Research Article

Spousal Support, Spousal Strain, and Loneliness in Older Mexican Couples

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Abstract

Objectives: A growing body of research has identified factors related to loneliness among older adults. Fewer have investigated predictors of loneliness within married couples. This analysis investigates how spousal support and strain relate with loneliness within older couples (age 50+), and whether these associations are modified by functional limitation. The study focuses on Mexico, a country experiencing rapid aging occurring alongside historically limited institutional support for older adults, and where traditional gender roles extend to marriage.

Methods: The analytic sample consisted of 3,584 husband–wife dyads from the 2012 and 2015 Mexican Health and Aging Study. Loneliness was measured using the Three-Item Loneliness Scale. Associations between spousal support, strain, and loneliness were estimated within husband–wife dyads using the Actor–Partner Interdependence Model.

Results: Experiencing more spousal support was associated with less loneliness, whereas experiencing spousal strain was associated with more loneliness 3 years later among married adults. The associations between spousal support/strain and loneliness were stronger among husbands with limitations in activities of daily living (ADL) when compared to their counterparts without ADL limitations.

Discussion: Among married adults, spousal support and strain may be important factors to understand loneliness within marriage. Effects should be interpreted within the context of functional limitation.

Keywords: Aging, Latin America, Loneliness, Marriage, Spousal support

Background

Humans are social creatures, forming mutually beneficial groups that aid in our individual and collective survival. Through this lens, loneliness has been viewed as an evolved response to motivate us to reestablish social connections with others to promote survival (Cacioppo et al., 2014). In addition to an unpleasant experience, loneliness is associated with poor health, making the role of loneliness as a public health problem abundantly clear. Loneliness is associated with elevated depressive symptoms (Cacioppo et al., 2006), poorer cognitive function (Zhong et al., 2017),

dementia risk (Holwerda et al., 2014), functional decline (Perissinotto et al., 2012), and mortality (Luo et al., 2012). Given the numerous health consequences of loneliness, others have sought to identify risk factors for experiencing loneliness. In particular, living in a rural area, living alone, widowhood, low education, low income, and poor health and functional status have been suggested to be associated with more loneliness (Savikko et al., 2005).

Prior studies have reported social support to be related to lower levels of loneliness in multiple countries (Rodrigues et al., 2014) including Mexico (Montero-López Lena et al., 2019).

Social support for *older* adults is a crucial issue as social support has been identified as a key factor in successful aging (Pruchno et al., 2010). The value of social support may become amplified as adults age because the aging process may involve health and functional deterioration, which may lead older adults to rely more heavily on others (Barron et al., 1994). This suggests that social support may be especially important among older adults with functional limitations. Unfortunately, increasing need for social support in late-life often occurs at a time when social support tends to decline due to factors including retirement, losing driving ability, and death of loved ones who may have been essential agents in providing social support (Winningham & Pike, 2007).

Loneliness in Marriage

Whereas several studies have investigated risk factors for loneliness among older adults, fewer have investigated correlates of loneliness among married adults. Although married adults tend to report lower levels of loneliness compared to their nonmarried counterparts (Stack, 1998), being married does not necessarily eliminate loneliness (Hsieh & Hawkey, 2018; de Jong Gierveld et al., 2009). This underscores the distinction between the objective state of being alone (social isolation) and the subjective experience of loneliness in that even in the case in which older adults are married, likely to be living together, and are less likely to be socially isolated, they may still experience subjective experiences of loneliness.

Poor relationship quality may increase the risk of experiencing loneliness. Quality of marriage has been argued to be a multidimensional construct consisting of both positive factors (such as spousal support) and negative factors (such as spousal strain), which may co-occur in relationships (Walen & Lachman, 2000). The relevance of spousal support is expected given past studies of the beneficial effects of social support in preventing loneliness (Montero-López Lena et al., 2019; Rodrigues et al., 2014), yet prior studies have found that both spousal support and strain may be independently related with loneliness in couples. In studies of older adults in the United States, support from a spouse has been related with less loneliness, whereas spousal strain tended to increase loneliness (Ayalon et al., 2013; Chen & Feeley, 2014). A study of older adults in Amsterdam similarly reported that emotional support from a spouse was related with less loneliness, whereas having infrequent conversations and high disagreement were related with more loneliness (de Jong Gierveld et al., 2009). Both cross-sectional and longitudinal associations between marital quality and loneliness have been investigated in the context of Ireland (Stokes, 2017a, 2017b). Cross-sectionally, each partner's experiences of both negative and positive marital quality were related with loneliness (Stokes, 2017a), whereas longitudinally, only experiences of negative marital quality were associated with higher levels of loneliness 2 years later (Stokes, 2017b).

Others have explored how the marital relationship interacts with health and functional limitation to influence mental health. The manner in which the marital relationship interacts with functional limitation, in particular, is important given the large impacts that functional limitations may have on everyday social life. For instance, individuals with functional limitation tend to report less social engagement (Rosso et al., 2013) and increases in functional limitation have been associated with decreases in social activity (Janke et al., 2006). Adjustments in social life due to functional limitation imply that researchers must thoroughly consider the proximal social environment of older adults, including the marital relationship. Spouses serve a central role in provision of social support, which may become amplified when a functional limitation is present in late-life as this may limit one's ability to engage in social activities outside of the home and increases reliance on a partner for support (Mancini & Bonanno, 2006), including caregiving (Spitze & Ward, 2000). Through the lens of stress-buffering (Cohen, 2004), supportive relationships may be critical for buffering negative effects of functional decline on mental health. Understanding how functional limitation interacts with marriage is especially important in Mexico as the number of years spent with functional limitation is increasing among more recent cohorts (Payne & Wong, 2019).

Studies that have critically examined the interactions between appraisals of the marital relationship and functional limitation have highlighted how the marital relationship may be essential for understanding complex relationships between functional limitation and mental health outcomes. Specifically, positive marital quality has been suggested to buffer the detrimental effects of functional limitation on loneliness in the United States (Warner & Adams, 2012; Warner & Kelley-Moore, 2012). The association between disability and depression is also especially pronounced among individuals with more marital disagreements (Bookwala & Franks, 2005). In the case of activity-related emotions, being in a supportive marriage may also reduce negative emotions and increase positive emotions among severely impaired women, whereas experiencing relationship strain may intensify negative emotions among severely impaired men (Carr et al., 2017). The results of these studies suggest that, the value of quality supportive relationships characterized by high levels of support and low levels of strain may be most pronounced among older adults with functional limitation.

The Need for Research in Mexico

The relationships between marriage, social support, and mental health cannot be assumed to be homogeneous across countries. The dynamics of social relationships and social support are a function of cultural and social structural factors, which differ across countries and settings (LaRocca & Scogin, 2015; Saito et al., 2005) and may have

important implications on associations between social support and loneliness (Rodriguez et al., 2014). Understanding loneliness within marriage in Mexico is a critical, yet understudied research question. Several relevant factors make the context of marriage important in Mexico. First, Mexican adults are likely to arrive in late-life with a spouse. Among adults age 50–59 and 60+ in Mexico, 76% and 64% were married or in a consensual union as of 2012 (Wong et al., 2017). The high prevalence of marriage and the ongoing interdependent nature of marital relationships make marriage a valuable area to consider for mental health in late-life. However, marriage in Mexico differs from other Organization for Economic Cooperation and Development (OECD) countries in unique ways including lower rates of divorce and an earlier mean age at first marriage (OECD, 2019). These patterns suggest that older married adults in Mexico may have gotten married earlier in life, and not divorced, thus spending greater portions of their lives with their partner leading to an integral role of partners for mental health in late-life. The importance of family may be further amplified by the lack of strong institutional support systems for older adults in Mexico (Robledo et al., 2012), which has led older adults to rely on family in late-life (Peek et al., 2012).

Prior work on gender differences in effects of spousal support and strain on well-being have framed differences using both socialization and power distributions within marriages. Women's well-being may be more dependent on marital quality because they may invest more in the relationship due to having less power within the marriage (Proulx et al., 2007). This may be especially relevant in Mexico as gender dynamics reflect a more traditional, albeit shifting, patterning of gender roles (Seedat et al., 2009) when compared to various high-income countries. Married Mexican men tend to report greater marital power than wives (Saenz & Rote, 2019), which suggests that marital power differentials may be an important factor leading to greater investment in the relationship for wives. Although this may suggest that spousal support/strain may be more closely related with loneliness among women, studies in Mexico have also reported gender differences in characteristics of social networks (Fuller-Iglesias & Antonucci, 2016; Montes de Oca, 2005), with women maintaining larger emotionally intimate networks and men having smaller networks and relying more heavily on the wife. This may result in spousal support and strain being especially salient for husbands. Given these patterns, gender differences in effects of spousal support and strain on loneliness may be expected.

The Current Analysis

The primary aim of this analysis is to evaluate whether spousal support and spousal strain are related with loneliness among older adults in Mexico. A second aim is to test whether the relationships between spousal support/strain

and loneliness differ by gender and by one's own functional limitations. Married adults with a functional limitation may rely more heavily on their partner and family for support. Therefore, experiencing less spousal support and more spousal strain may be more closely related to loneliness among married adults with a functional limitation. Identifying risk factors for loneliness among older adults in Mexico is vital given rapid aging in the country (Wong & Palloni, 2009).

Method

Sample

Data come from the 2012 and 2015 waves of the Mexican Health and Aging Study (MHAS Mexican Health and Aging Study, 2012), a large, longitudinal, nationally representative study of older adults (age 50+) in Mexico and their spouses (regardless of age). The unit of analysis is the husband–wife dyad. The MHAS study began in 2001 and follow-up interviews have been conducted in 2003, 2012, and 2015. The MHAS is especially useful for research on marriage, physical health, and mental health as detailed information across a variety of domains is collected for both spouses. The MHAS has been described in greater detail elsewhere (Wong et al., 2017). Beginning with 4,318 coresiding, married, husband–wife dyads in 2015, dyads that had not been interviewed in 2012 ($n = 414$) were eliminated. Dyads in which a partner reported being age 49 or younger in 2015 were then eliminated as the research questions are specific to loneliness in late-life ($n = 281$). Next, dyads in which loneliness was not assessed for either partner in 2015 were removed ($n = 39$) resulting in a final analytic sample size of 3,584 husband–wife dyads.

Measures

Loneliness

The key dependent variable in this analysis is loneliness, which was assessed in the 2015 wave of the MHAS using the Three-Item Loneliness Scale (Hughes et al., 2004). Respondents were asked how often they felt: (a) they lacked companionship; (b) left out; and (c) isolated or distant from others. Response choices included never, some of the time, or often. The loneliness scale demonstrated good internal consistency (ordinal alpha: 0.90).

Spousal support/strain

Following prior work considering both positive and negative aspects of the marital relationship (Ayalon et al., 2013; Chen & Feeley, 2014; Stokes, 2017a, 2017b), the current study uses measures of spousal support and spousal strain. Spousal support was assessed in the MHAS by asking each spouse how much (a) one's spouse understands the respondent's feelings; (b) the respondent can confide in his/her spouse; and (c) one's spouse pays attention to the

respondent. Spousal support demonstrated good internal consistency (ordinal alpha: 0.96). Spousal strain was assessed by asking respondents how much one's spouse lets the respondent down when the respondent is counting on him/her. Response choices for each of these four items included a lot, a little, or not at all.

Summary scores for loneliness and spousal support were each estimated as latent variables using a weighted least squares estimator (WLSMV) in confirmatory factor analyses (CFAs). Two separate CFAs (loneliness and marital support) were estimated in a sample of married MHAS respondents and the two latent variables were each specified to have a mean of zero and a variance of one. As spousal strain was assessed using a single item, preventing the construction of a latent variable, the variable was dichotomized such that respondents who report feeling that the spouse lets the respondent down "a lot" or "a little" were considered to experience spousal strain, whereas those responding "not at all" were considered not to experience spousal strain. To ensure that assessments of spousal support/strain preceded reports of loneliness, information on spousal support/strain was drawn from the 2012 MHAS and loneliness was obtained from the 2015 MHAS data.

Functional limitation

To determine whether the association between spousal support/strain and loneliness differed by one's functional status, respondents' reports of activities of daily living (ADL) and instrumental ADL limitations were considered. ADL limitation was assessed by respondents' reported difficulty dressing, eating, bathing, using the toilet, or getting out of bed, whereas IADL limitation was assessed by difficulty preparing meals, shopping, taking medications, and managing money. Classifications of ADL and IADL limitation were based on prior work (Díaz-Venegas et al., 2015), and two binary variables were constructed signifying whether respondents had limitations with any ADL and any IADL. Whether the effects of spousal support/strain on loneliness differed by the presence/absence of chronic conditions (hypertension, diabetes, heart attack, stroke, respiratory illness, and cancer) were also tested, yet having chronic conditions did not seem to modify relationships between spousal support/strain and loneliness, and are not reported.

Control variables

Several control variables are included that have been suggested to relate to loneliness in prior work using samples of older adults (Savikko et al., 2005; Stokes, 2017a). Control variables include age (in years), years of education, locality size (classified as 100,000+ [reference], 15,000–99,999, 2,500–14,999, and <2,500 residents), and couple-level wealth (assessed as the sum value of assets such as real estate, businesses, money in stocks and accounts, and vehicles). Couple-level wealth was categorized into deciles and treated as continuous. Several variables were included

to capture other sources of interaction, which may relate with loneliness including labor force participation (categorized as retired, working, or having never worked for pay), number of living children, frequency of participation in religious activities (categorized as "never," "once in a while," or "once or more/week"), and whether one has friends, acquaintances, or work colleagues. Health status was captured using a count of chronic conditions (hypertension, diabetes, heart attack, stroke, respiratory illness, and cancer) and self-rated health was categorized as good or better, fair, or poor.

Statistical Analysis

The association between spousal support/strain and loneliness within husband–wife dyads was investigated using the Actor–Partner Interdependence Model (APIM; Cook & Kenny, 2005), estimated using seemingly unrelated regression following prior studies (Carr et al., 2014, 2016). In the model, each partner's loneliness is modeled, simultaneously, as a function of his/her own reports of spousal support/strain and his/her partner's reports of spousal support/strain. "Actor" effects represent associations between one's own report of spousal support/strain and one's own loneliness, whereas "partner" effects represent associations between one's partner's report of spousal support/strain and one's own loneliness. Although the focus of this analysis is on actor effects, allowing loneliness to be affected by both spouses' reports of spousal support/strain is essential to understand interdependence in couples and the complex relationship between support and loneliness as both support given and received may be important for the well-being of older adults (Thomas, 2010). Models were estimated using full information maximum likelihood with robust standard errors using the "lavaan" package in R (Rosseel, 2012).

The model-building process involved first estimating the actor/partner effects of spousal support/strain freely by gender. To evaluate gender differences in spousal support/strain effects among married adults, a series of alternative models were fit with equality constraints on actor/partner effects of spousal support/strain for husbands and wives. Tests for gender differences in effects of spousal support/strain on loneliness are presented in [Supplementary Table 1](#). Model 1 estimates actor/partner effects freely by gender, serving as a baseline model for comparisons. Model 2 constrains the spousal support actor effect to equality by gender, Model 3 constrains the spousal strain actor effect, and Models 4 and 5 constrain the spousal support and strain partner effects, respectively. Model fit in equality constrained models versus the freely estimated model were compared using the Satorra–Bentler scaled chi-square difference test (Satorra & Bentler, 2001) where significant chi-square values indicate that allowing effects to differ by gender improves model fit. Comparisons revealed no significant differences in model fit providing no evidence of gender differences in actor/partner effects of spousal

support/strain. The final, most parsimonious, model constrained all actor/partner effects of spousal support/strain to equality by gender. Similar procedures were used to test for differences in spousal support/strain effects by functional limitation.

Results

Descriptive Results

Descriptive characteristics of husbands and wives are shown in the left- and right-hand sides of [Table 1](#), respectively. Husbands reported lower levels of loneliness than wives (0.08 vs 0.25, paired t test $p < .001$). Husbands reported higher levels of spousal support than wives (-0.06 vs -0.32 , paired t test $p < .001$), whereas a greater proportion of wives experienced spousal strain than husbands (52.4% vs 38.7%, test of proportions $p < .001$). Wives were more likely to have either an ADL or an IADL limitation (tests of proportions $p < .001$). On average, a husband was 3.8 years older than his partner. The majority of the couples lived in a locality with 100,000 or more residents.

Spousal Support, Strain, Loneliness, and Gender

Moving on to the regression results (shown in [Table 2](#)). Each spouse's loneliness score was modeled as a function of both partners' reports of spousal support/strain, own age, own education, locality size, couple-level wealth decile, own health variables (chronic condition count, ADL limitation, IADL limitation, and self-rated health), labor force participation, religious participation, number of children, and whether one had friends/acquaintances/work colleagues. The actor and partner effects of spousal support/strain are constrained to be equal by gender. Results suggested that for married adults, reporting higher levels of spousal support was related with lower levels of loneliness 3 years later ($\beta = -0.122$, $p < .001$). Significant associations were also observed for spousal strain where experiencing spousal strain was associated with higher levels of loneliness 3 years later ($\beta = 0.086$, $p < .001$). Shifting attention to the partner effects, having a partner who reported more spousal support was also related with less loneliness ($\beta = -0.047$, $p < 0.01$), whereas a partner's experience of spousal strain was not related with own loneliness 3 years later.

Heterogeneity by Functional Limitation

To assess whether effects of spousal support/strain on loneliness differed by one's functional limitation status, APIMs were fit in multiple groups: those with a functional limitation, and those without a functional limitation. To test for differences in effects of spousal support/strain on own loneliness, three models were estimated and compared: (a) a model where all regression effects were constrained to be equal by one's own functional limitation; (b) a model where

the actor effect of spousal support was freely estimated by own functional limitation; and (c) a model where the actor effect of spousal strain was freely estimated by own functional limitation. This process was done with groups defined by both ADL and IADL limitations for both husbands and wives. Models included all control variables besides health covariates as groups were defined by functional limitation, which correlated with other health variables. Using this procedure, equality constraints on spousal support/strain effects were retained unless allowing spousal support/strain effects to differ by functional limitation resulted in better model fit. Model comparison results are shown in [Supplementary Table 2](#) and illustrate that allowing actor effects of spousal support ($p = .010$) and strain ($p = .009$) to differ by husband's ADL status resulted in significantly better model fit, whereas allowing actor effects of spousal support and strain on the wife's loneliness to differ by wife's (I)ADL status did not result in improved model fit. Model fit was not improved by allowing the actor/partner effects of spousal support/strain to differ for other comparisons.

The illustrate how ADL status modifies actor effects of spousal support and spousal strain on loneliness for husbands, an APIM model with actor effects of spousal support/strain grouped by whether or not the husband had an ADL is shown in [Table 3](#). Note that an APIM using multiple groups is shown. That is, although only effects of spousal support/strain on husband's loneliness by husband's ADL status are shown, models of the wife's loneliness are estimated simultaneously with effects constrained to equality by group, but not shown. Among husbands without ADL limitations, husband's spousal support ($\beta = -0.083$, $p < .01$) and husband's strain ($\beta = 0.074$, $p < .01$) were associated with less and more loneliness 3 years later for husbands, respectively. Among husbands with an ADL limitation, husband's spousal support ($\beta = -0.243$, $p < .01$) was more negatively and husband's spousal strain ($\beta = 0.229$, $p < .01$) was more positively related with husband's loneliness 3 years later.

Discussion

Levels of loneliness reported by married adults differed based on qualities of the marital relationship. Specifically, married adults who felt that their partner was supportive, and who did not experience spousal strain tended to have lower levels of loneliness 3 years later. Results are consistent with other studies that have found measures of spousal support/strain to be related with loneliness ([Ayalon et al., 2013](#); [Chen & Feeley, 2014](#); [de Jong Gierveld et al., 2009](#); [Stokes, 2017a, 2017b](#)) and suggest that spousal support/strain within couples may be critical for fighting off loneliness in late-life when older adults are more likely to have exited the labor force and be spending more time with a partner.

The results of this analysis are also consistent with prior studies that have found effects of spousal support and

Table 1. Descriptive Characteristics of Married Adults From the Mexican Health and Aging Study ($n = 3,584$ Husband–Wife Dyads)

	Husbands		Wives		<i>p</i>
	Mean	SD	Mean	SD	
Dependent variable (2015)					
Loneliness	0.08	0.60	0.25	0.70	***
Spousal support/strain (2012)					
Spousal support	−0.06	0.51	−0.32	0.69	***
Spousal strain (<i>n</i> , %)	1,278	38.7	1,785	52.4	***
Functional limitation (2012)					
ADL limitation (<i>n</i> , %)	425	12.7	561	16.3	***
IADL limitation (<i>n</i> , %)	206	6.2	308	8.9	***
No chronic conditions (<i>n</i> , %)	1,589	44.6	1,179	33.0	***
One chronic condition (<i>n</i> , %)	1,247	35.0	1,392	39.0	
Multiple chronic conditions (<i>n</i> , %)	725	20.4	1,001	28.0	
Self-rated health: good or better (<i>n</i> , %)	1,410	42.3	1,117	32.4	***
Self-rated health: fair (<i>n</i> , %)	1,606	48.2	1,922	55.8	
Self-rated health: poor (<i>n</i> , %)	319	9.6	405	11.8	
Demographics (2012)					
Age	64.9	8.3	61.1	7.9	***
Years of education	6.1	5.0	5.5	4.3	***
Locality size (2012)					
100,000+ (<i>n</i> , %)	1,961	54.7	1,961	54.7	
15,000–99,999 (<i>n</i> , %)	408	11.4	408	11.4	
2,500–14,999 (<i>n</i> , %)	404	11.3	404	11.3	
<2,500 (<i>n</i> , %)	811	22.6	811	22.6	
Social connections outside marriage (2012)					
Labor force participation: retired (<i>n</i> , %)	1,452	40.5	1,461	40.8	***
Labor force participation: still working (<i>n</i> , %)	2,046	57.1	717	20.0	
Labor force participation: never worked (<i>n</i> , %)	85	2.4	1,404	39.2	
Living children	4.8	2.7	4.7	2.6	***
Religious participation: never (<i>n</i> , %)	714	21.4	549	15.9	***
Religious participation: once in a while (<i>n</i> , %)	1,547	46.4	1,389	40.3	
Religious participation: once or more/week (<i>n</i> , %)	1,074	32.2	1,505	43.7	
Have friends/acquaintances/work colleagues (<i>n</i> , %)	2,452	73.6	1,865	54.2	***
Financial well-being (2012)					
Wealth decile	4.9	2.7	4.9	2.7	

Notes: Sample sizes may differ across variables due to missing data. *p* indicates tests for differences in variables across partners. Differences in continuous variables tested using paired *t* tests, differences in binary variables tested using tests of proportions, differences in categorical variables tested using chi-square tests. *indicates $p < 0.05$, **indicates $p < 0.01$, ***indicates $p < 0.001$. ADL = activity of daily living; IADL = instrumental activity of daily living; SD = standard deviation.

Source: Author's own calculation using data from the 2012 and 2015 Mexican Health and Aging Study.

strain on loneliness to be similar across gender (Ayalon et al., 2013; Stokes, 2017a, 2017b). However, the current analysis indicates that this is the case even among older adults in Mexico who are likely to hold more traditional gender roles, which extend to the functioning of a marriage (Saenz & Rote, 2019; Seedat et al., 2009). Marital quality may be more closely related with well-being for women than men in studies not limited to older adults (Proulx et al., 2007). However, the lack of gender differences among older adults must be understood within the context of aging where husbands are likely to retire from the labor force and wives are less likely to be caring for and raising

dependent children, resulting in greater equity in gender roles (Carr et al., 2014). This is relevant in Mexico where males may be overrepresented in the formal labor sector (Bureau of Labor Statistics, 2013). By age 50+, as seen in this sample, around 42% of husbands who had worked for pay had retired. It may be that this shift in roles throughout the aging process may make the marital relationship more central, especially for husbands, resulting in similarities of effects of spousal support/strain on loneliness. Future work would benefit from following younger couples as they age to understand how shifts in gender roles relate with effects of spousal support/strain on mental health.

Table 2. Actor–Partner Interdependence Model of Spousal Support/Strain and Loneliness in Husband–Wife Dyads ($n = 3,584$) From the Mexican Health and Aging Study

	Model 1			
	Husband's loneliness		Wife's loneliness	
	β	SE	β	SE
Spousal support				
Actor effect	−0.122***	0.016	−0.122***	0.016
Partner effect	−0.047**	0.015	−0.047**	0.015
Spousal strain				
Actor effect	0.086***	0.017	0.086***	0.017
Partner effect	0.011	0.017	0.011	0.017
Demographics				
Age	0.002	0.001	0.001	0.002
Years of education	−0.011***	0.002	−0.007*	0.003
Wealth decile	−0.001	0.004	−0.005	0.004
Locality size 15,000–99,999 (Ref: 100k+)	−0.010	0.031	0.048	0.038
Locality size 2,500–14,999 (Ref: 100k+)	−0.049	0.032	−0.029	0.036
Locality size <2,500 (Ref: 100k+)	0.098***	0.029	0.134***	0.033
Social connections outside marriage				
Working (Ref: retired)	−0.015	0.022	0.054	0.031
Never worked for pay (Ref: retired)	0.080	0.073	0.051*	0.026
Number of living children	−0.006	0.005	0.002	0.005
Religious participation once in a while (Ref: never)	−0.009	0.028	−0.005	0.033
Religious participation 1+ per week (Ref: never)	−0.015	0.023	0.020	0.025
Has friends/acquaintances/work colleagues	−0.085***	0.024	−0.021	0.024
Health				
Chronic condition count	0.003	0.013	0.049***	0.014
ADL limitation	0.164***	0.041	0.082*	0.037
IADL limitation	0.099	0.059	0.068	0.049
Self-rated health: fair (Ref: good or better)	0.099***	0.022	0.124***	0.025
Self-rated health: poor (Ref: good or better)	0.204***	0.046	0.292***	0.047
Model fit statistics				
Chi-square (scaled)	56.317 (52.411)			
Degrees of freedom	30			
CFI	0.972			
TLI	0.936			
RMSEA	0.015			
SRMR	0.005			

Notes: β s are unstandardized coefficients. Bolded coefficients represent parameters that are constrained to equality by gender. *indicates $p < 0.05$, **indicates $p < 0.01$, ***indicates $p < 0.001$. ADL = activity of daily living; CFI: comparative fit index; IADL = instrumental activity of daily living; RMSEA = root mean square error of approximation; SE = standard error; SRMR = standardized root mean square residual; TLI: Tucker–Lewis index.

Source: Author's own calculation using data from the 2012 and 2015 Mexican Health and Aging Study.

Functional Limitation, Spousal Support, and Spousal Strain

Although spousal support and strain may be important for loneliness, the results of the analyses suggest that relationships between spousal support/strain and loneliness may be nuanced, and better understood within the context of functional limitation. Among husbands, reporting one's spouse to be less supportive and experiencing spousal strain had the most detrimental effect for husbands who had an ADL limitation. A more salient role of spousal support/strain among older adults with functional limitation

was expected and is consistent with prior studies finding functional limitation to interact with spousal support and strain in its effects on mental health (Bookwala & Franks, 2005; Carr et al., 2017; Warner & Adams, 2012; Warner & Kelley-Moore, 2012). As mentioned above, health and functional deterioration are critical considerations as adults age because the aging process often involves deterioration in health and functional ability, which may result in older adults relying more heavily on others (Barron et al., 1994) including family members. The relationship between spousal support and positive psychological well-being may

Table 3. Multiple Group Actor–Partner Interdependence Model of Spousal Support/Strain and Loneliness in Husband–Wife Dyads From the Mexican Health and Aging Study by Husband’s Functional Limitation

	Group (husband’s ADL status)			
	ADL+		ADL–	
Husband’s loneliness	β	SE	β	SE
Spousal support				
Actor effect	–0.243**	0.075	–0.083**	0.028
Partner effect	–0.055**	0.019	–0.055**	0.019
Spousal strain				
Actor effect	0.229**	0.082	0.074**	0.025
Partner effect	0.012	0.024	0.012	0.024
Model fit statistics				
Chi-square (scaled)		71.588 (70.624)		
Degrees of freedom		62		
CFI		0.983		
TLI		0.974		
RMSEA		0.009		
SRMR		0.006		

Notes: β s are unstandardized coefficients. Bolded coefficients represent parameters that are constrained to equality by group (husband’s ADL status). Models also adjust for age, years of education, locality size, wealth decile, labor force participation, number of living children, religious participation, and whether respondent has friends. Actor–Partner Interdependence Models using multiple groups (based on husband’s ADL status) are shown. Although only effects of spousal support/strain on the husband’s loneliness are shown, models of the wife’s loneliness are estimated simultaneously with effects constrained to equality by group, but not shown. *indicates $p < 0.05$, **indicates $p < 0.01$, ***indicates $p < 0.001$. ADL = activity of daily living; CFI = comparative fit index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; SE = standard error; TLI = Tucker–Lewis index. Source: Author’s own calculation using data from the 2012 and 2015 Mexican Health and Aging Study.

be explained by spousal support serving as a “buffer” to protect against stressful events (Cohen, 2004). Having the onset of functional limitations may be a stressful event involving large adjustments to daily life and is related with poorer mental health outcomes (Bruce, 2001). Among married adults who have a functional limitation, having a supportive spouse may serve an essential role in buffering the stress of health deterioration, leading to the larger negative association between spousal support and loneliness among the functionally impaired observed in this analysis. Additionally, experiencing multiple stressors such as spousal strain and functional limitation at once may result in stress amplification whereby an individual’s ability to cope with stress is diminished, and negative interpersonal interactions add further stress above the stress of disablement (Carr et al., 2017; Ingersoll-Dayton et al., 1997).

Results suggested gender differences in how functional limitation may modify the associations between spousal support/strain and loneliness. Among wives, there was no statistical evidence for differences in the effects of spousal

support or strain on the wife’s loneliness by the wife’s ADL or IADL status. Among husbands, the associations between spousal support/strain and loneliness were amplified among husbands with an ADL. The negative effect of spousal support on loneliness was approximately 2.9 times larger for husbands with an ADL limitation compared to husbands without an ADL limitation, whereas the effect of spousal strain on loneliness was 3.1 times larger among husbands with compared to without an ADL limitation. These patterns may be the result of gender differences in available support through one’s social network. Women may have larger social networks when compared to men who may have a smaller social network and rely more heavily on a spouse (Fuller-Iglesias & Antonucci, 2016; Montes de Oca, 2005).

Gendered patterns of available support may also be relevant for caregiving, which is an important concern because functional limitations often necessitate help from others. However, caregiving is carried out in gendered ways. Women are typically tasked with significantly more caregiving than men in Mexico (Rivero, 2011). Further, research in the United States has found that wives may often serve as the primary caregiver for a husband with a functional limitation, whereas a wife with a functional limitation often receives support from a greater number of sources including adult children (Feld et al., 2010). Studies in Mexico have found similar patterns in which men provide less care for a person with disabilities and are less likely to be a primary caregiver when other sources of care are available (Rivero, 2011).

Together, the gendered patterns of social support networks and caregiving suggest that, in the event of a functional limitation, wives may be able to draw from various other sources of support to buffer the negative effects of functional limitation. With fewer alternative sources of support, husbands with a functional limitation who are not satisfied with the support and care received from one’s spouse may represent a particularly vulnerable group. Although this may certainly be relevant, Warner and Adams (2012) found that adults with a disability in low-quality marriages tended to be more lonely regardless of support received from nonspousal sources in the United States. Future work should evaluate how support received from individuals in the broader social network, including extended family, interact with spousal support/strain in Mexico.

Limitations and Strengths

Several limitations are worth noting. First, although this analysis has the advantage of establishing ordering of events by using measures of spousal support/strain 3 years prior to loneliness, associations between spousal support/strain and loneliness may be better understood as a process of change. However, the MHAS assessed spousal support/strain in the 2012 wave of the study but not in 2015, whereas loneliness was added in the 2015 wave. Second, spousal support

items are more consistent with emotional support. Social support is broad, including informational (providing advice or information) and instrumental support (providing support in the form of material goods or physical assistance) (Cohen, 2004), which may be related with mental health outcomes. However, emotional support has been argued to have an especially salient role in psychological and relational outcomes (Burleson, 2003). Future studies of older adults in Mexico should use a broader range of spousal support measures capturing each aspect of social support. Third, relationships between spousal support/strain and loneliness may also be modified by other conditions such as dementia that increase reliance on spousal caregivers. Unfortunately, there are challenges exploring this in the MHAS as many individuals with dementia may have required a proxy to complete interviews, but spousal support/strain and loneliness are not ascertained in proxy interviews. Future work should evaluate the interplay between spousal support/strain, dementia, and loneliness in Mexico. Last, only one item measuring spousal strain was included in the MHAS. The individual item may be limited in its ability to accurately capture the full extent of the associations between spousal strain and loneliness. Future studies should assess spousal strain using a more extensive array of indicators. Notwithstanding these limitations, the current study has notable strengths including the ability to investigate spousal support/strain and loneliness in thousands of husband–wife dyads and account for relevant confounding variables.

Conclusions

Understanding how marital characteristics influence mental health among older couples in Mexico is becoming increasingly important given rapid population aging, the large proportion of older adults who arrive in late-life with a partner (Wong et al., 2017), and the limited institutional support for older adults in Mexico, which often leads older adults to rely on support from family (Peek et al., 2012; Robledo et al., 2012). The central role that a spouse plays in one's life makes the marital relationship a key resource to consider for mental health outcomes in old age. However, the results of this analysis suggest that not all marriages are equal. Relationships characterized by low levels of support and high levels of strain may promote feelings of loneliness among older adults who are married. Results point to the need to consider not only the context of marriage, but also how spousal support and strain may interact with functional limitation to shape loneliness.

Supplementary Material

Supplementary data are available at *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences* online.

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Conflict of Interest

None declared.

Author Contributions

Conceptualization of the project, development of the methodology, formal analysis and investigation, and draft preparation, reviewing, and editing of the manuscript were conducted by J. L. Saenz.

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