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Loneliness in Older Chilean People: Importance of Family Dysfunction and Depression

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ABSTRACT

Loneliness is considered a public health problem that negatively affects wellbeing, especially in the older population. In Latin-American countries, most of the older population live with their family. Although this is thought to diminish feelings of loneliness, there is scarce data to support this. The objective of this study is to determine the prevalence of loneliness and evaluate its association with objective social networks, family functioning and perception of social support, in a sample of older people from Santiago, Chile. A survey was conducted of a representative sample of community older people (60–97 years) from Santiago, Chile, using the UCLA abbreviated scale of loneliness. Logistic regression was performed to test the variables related to the loneliness of older people. A total of 1,217 older people were interviewed. 88% were living with at least one person at home and 92% had living children. Using the UCLA abbreviated scale, 45% were found to perceive feelings of loneliness at least some of the time. Logistic regression showed significant association between loneliness and family dysfunction; depressive symptoms; living alone; not having a partner (widowed, separated or single); having little contact with relatives and friends; feeling a lack of social support; and sensation of poor self-efficacy. Loneliness is a prevalent public health problem in this older Latin-American community. Living accompanied does not protect against loneliness, particularly in vulnerable groups such as those with depression, or when there are family conflicts. The high prevalence of loneliness strongly conveys the need for public health policies to address loneliness in older people.

KEYWORDS

Ageing; family relations; loneliness; social support

1 Introduction

The population is ageing around the world. However, regions such as Latin America are experiencing an accelerated process, in contrast to now industrialized countries where the process took place more gradually. For example, to double the proportion of people aged 65 and over, the USA and France took more than 60



and 100 years respectively. In contrast, Chile is estimated to double this value in only 24 years [1]. This ageing population poses new challenges, such as promoting wellbeing in the years gained, with different social and health support.

Social participation is key for successful ageing. Often, older people give greater importance to it than to physical health [2,3]. However, both determinants seem to be strongly linked: health can hinder social integration and social relationships can affect health in a beneficial or prejudicial way [4].

Loneliness is a subjective experience of dissatisfaction due to lack of significant human relationships or a perception of discrepancy between desired human relationships versus reality [5,6]. Loneliness must also be distinguished from social isolation, which refers to number of social contacts and level of social integration. Therefore, even when social isolation is not present loneliness may occur, as social contact may be plentiful but unsatisfactory [5].

The estimated prevalence of loneliness varies and has been reported to be as high as 49%, depending on the population studied [5,7]. Loneliness has been associated to different aspects, such as: older age [8–10], poorer health [11], depression [12,13], and social, economic and cultural aspects [8,14]. Although there are many studies internationally, to our knowledge the only study regarding a Latin American population is from older Latin-American people living in the USA [15]. Older people in Latin America live a different reality from that of developed countries. For instance, there is greater poverty and inequality; less access to health; and a weaker social security system [1]. This means conclusions of loneliness studies from other regions may not be extrapolated to Latin America and that this study gives us new and interesting insight regarding this population.

The aim of this study is to determine the prevalence of loneliness in older people in Santiago, Chile, and to analyse possible association with objective social networks, family functioning, perception of social support, physical and mental health, controlling for sociodemographic factors, all of which are important aspects in successful ageing.

2 Materials and Methods

2.1 Participants

This study is based on data from the survey “*Stressful events that occur while growing old: how family relationships and social resources impact elderly people’s wellbeing*” of the FONDECYT project N° 1120331. The survey was face-to-face and conducted in Autumn 2013 (April to June). The target population was all people aged 60 or over who lived in the city of Santiago de Chile, in their private homes, and who could answer a survey by themselves. The final sample was composed of a total of 1,217 senior citizens, with a sampling error of 4%. Nursing home residents were excluded, as well as individuals with suspicion of cognitive impairment.

The sample design consisted of a multistage random sampling. First, using systematic randomization, geographic blocks of the city of Santiago were selected. Second, private housing was randomly selected from the selected blocks. Third, in the selected residences, all older people were listed and then randomly selected using a Kish grid. Respondents did not receive monetary incentives to participate in the study.

All respondents gave informed consent. The project had an ethical follow-up at all stages, being approved by the Ethical Committee of the Pontificia Universidad Católica de Chile, following the ethical standards laid down in the Declaration of Helsinki, 2008.

2.2 Instruments and Measures

The survey was constructed by professionals of the research team, and was composed of six sections: a) Socio-demographic factors (sex, age, education, marital status, number of children), b) Loneliness and wellbeing (general satisfaction and positive or negative emotions), c) Family structure and functioning

(household composition, quality of family relationships), d) social participation and social support and e) Personal conditions (self-efficacy, functional capacity, depressive symptoms).

2.3 Outcome Variable

Loneliness was used as the outcome variable, using the revised UCLA Three-Item Loneliness Scale, which has shown performance comparable with the original version [16]. The scale is composed of three questions: i) How often do you feel that you lack companionship? ii) How often do you feel left out? iii) How often do you feel isolated from others? The possible responses were hardly ever, some of the time, or often. The scale was then dichotomised: in cases in which the answer was “hardly ever” for all three questions, the answers were re-coded as “without loneliness” and those who answered “some of the time” or “often” in at least one question as “with loneliness” [11].

Principal component analysis supported construct validity of the index in the Chilean sample, finding that 78% of the loneliness variance was explained by the three items, with a factor loading of 0.80 for the item “how often do you feel that you lack companionship” and a 0.92 for the other two items. The alpha coefficient of Cronbach was 0.84.

2.4 Independent Variables

To measure family structure and functioning, the following variables were selected. Firstly, the Household Composition variable (to live *accompanied* or *alone*) and secondly, number of children (current living children: “How many living children do you have?”).

In addition, the Scale of Family Functioning: APGAR [17,18] was selected: APGAR is a five-item scale of family functioning: Adaptability, Partnership, Growth, Affection, and Resolve. The range of answers corresponds to a 3-point scale, ranging from 0 (hardly ever), 1 (sometimes) and 2 (almost always). The summated scale ranges from 0 (low) to 10 (greater degree of satisfaction with family functioning). It is coded into three levels: *Serious dysfunction* (0 to 3 points), *minor dysfunction* (4 to 6 points) and *good family functioning* (7 to 10 points). In analysis of the main components, this scale behaved in a unidimensional way, with 68% of variance explained by the five items. The factor loading varied from 0.77 for “Do you feel satisfied with the way in which you can ask your family for help when something worries you?” to 0.87 for “Do you feel satisfied with the way in which your family talk and share problems with you?” The scale had a high level of internal consistency, with an alpha coefficient of Cronbach of 0.88.

In addition, the eight-item Medical Outcomes Study Social Support Survey (MOS) [19] was used to measure two dimensions of social support: instrumental and emotional. The survey investigated the perception of potential available support in eight hypothetical cases with three possible answers (always = 1; sometimes = 2; never = 3); giving a range of 8 to 24 points (from *less to greater support*). In the principal component analysis, the scale behaved in a unidimensional way, with 70% explained variance; an alpha coefficient of Cronbach of 0.938; and factor loading from 0.79 for “... love and make you feel wanted?” to 0.86 for “...to take you to the doctor if you need it?”

Amongst significant activities, two were selected: frequency with which the individual visits or receives visits from relatives or friends, and frequency with which the individual participates in religious activities, social organisations, or in courses and workshops. In both cases, possible answers were: *Many times a week, once a week, once a month and less frequent/never*. Posteriorly, answers were classified into two categories: *Once a month or less frequent/never, versus once or many times a week*. These two activities have been significantly associated to subjective well-being in previous studies on older people carried out in Chile [20,21].

In the personal conditions section, two variables were chosen: self-efficacy and health status. Chen's Self-Efficacy Scale [22], which measures a person's capacity to cope when facing new and difficult tasks, was used as a scale composed of eight items with a range of answers corresponding to a Likert scale of three options (*almost never/never, sometimes, almost always/always*), giving a range of 8–24 points. According to the principal component analysis, the scale was unidimensional with 73% of variance explained by the eight items; factor loading between 0.78 for “*Do you think you would be able to achieve most of the goals you propose?*” to 0.88 for “*Do you think you would be able to overcome many challenges successfully?*”; and Cronbach's alpha of 0.945.

Health status was evaluated with self-rated perception of health, an indicator broadly used as a predictor of global health which is associated to morbidity, use of services and mortality [23]. This self-perception was evaluated using the question “*Do you consider your health: Excellent, good, regular or bad?*” which was then categorized into three groups: *bad, regular and excellent/good*.

The last variable selected was depressive symptoms, measured using the Abbreviated Screening Scale of Depression Yesavage GDS-5, a questionnaire of five dichotomous questions (*Yes/No*) validated in Chile [24]. A score higher or equal to 2 suggests depression. The scale behaved in a unidimensional way with a Cronbach's alpha coefficient of 0.646.

Finally, the following socio-demographic variables were selected: gender, age (*60–74, 75 and more*), education (*primary: Eight or less years of education, secondary: From nine to 12 years of education, higher: At least one year of university or professional studies*), and marital status (*single, married/cohabitant, separated/divorced, widower*).

2.5 Statistical Analysis

Data was analyzed using STATA 14 software. First, we conducted a descriptive analysis of the variables (percentages, means, and standard deviations). Then, we performed a logistic regression to test the variables related to the loneliness to the older people. Logistic regression models were calculated with the dichotomous dependent variable of loneliness (0 = *without loneliness*; 1 = *with loneliness*). Stepwise models were calculated which allowed continuous evaluation of how the models changed while the variables were being incorporated step by step. First, the variables of family structure, family functioning and the undertaking of significant activities were included. These constitute social factors, which are more likely to be associated with the feeling of loneliness. In a second model, the variables of self-efficacy, and mental/physical health were added. Finally, the socio-demographic variables were incorporated (sex, age, education and marital status). Goodness of fit was assessed using the Hosmer–Lemeshow test and pseudo- R^2 .

3 Results

The characteristics of the sample were: 63% women with a mean age of 71.0 years ($SD = 7.512$). Only 11% had completed higher education, just over half of the participants were married (53%) and near one quarter widowed (26%). Almost all respondents said that they had living children (92%), with an average number of three children ($SD = 1.846$). The majority were living with at least one person at home (88%) and perceived their family functioning as quite positive (81%). There was a high valorization of the availability of support with a mean of 21.4 points in the MOS scale ($SD = 4.334$).

With regards to participation in significant activities, over half of the participants mentioned frequently (once or many times a week) meeting with relatives or friends (60%), whilst the participation in religious activities, social organizations, or courses/workshops reached 42%. In terms of personal conditions, perception of self-efficacy was high, with a mean of 20.0 ($SD = 4.183$) in the Chen scale and 49% perceiving their health as excellent/good or very good health. Finally, more than one third (34%) had a positive GDS-5 screening, suggesting depression.

Loneliness: 45% of the sample were classified with some level of loneliness and 55% without. The analysis by item showed that 13.4% of the sample answered “often” to at least one of the three items of the UCLA abbreviated loneliness scale, and 4.3% to all three items (severe loneliness). The average score of this three-item scale was 4.176 (SD = 1.690), ranging between 3 and 9. In other words, even though almost half felt lonely at least some of the time, for most of them it was not severe. The distribution of each independent variable and its association with loneliness, analyzed in a dichotomous way, is shown in [Tab. 1](#).

Table 1: Independent variables and loneliness scale (Sample = 1217 cases)

	Loneliness scale	Without loneliness (55.0%)	With loneliness (45.0%)	Total (n% or mean [SD])	Statistics
Do you live accompanied or alone?	Accompanied	57.9%	42.1%	1063 (87.5%)	$(X^2) p < 0.001$
	Alone	34.9%	65.1%	154 (12.5%)	
Number of children	Mean	3.07	3.03	1217 (3.05)	$(t\text{-test}) p = .737$
	SD	1.750	1.957	(1.846)	
Family Functioning APGAR	Serious or minor dysfunction (0–6)	18.2%	81.8%	236 (19.4%)	$(X^2) p < 0.001$
	Good family functioning (7–10)	63.8%	36.2%	981 (80.6%)	
Support Scale MOS	Mean	22.54	19.79	1182 (21.4)	$(t\text{-test}) p < 0.001$
	SD	3.416	4.889	(4.334)	
Frequency with which he/she visits or receives relatives or friends	Once or less times a month/does not do it	42.0%	58.0%	486 (39.9%)	$(X^2) p < 0.001$
	Once or more times a week	63.5%	36.5%	731 (60.1%)	
Frequency of participate to religious activities, social organizations, or courses/workshops	Once or less times a month/does not do it	52.5%	47.5%	714 (58.7%)	$(X^2) p < 0.05$
	Once or more times a week	58.5%	41.5%	503 (41.3%)	
Self-efficacy scale	Mean	20.88	18.90	1192 (20.0)	$(t\text{-test}) p < 0.001$
	SD	3.943	4.217	(4.183)	
How would you say it is your health?	Excellent/Very good/Good	63.4%	36.6%	594 (48.8%)	$(X^2) p < 0.001$
	Regular	50.2%	49.8%	502 (41.4%)	
	Bad	35.3%	64.7%	121 (9.9%)	
GDS-5	Does not suggest depressive symptoms (<2)	69.5%	30.5%	766 (65.6%)	$(X^2) p < 0.001$
	Suggests depressive symptoms (≥ 2)	30.5%	69.5%	405 (34.4%)	

(Continued)

Table 1 (continued).

	Loneliness scale	Without loneliness (55.0%)	With loneliness (45.0%)	Total (n% or mean [SD])	Statistics
Gender	Men	61.8%	38.2%	455 (37,4%)	$(X^2) p < 0.001$
	Women	50.9%	49.1%	762 (62.6%)	
Age	60–74	54.1%	45.9%	808 (66.4%)	$(X^2) p = 0.382$
	75+	56.7%	43.3%	409 (33.6%)	
Educational level	Primary	50.6%	49.4%	719 (59.1%)	$(X^2) p < 0.01$
	Middle (secondary)	59.7%	40.3%	362 (29.8%)	
	High (technical or university)	65.4%	34.6%	136 (11.1%)	
What is your marital status?	Single	46.3%	53.7%	137 (11.2%)	$(X^2) p < 0.01$
	Married/Cohabitant	66.0%	34.0%	638 (52.5%)	
	Separated, Annulled or divorced	41.2%	58.8%	132 (10.8%)	
	Widower	42.4%	57.6%	310 (25.5%)	

Older people living alone reported more loneliness ($X^2 (1) = 22.2, p < 0.001$) whereas number of children was not significant ($t = 0.335, p = 0.737$). Presence of family dysfunction was significantly associated to more loneliness ($X^2 (1) = 159.7, p < 0.001$), and the greater the perceived availability of support the lower perception of loneliness ($t = 11.2, p < 0.001$). In terms of participation in significant activities, having frequent contact with relatives or friends and participate (at least once a week) to religious activities, social organizations, or courses/workshops reduced loneliness ($X^2 (1) = 54.1, p < 0.001$ and $X^2 (1) = 4.190, p = 0.05$, respectively).

Greater loneliness was found in those with lower self-efficacy ($t = -8.000, p < 0.001$) and in those with poor self-reported health ($X^2 (2) = 39.9, p < 0.001$). Also, people who were classified with depressive symptoms reported more loneliness ($X^2 (1) = 162.0, p < 0.001$).

Finally, loneliness was more prevalent among female gender ($X^2 (1) = 13.5, p < 0.001$) and lower educational level ($X^2 (2) = 14.98, p < 0.001$), in contrast to being married or cohabiting ($X^2 (3) = 65.3, p < 0.001$). Age was not significant ($X^2 (1) = 0.764, p = 0.382$).

Multivariate logistic regression models were constructed for the probability of loneliness occurrence (Tab. 2). As previously mentioned, family variables and significant activities were included in the first model. In the second, personal conditions (self-efficacy and health) were included, and in the third model the socio-demographic variables. All models were significant (Model 1: $X^2 (6) = 225.4, p < 0.001$; Model 2: $X^2 (10) = 315.5, p < 0.001$ and Model 3: $X^2 (17) = 352.4, p < 0.001$). The Hosmer–Lemeshow goodness-of-fit test showed that all models fit the data well, with the third model having the best fit, explaining 26% of the variance.

In the final model, it was observed that the greatest chances to feel lonely were associated to the presence of family dysfunction (OR = 4.734, $p < 0.001$) and the presence of depressive symptoms (OR = 3.147, $p < 0.001$).

Table 2: Loneliness Logistic Regression (dichotomous variable 0=*without loneliness* 1= *with loneliness*)

	Model 1			Model 2			Model 3		
	OR	Sig (<i>p</i> -values)	CI	OR	Sig (<i>p</i> -values)	CI	OR	Sig (<i>p</i> -values)	CI
Living alone	2.499	0.000	1.657–3.767	2.930	0.000	1.871–4.588	2.008	0.005	1.236–3.261
Number of children	1.051	0.183	0.976–1.131	1.024	0.559	0.944–1.111	1.017	0.707	0.931–1.111
Serious or minor family dysfunction ¹	4.717	0.000	3.156–7.050	3.942	0.000	2.519–6.170	4.347	0.000	2.753–6.864
Support Scale MOS	0.896	0.000	0.866–0.928	0.902	0.000	0.869–0.936	0.904	0.000	0.871–0.940
Visits or receives relatives or friends once or more times a week	0.597	0.000	0.451–0.791	0.647	0.008	0.470–0.892	0.615	0.004	0.443–0.856
Participates to religious activities, social organizations, or courses/ workshops once or more times a week	0.837	0.205	0.636–1.101	0.921	0.607	0.675–1.257	0.875	0.423	0.632–1.211
Self-efficacy scale				0.947	0.004	0.913–982	0.942	0.002	0.907–0.979
Regular health perception ²				1.107	0.534	0.802–1.529	1.101	0.571	0.788–1.536
Bad health perception ²				1.239	0.449	0.710–2.162	1.221	0.498	0.684–2.180
GDS-5 suggests depressive symptoms				3.535	0.000	2.538–4.923	3.147	0.000	2.236–4.429
Woman							1.378	0.065	0.980–1.939
75+							0.738	0.094	0.517–1.052
Primary education ³							1.025	0.925	0.608–1.729
Secondary education ³							0.940	0.826	0.544–1.624
Single ⁴							1.740	0.041	1.021–2.964
Separated, annulled or divorced ⁴							1.907	0.012	1.14–3.164
Widower ⁴							2.893	0.000	1.931–4.334
Constant	6.852			10.709			7.544		
Observations	1182			1101			1101		
Hosmer–Lemeshow test (<i>p</i> -value)	0.460			0.373			0.0765		
Pseudo R ²	0.149			0.230			0.258		

OR: Odds Ratio; CI: Confidence Intervals.

Reference category: ¹No family dysfunction; ²Excellent/Very good/Good health perception; ³Higher education; ⁴Married/Cohabitant.

Other significant but less relevant variables in the model were related to objective loneliness measured as living alone (OR = 2.008, $p < 0.01$) and living without a partner: either being single (OR = 1.740, $p < 0.05$), separated (OR = 1.907, $p < 0.05$), and especially a widower (OR = 2.893, $p < 0.001$). On the other hand, the greater the perceived potential support, the lower the chances of loneliness (OR = 0.904, $p < 0.001$). This was also the case for frequent contact with relatives and friends (OR = 0.615, $p < 0.01$). Finally, people with higher perception of self-efficacy reported less loneliness (OR = 0.942, $p < 0.01$).

4 Discussion

Loneliness in the older population is a growing, worldwide public health problem that negatively impacts wellbeing [5,11]. In this Latin-American sample of older people there was a high overall prevalence of loneliness (45%), although the prevalence of severe loneliness only reached 4.3%.

The most remarkable finding in our population, which had low objective isolation, was the strong relation between loneliness and family dysfunction, suggesting that when family dysfunction is present, it may outweigh the protective benefits of living accompanied. This powerfully supports the hypothesis that the quality of social contacts, such as the level of friendliness, trust and companionship of relationships, has more influence on loneliness than quantity [10]. Similarly, a previous study links quality of relationship between spouses to loneliness [25], however does not evaluate the effect of family functioning or presence of conflict.

In line with the literature, we found an association of loneliness with objective social isolation, measured as living alone; not having a partner (widowed, separated or single); and having little contact with relatives and friends [8,26,27]. However, in our sample social isolation was rare: only 13% were living alone, more than 90% had living children (three on average) and more than half had visits from friends/family at least every week, assumed as representing relatively better quality relationships [26–28]. These factors, which are expected to be protective against loneliness [29], are much more prevalent than in other populations [28,30]. Despite this, the prevalence of loneliness is not better than in other populations, even in terms of severe loneliness, which reinforces the importance of the quality of bonds over quantity of contact [10].

The high prevalence of loneliness in this sample may also be linked to cultural aspects. It is known that Latins tend to have high expectations of family relationships, amplifying the difference between desired and actual relationships [31,32]. Moreover, in contrast to Anglo-Saxon cultures in which living alone is more of a sign of independence, Latin-Americans associate living alone with feelings of abandonment [14,15]. Additionally, as in many other developing countries, families provide most of the care for older people informally, satisfying the needs that are not sufficiently covered by the formal system of social protection [1]. This could be a source of conflict and caregiver overload, related to the association of loneliness found with poor perception of self-efficacy [8]. In addition, Chile has one of the highest rates of depression in Latin America [33] and there is a strong association with loneliness in our population. Depression has been systematically associated with loneliness, however the relationship between the two remains unclear. In some studies, loneliness increases depression [13] but in others loneliness may cause anxiety rather than depression itself [34].

No association was shown with gender nor age. Literature describes increased loneliness in women due to factors such as being widowed, suffering depression or being at an economic disadvantage [10,11,14,35]. Greater age has also frequently been associated with loneliness [9,10,27,30,36] due to many factors such as negativity linked to acceptance of irreversible aspects of ageing; less social support due to a higher probability of death of loved ones; and physical and health limitations which hinder social situations [10,35]. Many studies have demonstrated a U-shaped relationship between age and loneliness over a lifetime [10]. However, our study is in line with other reports that show no higher risk of loneliness with increasing age [28,37,38], one of which also studied a Latin-American population but living in the USA [15].

It is important to note that, as described in the method of the study, the revised UCLA scale used to measure the prevalence of loneliness was dichotomised as “without loneliness” for “hardly ever” in all three questions, and “with loneliness” when people answered “some of the time” or “often” in at least one question [11]. The reason for this classification was that the scale did not have a normal distribution, because close to half of the sample answered “hardly ever” for the three questions. Although this classification could be seen as a risk for concealing important results, in this study an exploratory bivariate analysis showed that the discrimination was higher when the scale was dichotomized.

This study has the strength of being the first, to our knowledge, to analyse a representative sample of urban Latin–American older people living in their country of origin. The study allowed control of the effects of social isolation, depressive symptoms, social support and health determinants. However, due to the study’s transversal design, results could only refer to associations and not to causality. Moreover, the scales used to measure self-efficacy, health and functional capacity were based on each individual’s perceptions, and therefore not diagnostic as in the case of the depression or cognitive impairment scales. As a consequence, results could only suggest associations of each factor analysed. More longitudinal studies are needed to study the causality relationships in loneliness.

5 Conclusion

In conclusion, as the population grows older, the interest in studying the variables associated to ageing and well-being in the older population increases. Loneliness is a complex and multifactorial condition which is deeply influenced by culture, social determinants and health. The development of public policies addressing its potentially modifiable aspects should be encouraged. Our study suggests that focusing on improving social support to families living with older people and treating depression may have a positive impact on the quality of life of older people.

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