

Well-being of the elderly living in Male', Maldives: Prevalence and relationship among sociability, loneliness and depression

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ABSTRACT *Loneliness, depression and sociability among the elderly population are recognized as critical global public health issues. Understanding the level and depth of these issues can be helpful for designing future public health interventions for this population. This study aimed to determine the prevalence and explore the relationships between loneliness, social isolation and depression among the senior population living in Male', Maldives. This is an analytical descriptive study in which data was collected through a questionnaire administered in a personal face-to-face approach. This study was carried out in the four wards of Male', Henveyru, Maafannu, Machangolhi and Galolhu among elderly people aged between 65 to 75 years (n= 312). The prevalence of elderly depression, sociability and loneliness found in this study were 56.1%, 64.0% and 55.4% respectively. The study also revealed that loneliness and depression were positively correlated each other ($r = 0.817, p < 0.001$), while a negative correlation were observed between sociability and depression, sociability and loneliness ($r = - 0.656, p < 0.001$) and ($r = -0.603, p < 0.001$). Therefore, the study suggests to modify and implement age-sensitive interventions and address all the three aspects together to reduce significant adverse effects on elderly health.*

Keywords: depression, elderly, loneliness, Maldives, prevalence, sociability, well-being

Global statistics show that the aging population is increasing dramatically; around 617 million people are recognized as being in the elderly age group (65 years old and above) (UNFPA, 2018). Loneliness, depression and sociability in elderly population are recognized as a critical global public health issue by health professionals (WHO, 2004) and according to a study done in the UK, over 1 million elderly people are always experiencing loneliness, social isolation and depression (Davidson & Rossal, 2014). World Health Organization has revealed that the life expectancy of Maldivians is slowly increasing, 77 years in males and 80 years in females (WHO, 2004). Many noncommunicable diseases (NCDs), long-term chronic diseases and psychological disorders have been identified among the elderly population (WHO, 2017). With this rise in life expectancy, elderly population density is also rising gradually. According to the National Bureau of Statistics (2018), 5% of the total population of Maldives are identified in the elderly age group and it is forecast to double in the next 35 years. Age related health problems and other consequences are possibly increasing due to high life expectancy and population density.

People in this age group are living with multiple physical, psychological and social problems which challenge their sense of self in day to day life and their capacity to live happily. In the Maldivian context, people are living in geographically isolated islands which are arranged into atolls where the availability of health services, education and jobs in the islands are generally very limited compared to the capital city Male'. Therefore, a lot of people belonging to these atolls have migrated to Male' City for better facilities. Around, one third of the population lives in Male' including permanent residents of Male' City (National Bureau of Statistics, 2018). This internal migration has caused overcrowding and unforeseen social problems in the country.

Living expenses in Male' City have increased tremendously and as a result both partners in most families have to work fulltime while aged parents are left alone. Most of the families live in small accommodations because of the costly rent and are usually in high-story buildings with stairs rather than elevators. A study revealed that lack of affordability of housing and the related troubles with living arrangements are also related factors that might cause the aging population to become lonely and socially isolated (Sibley et al., 2016). Despite these facts, many senior citizens in the age category are still living in accommodations which prevent their interaction with others and thus experiencing high rates of loneliness, depression and social isolation (Sibley et al., 2016). Life in high-rise buildings means that even the elderly might have to regularly climb up to ten floors or on the contrary be in the confinement of the living quarters for considerable periods of time. Furthermore, due to the narrow congested roads with people and vehicles, it is not easy for the senior citizens to move within the city. Due to the lack of close family ties and reduced social connection, they become more isolated.

This is an area that needs exploration for the wellbeing of the elderly. Especially in the Maldivian context, published studies on the relationship of loneliness, depression and sociability among the elderly age group are rare. This study therefore aimed to estimate the prevalence and explore the relationships between loneliness, social isolation and depression among the senior population in the crowded Male' City of the Maldives.

Literature Review

Depression is categorized as one of the most common mental diseases and it was confirmed as the second most serious medical condition that negatively affects thoughts, feelings and daily activities and this is the second highest cause of disability after heart diseases as estimated by WHO (Oni, 2010).

Loneliness refers to a complex set of negative feelings which someone experiences in various life situations (Singh & Misra, 2009). Internal factors are more related to personality and psychological factors and this will lead to emotional loneliness (Dykstra, 2009). Loneliness is most commonly determined by two distinct phases, defined as external factors and internal factors and can be divided into two types, physical and mental (Solanki, 2016). External factors, which is attributed to the lack of a social network, has been known as the root cause of loneliness; while internal factors, attributed to personality and psychological factors, arise from the

individual (Solanki, 2016). Loneliness (emotional and social) can be measured subjectively using a cognitive approach (Davidson & Rossal, 2014). The severity of these feelings can affect health and well-being and it may lead to a shorter span of life as these psychological stresses can eventually manifest as physical problems (Bennett et al., 2014). The term isolation is defined as separation from the social contact of community involvement and access to services offered to the people in the community (Leigh-Hunt et al., 2017). This relates to sociability, which plays a vital role in protecting people suffering from psychological distress and functions to enhance well-being (Solanki, 2016).

Recent WHO statistics show that European countries have the highest population of the elderly age group (sometimes classified as 65 years and above) in the world; currently this amount is almost 16% and it is expected to double by the year 2050 (WHO, 2018). A study conducted in Sweden reflects that, nearly 1.8 million Swedes were over 65 years in 2011 and estimates this number will increase to 2.5 million by 2035 (Djukanovic, 2017). Ageing and the health of the ageing population has become an area of interest among nations, as WHO now celebrates a day as the “International Day for Older Persons” (WHO, 2018) with a global strategy and action plans endorsed to ensure senior adults live not only for longer but a healthier life.

The experiences of loneliness, social isolation and depression may lead to poor appetite, losing interest in sex, difficulty to concentrate and think straight (Bernard, 2013), feeling restlessness, being irritable, losing self-confidence, avoiding people and disintegrating from the social community, and having difficulty making decisions (Bolton, 2012). In addition, they might feel inadequate, hopeless and perceive that nothing will be same as before and feel guilty about themselves (Solanki, 2016). Prolonged exposure of these stressors have been shown to increase blood pressure, risk of cardiovascular diseases, and elevates blood cortisol levels which adversely affect their general health (Davidson & Rossal, 2014). Moreover, this may impair sleep quality, induce negative effects on metabolic rate, affect neural and hormonal regulations, cause depression, anxiety, and increase vulnerability to many other diseases (Bolton, 2012). Also, this is associated with some physical symptoms such as tightness in the chest area, fatigue and shortness of breath in severe depression (Djukanovic, 2017). Consequences of physical health status at old age is a correlated factor of depression (Charles et al., 2001; Singh & Misra, 2009), physical health condition influences loneliness and depression and later contributes to general ill health (Jabin, 2016). In addition, depression and loneliness can lead to chronic health conditions, death, lack of friends, less community access or participation in social activities (Adams et al., 2004).

Methodology

This is an analytical descriptive study in which data was collected by administering a questionnaire and interviewing participants in a personal and direct, face-to-face approach.

The setting of this study was targeted especially at Male' City because, a large population from all the inhabited islands live in this central City Male'. Four wards instead of the six were selected as the scope of this study.

Sample size and Participant selection

Sample was selected through cluster random sampling process. Four wards were considered as clusters of this study and random sampling method was chosen to minimize selection bias and sampling bias and to ensure that every eligible participant in the target population have equal chances to be included in the study. The exclusion criteria of this study were determined as: older adults who were too ill from chronic illnesses such as cancer, renal failure, and paralysis; elderly people who were mentally ill or diagnosed patients for mental disorder; and hospitalized patients. The Department of National Registration (DNR) provided the addresses of household lists of all the 6 wards of Male' City along with names of elderly age group between 65 to 75 years. This age group was selected because 65 years is considered as the age of retirement in the Maldives. The current elderly population (65 years and above) in Male' City was 2572, of which 1605 are between the ages of 65 to 75 years (National Bureau of Statistics, 2018). Based on 95% confidence interval and 5% error, the total sample size for this study is 311. Clusters were taken based on the total sample size which were equally distributed and divided into 4 wards; estimation from each ward was 78 samples.

Data was then collected from randomly selected individual households from the 4 wards of Male' City; Henveyru, Maafannu, Machangolhi and Galolhu. Villingili and HulhuMale' wards of the greater Male' region was excluded because of limited time and budget for travelling by sea.

Instrumentation

Data was collected using 3 standard tools which are commonly used to assess loneliness, depression and social isolation of adults in studies similar to this one.

- UCLA (University of California, Los Angeles) loneliness scale (Russell et al., 1980).
- EPQR (Sociability subscale of Eysenck Personality Questionnaire Revised) (Eysenck & Eysenck, 1975).
- CES-D (Centre for Epidemiologic Studies Depression Scale) (Radloff, 1977).

UCLA loneliness scale (Russell et al., 1980) measures loneliness using 10 positively worded and 10 negatively worded items. The responses of UCLA scale can be given as 'never' 'rarely' 'sometimes' 'often'. The total score of this scale ranges from 0 (never lonely) to 3 (often lonely). Based on this 20-item scale higher scores on this scale indicate more intense feelings of loneliness. A score of 50–60 (60 being the highest) is considered as a moderately high degree of loneliness, score of 35–49 is moderate degree of loneliness, 20–34 is low degree of loneliness and less than 20 indicates no loneliness.

EPQ-R (Eysenck & Eysenck, 1975), EPQ-R revised version is a sociability subscale which is recognized as a multi-dimensional modular inventory. The 4-scale inventory measures the personality traits; P-Psychoticism (Tough- Mindedness), E-Extraversion (Sociability), N-Neuroticism (Emotionality) and L-Lie. Each

dimension has sub-scales of total 48 questions and answers are measured as a 'yes' or 'no'. This tool has positively worded and negatively worded items as well and are commonly used to measure personality traits of adolescents and adults. This assesses a number of coping behaviours and thoughts which a person has gone through in different situations of life. Extreme high score results represent restless, moody and anxious where low score results are meant to be stable, calm and reliable.

CES-D, the Centre for Epidemiologic Studies Depression scale published in 1977, is used as a screening tool to assess depressive feelings experienced in the past week in the general population. The CES-D is generally used in academic research studies to examine the well-being of participants in large-scale population surveys. This is a self-administered screening scale that again includes 20 items. 16 of these are negatively worded while 4 are positively worded questions. They are designed to assess the relationship between depression and other variables. Each question receives a score ranging from 0 to 3, the possible range of scores are from 0 to 60, with higher scores indicating the presence of greater symptomatology of depression (Radloff, 1977).

Scores ranging from 0-9 indicate not experiencing any signs of depression. While people with scores from 10-15 are mildly depressed, scores of 16-24 are an indication of being depressed and more than 25 are considered severely depressed. However, this tool has a cut-off point of 16 and above and is considered depressed. This scale was simple to use and quick to administer and these 20 questions are simple questions including 16 direct questions and 4 reverse questions.

Data collection

Questions were administered verbally and read aloud, and participant's answers were recorded by the researcher on the questionnaire. Questionnaires were administered directly by first building a good rapport with them. Standard instructions were given on the questionnaire. Clear explanation were given to the participants that there are no wrong or right answers and if participants have any difficulty to answer, proper guidance and further explanation were given.

Participants were interviewed in a comfortable environment in a convenient, comfortable place of their own choosing. Survey was conducted at the most convenient time for the participants (4-6 pm and 8-9 pm). In addition, a personal data information sheet was prepared and obtained to collect necessary personal information of participants including sex, age and occupation.

Data analysis was done through the Statistical Package for Social Science 20th version (SPSS) of scientific data analysis standardized tool. Descriptive statistics with Mean scores and standard deviation for each outcome variable was derived.

Correlational bivariate analysis was conducted between combinations of each of the two outcome variables, where the first variable mentioned in table 3 was considered as the dependent variable.

Ethical consideration

Interviews were conducted on a voluntary basis and participants were given the right to withdraw any time during the study. In addition, participants were

informed that their answers will be kept confidential, and that findings will be presented with proper anonymity maintained and ensured.

Written informed consent was obtained from all participants. Interview was conducted only after filling the participant's consent form with signature. Therefore, any risks of physical, psychological, social and legal were reduced to almost negligible. Ethical approval for the study was obtained from the Villa College Ethics Approval Committee (VCEAC) "REF 2018/E-036" dated 18th March 2018.

Results

Demographic characteristics of the mean age of this study sample was 70 years (+/-3.2 years). A total of 312 residents were interviewed, of which 151 were females (48.4%) and 161 males (51.6%). Majority of the participants had basic literacy and grade 7 level education, were married (75.3%) and were living with their families (64.4%).

Table 1
Demographic Characteristics of the Sample

Characteristics	Frequency (n= 312)	%	Mean	SD
<i>Age</i>			69.66	3.217
<i>Gender</i>				
Female	151	48.4		
Male	161	51.6		
<i>Education</i>				
Basic Literacy	107	34.3		
Grade 7	108	34.6		
Grade 8	34	10.9		
Grade 9	18	5.8		
Grade 10	36	11.5		
Grade 12	8	2.6		
<i>Marital status</i>				
Married	235	75.3		
Divorced	41	13.1		
Widowed	36	11.5		
<i>Living condition</i>				
With spouse	25	8.0		
With family	201	64.4		
Living alone	86	27.6		

Table 2
Prevalence of Loneliness, Sociability and Depression

	Frequency (n = 312)	%	Mean Score	SD
<i>Sociability</i>				
Introvert (0-10)	113	36	1.64	0.48
Extrovert (11-24)	199	64	2.94	0.99
<i>Loneliness</i>				
No loneliness (0-19)	139	44.6	1.87	0.90
Low loneliness (20-34)	86	27.6		
Mild loneliness (35-49)	76	24.4		
High loneliness (50-60)	11	3.5		
<i>Depression</i>				
No depression (0-9)	137	43.9	2.18	1.27
Mild depression (10-15)	74	23.7		
Moderate depression (16-24)	10	3.2		
Severe depression (25-60)	91	29.2		

Association between Loneliness, Sociability and Depression

Table 3 shows that loneliness, sociability and depression are highly correlated. A strong positive, direct correlation was found between loneliness and depression ($r^2 = 0.817$), a moderate negative correlation was observed between loneliness and sociability ($r^2 = -0.603$), and Sociability and depression ($r^2 = -0.656$).

Table 3
Correlation analysis between Loneliness, Sociability and Depression

Correlation	n	Coefficient	p value
Loneliness and Depression	312	0.817	<0.000
Sociability and Depression	312	-0.656	<0.000
Loneliness and Sociability	312	-0.603	<0.000

Discussion

This study showed that a considerable proportion of elderly people at the ages of 65–75 are experiencing at least some level of depression associated with loneliness and social isolation in the capital city Male', Maldives. This study also revealed that sociability, loneliness and depression are associated with one another.

The prevalence of depression was 56.1% in this study and quite similar results were observed in a study conducted among the elderly people in Karnataka rural

area in West Bengal where the prevalence was 55% (Goud & Nikhade, 2015). Differences in the prevalence of depression were observed in other countries; 60% among US elderly (Adams et al., 2004), 13.4% among Singaporean elderly (Tan et al., 2019) and 10.7% among Iranian elderly (Nazemi et al., 2013). Similarities in the prevalence rates may be due to the utilisation of similar instruments to measure depression (Goud & Nikhade, 2015). The differences in the prevalence rates highlights cultural, economic and social influences that affect depression in different cultural contexts.

The results of this study show the prevalence of sociability among Maldivian elderly people was 64.0% while loneliness was suffered by 55.4%. A study conducted in India showed gender differences and were observed in the level of loneliness and sociability among elderly where men were found to be more sociable and less lonely (Singh & Misra, 2009). Although, a case study conducted in UK showed similar results, their study showed that loneliness started increasing after the age of 55 years (Victor & Yang, 2012). A big difference in prevalence of loneliness was found (60%) in groups who have lost their spouses (Adams et al., 2004). Comparative research on loneliness and sociability by residential areas, socioeconomic status and by living conditions can give further insight into the geriatric loneliness among elderly living with families.

Results of this study revealed that sociable elderly people outnumber (64.0%) people who were not sociable (36.0%). Some other studies (Oni, 2010) and (Mary, 2014), agreed elderly men were more sociable as compared to women. Some studies identified social relations, quality and quantity of socioeconomic status as associated factors in the increased level of loneliness and depression (Green et al., 1992). Moreover, lack of family and social relationships can lead to feeling of loneliness and depression at old age and this level is increased if they have low economic status (Raut et al., 2014).

Findings of this study demonstrated that loneliness and sociability contribute directly to depression and is contingent with global findings. A review of forty systematic reviews conducted between the years 1950 to 2016 highlighted a significant association between social isolation and loneliness among the elderly (Leigh-Hunt et al., 2017). Similar findings were observed in other studies with statistically significant correlation between depression and loneliness ($p < 0.005$) (Adams et al., 2004; Mary, 2014).

Conclusion

This study has demonstrated that more than half of the elderly in the Maldives suffer from depression and loneliness. More than half the sample was also sociable. This implies that being sociable does not necessarily mean they are not lonely. It also identified that sociability, loneliness and depression among the Maldivian elderly were associated with one another. Hence, it is important to address all the three aspects together to reduce the significant adverse effects on the health of the elderly.

It is vital to develop a support system within the community, such as accessible health professionals who could visit homes and spend time in advising and supporting and carrying out appropriate health assessments for the elderly. Hence,

it is important to divide the responsibilities of health professionals and relevant authorities to help and support older residents. It is also important to modify and implement age sensitive interventions targeted for this age group.

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