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Changes in Depressive Symptoms during Widowhood among Older Mexican Americans: The Role of Financial Strain, Social Support, and Church Attendance

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Abstract

Objectives—This study examines how depressive symptoms change during the widowhood process among older adults of Mexican descent. This research also investigates whether financial strain, social support, and church attendance moderate changes in depressive symptoms in the context of widowhood.

Method—This study uses seven waves of data from the Hispanic Established Population for the Epidemiologic Study of the Elderly collected at approximately two-year intervals. This research applies multiphase growth models to examine changes in depressive symptomatology before, during, and after the transition to widowhood (the measurement wave at which spousal bereavement was first reported) among 385 older adults of Mexican descent who experienced the death of a spouse during the survey.

Results—This study demonstrates that older adults of Mexican descent experienced a significant increase in depressive symptoms pre-widowhood and in particular, during the transition to widowhood. The levels and rates of changes in depressive symptoms post-widowhood did not differ from the pre-widowhood ones. Greater social support was related to more depressive symptoms during the transition to widowhood. More frequent church attendance was a protective factor against increases in depressive symptoms pre-widowhood.

Conclusion—This study highlights the multiphase pattern in the effects of the widowhood process on depressive symptomatology among older adults of Mexican descent. The findings also suggest that social support and church attendance can have implications for the interplay between widowhood and depressive symptoms.

Keywords

depressive symptoms; older Mexican Americans; widowhood

Introduction

Elevated depressive symptomatology in later life is a significant risk factor for disability, morbidity, and mortality (Blazer, 2003). Marital status has been recognized to be closely

linked to the mental health of older adults (Djernes, 2006). In particular, the death of a spouse is considered to be one of the most distressing life events in old age (Hatch, 2000; Williams, 2004). Prior research has extensively examined depressive symptomatology among older adults during the transition to widowhood and within the first few years of spousal bereavement (e.g., Hewitt, Turrell, & Giskes, 2012; Strohschein, McDonough, Monette, & Shao, 2005; Wade & Pevalin, 2004; Wilcox, Evenson, Aragaki, Wassertheil-Smoller, Mouton, & Loevinger, 2003). Several previous studies have also investigated possible changes in older adults' depressive symptoms within a year or two immediately leading to the death of a spouse (e.g., Bonanno et al., 2002; Carnelley, Wortman, & Kessler, 1999; Vable, Subramanian, Rist, & Glymour, 2015; Williams, Sawyer, Roseman, & Allman, 2008). However, research on longer-term trends in depressive symptomatology in the years preceding and following the death of a spouse is scarce (for an exception, see Sasson & Umberson, 2014) because the majority of previous studies tend to focus on the two-to-three years before and after the transition to widowhood.

Drawing on seven waves of data from the Hispanic Established Population for the Epidemiologic Study of the Elderly (H-EPESE; 1993–2011), this research examines long-term changes in depressive symptomatology among older adults of Mexican descent (age 65 and over) before, during, and after the transition to widowhood which was defined as the measurement wave at which the death of a spouse was first reported.

The current study contributes to the literature on the interplay between widowhood and depressive symptom in three important ways. First, by using multiphase growth curve models, we are able to compare the average levels and rates of change in depressive symptoms across the widowhood process (i.e., pre-widowhood, during the transition to widowhood, and post-widowhood).

Second, by focusing on older adults of Mexican descent, we address the lack of prior research on the longer-term implications of spousal loss for the changes in depressive symptoms among racial and ethnic minorities in late life. There are several reasons why it is critical to investigate whether among older adults of Mexican descent, changes in depressive symptomatology across the widowhood experience follow similar patterns to those identified in the general population in the U.S. and other countries in prior research. Older adults of Mexican origin have relatively high rates of depressive symptoms, compared to the U.S. general population (Black, Markides, & Miller, 1998; Swenson, Baxter, Shetterly, Scarbro, & Hamman, 2000). At the same time, Mexican Americans account for two-thirds of Hispanics (Ennis, Ríos-Vargas, & Albert, 2011) which is one of the rapidly growing segments of the U.S. aging population. Specifically, the Hispanic elderly population is expected to grow from its current level of 6% to 17% by 2050 (PEW Hispanic Center, 2008). In addition, there are some differences in family culture and values between individuals of Mexican descent and the general U.S. population. Specifically, Mexican Americans tend to have higher levels of interdependency among family members (Angel, Douglas, & Angel, 2003; Rodriguez, Mira, Paez, & Myers, 2007) which can have some impact on the linkages between widowhood and depressive symptoms. For example, because of greater emphasis on the importance of family relationships, including marital ties, among Mexican Americans, elevated levels of depressive symptoms in this population

group in late life may not subside to pre-widowhood levels and continue increasing post-widowhood. Alternatively, due to greater availability of family support and stronger extended family ties among individuals of Mexican descent, these older adults can experience substantial decreases in depressive symptomatology post-widowhood after the rise during the transition to widowhood.

Third, by investigating whether such social resources known to be associated with depressive symptoms as financial strain, social support, and church attendance can moderate the effect of the death of a spouse on depressive symptomatology across widowhood experience, we attend to the paucity of prior longitudinal research on this topic. The implications of these resources for the effects of widowhood on depressive symptomatology may be particularly critical for older Mexican Americans, because of their relatively lower socioeconomic status and greater reliance on social networks for assistance and support (Chiriboga, Black, Aranda, & Markides, 2002; Lawrence, Bennett, & Markides, 1992). A better understanding of whether changes in these social resources across the widowhood process can serve as protective or risk factors for changes in individuals' depressive symptoms can provide some insights into potential intervention programs among older adults of Mexican descent.

Duration of Widowhood

Prior research demonstrates that widowed individuals tend to be at greater risk for increased depressive symptomatology, compared to their married counterparts (Carr, 2004; Chou & Chi, 2000; Schaan, 2013). The crisis perspective (Hagedoorn et al., 2006; Wade & Pevalin, 2004) and the chronic strain framework (Thoits, 2010; Wheaton, 1999) indicate, however, that it is important to take into account the duration of widowhood when examining the implications of spousal bereavement for mental health. Specifically, the crisis perspective implies that spousal loss is a significant short-term risk factor for depression with its adverse effect becoming weaker after two-three years (Hagedoorn et al., 2006; Wade & Pevalin, 2004). In contrast, the chronic strain perspective suggests that widowhood can have long-term detrimental consequences for individuals' mental health because negative changes associated with the transition to widowhood, such as financial difficulties or social loneliness, may accumulate over time and, as a result, lead to persistent stress (Thoits, 2010; Wheaton, 1999).

Numerous studies have examined individuals' depressive symptomatology after the death of a spouse. The majority of these studies provide support for the crisis perspective and indicate that compared with married individuals, the recently widowed have substantially elevated levels of depressive symptomatology, whereas the continuously widowed do not (e.g., Hewitt et al., 2012; Strohschein et al., 2005; Wade & Pevalin, 2004; Wilcox et al., 2003). However, most of these studies did not investigate the implications of spousal bereavement for individuals' depressive symptomatology beyond the first few years subsequent to the death of a spouse. At the same time, some research suggests that the death of a spouse can have psychological consequences for individuals' well-being for up to 8 or even 20 years (Carnelley, Wortman, Bolger, & Burke, 2006; Lucas, Clark, Georgellis, & Diener, 2003).

In addition, a growing body of research shows that it is important to examine the consequences of widowhood for depressive symptomatology not only after but also before the death of a spouse. In particular, studies with a specific focus on the pre-widowhood period point out that individuals might report elevated depressive symptomatology already during a couple of years leading to the death of a spouse (e.g., Bonanno et al., 2002; Carnelley et al., 1999; Vable et al., 2015; Williams et al., 2008). A higher prevalence of mental health issues among individuals approaching widowhood is explained by such factors as serious illness of a spouse, caregiver burden, and anticipatory grief (Carnelley et al., 1999; Harlow, Goldberg, & Comstock, 1991; Johansson & Grimby, 2012).

Additionally, a study by Sasson and Umberson (2014) focuses on longer periods of time before and after spousal loss in late midlife and shows similar general patterns of the linkages between widowhood and changes in depressive symptoms over time to those found in research on shorter periods of time. However, their study also demonstrates a more subtle complexity of the impact of spousal loss on short- and long-term changes in depressive symptomatology. In particular, the consequences of widowhood on these changes can depend on the age at spousal loss, widowhood duration, and spouse's health status before death (Sasson & Umberson, 2014). Namely, individuals' younger age at spousal loss and spouse's poor health before death were associated with a slower return to pre-widowhood levels of depressive symptoms. Moreover, early and long-term widowhood in late midlife was predictive of consistently higher depressive symptomatology for several years following the death of the spouse.

The current study builds on prior research that has demonstrated the importance of examining longer periods of time prior to and after the transition to widowhood. To the best of our knowledge, this is the first study on older adults aged 65 and over that uses multiphase growth models that enable us not only to examine general changes in depression before, during, and after spousal loss but also to investigate and compare average levels of and rates of changes in depressive symptoms among these three stages of the widowhood process. Overall, we expect that depressive symptoms will start elevating pre-widowhood, increase substantially during the transition to widowhood, and decrease and remain stable post-widowhood.

Moderating Effects of Social Resources

According to the family stress theory, variations in financial circumstances, social support, and religious involvement can determine individuals' psychological adjustment to stressful life events such as widowhood (McCubbin & Patterson, 1983). Previous studies also point to changes in the levels of these social resources throughout the widowhood process. For example, the death of a spouse can be associated with more financial difficulties (Arber, 2004; McGarry & Schoeni, 2005), although they might decrease over the course of spousal bereavement (Umberson, Wortman, & Kessler, 1992). Nonetheless, prior research indicates that perceived financial strain can be an important predictor of mental health among older adults, including Mexican Americans (Angel, Frisco, Angel, & Chiriboga, 2003; Chiriboga et al., 2002; Chou & Chi, 2000).

In addition, the literature demonstrates that widowhood can lead to fluctuations in the availability of social support from family and friends. Namely, studies focusing on the first three years of widowhood reveal that bereaved persons can perceive increases and decreases, but also stability in social support following the death of a spouse (Guiaux, van Tilburg, & Broese van Groenou, 2007; Ha, 2010; Powers, Bisconti, & Bergeman, 2014). Nevertheless, regardless of its initial post-widowhood levels, social support can start declining after the first two years of spousal bereavement (Guiaux et al., 2007; Powers et al., 2014). The findings of prior research on the linkages between social support and older adults' mental health are mixed, however. Some studies suggest that higher levels of social support can be related to fewer depressive symptoms among older adults (Han, Kim, Lee, Pistulka, & Kim, 2007), including the widowed (Ha, 2010). In contrast, other studies argue that not only low, but also excessive social support can be associated with more depressive symptoms among older adults (Ramos & Wilmoth, 2003) because they may feel more dependent on others (Johnson, Schwiebert, Alvarado-Rosenmann, Pecka, & Shirk, 1997; Zunzunegui, Béland, & Otero, 2001).

Previous studies indicate that widowhood can lead to less frequent attendance of religious services (Lee, DeMaris, Bavin, & Sullivan, 2001; Fry, 2001). At the same time, some research suggests that widowhood can be linked to a temporary rise in church attendance for up to 2 years after the death of a spouse (Brown, Nesse, House, & Utz, 2004). Greater religious involvement can serve as a coping mechanism to adjust to spousal loss (Michael, Crowther, Schmid, & Allen, 2003). In general, religious involvement, such as church attendance, can be beneficial for mental health among older adults (Law & Sbarra, 2009), including the widowed (Fry, 2001; Lee et al., 2001; McGloshen & O'Bryant, 1988), because it provides them with additional access to different types of social support and interpersonal interactions.

Yet, prior research did not specifically examine whether changes in the levels of these social resources can matter for individuals' psychological adjustment across the widowhood process. Because existing studies provide little guidance for the pattern of moderation across spousal bereavement, we do not have specific hypotheses for particular stages of the widowhood process. However, we expect that lower financial strain, greater social support, and more frequent church attendance will be related to fewer depressive symptoms at different stages of the widowhood process.

Method

Data

The analyses were based on seven waves of data from the Hispanic Established Population for the Epidemiologic Study of the Elderly (H-EPESE). The H-EPESE has an area probability, multistage sample of noninstitutionalized Mexican Americans aged 65 and older, who reside in five southwestern states, including Texas, New Mexico, Colorado, Arizona, and California (Markides, Stroup-Benham, Goodwin, Perkowski, Lichtenstein, & Ray, 1996). The baseline data were collected in 1993 – 1994 on 3,050 individuals, with a response rate of 83% (Markides, Stroup-Benham, Black, Satish, Perkowski, & Ostir, 1999). Follow-up waves were collected at approximately two-year intervals: Wave 2 in 1995–96 (n

= 2,438), Wave 3 in 1998–99 ($n = 1,980$), Wave 4 in 2000–01 ($n = 1,682$), Wave 5 in 2004–05 ($n = 2,069$), Wave 6 in 2007 ($n = 1,542$), and Wave 7 in 2010–2011 ($n = 1,078$). Wave 5 included interviews with new respondents age 75 and over ($n = 902$), who were not interviewed in previous waves but who were also reinterviewed during the following waves.

For the purposes of the present study, we included only those respondents who were married at Wave 1 or at Wave 5 for additional respondents and became widowed during the course of the survey. Respondents who experienced spousal loss over the course of the survey reported lower levels of social support, were less likely to die during the survey, were more likely to be female, and were younger. Our sample also excluded data from proxies, which were obtained when the sampled respondents could not be interviewed directly due to their cognitive status, illness, hospitalization, or temporary absence. Furthermore, we did not include respondents with missing information on depressive symptoms ($n = 18$). Accordingly, we used data collected from 385 respondents. In particular, original respondents contributed 335 observations at Wave 1, 328 at Wave 2, 307 at Wave 3, 285 at Wave 4, 233 at Wave 5, 192 at Wave 6, and 129 at Wave 7, whereas additional respondents contributed 50 observations at Wave 5, 47 at Wave 6, and 38 at Wave 7. To create a person-period datafile, we used the repeated observations from the respondents. The final datafile consisted of 1,944 person-periods. On average, respondents provided about 4 waves of data ($M = 3.64$, $SD = 1.92$).

Measures

Except for the variable measuring gender of the respondent, the study variables were used as time-variant ones assessed at each wave. In order to facilitate the interpretation of results, we centered several continuous variables (i.e., financial strain, social support, church attendance, and age), so that zero indicated the average value on each measure (Singer & Willett, 2003).

Depressive symptoms were measured at each wave with the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). In the H-EPESE, this scale contains 20 items, including 16 negative affects (e.g., I felt depressed) and 4 positive affects (e.g., I felt hopeful about the future). For each item, respondents reported how often they had a particular feeling in the previous week (0 = *rarely or none of the time*, 3 = *most or all of the time*). The responses for the positive affect items were reverse coded. The total score of the CES-D was used as a continuous measure ($\alpha = .84 - .96$, depending on wave).

Widowhood status—Following prior research that examined developmental changes (e.g., changes in depressive symptoms or mastery perceptions) before, around, and after a certain event (e.g., disability onset, cancer diagnosis, or placement of care recipients to a nursing home), we created 3 time variables of widowhood status (Fauth, Gerstorf, Ram, & Malmberg, 2012; Infurna, Gerstorf, & Ram, 2013; Infurna, Gerstorf, & Zarit, 2012). During each wave of the H-EPESE, respondents were asked about their marital status. We used this information to construct *time to/from widowhood*, ranging from –6 to 5, which is a time index centered at each individual's transition to widowhood (Table 1). The wave at which respondents first reported the death of a spouse is set to 0. Negative scores (i.e., from –6 to

–1) indicate waves pre-widowhood, whereas positive scores (i.e., from 1 to 5) represent waves post-widowhood. In addition, *transition to widowhood* was defined as the first wave of measurement at which the death of a spouse was reported. This variable was coded as 1 for wave 0 and as 0 for the rest of the waves. To track changes in individuals' depressive symptomatology post-widowhood, we created a variable "*post-widowhood*." The latter variable was coded as 1 for the observations obtained after the transition to widowhood (i.e., waves 1 to 5) and as 0 for the rest of the waves. We also included in our models the interaction term between *time to/from widowhood* and *post-widowhood* to examine whether there are differences in the rates of change in depressive symptoms between pre- and post-widowhood.

Social resources—*Financial strain* at each wave captured whether the respondent had problems paying monthly bills (1 = *none*, 4 = *a great deal*). This measure was mean-centered on "3 = *some*." *Social support* at each wave was a mean scale constructed from two questions asking how often the respondent could count on and talk about problems with family and friends in times of need ($\alpha = .69 - .86$, depending on wave). This variable was mean-centered on "3 = *most of the time*." All responses were recoded so that higher values indicated greater perceived support (1 = *hardly ever*, 3 = *most of the time*). *Church attendance* at each wave measured how often the respondent went to religious services (1 = *never or almost never*, 5 = *more than once a week*). It was mean-centered on "3 = *once or twice a month*."

Controls—*Died during survey* (0 = no, 1 = yes) was included in the analyses to control for the panel attrition due to death because it was related to more depressive symptoms among respondents (for a similar approach see Thomas, 2011 and Warner & Brown, 2011). Preliminary analyses (not shown) confirmed that the introduction of this measure did not change the results.

Prior research indicates that it is important to consider individuals' age and gender because these factors can be associated with their depressive symptomatology. Namely, depression tends to decrease from young adulthood to middle age, but it starts rising in later life, around age 65–70 (Clarke, Marshall, House, & Lantz, 2011; Wu, Schimmele, & Chappell, 2012). Also, women, including those of Mexican descent, seem to have poorer mental health in later life than men (Djernes, 2006; Swenson et al., 2000). *Age* at each wave was measured in years and centered at 65, the lowest observed age. *Woman* was a dichotomous variable (0 = *no*, 1 = *yes*).

Missing values on all independent and control variables were handled using the Stata command *mi impute* for multiple imputation. The variables had less than 2% of missing values. Mean substitution and listwise deletion yielded similar results (not shown).

Analytic Strategy

Descriptive statistics by widowhood status for repeated observations of all study variables are presented in Table 2. Differences in means by widowhood status were examined with *t*-tests. Zero-order correlations (not shown) confirmed that none of the correlations among the independent and control variables exceeded .60.

To examine changes in depressive symptomatology prior to, during, and after the transition to widowhood, we used multiphase growth curve models (Ram & Grimm, 2007; Singer & Willett, 2003). Level 1 model for within-individual variations was specified as:

$$DS_{ti} = \beta_{0i} + \beta_{1i}(\text{time to/from widowhood}_{ti}) + \beta_{2i}(\text{transition to widowhood}_{ti}) + \beta_{3i}(\text{post-widowhood}_{ti}) + \beta_{4i}(\text{time to/from widowhood}_{ti} \times \text{post-widowhood}_{ti}) + \varepsilon_{ti}$$

where DS_{ti} is individual i 's level of depressive symptoms at time t ; β_{0i} stands for the intercept and indicates the average levels of depressive symptoms pre-widowhood; β_{1i} denotes the linear slope and represents the rate of change in depressive symptoms pre-widowhood; β_{2i} and β_{3i} reflect whether the average levels of depressive symptoms differ during the transition to widowhood and post-widowhood, compared to pre-widowhood, respectively; β_{4i} examines whether the rates of change in depressive symptoms vary pre- and post-widowhood; and ε_{ti} is an error term.

On the basis of standard growth modeling procedures (Singer & Willett, 2003), individual-specific intercepts and slopes (i.e., β s from Level 1) were specified in the following way at Level 2 for between-individual variations:

$$\begin{aligned}\beta_{0i} &= \gamma_{00} + u_{0i}, \\ \beta_{1i} &= \gamma_{10} + u_{1i}, \\ \beta_{2i} &= \gamma_{20} + u_{2i}, \\ \beta_{3i} &= \gamma_{30} + u_{3i}, \\ \beta_{4i} &= \gamma_{40} + u_{4i}.\end{aligned}$$

In these models, γ_{00} is the average intercept pre-widowhood; γ_{10} is the average linear rate of change pre-widowhood; γ_{20} is the average effect of the transition to widowhood; γ_{30} is the average effect of post-widowhood; γ_{40} is the average linear interaction effect of time to/from widowhood and post-widowhood; and u_{0i} , u_{1i} , u_{2i} , u_{3i} , and u_{4i} are interindividual differences that are assumed to be normally distributed, correlated with each other, and uncorrelated with the residual errors. The results for the combined model with Levels 1 and 2 are presented in Table 3. Furthermore, in order to examine whether financial strain, social support, and church attendance moderated the variations in individuals' depressive symptoms prior to, during, and after the death of a spouse, we added interaction terms between these factors and measures of widowhood status (Table 4). All the models control for attrition due to death. The model with the measures of social resources also included age and gender. We applied Stata *xtmixed* procedure with maximum likelihood estimation which is appropriate for analyzing panel data with attrition.

Results

Descriptive Results

Table 1 indicates that on average, depressive symptoms increase one wave prior to the reported death of a spouse, substantially rise at the wave when the death of a spouse was first reported, considerably decrease in the following wave, and gradually increase, albeit

fluctuating, thereafter. There were several statistically significant differences in depressive symptoms and social resources by widowhood status. Compared to pre-widowhood, the transition to widowhood and post-widowhood were characterized by more depressive symptoms. In addition, respondents perceived greater social support from friends and family after the death of a spouse than pre-widowhood which is consistent with prior research (Guiaux et al., 2007; Ha, 2010). In line with previous studies (Fry, 2001; Lee et al., 2001), respondents reported less frequent church attendance following spousal loss, although some prior research found an increase in attendance of religious services following spousal loss (Brown et al., 2004). However, contrary to prior research (Arber, 2004; McGarry & Schoeni, 2005; Umberson et al., 1992), widowhood was not characterized by greater financial strain.

At the same time, respondents reported fewer depressive symptoms and lower financial strain post-widowhood, compared to the time during the transition to widowhood. Some prior research also implies that financial problems among the widowed can decline over time (Umberson et al., 1992). Yet, the findings on the similar levels of social support at the transition to widowhood and post-widowhood contradict previous studies indicating that social support during spousal bereavement could decline after the initial increase (Guiaux et al., 2007; Powers et al., 2014).

Results from Multiphase Growth Models

Table 3 presents the results from the multiphase growth model examining how depressive symptoms change across the widowhood process. The average rate of change in depressive symptoms was characterized by a significant increase prior to the death of a spouse ($\gamma_{10} = .49$). The average level of depressive symptoms was significantly higher during the transition to widowhood ($\gamma_{20} = 2.94$) than pre-widowhood. However, the estimate for post-widowhood and the interaction term between time to/from widowhood and post-widowhood were not statistically significant. That is, the average level of and rate of change in depressive symptoms post-widowhood were similar to those pre-widowhood. Namely, post-widowhood depressive symptoms returned to the pre-widowhood level, but they started increasing over time at the same rate as pre-widowhood. In the supplementary analysis (not shown), we switched the reference group to post-widowhood to test whether our results were robust. The findings of this additional analysis were consistent with our interpretation: the estimates indicated a statistically significant increase in the rate of change in depressive symptoms post-widowhood and no differences in the average levels and rates of depressive symptoms between post-widowhood and pre-widowhood.

Table 4 examines the implications of financial strain, social support, and church attendance. Overall, the present study demonstrates that financial strain, social support, and church attendance are important for depressive symptomatology among older Mexican Americans. Similar to prior research (Angel et al., 2003; Chiriboga et al., 2002; Chou & Chi, 2000), greater financial strain in this study is related to more depressive symptoms. Higher levels of perceived social support are predictive of fewer depressive symptoms among older adults of Mexican descent, which is consistent with previous studies (Ha, 2010; Han et al., 2007). Also, in line with prior research (Fry, 2001; Law & Sbarra, 2009; Lee et al., 2001), more frequent church attendance is associated with lower levels of depressive symptomatology.

Financial strain did not moderate the effect of widowhood on depressive symptoms. At the same time, the significant positive interaction term between transition to widowhood and social support suggests that greater social support during the transition to widowhood is associated with more depressive symptoms. In contrast, the significant negative interaction between time to/from widowhood and church attendance implies that during pre-widowhood, older adults who attend religious services more frequently experience less steep increases in depressive symptoms.

Discussion

It is generally recognized that widowhood, especially recent spousal loss, can be associated with elevated depressive symptomatology in later life (Hatch, 2000; Williams, 2004). Focusing on older adults of Mexican descent, the present study extended prior research by investigating longer-term variations, i.e. beyond the scope of two-three years in the majority of prior research, in the levels and rates of change in depressive symptoms prior to, during, and after the transition to widowhood. Overall, the general patterns of changes in depressive symptoms pre-widowhood and during the transition to widowhood among older adults of Mexican descent that were identified in the present research are consistent with those found in previous studies on other population groups. Specifically, in line with a growing body of research on the significance of pre-widowhood for mental health (Bonanno et al., 2002; Carnelley et al., 1999; Vable et al., 2015; Williams et al., 2008), the present study demonstrated that depressive symptomatology among older adults of Mexican descent increased in the years approaching the death of the spouse. Due to data limitations, we did not investigate whether elevated depressive symptomatology before the transition to widowhood could be explained by such factors suggested in the literature as the cause of spousal death, caregiver responsibilities, and low well-being related to anticipation of spousal loss (Carnelley et al., 1999; Harlow et al., 1991; Johansson & Grimby, 2012). Also, in accord with prior research (Hewitt et al., 2012; Strophschein et al., 2005; Wade & Pevalin, 2004; Wilcox et al., 2003), the findings of our study indicated that the level of depressive symptoms among older adults of Mexican descent was considerably elevated during the transition to widowhood. In addition, the results showed that the level of depressive symptoms post-widowhood returned to the pre-widowhood level. These findings provide support for the crisis perspective's argument that depressive symptoms peak around the death of a spouse and decline to the pre-widowhood level after two-three years (Hagedoorn et al., 2006; Wade & Pevalin, 2004).

However, the present finding on the longer-term changes in depressive symptoms post-widowhood did not corroborate the results of some prior research on the general population in the U.S. and other countries. Especially, because we did not find any differences between the average rates of change in depressive symptoms pre- and post-widowhood, the present study suggests that after returning to pre-widowhood levels, depressive symptomatology could start rising in the years following the transition to widowhood at a similar rate as pre-widowhood. This finding contradicts some prior research that focused on shorter time periods around spousal loss and did not find elevated levels of depressive symptomatology among the continuously widowed (Hewitt et al., 2012; Strophschein et al., 2005; Wade & Pevalin, 2004; Wilcox et al., 2003). At the same time, the present finding on the lasting

negative consequences of spousal bereavement is in line with research by Sasson and Umberson (2014) that also examined longer periods of time during the widowhood process and demonstrated that under certain circumstances, the adverse impact of spousal bereavement on depressive symptoms could still be evident several years after the death of the spouse. The current finding is also consistent with the chronic strain perspective maintaining that the loss of a spouse can have long-term detrimental implications for individuals' mental health due to the accumulation of negative changes related to this life-course event (Thoits, 2010; Wheaton, 1999). Relatedly, some prior research indicates that bereavement can deleteriously affect other aspects of individuals' psychological well-being for several years after the death of a spouse (Carnelley et al., 2006; Lucas et al., 2003). Future research would benefit by determining the specific underlying mechanisms for these increases in depressive symptoms post-widowhood among older adults of Mexican descent. In addition, drawing on multiphase growth curve models, future research on older adults with various racial and ethnic backgrounds can determine whether these results on the similar levels and rates of changes in depressive symptoms pre- and post-widowhood will hold for other population groups.

This study also assessed whether financial strain, social support, and church attendance could make a difference in the effect of spousal loss on depressive symptomatology across the widowhood process. We did not find the support for the contention that financial strain can shape individuals' psychological adjustment to the death of a spouse. It should be noted that the present study did not consider income because information on household and individual incomes was not available at each wave of the H-EPESE. However, according to prior research, not only subjective (e.g., financial strain) but also objective (e.g., income) indicators of economic resources are important factors influencing psychological well-being among older adults, including Mexican Americans (Chiriboga et al., 2002; Jang, Chiriboga, Kim, & Phillips, 2008; Robison, Curry, Gruman, Covington, Gaztambide, & Blank, 2003). Changes in income after the death of a spouse might be better predictors of the association between widowhood and depressive symptomatology. Specifically, the literature argues that although older adults can become more disadvantaged in objective indicators of economic resources over time, they might not perceive greater levels of financial hardship in later life (Garasky, Martin, Margrett, & Cho, 2012; Hansen, Slagsvold, & Moum, 2008; Mirowsky & Ross, 1999).

The findings of the present study showed that social support and church attendance could moderate the effect of the death of a spouse on depressive symptomatology. In spite of the general beneficial implications of social support for individuals' mental health, higher levels of perceived social support among older adults of Mexican descent were predictive of more depressive symptoms during the transition to widowhood. This finding corresponds with prior research suggesting that not only inadequate social support can lead to lower mental health among older adults, but also too much social support can make older adults feel less independent from others and, as a result, more depressed (Johnson et al., 1997; Ramos & Wilmoth, 2003; Zunzunegui et al., 2001). In other words, social support may not ameliorate the adverse implications of widowhood for depression under certain circumstances. For example, when older adults experience stressful situations, such as spousal loss, and are not able to reciprocate social support, they might feel that they are becoming a burden to their

family and friends. However, there can be another possible explanation for the latter finding. Namely, higher levels of social support following spousal loss may also be indicators of a greater need for support from family and friends among those recently widowed older adults who have elevated depressive symptomatology.

In the present study, more frequent church attendance was associated with a slower increase in depressive symptoms pre-widowhood. Similarly, several previous studies demonstrated that church attendance is a protective factor for mental health among older adults, regardless of marital status (Fry, 2001; Law & Sbarra, 2009; Lee et al., 2001; McGloshen & O'Bryant, 1988) because through religious involvement, older adults can get access to different types of support and resources that can help them cope with stressful life course events (Michael et al., 2003).

There are several factors that we were unable to take into consideration because of data limitations and that should be examined in future research. Most importantly, we could not investigate changes in depressive symptoms within shorter time intervals across the widowhood process because measurement occasions in the H-EPESE were separated by at least two years. Also, we did not have information on the exact date of spousal loss. More precise temporal information could help researchers better understand changes in depressive symptomatology that take place before, during, and after the death of a spouse. Future research would also benefit by considering whether the linkages between widowhood and depressive symptomatology differ by the cause of spousal death, the quality of marital relationship, and caregiving exchanges between older spouses (Carr et al., 2000; Carr, 2003; Keene & Prokos, 2008).

In spite of its limitations, the present study extends prior research by demonstrating that changes in depressive symptomatology across the widowhood process follow a multiphase pattern. This study also suggests that older adults can be at risk for elevated depressive symptomatology not only around the death of a spouse but in the years preceding spousal bereavement. Furthermore, long-term widowhood can become detrimental for individuals' mental health, although the average level of depressive symptoms post-widowhood might initially decrease to the pre-widowhood level. Additionally, the present study suggests that effective interventions for older adults across the widowhood process may include programs focusing on the benefits of religious involvement and on minimizing possible tensions in intergenerational and interpersonal relationships in situations when social support from family and friends can be related to elevated depressive symptomatology.

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Figure 1.

Graphic illustration of the predicted average change in depressive symptoms over time to/from widowhood based on the multiphase growth curve model presented in Table 3. The dashed line indicates the first wave of measurement at which the death of a spouse was reported.

Table 1

Descriptive Statistics for Study Variables Over the Time Metric of Time To/From Widowhood ($N = 1,944$ person periods).

Time to/from widowhood	# of observations	Depressive symptoms					Social support		Church attendance		Age		Woman		Died during survey	
		<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>	<i>M(SD)</i>
-6	33	5.88(5.99)	2.52(.94)	1.32(.57)	3.30(1.05)	70.06(3.08)	.58(.50)									0
-5	68	5.85(6.57)	2.62(.86)	1.96(.90)	3.57(1.18)	71.28(3.93)	.63(.49)									.04(.21)
-4	139	6.47(7.90)	2.58(1.09)	2.09(.88)	3.58(1.14)	71.73(4.07)	.66(.47)									.14(.35)
-3	172	5.28(6.55)	2.53(.99)	2.47(.79)	3.45(1.32)	73.84(4.76)	.67(.47)									.22(.41)
-2	283	6.39(7.19)	2.59(1.04)	2.37(.83)	3.20(1.23)	75.80(5.27)	.66(.48)									.28(.45)
-1	384	8.19(8.62)	2.59(1.02)	2.47(.76)	2.98(1.29)	77.27(5.61)	.65(.48)									.35(.48)
0	385	11.04(9.01)	2.64(1.02)	2.71(.52)	3.08(1.31)	80.00(5.74)	.65(.48)									.35(.48)
1	224	7.98(7.68)	2.50(1.06)	2.73(.50)	3.22(1.24)	80.90(4.90)	.71(.45)									.31(.46)
2	134	9.05(9.23)	2.46(1.04)	2.57(.62)	3.05(1.29)	82.50(4.90)	.74(.44)									.28(.45)
3	70	8.50(8.99)	2.70(1.16)	2.65(.55)	3.00(1.40)	83.59(4.22)	.77(.42)									.20(.40)
4	42	9.48(8.26)	2.29(1.09)	2.61(.62)	2.69(1.37)	85.55(4.65)	.67(.48)									.10(.30)
5	10	8.90(9.04)	1.90(1.29)	2.55(.69)	3.50(.85)	85.40(3.95)	.70(.48)									0

Source: 1993–2011 H-EPESE.

Note: Time to/from widowhood indicates the waves before, at, and after the death of a spouse. Negative numbers represent waves before widowhood. Zero represents the wave at which the death of a spouse was first recorded. Positive numbers represent waves after the wave at which the death of a spouse was first recorded. Means for dichotomous variables can be interpreted as the proportion of the observations coded 1 on a specific variable. Means are for original, non-centered, variables.

Table 2

Means (Standard Deviations) for Study Variables for Baseline Wave.

	Range	<i>M</i> (<i>SD</i>)
Depressive symptoms	0 – 47	8.13(8.06)
Financial strain	1 = <i>none</i> , 4 = <i>a great deal</i>	2.53(1.03)
Social support	1 = <i>hardly ever</i> , 3 = <i>most of the time</i>	1.51(.75)
Church attendance	1 = <i>never</i> , 5 = <i>more than once a week</i>	3.09(1.27)
Age	65 – 99	72.65(5.46)
Woman	0 = <i>no</i> , 1 = <i>yes</i>	.65(.48)
Died during survey	0 = <i>no</i> , 1 = <i>yes</i>	.35(.48)
<i>N</i>		385

Source: 1993–2011 H-EPESE.

Note: Means for dichotomous variables can be interpreted as the proportion of the observations coded 1 on a specific variable. Means are for original, non-centered, variables.

Table 3Growth Models for Depressive Symptoms Over Time To/From Widowhood ($N = 1,944$ person periods).

	Estimate(SE)
<i>Fixed Effects</i>	
Intercept	7.73 ***(.52)
Time to/from widowhood	.49 **(.15)
Transition to widowhood	2.94 ***(.57)
Post-widowhood	-.71(.76)
Time to/from widowhood $\times$ Post-widowhood	.27(.35)
Died during survey	1.06(.59)
<i>Random Effects</i>	
Variance intercept	22.11(2.73) *
Variance Time to/from widowhood	.19(.19)
Variance Transition to widowhood	24.05(6.31) *
Covariance intercept, Time to/from widowhood	1.62(.52)
Covariance intercept, Transition to widowhood	-3.88(3.02)
Covariance Time to/from widowhood, Transition to widowhood	-.38(.75)
Residual variance	42.31(1.90) *
<i>ICC</i>	.34(.03) *
<i>Goodness of fit</i>	
Log likelihood	-6,697.99
<i>AIC</i>	13,421.99
<i>BIC</i>	13,494.43

*
 $p < .05$.**
 $p < .01$.***
 $p < .001$ (two-tailed tests).

Note: Pre-widowhood is a reference time category of widowhood status (i.e., the estimate for the intercept and time to/from widowhood specify the average levels of depressive symptoms and the average rate of change in depressive symptoms pre-widowhood, respectively). *ICC* = Intraclass correlation; *AIC* = Akaike's information criterion; *BIC* = Bayesian information criterion.

Table 4

Growth Models for Depressive Symptoms Over Time To/From Widowhood: The Moderating Effects of Financial Strain, Social Support, and Religion ($N = 1,944$ person periods).

	Estimate(SE)
<i>Fixed Effects</i>	
Intercept	6.66 *** (.85)
Time to/from widowhood	.60 ** (.20)
Transition to widowhood	2.38 *** (.62)
Post-widowhood	-.40 (.76)
Time to/from widowhood $\times$ Post-widowhood	-.29 (.36)
Financial strain	1.26 ** (.38)
Time to/from widowhood $\times$ Financial strain	.20 (.13)
Transition to widowhood $\times$ Financial strain	-.73 (.55)
Post-widowhood $\times$ Financial strain	-.59 (.67)
Social support	-1.86 *** (.50)
Time to/from widowhood $\times$ Social support	-.03 (.16)
Transition to widowhood $\times$ Social support	1.92 * (.98)
Post-widowhood $\times$ Social support	-.21 (1.01)
Church attendance	-.78 * (.31)
Time to/from widowhood $\times$ Church attendance	-.25 * (.11)
Transition to widowhood $\times$ Church attendance	-.29 (.44)
Post-widowhood $\times$ Church attendance	.41 (.55)
Died during survey	.55 (.56)
Age	.11 * (.05)
Woman	2.45 *** (.52)
<i>Random Effects</i>	
Variance intercept	17.01 (2.30) *
Variance Time to/from widowhood	.09 (.18)
Variance Transition to widowhood	24.33 (6.10) *
Covariance intercept, Time to/from widowhood	1.00 (.45)
Covariance intercept, Transition to widowhood	-2.94 (2.72)
Covariance Time to/from widowhood, Transition to widowhood	-.35 (.70)
Residual variance	40.64 (1.82) *
ICC	.30 (.03) *
<i>Goodness of fit</i>	
Log likelihood	-6,635.57
AIC	13,325.15
BIC	13,475.61

* $p < .05$.

**
 $p < .01$.

 $p < .001$ (two-tailed tests).

Note: Pre-widowhood is a reference time category of widowhood status (i.e., the estimate for the intercept and time to/from widowhood specify the average levels of depressive symptoms and the average rate of change in depressive symptoms pre-widowhood, respectively). *ICC* = Intraclass correlation; *AIC* = Akaike's information criterion; *BIC* = Bayesian information criterion.

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