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Loneliness among very old Mexican Americans: Findings from the Hispanic established populations epidemiologic studies of the elderly

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Abstract

Increasing numbers of researchers are finding that loneliness is a significant risk factor for morbidity and mortality, and several of variables have been found to be closely related to the experience of loneliness among elders. However, much of the research has focused on the general older population, with no research to date focusing on minority populations. The objective of this study was to determine the prevalence and the correlates of loneliness among a community-dwelling older Mexican American population. This study used a three-item loneliness scale to determine prevalence of loneliness. Pearson's correlation and linear regression analyses were used to determine the cross-sectional association between sociodemographic, interpersonal relationship and health variables with the scale. Data used came from the most recent wave (2011) of the Hispanic Established Populations for the Epidemiologic Studies of the Elderly (H-EPESE). A total of 873 Mexican Americans completed the loneliness scale. The age range was from 80 to 102, with a majority (65%) female. The mean score on the scale was 4.05 (range 3–9), indicating relatively low levels of loneliness. Regression results indicate that depressive symptoms, cognitive status, and living alone were significantly associated with higher loneliness scores. Being married and having a confidante were significantly associated with lower loneliness. Age, number of close relatives and frequency of contact were not associated with loneliness. Findings suggest that among community-dwelling Mexican American older adults, loneliness has multiple determinants. Loneliness is a significant public health topic and clinicians should be aware of the various factors that can affect loneliness.

1.1 INTRODUCTION

Researchers have consistently shown that social relationships and social embeddedness are associated with morbidity and mortality outcomes (Kawachi & Berkman, 2001; Seeman, 2001), and research suggests that the costs of not having adequate social integration and support is especially high among older adults.

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While to date much of the research literature on the association between social relationships and health has used objective measures of social interaction (e.g., the number of social contacts) researchers are becoming increasingly aware of the importance of capturing the *subjective* experience of social relationships (Hughes, Waite, Hawkey, & Cacioppo, 2004). One relevant construct is loneliness. Defined as the perception of discrepancy between desired and actual relationships (Peplau & Perlman, 1982), loneliness captures the personal experience of social integration. Researchers agree that loneliness is a unique and important phenomenon (De Jong Gierveld, 1998; Dykstra, 2009), and during the past few decades there has been an increase in the research area on loneliness, including among older adults (Dykstra, 2009; Luo, Hawkey, Waite, & Cacioppo, 2012). In part this increase in research interest in loneliness has been the development of reliable and valid measures that effectively capture the subjective experience of loneliness (Russell, 1996). One such measure is a three-item scale to measure loneliness developed by Hughes and colleagues in 2004.

Research has found that loneliness is a powerful predictor of mortality and morbidity in old age (Luo et al., 2012) and researchers have begun to identify a number of its determinants (see De Jong Gierveld, 1998 and Pinquart & Sörensen, 2001 for reviews). However, to date loneliness scales have been administered in surveys to the general older population, with relatively few studies considering minority sub-populations and culture.

Some research suggests that patterns of loneliness significantly differ by cultural factors, such as sense of familism and social support. For example, research within Europe has shown loneliness prevalence to differ across countries by rates of familism (Dykstra, 2009). Defined as a set of normative beliefs that emphasize the obligations and support that family members owe to nuclear and extended kin (German, Gonzales, & Dumka, 2009), familism is one component of culture that appears to impact loneliness. Interestingly, although there has been limited research on culture and loneliness, some research has found that prevalence of loneliness is lower in countries that are viewed as being more individualistic and higher in countries with higher rates of familism (Dykstra, 2009).

The concept of “loneliness threshold” is one way to explain this difference across countries and culture. Depending on the culture, and the level of familism, various levels of social contact are needed to avoid loneliness (Johnson & Mullins, 1987; Jylhä & Saarenheimo, 2010). In societies with high individualistic values where independence is valued, a large number of social relationships may not be as important, and therefore have a higher loneliness threshold. Conversely, in more familistic cultures the loneliness threshold may be lower, suggesting that a larger number of social relationships would be needed to prevent loneliness.

Specifically in the United States (US), Hispanic culture, in comparison to mainstream culture, is associated with higher rates of familism and collectivist values (Black, Markides, & Miller, 1998; German, et al., 2009; Markides & Gerst, 2011; Triandis, 1989). This differs from the individualistic values generally held by non-Hispanic White and European-origin Americans (Triandis, 1989). This may be particularly relevant in light of a shift in family patterns in recent decades among familistic societies living in the US (Centers for Disease

Control and Prevention, 2011), such as Hispanics. Specifically for older adults, as traditional societies shift, the value of respecting older adults may be eroding (Centers for Disease Control and Prevention, 2011), which may be directly related to less availability of familial social support and subsequent loneliness.

This shift may especially be the case for immigrant Hispanics elders, where traditional social relationships may be disrupted resulting in increased social isolation and a loss of meaningful roles for those aging in a new country. Some studies also suggest that among immigrants, the process of assimilation encourages individualistic values and reduces familism (Landale & Oropesa, 2007). Additionally, loneliness may be compounded for immigrants due to general stressors of acculturation, such as language and cultural barriers in the new country (Dong, Chang, Wong, & Simon, 2012). Taken together, this suggests that older Hispanics, particularly immigrants, may be at particular risk for high rates of loneliness.

With a projected increase in the diversity of older Americans, it is important to examine determinants of loneliness for specific cultural sub-populations. The numbers of older Hispanics especially are projected to grow rapidly, experiencing a nearly seven-fold increase by the year 2050 (Federal Interagency Forum on Aging-Related Statistics, 2010). Below we examine the prevalence of loneliness and its influences among community-dwelling older Mexican Americans, a highly familistic segment of the American population. Such information should facilitate the development of interventions to address loneliness in this rapidly growing population. Information obtained will also have relevance for other familistic populations in the US, as well as in other western societies.

1.2 METHODS

Cross-sectional analyses were conducted using data from the Hispanic Established Population for the Epidemiological Study of the Elderly (H-EPESE). The H-EPESE is a community-based study of older Mexican Americans living in five southwestern states in the US (i.e., New Mexico, California, Texas, Arizona and Colorado). Baseline data were collected in 1993/1994 with 3,050 Mexican Americans aged 65 and older. The sample was selected using multistage area probability sampling, ensuring that the survey results were generalizable to older Mexican Americans living in the Southwest US. Respondents were followed every two to three years. Surveys were administered both in English and in Spanish depending on the preference of the respondent. The most recent wave (wave 7) of data collection was conducted in 2010–2011, with subjects aged 80 and over. Subject interviews included the Three-Item Loneliness Scale (Hughes et al., 2004). Subjects interviewed via a proxy were excluded from the analytical sample. All analyses were conducted using SPSS software (version 21).

The Three-Item Loneliness Scale (Hughes et al., 2004) is based on the 20-item Revised UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980). The shorter scale has yielded comparable results to the full scale (Hughes et al., 2004). The three questions asked respondents how often they: 1) feel like that they lack companionship, 2) feel left out, and 3) feel isolated from others. Participants responded to questions on a Likert type scale (1 =

hardly ever, 2 = *some of the time*, 3 = *often*). The scores (1–3) were summed to create the scale (possible range 3–9), with higher scores indicating greater levels of loneliness. The internal reliability of the scale was calculated using Cronbach's alpha to determine the usefulness of this scale in this specific population of Mexican American elders. Cronbach's alpha of > .70 was used as the cut-off point for acceptability (Santos, 1999).

Next, Pearson product moment correlations were run between loneliness and sociodemographic characteristics, a measure of isolation, as well as physical and mental well-being. Significant variables were then entered into linear regression models predicting loneliness as an outcome. Sociodemographic variables included age (continuous), gender (male = 0), whether the respondent was born in the US (foreign born = 0) and years of education (continuous). We also included linguistic preference, using language of interview (Spanish=0). Physical well-being was measured using self-rated health as a global health indicator. This single item is a key measure of health status used frequently by epidemiology researchers and has been shown to be valid in different ethnic groups (Chandola & Jenkinson, 2000). Respondents were asked to rank their health as excellent, good, fair, or poor (coded as 4, 3, 2 and 1). It was further collapsed into a dichotomous variable (poor/fair vs. good/excellent). Activities of daily living (ADLs) limitation was assessed by the self-reported measure asking respondents whether they need help with: eating, bathing, walking, dressing, toileting or transferring from a chair to a bed.

Cognitive impairment was measured using the Mini Mental State Exam (MMSE), which researchers have shown to be a valid indicator of cognitive impairment in survey research examining older Mexican Americans (Espino, Lichtenstein, Palmer, & Hazuda, 2001). The measure was left continuous for all analyses.

Although loneliness is a separate construct from social isolation, they are related and therefore it was hypothesized that respondents with higher levels of isolation would also report higher levels of loneliness. Following previous research (Hughes et al., 2004), we measured social isolation with marital status (not married=0) and living arrangements (living alone=0).

Additionally, interpersonal and family relationships were measured with three questions. The first two questions asked respondents about family members: 1) How many relatives do you feel close to? (i.e., that you feel at ease with, can talk to about private matters, or can call) and 2) How many of these relatives do you see at least once a month? Respondents were also asked if they had someone to count on in times of trouble (most of the time/some of the time versus hardly ever). The number of relatives and the number of relatives seen at least once a month were both top-coded at four to account for the distribution of the variables.

Given prior research findings (Luanaigh & Lawlor, 2008), we also hypothesized that those with higher scores on a depressive symptoms scale would report higher scores on the loneliness scale. We use the 20-item Center for Epidemiologic Studies–Depression Scale (CES-D) (Radloff, 1977) to measure depressive symptoms, dropping out the one item on the

CES-D that specifically asks respondents if they felt lonely. This modified 19-item depressive symptoms scale was kept continuous in all analyses.

1.3 RESULTS

1.3.1 Sample Descriptives

The most recent wave of the H-EPESE included 1,079 respondents aged 80 and over. One-hundred and eighty respondents were dropped because they were completed by proxy. Additionally, 16 respondents did not complete one or more of the loneliness questions and were therefore dropped from the analyses. Table 1 describes the final analytic sample of 873 Mexican Americans. Respondents' age ranged from 80 to 102 ($M = 85.4$ years). A majority (65%) were female, slightly over half (54%) were born in the US and about one-third lived alone. Less than one-third (32%) were currently married, and 59% were widowed.

Table 2 provides descriptive data on the loneliness scale in this sample, as well as details on each of the three items used to create the loneliness scale. The mean score on the scale for this sample was 4.05 ($SD = 1.5$), indicating relatively low levels of loneliness on a scale where the possible score ranged from 3 to 9. Similarly, the scores were positively skewed, suggesting that relatively few respondents reported high levels of loneliness. The most commonly reported item from the three questions was the lack of companionship, where 10% of the sample reported that they felt this way often.

The Cronbach's alpha coefficient of reliability for the Three-Item Loneliness Scale in this sample is .84, indicating high internal consistency. This is somewhat higher than the alpha previously reported from the HRS survey on persons aged 50 years and older ($\alpha = .72$; Hughes et al., 2004), but similar to that of the full UCLA Loneliness Scale on persons aged 65 years and older ($\alpha = .89$, Russell, 1996).

1.3.2 Correlations

Table 3 shows the simple correlations between the scale and three sets of variables: sociodemographic, interpersonal relationships, and health. Among sociodemographic variables, increased age and being female was positively correlated with higher loneliness scores. Years of education, whether the respondent was born in the US and which language the respondent chose to complete the survey were both not significantly associated with loneliness.

Among the interpersonal relationship variables our first hypothesis was that respondents reporting higher levels of loneliness would have lower levels of interpersonal relationships and contact. The results appear to support this hypothesis. Living alone was significantly associated with higher scores on the loneliness scale as was a similar measure, number of people in the household. Being married, seeing a greater number of relatives and having someone to count on were significantly correlated with lower scores on the loneliness scale. The only variable in this category that was not significantly associated with the loneliness scale was the number of close relatives that respondents reported having, although the direction of the correlation was in the expected direction. We also found that loneliness was

significantly correlated with lower self-rated health and positively correlated with depressive symptoms.

Correlations between the loneliness scale and whether respondents felt lonely during the past week were large and significant. In addition, the correlations were higher with this item than with any of the other individual 19 remaining items that form the CES-D scale (results not shown), supporting the validity of the three-item scale to measure loneliness in this sample. Contrasting with the objective measures of social relationships, the question of feeling subjectively lonely from the CES-D scale was much more highly correlated with the scale than any of the relationship measures.

Additionally, it is important to note that while significant, the correlations between interpersonal relationships and the loneliness scale were relatively small. This is consistent with previous research that has emphasized the importance of distinguishing subjective construct of loneliness from objective criteria, such as the number of relationships.

1.3.3 Regression Results

Table 4 shows results for linear regression with loneliness scale as the dependent variable. Model 1 presents linear regression results for loneliness using sociodemographic variables, health, depressive symptoms and MMSE scores as independent variables. Model 2 then adds in the social integration measures to the model. None of the three socio-demographic variables (age, gender and number of years of education completed) were significant in the two models. Additionally, neither of the health measures (self-rated health and ADL limitation) were significant in the models. Scores on the depressive symptoms scales were consistently associated with higher loneliness scores (p -value $< .001$). Additionally, higher scores on the MMSE scale (i.e., higher cognitive functioning) were associated with lower levels of loneliness.

Of the social integration measures, being married was negatively associated with loneliness, while living alone was positively associated with loneliness. Interpersonal relationship results were mixed. While the number of close relatives seen at least once a month was not significantly associated with loneliness, having someone to count was protective of loneliness. Since the number of relatives seen once a month was not significant in preliminary analyses, this variable was omitted in the final model.

Gender was not a statistically significant variable in the final analyses, although the effect was in the expected direction, where women reported lower scores on loneliness than men. This is supported by previous literature that finds either no statistical gender differences in loneliness, or small effects where loneliness scores were lower among women than men (Borys & Perlman, 1985; Dejonggierveld, 1987).

1.4 DISCUSSION

Results from these analyses show that the Three-Item Loneliness scale is a reliable and appropriate scale to use in a population of Mexican Americans aged 80 years and older. The average scores on the scale (possible range = 3–9) for Mexican Americans in this sample

was 4.05 ($SD = 1.5$), which was slightly higher than previous research using the three-item scale on the general population. Hughes et al. (2004) found a mean of 3.89 ($SD = 1.34$) score among their sample of respondents using the Health and Retirement Study. The study included persons aged 50 years and older, and did not break results down by race/ethnic groups, making it difficult to compare to our sample.

In any case, the relatively higher rates in our sample of older Mexican Americans might well reflect the nature of Mexican American culture. It is possible that elders in such a highly familistic culture have higher expectations for social interactions (Johnson & Mullins, 1987; Jylhä & Saarenheimo, 2010) and the losses that accompany old age (e.g., loss of status in society, deaths of relatives or friends) may be more difficult to combat. Additionally, it is possible as traditional societies shift among Hispanics in the US, the value of respecting older adults may be eroding, leaving older Hispanics at higher risk for loneliness. Therefore, at first glance these results appear to support our original hypothesis that older Hispanics are at particular risk for loneliness. Such conclusions are difficult to draw with this study, however, and future research should consider cross-cultural analyses to examine this possibility.

Our analyses revealed that depressive symptoms were significantly correlated with higher loneliness scores. Recent research has found that loneliness is a consistent and strong risk factor for depression among the general population (e.g., Luanaigh & Lawlor, 2008; Luo et al., 2012), although the authors agree that it is equally plausible that the causality is reversed, with higher depressive symptoms resulting in loneliness (see Luo, 2012). Because this was the first wave of the H-EPESE that included this scale, it is impossible to determine longitudinal consequences of any of the independent variables.

Among social contact and isolation measures, marriage and living alone were significant predictors. Marriage is one of the more integrating social structures in our society today, and previous research has shown marriage to reduce the likelihood of loneliness (De Jong Gierveld, 1998). Living alone was also significantly associated with loneliness, which is consistent with previous research (De Jong Gierveld, 1998).

While the number of relatives seen once a month was not significantly associated with loneliness, once additional covariates were entered into the model, having a confidante remained significant. Previous research has suggested that quantity of social contacts is less related to the experience of loneliness than the quality of contacts (Pinquart & Sörensen, 2001). Our results suggest that this holds true for this sample of very old Mexican Americans as well.

Despite our initial hypothesis that immigrants might be at a particular risk for loneliness, country of birth was not significantly correlated with loneliness in this sample. This may be because country of birth is a rough proxy measure of acculturation, and perhaps more detailed acculturation variables (not available in the dataset), such as language and cultural barriers, would have provided a more nuanced examination of the issue.

Finally, model fit statistics show that while social connections and other covariates were related to loneliness, they accounted for less than one-third of the variation in the outcome,

which supports previous research findings that loneliness is a *separate but important* construct from social isolation (De Jong Gierveld, 1998; Dykstra, 2009; Hughes et al., 2004).

1.4.1 Conclusions

Loneliness among older adults is an important and prevalent public health issue (Hawkley & Cacioppo, 2010) as increasing numbers of researchers are finding that loneliness is a significant risk factor for both morbidity and mortality (Luo et al., 2012). While the determinants of loneliness are often multi-faceted and complex, researchers have begun to create a profile of the influences on loneliness. However, extant research has mostly focused on the general, majority white, population and has not considered minorities specifically. To the authors' knowledge, these analyses for the first time present results for a large and growing sub-population of older Americans, Mexican Americans aged 80 years and older. It is important to note that despite sharing a common language and ancestral ties to Spain, Hispanics in the US are a highly diverse group, and results from this study may not be applicable to other Hispanic groups. This emphasizes the need for additional cross-cultural and sub-group analyses.

With the continued projected increase in a diverse older population, it is imperative that health researchers focus on older adults and consider potential differences by ethnicity. Such differences will be increasingly consequential for research and social policy, and research focusing on sub-populations can provide a useful model to improve population health. Although a major limitation of these analyses was the cross-sectional nature of the data, this paper has laid the groundwork for examining the prevalence and correlates of loneliness among Mexican American elders. Future research should utilize the longitudinal nature of the H-EPESE to follow up with respondents two years later and determine causality of loneliness.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1

Sample Description of the H-EPESE (N=873)

Variable	Percent/Mean
Age (mean, range)	85.3 (80–102)
Female	64.3%
Years of Education (mean, range)	5.19 (4,11)
Married	31.8%
Separated, Divorced	5.20%
Widowed	59.0%
Never Married	3.9%
Living alone	33.4%
US born	54.0%
1 or more ADL limitation	42.6%
Self-rated health (mean, range)	2.8 (1–4)
Excellent	6.0%
Good	27.9%
Fair	51.1%
Poor	14.9%
Survey taken in English (vs. Spanish)	83.3%

Note: Proxies excluded

Table 2

Descriptives of Loneliness Scale Components in H-EPESE sample (N=873)

Variable	Percent
Lack companionship	
Hardly Ever	62.5
Some of the time	27.5
Often	10.0
Feel left out	
Hardly Ever	75.5
Some of the time	21.3
Often	3.2
Feel isolated	
Hardly Ever	73.4
Some of the time	23.1
Often	3.4
Full Scale mean(SD)	4.05(1.5)
Median	3.0

Note: Proxies excluded

Table 3

Correlations of the loneliness scale with measures of relationships and health

Variable	Correlation	N
Sociodemographic		
Age (continuous)	.069*	873
Female	.117**	873
Years of Education	-.068	873
US Born	-.031	873
Survey in English (vs. Spanish)	-.001	873
Interpersonal Relationships		
Married	-.258**	871
Living alone	.262**	873
Number of people living in household	-.182**	865
Number of close relatives	-.057	870
Number of relatives seen at least once a month	-.080*	640
Having someone to count on	-.170**	870
Health		
CES-D total score	.469**	872
Excellent/Good self-reported health	-.152**	872
At least one ADL limitation	.153**	869
CES-D		
I felt lonely (item # 14)	.492***	869

Note: Higher scores on scale = greater levels of loneliness.

*
 $p < .05$,

**
 $p < .01$,

 $p < .001$

Table 4

Linear regression of loneliness scale as dependent variable

	<u>Model 1</u>			<u>Model 2</u>		
	Beta	SD	p-value	Beta	SD	p-value
Age	.022	.014	.104	.004	.013	.759
Gender (female)	-.001	.105	.995	-.198	.109	.068
Years of education (continuous)	.003	.013	.792	.002	.012	.866
Poor health	.068	.105	.519	.091	.102	.376
Any ADL limitation	.124	.105	.237	.092	.101	.362
CESD (19 item)	.116	.009	.000	.106	.009	.000
MMSE	-.037	.010	.000	-.039	.010	.000
Married				-.414	.125	.001
Lives alone				.558	.112	.000
Number of close relatives seen at least once a month ^f						
1				.125	.116	.284
2				.052	.139	.708
3				-.204	.205	.320
4 or more				-.143	.161	.373
Someone to count on				-.378	.172	.028
R-square			0.228			0.301
^f (0 relatives= reference)						