

Prevalence of Loneliness and Associated Factors among Older Adults in South Africa

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Abstract

Objective: Loneliness can be detrimental to health. The aim of this study is to estimate the prevalence of loneliness as well as its risk factors in older adults in South Africa.

Materials and Methods: This cross-sectional population based study investigated factors associated with loneliness in a nationally representative sample (n=3624) of older South Africans who took part in the “Study of Global Ageing and Adults Health (SAGE)” wave 1 in 2008. The outcome variable was self-reported prevalence of loneliness and the exposure variables were socio-demographic characteristics and health variables.

Results: The overall prevalence of self-reported loneliness was 9.9%. Prevalence of loneliness was 10.2% for females and 9.5% for males, lowest among those married (7.5%), and highest among the 70+ years olds (12.5%). Individuals with highest level of education had the lowest prevalence of loneliness (5.9%). Indians or Asians were significantly more likely to experience loneliness than other population groups (Adjusted Odds Ratio=AOR: 3.20; 95% Confidence Interval=CI: 1.31, 7.80). Married or cohabiting individuals were significantly less likely to experience loneliness than unmarried or non-cohabiting ones, respectively (AOR: 0.55; 95% CI: 0.37, 0.81). In multivariable logistic regression, individuals with good subjective health were less likely to experience loneliness than those with poor health (AOR: 0.40, 95% CI: 0.22, 0.73). Similarly, individuals with good cognitive functioning were significantly less likely to experience loneliness than those with poor cognitive functioning (AOR: 0.55, 95% CI: 0.32, 0.97).

Conclusion: The study found that the prevalence of loneliness among older adults in South Africa is significant. Preventative interventions that address the identified factors, including poor health status and low cognitive functioning, associated with loneliness need to be developed.

Keywords: Loneliness, health variables, older adults, South Africa

1. Introduction

Loneliness is a common phenomenon associated with old age due to changes in the quality and quantity of social relationships (Luanaigh & Lawlor, 2008; Qualter et al., 2015). Consequently, elderly people may experience feelings of distress, loss and unmet social needs (Hawkey & Cacioppo, 2010). A recent study on late-life loneliness conducted in 11 countries across Europe among older adults, found the prevalence of loneliness to be common, ranging from 10 to just over 30%, i.e. 10% in France and Norway; 20% in Russia and Czech Republic and more than 30% in Bulgaria and Georgia (Hansen & Slagsvold, 2016). Loneliness may have adverse mental and physical health outcomes such as hypertension, sleep problems, lower immunity and poorer cognition functioning (Luanaigh & Lawlor, 2008; Boss, Kang & Branson, 2015). It is therefore important to determine factors associated with loneliness among elderly people. Cohen-Mansfield, Hazan, Lerman and Shalom (2016, p.557) found following factors to be associated with loneliness: “female gender, non-married status, older age, poor income, lower educational level, living alone, low quality of social relationships, poor self-reported health,

poor functional status, poor mental health, low self-efficacy beliefs, negative life events, and cognitive deficits.” Petite (2015) found common chronic diseases such as metabolic disorders, cardiovascular disorders, hypertension, lung disease, and obesity to be associated with loneliness. Conflicting associations were found between smoking and loneliness (Dyal & Valente, 2015). There is a dearth of information on the factors associated with loneliness among older adult populations in Africa (Van der Geest, 2004). Therefore, the aim of this study is to estimate the prevalence of loneliness as well as its risk factors in older adults in South Africa.

2. Methods

2.1 Sample and Procedure

The “Global Study on Ageing and Adult Health (SAGE Wave 1)” involved a nationally representative population-based cross-sectional sample of 3624 (77% response rate) South Africans aged 50 years or older. The SAGE sampling design involves a probability sample (two-stage) that produces national and provincial estimates in relation to geo-locality type and population group (Black Africans and others); in more detail (Kowal et al., 2012). Research Ethics Approval was attained from the “HSRC Research Ethics Committee (Protocol REC 5/13/04/06)”. Informed consent was obtained from all study respondents prior to the interview assessment.

2.2 Measures

Primary Outcome: One binary question was asked to assess the primary outcome, *loneliness*, “Did you feel lonely for much of the day yesterday?” (“Yes” or “No”).

Exposure variables: Exposure variables included socio-demographic and health variables and they have been described below.

Sociodemographic variables: Age (50-59, 60-69, 70+), sex (male, female), marital status (married, cohabitating, single, widowed), formal education (none, 1-7 years, 8-11 years, 12 or more), residence (urban or rural), population group and economic or wealth status. With regard to population group, the response categories were “Black African, Coloured, Indian/Asian, White” and “other” as described by “Statistics South Africa” (2014, p.12).

Economic or wealth status of a given household was estimated based on a list of household assets, and subsequently, wealth quintiles were created from these (Ferguson, Murray, Tandon & Gakidou, 2003).

Health variables. Health variables included self-rated health, chronic conditions, lifetime tobacco and alcohol use, obesity, cognitive capacity, and functional disability.

Overall, “*self-rated health status*” was measured through a 5-point scale on how participants rated their current health: “very good, good, moderate, bad, and very bad.” The five categories were collapsed into two categories, 0= ‘very good’, ‘good’, or ‘moderate’ and 1= ‘bad’ or ‘very bad’ (Phaswana-Mafuya et al., 2013).

Chronic diseases such as angina, asthma, arthritis, chronic lung disease, diabetes mellitus and stroke, were assessed by self-report of ever having diagnosed (coded 0=no condition and 1= having any of the six conditions).

Tobacco use was assessed with two questions in order to establish daily tobacco use (WHO, 1998).

Lifetime alcohol use was assessed through asking participants whether they had “ever consumed a drink that contains alcohol (such as beer, wine, spirits, etc.)” (Response categories: ‘yes’ or ‘no, never’). Those who responded with “yes”, were asked: “During the past 7 days, how many drinks of any alcoholic beverage did you have each day?”. Risky alcohol use was classified as having had ≥ 10 drinks in the past week (Peltzer & Phaswana-Mafuya, 2013).

Obesity was measured using “Body mass index (BMI)” (weight in kg divided by height metre squared) ($BMI \geq 30$ kg/m²) (WHO, 2016).

Cognitive capacity was assessed using cognitive tests to measure various aspects of cognitive performance, namely: concentration, attention, immediate memory, verbal fluency (executive function), verbal recall (immediate and delayed), and digit span (forward and backward) (Peltzer & Phaswana-Mafuya, 2012). An overall cognitive score was calculated that was converted to a scale from 0= worst cognition to 100= best cognition, and dichotomised into poor or good by using the median of 48 as a cut-off point (Peltzer & Phaswana-Mafuya, 2012).

The “World Health Organization (WHO) *Disability Assessment Schedule (WHODAS-II)*” was used to assess health, functioning, and disability in the past 30 days (Üstün, Kostanjsek, Chatterji & Rehm, 2010). To estimate the severity of disability participants are asked about the level of difficulty with instrumental activities of daily living (IADLs) (ability to perform more complex tasks). Scores from the 12 item WHODAS-II are added up to get a total score, which is then converted to the following disability categories: “No problem (0% – 4%); Mild problem (5%

– 24%); Moderate problem (25% – 49%); Severe problem (50% – 95%); Extreme problem (95% – 100%)” (Üstün et al., 2010).

2.3 Data Analysis

STATA software version 13.0 (“Stata Corporation, College Station, Texas, USA”) was used to analyse the data taking into account for the sampling design. Logistic regression analysis was performed to determine the Odds Ratio with 95% confidence interval (CI) in order to estimate the associations between independent variables (sociodemographic characteristics and health variables) and loneliness. All variables, which were statistically significant ($P < .05$) in bivariate analyses, were subsequently included in the overall multivariable models. The association between loneliness and health variables (self-rated health status, cognitive functioning, and IADL) was also estimated using multivariable logistic regression. Model 1 was adjusted for sociodemographic variables and model 2 was adjusted for sociodemographic and other health variables.

3. Results

3.1 Sample Characteristics

The total sample included 3624 South Africans aged 50 years and above, 44.1% men and 55.9% women. The largest population group was Black African (74.0%), followed by Coloured (12.8%), Whites (9.3%) and 3.8% Indian or Asian groups. The self-reported prevalence of loneliness was 9.9%, 10.2% for females and 9.5% for males. It was lowest among those married (7.5%). Prevalence was highest among the 70+ years olds (12.5%). Indians or Asians (22.8%) had highest prevalence of loneliness than other racial groups. Individuals with highest level of education had lowest prevalence of loneliness (5.9%) (see Table 1).

Table 1. Sample characteristics by population group and gender (N=3624)

Variable	Response option	Total Percentage	Loneliness	
			Frequency	Percentage
All			3275	90.1
			349	9.9
Gender	Female	55.9	215	10.2
	Male	44.1	134	9.5
Age	50-59	49.9	144	9.9
	60-69	30.6	108	8.4
	70 or more	19.5	97	12.5
Population group	Black African	74.0	183	9.6
	White	9.3	18	8.7
	Coloured	12.8	55	6.0
	Indian or Asian	3.8	48	22.8
Education	None	25.5	53	11.9
	1-7 years	27.0	78	9.5
	8-11	32.7	114	12.1
	12 or more	14.9	30	5.9
Marital status	Single	14.3	48	12.7
	Married	55.9	132	7.5
	Cohabiting	5.9	32	15.5
	Widowed	23.9	130	12.6
Wealth	Low	40.6	142	11.3
	Medium	18.2	66	9.2
	High	41.2	139	8.9

Residence	Rural	35.1	100	11.6
	Urban	64.9	249	9.0
Health state	Very good/good	37.9	82	4.7
	Moderate	44.6	169	10.8
	Bad/very bad	17.5	98	19.3
Chronic condition	No	65.5	142	8.8
	Yes	34.5	207	11.0
Instrumental Activity of Daily Living (IADL)	None-mild	59.8	165	6.9
	Moderate	21.6	88	12.0
	Severe/extreme	18.6	96	16.9
Obese	No	53.3	198	10.8
	Yes	46.7	142	9.1
Alcohol use (10 or more/week)	No	96.3	326	9.9
	Yes	3.7	23	10.2
Daily tobacco use	No	79.6	263	10.1
	Yes	20.4	86	9.4
Cognitive functioning	Poor	48.0	213	14.4
	Good	52.0	113	6.1

3.2 Associations between Loneliness and Socio-Demographic Variables

In multivariable logistic regression analysis, sociodemographic variables (being Indian or Asian and being single or widowed) and health variables (poor self-rated health status and low cognitive functioning) were found to be associated with loneliness (see Table 2).

Adjusting for all variables, Indians or Asians were significantly more likely to experience loneliness than other population groups (AOR: 3.20; 95%CI: 1.31, 7.80). Married or cohabiting individuals were significantly less likely to experience loneliness than unmarried or non-cohabiting ones, respectively (AOR: 0.55; 95% CI: 0.37, 0.81). Individuals with moderate and very bad health were more likely to experience loneliness compared to individuals with good health. Individuals with high cognitive functioning (AOR: 0.49, 95% CI: 0.30, 0.81) were less likely to experience loneliness than those with low cognitive functioning.

Table 2. Predictors of loneliness

		CrOR (95% CI)	AOR (95% CI)
Gender	Female	1 (Reference)	---
	Male	0.92 (0.55, 1.54)	
Age	50-59	1 (Reference)	---
	60-69	0.84 (0.56, 1.24)	
	70 or more	1.30 (0.88, 1.94)	
Population group	Black African	1 (Reference)	1 (Reference)
	White	0.90 (0.40, 2.00)	1.73 (0.63, 4.75)
	Coloured	0.60 (0.33, 1.08)	0.78 (0.45, 1.36)
	Indian or Asian	2.80 (1.21, 6.48)*	3.27 (1.31, 8.13)*
Education	≤7 years	1 (Reference)	---
	8-11	1.02 (0.58, 1.79)	
	12 or more	0.46 (0.19, 1.11)	
Marital status	Single, Widowed	1 (Reference)	1 (Reference)
	Married, Cohabiting	0.54 (0.36, 0.82)**	0.55 (0.37, 0.82)**
Wealth	Low	1 (Reference)	---
	Medium	0.80 (0.49, 1.30)	
	High	0.76 (0.47, 1.22)	
Residence	Rural	1 (Reference)	---
	Urban	0.75 (0.42, 1.31)	
Health state	Very good/good	1 (Reference)	1 (Reference)
	Moderate	2.46 (1.32, 4.60)**	2.06 (1.08, 3.92)*
	Bad/very bad	4.88 (2.82, 8.41)***	2.98 (1.55, 5.75)**
Chronic condition	No	1 (Reference)	---
	Yes	1.20 (0.84, 1.94)	
IADL	None-moderate	1 (Reference)	1 (Reference)
	Severe	2.75 (1.72, 4.41)***	1.30 (0.81, 2.08)
Obese	No	1 (Reference)	---
	Yes	0.82 (0.58, 1.16)	
Alcohol use (10 or more/week)	No	1 (Reference)	---
	Yes	1.03 (0.50, 1.71)	
Daily tobacco use	No	1 (Reference)	---
	Yes	0.93 (0.59, 1.45)	
Cognitive functioning	Low	1 (Reference)	1 (Reference)
	High	0.38 (0.22, 0.66)***	0.49 (0.30, 0.81)**

IADL=instrumental activities of daily living ***P<0.001; **P<0.01; *P<0.05.

3.3 Associations between Loneliness and Health Variables

In multivariable logistic regression, individuals with good subjective health were significantly less likely to experience loneliness than those with poor health in both model 1 (AOR: 0.35; 95% CI:0.19, 0.64) and model 2 (AOR: 0.40, 95% CI: 0.22, 0.73). Similarly, individuals with good cognitive functioning were significantly less

likely to experience loneliness than those with poor cognitive functioning in both model1 (AOR: 0.43, 95% CI: 0.24, 0.75) and model 2 (AOR: 0.55, 95% CI: 0.32, 0.97). Further individuals with severe IADL were more likely to experience loneliness than those without IADL in model 1 (AOR: 2.43, 95% CI: 1.18, 5.00) but not in model 2 (see Table 3).

Table 3. Multivariable logistic regression analyses of the association between loneliness and health variables

Variable (Outcome)	Loneliness	Model 1	Model 2
		Model 1: Adjusted Odds Ratio (95% CI)	Model 2: Adjusted Odds Ratio (95% CI)
Health status			
Poor subjective health	Poor	1 (Reference)	
Good subjective health	Good	0.35 (0.19, 0.64)***	0.40 (0.22, 0.73)**
Cognitive functioning	Poor	1 (Reference)	1 (Reference)
	Good	0.43 (0.24, 0.75)***	0.55 (0.32, 0.97)*
IADL	None-moderate	1 (Reference)	1 (Reference)
	Severe	2.02 (1.22, 3.32)**	1.37 (0.83, 2.25)

IADL=instrumental activities of daily living;

Model 1: Adjusted for sociodemographic variables (age, sex, population group, education, socioeconomic status, geolocality and marital status); Model 2: Adjusted for sociodemographic and health variables (health status, chronic condition, IADL, obesity, alcohol use, tobacco use and cognitive functioning). CI=Confidence Interval; ***P<0.001; **P<0.01; *P<0.05

4. Discussion

This study investigated the prevalence of loneliness and related factors in a nationally representative sample of older South Africans who took part in SAGE in 2008. This population based study found loneliness to be a relatively common phenomenon among elderly South Africans, i.e. prevalence of 9.9% as found in other studies (Hansen & Slagsvold, 2016). Loneliness is attributed to age-related changes and losses (Luanaigh & Lawlor, 2008). There were gender, age and racial disparities in loneliness with prevalence being higher among females, older individuals, unmarried individuals, Indians or Asians and individuals with no education or lower educational level. Cohen-Mansfield et al. (2016) also found “female gender, non-married status, older age, poor income, lower educational level, living alone, low quality of social relationships, and cognitive deficits” to be associated with loneliness. This suggests that loneliness interventions should focus on individuals with these socio-demographic characteristics.

This cross-sectional study found cognitive functioning to be associated with loneliness as found in Cohen-Mansfield et al (2016). More research is needed in order to determine causal factors underlying the association between loneliness and cognitive functioning (Boss et al. 2015). Further, as found in a number of previous studies (Cacioppo et al., 2002; Cohen-Mansfield et al, 2016; Hawkey & Cacioppo, 2010; Petitte et al., 2015; Stickley et al., 2013), this study found that loneliness was associated with poor subjective health status.

According to Hawkey and Cacioppo (2003) there might be several possible ways linking loneliness with poor health. It is possible, for instance, that poor subjective health status co-occurs with poor sleep and short sleep duration and may reinforce each other over time. It has been proposed that loneliness may generate anxiety-related thoughts that may hinder relaxation resulting in poorer and shorter sleep (Hawkey & Cacioppo, 2003; Stickley et al., 2015). In addition, the study found an association between different stressors and loneliness, so stress could be a mechanism linking loneliness with poor health (Stickley et al., 2015).

4.1 Study Limitations

This investigation had several limitations. The study was cross-sectional in nature, so that causal inferences cannot be drawn. As the questionnaire relied on self-report, it is possible that some respondents biased their responses. The questionnaire utilized in this investigation assessed certain concepts such as loneliness with a single item. However, several authors seem to emphasize a high correlation between single-item and multi-item indices (Stickley et al., 2015).

5. Conclusions

The study found that the prevalence of loneliness among older adults in South Africa is significant. Several predictors for loneliness were identified as well as associations between loneliness and health variables, including poor health status and low cognitive functioning, were identified which may help in the development of loneliness prevention and intervention programmes in this older adult population.

Competing Interests Statement

The authors declare that they have no significant competing financial, professional, or personal interests that might have influenced the performance or presentation of the work described in this manuscript.

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Competing Interests Statement

The authors declare that there are no competing or potential conflicts of interest.

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