence (Rural, Urban); Marital status (With spouse, Without spouse); Employment status (Currently working, Not working); Income status (Receive income, No income). Health-related variables comprised of self-rated health status (Poor, Moderate, Good); Diagnosed with illnesses (Yes, No); Limitation in activities of daily living (ADL) and instrumental activities of daily living (IADL) (Yes, No). Family support variables included living arrangement (Live alone, Live with family, Live with spouse only); Staying with children (Yes, No); Perceived strong family relationship (Agree, Disagree).

Social connectedness was measured as a single score using a 5-point Likert scale on how often respondents feel with respect to the following 6 items: (1) In tune and get along well with people around them (2) There are people they can talk to and share feelings (3) There are people they can turn to for help (4) There are people who really understand them (5) There are people they are close to, and (6) They are part of a group of friends/community. The scale ranges from 1=Never, 2=Rarely, 3=Sometimes, 4=Often and 5=Always which gives a possible score of 6 to 30. The measurement was generated using factor analysis which yielded good reliability and consistency with a Cronbach's Alpha of 0.85.

Univariate analysis was first performed to obtain the prevalence of loneliness for the overall sample followed by bivariate analysis using Chi-square test for categorical variables to examine the prevalence of loneliness across the subgroups of the sample while independent sample t-test for testing the mean social connectedness score between the two categories of loneliness. Subsequently, binary logistic regression was performed on loneliness as the dependent variable and incorporating all other variables as predictors. The analysis generated odds ratios (OR) and 95% confidence intervals for predicting the likelihood of experiencing loneliness and Hosmer and Lemeshow (HL) was used to examine the goodness of fit of the model. The analysis was carried out using SPSS version 25.

RESULTS

The descriptive statistics are presented in Table 1. The proportion of respondents who experienced loneliness was 32.4%. The sample consisted of slightly more females (55.8%) than males and quite evenly distributed across age groups except for the oldest age which accounted for 14%. More than half of the respondents were Malay (57.4%) followed by Indigenous Sabah & Sarawak (22.9%), Chinese (11.4%) and Indian (8.3%). Majority (61.5%) lived in urban areas and slightly more than three-quarters (77.6%) of the respondents reported having a spouse. Nearly half of the respondents had completed secondary education (48.2%), followed by primary school (29.5%). Those with tertiary education and no schooling accounted for 10% and 12%, respectively. While majority of the respondents were currently not working (64.3%), 60% of them reported they had received some form of income or payment.

In terms of health, slightly more than half of the respondents rated themselves in good health (51.1%), followed by moderate health (36.8%). While about 91% of the respondents reported that they never felt depressed, 58% had been diagnosed with illnesses by medical experts. Respondents having limitations in activities of daily living (ADL) and instrumental activities of daily living (iADL) accounted for 10.7% and 40.5% respectively. A high proportion of the respondents were living with their family (84.2%), 11.6% were living with spouse only and the remaining 4.2% were living alone. Nearly two-thirds of the respondents reported living together with their children and more than 90% agreed that they have a strong family relationship. Social connectedness had a mean score of 23.91 out of maximum 30.

Table 1: Description statistics of MARS sample

Variables (n=5613)	Percentage
Loneliness	
Not lonely	67.6
Lonely	32.4
Gender	
Male	44.2
Female	55.8
Age	
40-49	27.7
50-59	32.5
60-69	25.7
70 and above	14.0
Ethnicity	
Chinese	11.4
Malay	57.4
Indian	8.3
Indigenous Sabah &Sarawak	22.9
Place of residence	
Rural	38.5
Urban	61.5
Marital status	
Without spouse	22.4
With spouse	77.6
Educational level	
No schooling	11.9
Primary	29.5
Secondary	48.2
Tertiary	10.4
Currently working	
No	64.3
Yes	35.7
Received any income	
No	39.9
Yes	60.1
Self-rated health status	
Poor	12.2
Moderate	36.8
Good	51.1
Feeling depressed	
No	90.6
Yes	9.4
Diagnosed with illnesses	
No	42.2
Yes	57.8
Limitation in ADL	
No	89.3
Yes	10.7
Limitation in iADL	
No	59.5
Yes	40.5
Living arrangement	
Live alone	4.2
Live with family	84.2
Live with spouse only	11.6
Your children staying with you	
No	37.3
Yes	62.7
Perceived strong family relationship	
Disagree	6.5
Agree	93.5
Social connectedness (mean score)	23.91

Prevalence of loneliness across the subgroups of the sample is shown in Table 2. The proportion of lonely female respondents was significantly higher than male (37.1% & 26.4%, respectively). The proportion of respondents who experienced loneliness increased with age from 27% among respondents aged 40-49 to 45% among those aged 70 and over. Across ethnicity, Indian respondents registered the highest proportion of loneliness (45.1%) followed by the Indigenous Sabah and Sarawak (34.3%). However, there was no difference in the prevalence of loneliness between Malay and Chinese respondents (30%). A significantly higher proportion of rural respondents admitted they experienced loneliness compared to urban respondents (34.4% vs 31.2%). Prevalence of loneliness was significantly lower among respondents with spouse (27.0%) than respondents without spouse (51%) and decreased significantly with increasing level of education. Respondents who were currently working and those receiving income registered significantly lower proportion of loneliness than their respective counterparts.

The proportion of respondents with experience of loneliness among those in good health was half of those in poor health (26.2% vs 52.8%). Similarly, a significantly higher prevalence of loneliness among respondents who felt depressed (69.6%), with diagnosed illnesses (36.6%) those having limitations in ADL (48.0%) and iADL (38.1%) compared to their respective counterparts. While there was no significant difference in the prevalence of loneliness across living arrangements, its prevalence was significantly lower among respondents who were co-residing with children and having a good relationship with the family compared to those who were not. As for social connectedness, the result indicates that respondents who were not lonely tended to have higher social connectedness score compared to those experienced loneliness.

Table 2: Prevalence of loneliness across subgroups of the sample respondents

Variables	Not lonely	Lonely	Test statistics
Gender			72.040***
Male	73.6	26.4	
Female	62.9	37.1	
Age			75.928***
40-49	73.0	27.0	
50-59	69.2	30.8	
60-69	66.3	33.7	
70 and above	55.5	44.5	
Ethnicity			45.740***
Chinese	70.0	30.0	
Malay	70.1	29.9	
Indian	54.9	45.1	
Indigenous Sabah & Sarawak	65.7	34.3	
Place of residence			6.049***
Rural	65.6	34.4	
Urban	68.8	31.2	
Marital status			255.583***
Without spouse	49.0	51.0	
With spouse	73.0	27.0	
Educational level			164.137***
No schooling	51.5	48.5	
Primary	62.3	37.7	
Secondary	72.3	27.7	
Tertiary	79.3	20.7	
Currently employed			96.925***
No	63.0	37.0	
Yes	75.9	24.1	
Received any income or payment			8.352***
No	65.4	34.6	
Yes	69.1	30.9	
Self-rated health status			182.568***
Poor	47.2	52.8	
Moderate	65.7	34.3	
Good	73.8	26.2	
Feeling depressed			368.165***
No	71.5	28.5	
Yes	30.4	69.6	
Diagnosed with illnesses			61.827***
No	73.4	26.6	
Yes	63.4	36.6	
Limitation in ADL			74.189***
No	69.5	30.5	
Yes	52.0	48.0	
Limitation in IADL			57.665***
No	71.5	28.5	
Yes	61.9	38.1	

Living arrangements			0.490
Stay alone	69.6	30.4	
Stay with family	67.5	32.5	
Stay with spouse only	67.2	32.8	
Your children staying with you			81.259***
No	60.8	39.2	
Yes	72.8	27.2	
Perceived strong family relationship			113.659***
No	42.2	57.8	
Yes	69.4	30.6	
Social connectedness (mean score)	24.46 (SE=0.076)	22.77 (SE=0.119)	11.929***

Notes:
Chi-squared test/independent sample t-test significance: *** p<0.05

Two binary logistic models on the experience of loneliness were performed and the results are presented for both the full and reduced models (Table 3). The full model incorporated all the independent variables while the reduced model included only the significant variables in the full model except age. The result described here is based on the reduced model which suggests that females were 1.285 times [95% CI: 1.105-1.494] more likely to experience loneliness than males and that Indian and Indigenous Sabah and Sarawak were more likely to experience loneliness than Chinese with odds ratio 1.384 and 1.340, respectively. The result also indicates that, urban respondents were 0.868 times (95% CI: 0.750-1.005) less likely to experience loneliness compared to those in the rural areas, respondents with spouse were less likely to feel lonely than those without spouse (OR: 0.464, 95% CI: 0.390-0.551), respondents with secondary and post-education were 0.799 times and 0.698, respectively, less likely to experience loneliness than those with no schooling, and working respondents were 0.787 times (95% CI: 0.667-0.929) less likely to be lonely than those who were not working.

Significant health related variables include self-rated health, feeling depressed and having diagnosed illness. Respondents rated themselves in moderate and good health were less likely to feel lonely than those in poor health (odds ratio 0.627 & 0.528, respectively). In contrast, feeling depressed and having diagnosed illness significantly elevated the risk of feeling lonely (odds ratio 4.132 & 1.176, respectively). In terms of family support, the result shows that respondents who lived with family were 1.350 times more likely to experience loneliness compared to those who lived alone while living with children (OR: 0.752, 95% CI: 0.647-0.874) and having a strong family relationship significantly reduced the odds of feeling lonely (odds ratio 0.752 & 0.624, respectively). The result also indicates the significance of social connectedness where respondents who had high social connectedness score were 0.947 times less likely to experience loneliness.

Table 3: Logistic regression model on the likelihood of experiencing loneliness

Variables	Full model	Reduced model
Gender:		
Male (*reference category*)	-	-
Female	1.259*** [1.077-1.470]	1.285*** [1.105-1.494]
Age:		
40-49 (*reference category*)	-	-
50-59	1.027 [0.856-1.234]	1.034 [0.862-1.242]
60-69	0.887 [0.712-1.104]	0.890 [0.716-1.108]
70 and above	0.898 [0.684-1.180]	0.923 [0.704-1.210]
Ethnicity:		
Chinese (*reference category*)	-	-
Malay	1.110 [0.882-1.398]	1.116 [0.887-1.403]
Indian	1.366*** [1.004-1.858]	1.384*** [1.019-1.881]
Indigenous	1.345*** [1.033-1.753]	1.340*** [1.029-1.746]
Place of residence:		
Rural (*reference category*)	-	-
Urban	0.864** [0.746-1.001]	0.868** [0.750-1.005]
Marital status:		
Without spouse (*reference category*)	-	-
With spouse	0.461*** [0.387-0.550]	0.464*** [0.390-0.551]
Educational level:		
No schooling (*reference category*)	-	-

Primary	0.891 [0.714-1.112]	0.886 [0.711-1.104]
Secondary	0.809** [0.641-1.022]	0.799** [0.634-1.007]
Tertiary	0.718*** [0.520-0.992]	0.698*** [0.507-0.962]
Currently employed:		
No (*reference category*)	-	-
Yes	0.810*** [0.682-0.962]	0.787*** [0.667-0.929]
Received any income or payment:		
No (*reference category*)	-	
Yes	0.970 [0.839-1.122]	
Self-rated health status:		
Poor (*reference category*)	-	-
Moderate	0.650*** [0.526-0.804]	0.627*** [0.509-0.774]
Good	0.552*** [0.442-0.689]	0.528*** [0.425-0.656]
Feeling depressed:		
No (*reference category*)	-	-
Yes	4.075*** [3.246-5.114]	4.132*** [3.295-5.181]
Diagnosed with illnesses:		
No (*reference category*)	-	-
Yes	1.165*** [1.006-1.348]	1.176*** [1.017-1.361]
Limitation in ADLs:		
No (*reference category*)	-	
Yes	1.163 [0.944-1.435]	
Limitation in IADLs:		
No (*reference category*)	-	
Yes	1.097 [0.950-1.266]	
Living arrangement:		
Live alone (*reference category*)	-	-
Live with family	1.345** [0.961-1.883]	1.350** [0.964-1.890]
Live with spouse only	1.304 [0.891-1.910]	1.299 [0.887-1.902]
Your children staying with you:		
No (*reference category*)	-	-
Yes	0.751*** [0.646-0.873]	0.752*** [0.647-0.874]
Perceived strong family relationship:		
Disagree (*reference category*)	-	-
Agree	0.626*** [0.476-0.822]	0.624*** [0.475-0.820]
Social connectedness	0.947*** [0.934-0.961]	0.947*** [0.934-0.960]
Chi-squared statistics of HL test	7.063	4.609

Notes:
*** & ** indicate p-values significance at 5% & 10% respectively; Value in [ ] indicates 95% confidence interval

DISCUSSION

This study examined the prevalence of loneliness and its determining factors using data from Malaysia Ageing and Retirement Survey (MARS) conducted in 2018-2019 involving respondents aged 40 and over. The overall prevalence of loneliness was 32.4% which is lower than that of Teh et al. (2014) (53.4%) and Mahmud, Jani and Shafiai (2016), reported at 53.4% and 36.5%, respectively. The difference is due to the age composition of the sample in which MARS data comprised of respondents aged 40 and over while both Teh et al. (2014) and Mahmud et al. (2016) used the Malaysian Population and Family Survey (MPFS) 2004 and 2014 data, respectively, which involved respondents aged 60 and older. In addition, the prevalence of loneliness in this study is within the range of 20% to 34% reported in China, Europe, Latin America and the US (WHO, 2021).

The logistic regression indicates several significant factors affecting the likelihood of loneliness. Females were more likely to experience loneliness than males. The finding is consistent with that of Aartsen & Jylha (2011), Luo and Waite (2014), Mahmud et al. (2016), and Rahman et al. (2019) but not that of Teh et al. (2014) and Huang et al. (2021). It has been argued that women are more likely to enter widowhood due to their longer longevity and remain unmarried compared to men (Carr & Bodnar-Deren, 2009; Teh et al., 2014) and that the lack of companionship may contribute to the feeling of loneliness among women. MARS data showed that 45% of female respondents aged 60 and older were either widowed, divorced or separated compared to only 12% of the male respondents. The gender difference could also be attributed to the higher participation of men in the labour market which provides opportunities to get involved in social events (Rahman et al., 2019) while women traditionally are expected to stay home to take care of the family which limit their social participation (Perrone, 2009), hence the higher likelihood of women than men to experience loneliness. MARS data showed only 23% of female respondents were currently working compared to 59% of the male. Additionally, this may explain the significance of being employed or working in reducing the likelihood of loneliness because of the opportunities in social and professional networking which confirms the study by Luo and Waite (2014) and Huang et al. (2021). Experience of loneliness was also affected by ethnicity, education, place of residence and marital status consistent with previous research (Huang et.al., 2021; Mahmud et al., 2016; Teh et al., 2014; Drennan et al., 2008; Stack, 1998). In this study, Indian and indigenous Sabah and Sarawak were more likely to experience loneliness than Chinese which could be due to the different norms embedded in their cultural traditions. The likelihood of experiencing loneliness significantly decline with increasing level of education which is directly related to having better jobs, financial security and continued engagement with colleagues and friends even during old age. This study highlighted the importance of marriage which shows that respondents with spouse were significantly less likely to experience loneliness than those without spouse. Being married means having a life partner which provides companionship and emotional attachment that can contribute to a better quality of life (Lai and Tey, 2021). The higher likelihood of rural respondents to experience loneliness may be explained by the low density of population and lack of transportation especially in the very remote areas that limit social interactions among rural community dwellers (Drennan et al., 2008). Another plausible explanation is co-residence with children among respondents living in urban areas. It may be reasonable to argue that younger people tend to move to urban areas for better job opportunities and invite their parents to live with them in the city. The significance of living together with children in reducing the likelihood of feeling lonely is very much related to having a strong relationship and support. Evidence from MARS showed that 63% of the respondents live with their children and more than 90% reported they have a strong family relationship.

Significant health-related factors of experiencing loneliness include poor self-rated health, feeling of depression and having diagnosed illnesses which echoed earlier studies (Luo and Waite, 2014); Mahmud et al., 2016); and Rahman et al., 2019; Teh et al. , 2014; Huang et al., 2021). To a large extent these factors can hinder affected individuals more so older adults from communicating and interacting with others hence the lack of social interaction and the lack of social connectedness (Van Tilburg & Broese van Groenou, 2002). Higher social connectedness reduces the likelihood of feeling lonely which confirms the study by Niedzwiedz et al. (2016). Determinants of social connectedness include social network strength or frequency of participation in social activities and that social connectedness is one of the important aspects of quality of life and wellbeing of older adults (Litwin, 2010; Pinquart & Sorensen, 2001; Milligan et al., 2015).

CONCLUSION

The motivation to study loneliness is because of the increasing prevalence of loneliness especially among older adults and its impact on general health and wellbeing, and mortality. This study used a single item on the frequency of experiencing loneliness to examine the prevalence and its determining factors while loneliness may be measured using De-Jong Gierveld Loneliness Scale (DJGLS) which can be explored in future research. Significant factors of experiencing loneliness consist of demographic and socio-economic, health related, family and social connectedness which provide rich insights for policy interventions. In view of the COVID-19 situation, it would be useful to study the impact of prolonged lockdown and travel restrictions on the feeling of loneliness among young people, mid-aged and older adults. The findings suggest the need for policies and strategies that would promote participation in the labour market, healthy living, strengthen family relationships and social participation to enhance social connectedness. These factors are important considerations as the country is heading towards an aged population status.

REFERENCES

Aartsen, M. J., & Jylhä, M. (2011). Onset of loneliness in older adults: Results of a 28 year prospective study. *European Journal of Ageing, 8* (1), 31 – 38.

Abolfathi Momtaz, Y., Hamid, T. A., & Ibrahim, R. (2013). Theories and measures of elder abuse. *Psychogeriatrics*, 13(3), 182-188.

Aung, K., Nurumal, M. S., & Bukhari, W. N. S. W. (2017). Loneliness among elderly in nursing homes. *International Journal for Studies on Children, Women, Elderly And Disabled*, *2*, 72-8.

Bosma, H., Jansen, M., Schefman, S., Hajema, K., & Feron, F. (2015). Lonely at the bottom: A cross-sectional study on being ill, poor, and lonely. *Public Health, 129*(2), 185-187.

Bowling, A. (1994). Social networks and social support among older people and implications for emotional well-being and psychiatric morbidity. *International Review of Psychiatry, 6*(1), 41-58.

Cacioppo, J. T., Fowler, J. H., & Christakis, N. A. (2009). Alone in the crowd: The structure and spread of loneliness in a large social network. *Journal of Personality and Social Psychology, 97*(6), 977–991.

Carr, D., & Bodnar-Deren, S. (2009). Gender, aging and widowhood. In *International handbook of population aging* (pp. 705-728). Springer, Dordrecht

Dahlberg, L., Andersson, L., McKee, K. J., & Lennartsson, C. (2014). Predictors of loneliness among older women and men in Sweden: A National longitudinal study. *Aging & Mental Health, 19*(5), 409-417.

De Jong Gierveld, J., Keating, N., & Fast, J. E. (2015). Determinants of loneliness among older adults in Canada. *Canadian Journal on Aging / La Revue Canadienne Du Vieillissement, 34*(2), 125-136.

De Jong-Gierveld, J. (1987). Developing and testing a model of loneliness. *Journal of personality and social psychology*, *53*(1), 119.

Ernst, J. M., & Cacioppo, J. T. (1999). Lonely hearts: Psychological perspectives on loneliness. *Applied and preventive psychology*, *8*(1), 1-22.

Fakoya, O. A., McCorry, N. K., & Donnelly, M. (2020). Loneliness and social isolation interventions for older adults: a scoping review of reviews. *BMC public health*, 20(1), 1-14.

Heinrich, L. M., & Gullone, E. (2006). The clinical significance of loneliness: A literature review. *Clinical psychology review*, 26(6), 695-718.

Huang, P. H., Chi, M. J., Kuo, C. L., Wu, S. F. V., & Chuang, Y. H. (2021). Prevalence of Loneliness and Related Factors Among Older Adults in Taiwan: Evidence From a Nationally Representative Survey. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, 58, 00469580211035745.

Hussein, S. Z., Ismail, A. H., & Abu Bakar, S. H. (2021). Loneliness and Health Outcomes Among Malaysian Older Adults. *Makara Journal of Health Research*, *25*(2), 3.

Lennartsson, C., & Lundberg, O. (2006). 'What'S marital status got to do with it?': Gender inequalities in economic resources, health and functional abilities among older adults. *Health Inequalities and Welfare Resources Continuity and Change in Sweden*, 178-198.

Litwin, H. (2010). Social networks and well-being: A comparison of older people in Mediterranean and non-Mediterranean countries. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *65*(5), 599-608.

Luo, Y., & Waite, L. J. (2014). Loneliness and mortality among older adults in China. *Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 69(4), 633-645.

Mahmud A., Jani R., Shafiai R.M. (2016). Determinants of loneliness among elderly in Malaysia. Presented at the 3rd International Conference on Education and Social Sciences, 8-10 February, 2016, Istanbul, Turkey.

Milligan, C., Neary, D., Payne, S., Hanratty, B., Irwin, P., & Dowrick, C. (2015). Older men and social activity: a scoping review of men's sheds and other gendered interventions. *Ageing and Society*, *36*(5), 895-923.

Niedzwiedz, C. L., Richardson, E. A., Tunstall, H., Shortt, N. K., Mitchell, R. J., & Pearce, J. R. (2016). The relationship between wealth and loneliness among older people across Europe: Is social participation protective? *Preventive Medicine*, *91*, 24-31.

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

Perrone, K. M. (2009). Traditional and nontraditional work and family roles for women and men. *Journal of Career Development*, *36*(1), 3-7

Pinquart, M., & Sorensen, S. (2001). Influences on loneliness in older adults: A meta-analysis. *Basic and applied social psychology*, *23*(4), 245-266.

Poscia, A., Stojanovic, J., La Milia, D. I., Duplaga, M., Grysztar, M., Moscato, U., ... & Magnavita, N. (2018). Interventions targeting loneliness and social isolation among the older people: An update systematic review. *Experimental gerontology*, *102*, 133-144

Rahman, M. S., Rahman, M. A., & Rahman, M. S. (2019). Prevalence and determinants of loneliness among older adults in Bangladesh. *International Journal of Emerging Trends in Social Sciences*, *5*(2), 57-64.

Russell, D., Peplau, L. A., & Cutrona, C. E. (1980). The revised UCLA Loneliness Scale: concurrent and discriminant validity evidence. *Journal of personality and social psychology*, *39*(3), 472-80.

Sbarra, D. A. (2015). Divorce and health: Current trends and future directions. *Psychosomatic medicine*, *77*(3), 227.

Schön, P., & Parker, M. G. (2008). Sex Differences in Health in 1992 and 2002 Among Very Old Swedes. *Journal of Population Ageing*, 1(2–4), 107–123. https://doi.org/10.1007/s12062-009-9009-1

Schwartz, E., & Litwin, H. (2017). the reciprocal relationship between social connectedness and mental health among older European adults: a share-based analysis. *The Journals of Gerontology: Series B*, *74*(4), 694-702.

Stack, S. (1998). Marriage, Family and Loneliness: A Cross-National Study. *Sociological Perspectives*, *41*(2), 415–432.

Stall, N. M., Savage, R. D., & Rochon, P. A. (2019). Loneliness in older adults. CMAJ, 191(17), E476-E476.

Syed Elias, S. M. (2018). Prevalence of loneliness, anxiety, and depression among older people living in long-term care: a review. *International Journal of Care Scholars*, *1*(1), 39-43.

Teh, J.K.L., Tey, N.P., & Ng, S.T. (2014). Family support and loneliness among older persons in multiethnic Malaysia. *The scientific world journal*, *2014*

The University of York Centre for Reviews and Dissemination (2014). Interventions for loneliness and social isolation. Retrieved from https://www.york.ac.uk/media/crd/Loneliness%20and%20social%20isolation.pdf

Van Tilburg, T., & Broese van Groenou, M. (2002). Network and health changes among older Dutch adults. *Journal of Social Issue*, *58* (4), 697 – 713.

Weiss, R. S., & Bowlby, J. (1973). *Loneliness: The experience of emotional and social isolation*. Cambridge, Mass,: MIT Press.

WHO (2021). Social isolation and loneliness among older people: Advocacy brief. Geneva.

Yang, K., & Victor, C. (2011). Age and loneliness in 25 European nations. *Ageing and Society*, *31*(8), 1368.