ELSEVIER

Risk of Mortality Related to Widowhood in Older Mexican Americans

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PURPOSE: To examine the risk and correlates of mortality after death of a spouse and whether mortality risk varies by sex.
METHODS: Prospective cohort study (1993 to 2000) of 1693 Mexican Americans ages 65 years and older who were married at baseline. Mortality was confirmed by matching records with the National Death Index or through proxy report. Risk of death related to incidence of widowhood was estimated by using proportional hazard regression and adjusted for age, education, US nativity, financial strain, social support, health behaviors, medical conditions, disability, and depressive symptoms.
RESULTS: In the unadjusted Cox hazard analysis, widowed men are significantly more likely to die (HR = 2.32, CI = 1.48 to 3.61), but loss of spouse has no significant effect on the subsequent risk of death for widowed women (HR = 1.50, CI = 0.90 to 2.49). After adjustment for covariates known to influence survival, the association between widowhood and mortality in men remained significant, but the magnitude of the association decreased by 26%, which suggests a partial mediation effect of these factors on survival. The trajectory of the survival curve shows that the risk of death associated with widowhood is highest within the first 2 years.
CONCLUSIONS: Widowhood in older Mexican American men is a risk factor for mortality.
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KEY WORDS: Marriage, Mexican Americans, Mortality, Widowhood.

INTRODUCTION

Widowhood is one of the most significant negative life events at any age. Spousal loss often manifests as increased risk of depression, disability, and cognitive impairment (1–4). One of the most consistent findings in the literature is that spouses are at high risk for mortality within 6 to 12 months after the death of their spouse (5–11). These studies also agree that both men and younger spouses are at higher risk for mortality than women and older spouses after their spouse dies. Whether the widowhood effect on mortality varies by race/ethnicity is unclear. Few studies have explored this question, and the results have been mixed. One study found no differences by race (12), whereas another large study of white and black couples found substantial variation by race. White couples were more prone to long-term negative effects of conjugal loss, whereas black couples did not show an appreciable widowhood effect (13).

Explanations for the higher mortality risk of widowed spouses have focused on socioeconomic status (SES) and, to a limited extent, on health and health behaviors. The role of socioeconomic circumstances of the surviving spouse has had mixed results. One study found an association between individuals with the lowest SES and highest mortality risk (14). Other studies showed higher SES individuals at higher risk of post-widowhood mortality (12, 15). The authors of the latter studies conjectured that the more highly educated may have higher-quality relationships, making the death more stressful, or that cultural and structural characteristics of their social support network may lead to less available social support. In part, supporting the role of social support as a buffer to distress of widowhood, some evidence has been presented that mortality risk is negatively associated with the number of children (16). Health-related explanations are limited, but a pair of studies concluded that prior health status including chronic disease and disability (10, 11) explained part of the association between widowhood and mortality. Depression is hypothesized to exacerbate the mortality risk of widowhood because it has been shown to be independently associated with bereavement and death (17). Biological reaction to the distress of conjugal loss has been documented recently in a study of elderly

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Selected Abbreviations and Acronyms

SES = Socioeconomic status
HEPESE = Hispanic Established Populations for the Epidemiologic Studies of the Elderly

respondents. Bereavement was negatively associated with antibody response to influenza vaccination, and being married with high marital satisfaction was associated with higher response to influenza exposure (18). Finally, health risk behaviors are associated with widowhood, particularly health regulation behaviors such as medication compliance (19), and some studies have found evidence that shared health behaviors explain some of the association of mortality (11, 16), but another study found no significant effect (10).

Most of the previous research has lacked baseline data on individuals before the loss of their spouse, which leaves the possibility open that the higher risk of mortality is due, in part, to similar health profiles of spouses (20, 21). Another limitation of previous research is that few studies have included measures of health status, and only one study incorporated health variables as time-dependent covariates (11). By including time-dependent measures of health that affect survival such as health behaviors, chronic disease, disability, and depression, the association of widowhood with mortality may be explored in greater detail and may point to potential interventions to lower post-widowhood mortality. Another limitation of previous research is that many studies were composed primarily of non-Hispanic white respondents with very little representation of minorities. Therefore, this study examines the risk of mortality after death of a spouse after adjusting for time-dependent measures of health, health behaviors, social support, and financial strain using data from older Mexican Americans followed over a period of 7 years. This study uses a unique database of a large sample of Mexican Americans, so that the results can be compared with other findings in the literature on Non-Hispanic whites. Consistent with previous research, we expect that men will have a higher risk of death related to conjugal loss than women.

METHODS

Sample

This study used data from the Hispanic Established Populations for the Epidemiologic Studies of the Elderly, 1993 to 2000 (HEPESE) (22). The HEPESE is a multistage random sample of older Mexican Americans, ages 65 years and older, residing in Arizona, California, Colorado, New Mexico, and Texas. About 85% of the older, Mexican American population resides in these five states. The baseline data for the HEPESE included 3050 respondents 65 years and older. Participants were reinterviewed in 1995, 1998, and 2000. At baseline, there were 1693 married individuals, 955 widows, and the remaining sample was divorced, single, or separated. This study followed the 1693 respondents who were married in 1993 over 7 years to track incidence of widowhood.

Dependent Variable

Mortality was confirmed by matching records with the National Death Index or through proxy report. Survival time was recorded in months beginning with the start of the study in 1993 and ending with the death of the respondent or the last follow-up in 2000. The mortality outcome for 107 respondents could not be determined by a successful match with the National Death Index or through proxy report so those cases are excluded from analysis. None of these cases were widowed over the study period. Over 7 years of follow-up, 482 respondents died from the subsample of 1693 married respondents at baseline. Continuously married respondents accounted for 441 deaths and respondents who became widowed over the study period accounted for the remaining 41 deaths. Table 1 provides the number of respondents who were alive, dead, or lost to follow-up over the 7-year study by widowhood status.

Independent Variable

Widowhood was a binary time-dependent variable indicating the respondent's widowhood status over the study period. At each follow-up, respondents reported if their marital status changed and the date on which the change occurred. Time spent as a widow was calculated in months. Over the course of the study period, 239 respondents became widowed. Table 2 presents data for the weeks that the 239 respondents were widowed until death or the end of the study.

Covariates

Time-invariant covariates included demographic characteristics of the respondents in 1993. Age is continuous in years and ranges from 65 to 94 at baseline. Education is continuous in years and ranges from 0 to 17. A binary question asked respondents if they were born in the United States.

TABLE 1. Number of widows and non-widows by alive, dead, and lost to follow-up: Hispanic Established Populations for the Epidemiologic Studies of the Elderly 1993 to 2000

	Alive	Dead	LTF	Total
Widow	182	41	16	239
Non-widow	791	441	222	1453
Total	973	482	238	1693