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Exposure to Family Member Deaths Across the Life Course for Hispanic Individuals

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Abstract

The present study documents differences in exposure to family member deaths among foreign-born and U.S.-born Hispanic individuals compared with non-Hispanic Black and non-Hispanic White individuals. We use data from the Health and Retirement Study (HRS; 1992–2016, ages 51+; $N = 23,228$) and the National Longitudinal Study of Adolescent to Adult Health (Add Health; Waves I–V, ages 12–43; $N = 11,088$) to estimate the risk of exposure to the death of a mother, father, spouse, sibling, and child across the life course. HRS results show more inequities in exposure to family deaths compared with Add Health results, suggesting differences by age or birth cohort. Compared with non-Hispanic Whites, U.S.-born Hispanic individuals in the HRS have a higher risk of experiencing a child's death throughout adulthood and a sibling's death in later life; the latter is explained by larger sibship size, indicating a greater lifetime risk of bereavement experiences. The higher risk of parental death during childhood for U.S.-born and foreign-born Hispanic individuals is explained by covariates (e.g., lower levels of educational attainment). Hispanic individuals generally have a lower risk of family deaths than non-Hispanic Black individuals, but at times a higher risk of exposure relative to non-Hispanic White individuals.

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Keywords

Race/ethnicity; Hispanic paradox; Exposure to family member death; Mortality

Introduction

Robust, persistent, and well-documented disparities in mortality rates between Black and White Americans fuel racial inequities in bereavement exposures in the United States. Black Americans are more likely than White Americans to experience the death of a parent, spouse, sibling, or child and to experience these deaths earlier in the life course (Umberson et al. 2017). However, prior research has not systematically examined such patterns for Hispanic populations in the United States. Although Hispanic individuals exhibit lower mortality rates than non-Hispanic Whites (Fenelon 2013; Hummer and Hayward 2015; Lariscy et al. 2015; Markides and Eschbach 2011), some Hispanic populations, such as children, adolescents, and U.S.-born working-age adults, have higher mortality risk relative to non-Hispanic White Americans (Borrell and Lancet 2012; Fenelon et al. 2017; Rogers et al. 2019). Moreover, differential fertility histories, such as higher birth rates among Hispanic populations relative to non-Hispanic Whites (e.g., Martin et al. 2021), may increase the likelihood of exposure to sibling and child deaths. These mortality and fertility patterns indicate that some Hispanic individuals may experience a relatively greater burden of exposure to family member deaths across the life course.

In the present study, we address several unanswered questions about the risk of exposure to family member deaths across the life course for foreign- and U.S.-born Hispanic individuals in the United States. Specifically, we ask whether there are inequities in the extent and timing of exposure to the death of family members across the life course for foreign-born Hispanic and U.S.-born Hispanic adults compared with non-Hispanic Black and non-Hispanic White adults. We consider exposure to different types of family member deaths, variation in exposure between younger and older birth cohorts, and whether patterns of racial/ethnic inequities in exposure to family member deaths persist after accounting for sociodemographic covariates. To answer these questions, we document exposure to family member deaths across the life course for foreign-born and U.S.-born Hispanic adults compared with non-Hispanic Black and non-Hispanic White adults. Drawing on two nationally representative data sets, we examine the risk of exposure to the death of mothers, fathers, spouses, siblings, and children across the life course. We document possible differences in exposure to death by nativity status for Hispanic adults for two reasons. First, compared with U.S.-born Hispanic adults, foreign-born Hispanic adults have lower mortality rates (e.g., Fenelon et al. 2017; Hummer and Hayward 2015; Lariscy et al. 2015). Hence, U.S.-born Hispanic individuals may experience higher lifetime exposure to family member deaths compared with foreign-born Hispanic individuals. Second, foreign-born Hispanic individuals tend to have higher fertility rates than U.S.-born Hispanic individuals (e.g., Landale and Oropesa 2007; Tienda and Mitchell 2006), which could increase the risk of exposure to sibling or child deaths. These different possibilities point to the need to consider exposure to family member deaths separately for foreign-born and U.S.-born Hispanic adults.

Experiencing the death of a family member is one of the most stressful events people experience in their lifetime, with lasting consequences for mental health, physical health, dementia risk, and mortality risk (Cha et al. 2022; Smith et al. 2014; Stroebe et al. 2007; Umberson 2017). Moreover, experiencing the death of a family member early in the life course can have profound consequences for long-term health and well-being (e.g., Jacobs and Bovasso 2009; Maier and Lachman 2000; Shonkoff et al. 2021; Smith et al. 2014). Thus, differential exposure to the death of a family member, especially earlier in the life course, can contribute to existing racial/ethnic inequities in health (e.g., Cha et al. 2022; Donnelly et al. 2020; Shonkoff et al. 2021; Umberson et al. 2020). Documenting exposure to family member deaths among Hispanic populations relative to other groups is imperative to advance understanding of health inequity.

Background

The Hispanic Paradox and Exposure to Family Member Deaths

Black children and adults are much more likely than White children and adults to experience the death of family members and to experience these deaths earlier in life (Umberson et al. 2017). However, we know very little about exposure to family member deaths among Hispanic individuals in the United States. Yet there is substantial reason to expect higher risk of family member deaths for Hispanic populations. For example, a recent study shows that U.S.-born Hispanic parents, but not foreign-born Hispanic parents, have a greater risk of experiencing a child's death compared with non-Hispanic White parents (Umberson and Donnelly 2022). In addition, Liu and colleagues (2022) found that, compared with non-Hispanic White adults, Hispanic adults are more likely to experience the death of a mother before age 30, although that study did not explore differences between foreign-born and U.S.-born Hispanic adults. The present study builds on this work by using two nationally representative data sets—the National Longitudinal Study of Adolescent to Adult Health (Add Health) and the Health and Retirement Study (HRS)—to systematically document the risk of exposure to the death of a mother, father, sibling, spouse, or child across the life course for foreign-born and U.S.-born Hispanic individuals.

Differential mortality, immigration, and fertility among the Black, Hispanic, and White populations in the United States provide reasons to expect racial/ethnic inequities in exposure to family member deaths. Perhaps most important, higher age-specific mortality rates are likely to result in a greater risk of prematurely losing family members among some groups relative to others. For example, the greater exposure to family member deaths among Black Americans is largely attributable to stark racial inequities in mortality, wherein Black Americans experience higher mortality rates compared with White Americans from birth until late life (Kochanek et al. 2020; Rogers et al. 2019). However, mortality patterns among Hispanic populations in the United States are complex and vary by age, nativity status, and country of origin (Borrell and Lancet 2012; Fenelon et al. 2017), suggesting that the patterning of exposure to death may not be straightforward.

Until the COVID-19 pandemic (Andrasfay and Goldman 2022; Sáenz and Garcia 2021), Hispanic populations have long had lower mortality rates relative to non-Hispanic White populations in the United States despite lower levels of socioeconomic status—

a phenomenon often referred to as the Hispanic paradox (Fenelon 2013; Hummer and Hayward 2015; Lariscy et al. 2015; Markides and Eschbach 2011). The Hispanic paradox, however, has been most salient among foreign-born Hispanic individuals. That is, foreign-born Hispanic adults have tended to live longer lives and have had lower mortality rates than U.S.-born Hispanic, non-Hispanic White, and non-Hispanic Black adults (e.g., Fenelon et al. 2017; Hummer and Hayward 2015; Lariscy et al. 2015). This mortality advantage is attributed, in part, to immigrant selection and the return of migrants in poor health to their country of origin, as well as to the healthier behaviors of immigrants compared with U.S.-born individuals, such as lower smoking rates (Arenas et al. 2015; Fenelon 2013; Hummer and Hayward 2015; Lariscy et al. 2015; Riosmena et al. 2014).

Lower mortality rates for foreign-born Hispanic populations suggest that exposure to family member deaths among foreign-born Hispanic individuals may be equal to or even less likely than among non-Hispanic White individuals. For example, the risk of experiencing a child's death from mid to later life is comparable for foreign-born Hispanic and non-Hispanic White parents (Umberson and Donnelly 2022). This finding aligns with prior research on the favorable infant mortality rates among foreign-born Mexican women in the United States (Hummer et al. 2007) and suggests that the mortality advantage may persist beyond infancy. However, patterns of family member deaths may further vary depending on characteristics of family members, such as their country of origin or length of time in the United States. For example, because some countries have higher mortality rates than the United States (e.g., Viner et al. 2011), people with family members remaining in these countries could experience subsequently higher rates of exposure to family member death. More specifically, if foreign-born Hispanic adults have parents or siblings living in a high-mortality country, they may be more likely to experience the death of parents or siblings relative to non-Hispanic Whites, contrary to expectations based on the Hispanic paradox.

The mortality advantage of Hispanic immigrants tends to wane with subsequent generations as U.S.-born Hispanic individuals adopt unhealthier behaviors and experience a longer duration of exposure to discrimination and adversity in the United States (e.g., Hummer and Hayward 2015; Sternthal et al. 2011). The U.S.-born Hispanic population, then, tends to have mortality rates similar to or higher than those of the non-Hispanic White population (Borrell and Lancet 2012; Fenelon et al. 2017; Palloni and Arias 2004; Rogers et al. 2019; Sáenz and Garcia 2021). For example, evidence suggests that U.S.-born Mexican, Puerto Rican, and other Hispanic men under age 65, as well as U.S.-born Puerto Rican and other Hispanic women under age 65, exhibit a mortality disadvantage relative to non-Hispanic Whites, although this disadvantage does not exist after accounting for sociodemographic covariates (Fenelon et al. 2017). Moreover, U.S.-born Hispanic adults who identify as Black, American Indian/Alaska Native, some other race, or multiple races have a lower life expectancy compared with non-Hispanic White or Hispanic White adults (Arias et al. 2020). As a result of these mortality disadvantages, some U.S.-born Hispanic children and adults may experience a higher risk of exposure to family member deaths compared with non-Hispanic Whites. This may be especially true when considering the death of children: Rogers et al. (2017) demonstrated substantially higher mortality risk for Mexican American children relative to non-Hispanic White children. In line with this study, recent research found that older U.S.-born Hispanic parents had almost twice the risk of experiencing a

child's death compared to non-Hispanic White parents (Umberson and Donnelly 2022). Taken together, the mortality rates of U.S.-born Hispanic individuals suggest that U.S.-born Hispanic adults would experience greater exposure to certain types of family member deaths when compared with foreign-born Hispanic and non-Hispanic White adults.

In addition to considering differences in exposure to family member deaths across the life course by nativity status, the present study harnesses data from two data sets to document patterns among older people (HRS, over age 50) and among younger people (Add Health, ages 12–43). This is important because recent research documents that the demographic and health characteristics of older Hispanic adults have changed across cohorts (Garcia et al. 2022). For example, compared with older cohorts, younger cohorts of Hispanic adults in the HRS have higher levels of educational attainment and wealth and are more likely to be foreign-born (Garcia et al. 2022). If this favorable demographic profile translates to lower mortality risk, then younger Hispanic adults may experience a lower risk of lifetime family death exposures relative to their older counterparts. In the context of the present study, differences in exposure to family member deaths between Hispanic and non-Hispanic White adults could be less pronounced in Add Health than in HRS samples.

Additional Explanations for Family Member Deaths Among Hispanic Individuals

Overall, the Hispanic paradox offers a conceptual framework for hypothesizing about patterns of exposure to death among Hispanic individuals in the United States. However, the Hispanic paradox may not translate directly to family member death exposures among foreign- and U.S.-born Hispanic people. We often lack data on the deceased family members—their country of residence or length of time in the United States, their cause of death, their gender—and exposure to death could vary on the basis of these factors. For example, the parents or siblings of Hispanic adults in the United States may reside in a country with higher mortality rates (e.g., Viner et al. 2011) or may not be as healthy as their family members who migrated to the United States (e.g., Hummer and Hayward 2015; Lariscy et al. 2015; Riosmena et al. 2014), which could increase risk of exposure to family member deaths for Hispanic populations in the United States. Another possibility is that increases in anti-Hispanic hostility in the U.S. political climate elevate stress and reduce access to key social institutions, thereby undermining the health and mortality of Hispanic populations (e.g., Philbin et al. 2018). Indeed, restrictive immigration policies and racialized political rhetoric are associated with higher rates of preterm birth (Gemmill et al. 2019; Novak et al. 2017; Torche and Sirois 2019), and preterm birth increases the risk of infant mortality (e.g., Frisbie et al. 1996; Solis et al. 2000). Such policies could increase the risk of experiencing a child's death for Hispanic parents, especially those who have been exposed to the U.S. environment for a longer period of time.

Differential fertility histories across groups may also contribute to a higher risk of sibling and child death for Hispanic adults. This is especially likely for older Hispanic adults in light of substantial changes in fertility patterns across generations. For instance, high fertility rates persisted in Latin American countries until the 1960s before beginning to decline (Landale and Oropesa 2007; Potter et al. 2002). Thus, although foreign-born Hispanic women (especially Mexican-origin women) had higher fertility rates than non-Hispanic

White women throughout much of the twentieth century, racial/ethnic gaps in fertility have diminished in recent decades (Landale and Oropesa 2007; Parrado and Morgan 2008; Sweeney and Raley 2014; Tienda and Mitchell 2006). Patterns of fertility that vary across generations have implications for the risk of experiencing family member deaths across the life course. That is, older Hispanic adults in the HRS sample likely had more siblings, on average, than non-Hispanic Black and White older adults or younger Hispanic adults in the Add Health sample, which could translate into higher risk for experiencing the death of a sibling. Thus, we suggest that a combination of mortality, immigration, and fertility patterns shapes the likelihood of family member deaths for Hispanic individuals in the United States, relative to their non-Hispanic White and Black counterparts.

The Present Study

In the present study, we consider exposure to family member deaths across the life course. The death of a family member is typically a stressful life event that is associated with mental and physical health decline (e.g., Domingue et al. 2021; Smith et al. 2014; Stroebe et al. 2007; Umberson 2017), and the timing of exposure to family member deaths is essential to understanding the lifelong health implications. A blended stress and life course perspective (Pearlin et al. 2005) emphasizes the profound effects of stressful events early in the life course. For example, the death of a parent in childhood or young adulthood has lasting effects on mental health (Kamis et al. 2022; Leopold and Lechner 2015; Maier and Lachman 2000), cognitive impairment (Conde-Sala and Garre-Olmo 2020; Liu et al. 2022), and mortality risk (Smith et al. 2014) in mid to later life. Taken together, differential exposure to family member deaths, especially early in the life course, could influence differential trajectories of health for Black, Hispanic, and White adults, thereby leading to health inequities later in life.

The present study asks: (1) Are there inequities in the extent and timing of exposure to the death of family members across the life course for foreign-born Hispanic or U.S.-born Hispanic adults compared with non-Hispanic Black and non-Hispanic White adults? (2) Do racial/ethnic inequities in exposure to family member deaths depend on the type of family member death or differ between younger and older birth cohorts? (3) Do patterns of racial/ethnic inequities in exposure to family member deaths persist after accounting for sociodemographic covariates? We contribute to the health, mortality, and bereavement literatures in at least three ways. First, no prior study has systematically documented exposure to death for U.S.-born and foreign-born Hispanic individuals relative to non-Hispanic Black and White individuals. Second, we consider exposure to family member deaths across the life course, which has implications for lasting inequities in health. Finally, we consider differences by nativity status, the type of family member death, and birth cohort. This attention to heterogeneity helps provide a more comprehensive understanding of group differences in exposure to family member deaths, with implications for the health and well-being of surviving family members.

Data and Methods

We estimate racial and ethnic differences in exposure to family member deaths using two longitudinal, nationally representative data sets: the Health and Retirement Study (N = 23,228) and the National Longitudinal Study of Adolescent to Adult Health (N = 11,088). We use the HRS and Add Health in the present study for two primary reasons. First, the HRS includes older birth cohorts (born 1900–1967), while Add Health includes younger birth cohorts (born 1974–1983), offering a more robust examination of racial/ethnic inequities in exposure to family member deaths that may differ across the life course. This is especially important given distinct mortality and fertility experiences between younger and older Hispanic adults (Fenelon et al. 2017; Tienda and Mitchell 2006). Second, both data sets include questions allowing us to assess exposure to and timing of the deaths of different family members—questions often omitted from other large, nationally representative data sets. In the HRS and Add Health, we consider the death of a mother, father, spouse, sibling, and child among foreign-born Hispanic, U.S.-born Hispanic, non-Hispanic Black, and non-Hispanic White respondents.

HRS Sample

The HRS is a nationally representative study of United States adults over the age of 50. The study began in 1992 with a sample of adults aged 51–61 years; data collection is ongoing and occurs biannually. Since the initial cohort in 1992, cohorts of adults aged 51–56 have been added every six years. The present study includes respondents from the original HRS cohort (born 1931–1941), the War Babies cohort (born 1942–1947), the Early Baby Boomers cohort (born 1948–1953), the Mid Baby Boomers cohort (born 1954–1959), and the Late Baby Boomer cohort (born 1960–1965). The HRS also surveys the spouses of focal respondents, some of whom are older than 56 or younger than 51 when entering the study. However, we exclude any respondents who were younger than 51 (n = 3,809).

HRS analyses are restricted to respondents who report their race/ethnicity in their baseline interview as Hispanic, non-Hispanic Black, or non-Hispanic White. Hispanic respondents are further categorized on the basis of nativity (U.S.-born vs. foreign-born). We exclude respondents with missing data on nativity (n = 111) or who identify as another race/ethnicity (n = 2,491). The final analytic sample includes 1,392 U.S.-born Hispanic respondents, 2,152 foreign-born Hispanic respondents, 5,319 non-Hispanic Black respondents, and 14,365 non-Hispanic White respondents, giving a total of 23,228.

Add Health Sample

Add Health is a nationally representative school-based study of U.S. adolescents who were in grades 7 through 12 during the 1994–1995 academic year. Additional waves of data were collected in 1996 (Wave II), 2001–2002 (Wave III), 2008–2009 (Wave IV), and 2016–2018 (Wave V). By Wave V, respondents were between the ages of 33 and 43. Analyses are restricted to Hispanic, non-Hispanic Black, and non-Hispanic White respondents. If respondents selected multiple racial identities, they were then asked to identify the race/ethnicity they most strongly identify with. Nativity is also considered. We exclude respondents who have missing data for race or nativity (n = 74), as well as

respondents of other races (n = 885). The final analytic sample includes 1,288 U.S.-born Hispanic respondents, 412 foreign-born Hispanic respondents, 2,354 non-Hispanic Black respondents, and 7,034 non-Hispanic White respondents, for a total of 11,088. We note that the foreign-born Hispanic subsample in Add Health is unique given that data collection began when respondents were aged 12–19 and enrolled in a U.S. high school or middle school; hence, respondents were living in the United States at a young age, prior to the most common age range of international migration (Migration Policy Institute n.d.).

HRS Measures

HRS respondents reported on experiences of mother, father, sibling, child, and spouse death. For mother and father death, respondents reported whether each parent was living in every wave of the study. If respondents did not know whether their mother or father was living, we coded exposure to parent death as missing. Respondents who experienced the death of a mother or father then reported the year in which the death occurred. The HRS also asks respondents about their marital status, including the start and end dates of marriages that have ended in widowhood. We use this information to document exposure to spousal death. Respondents were not asked explicitly about the death of a sibling, but instead reported the number of living siblings in each wave. A decrease in the number of living siblings between waves was categorized as a sibling death, and the year of death was coded as occurring at the midpoint of the time between surveys. Sibling deaths that occurred before the baseline survey are not accounted for, and so the risk of experiencing these specific deaths is likely underestimated. Questions about exposure to the death of a child were not introduced to the HRS until 2006 and are included only in the supplemental leave-behind questionnaire administered to half samples of the HRS every other wave. Respondents are asked if they have experienced a child's death and, if so, in what year. Because respondents were asked these questions only between 2006 and 2014, the sample size for estimating risk of child death is smaller than the analytic sample for other family member deaths (n = 12,396).

The final measure of age at time of death exposure for each specific family member death is calculated by subtracting the respondent's birth year from the reported year of death. In the case of multiple deaths within the same family member group (i.e., siblings, spouses), the age at first death exposure is used, except for the death of a child. For parents who have experienced the death of more than one child, the HRS asks parents to report the year in which the most recent death occurred.

Add Health Measures

Respondents report on specific family member deaths at each wave. Death of a biological mother or a biological father is reported at all waves. Beginning at Wave III, respondents were also able to report the death of parentlike figures such as an adoptive parent, stepparent, grandparent, or other relative. We include deaths of these parentlike figures in the measure of death of a mother or a father. Sibling deaths are reported at Waves IV and V, whereas child and spouse deaths are reported at Waves III through V. Child deaths do not include deaths from pregnancies that did not result in a live birth. Spouse deaths at Wave V are captured only if the marriage was the respondent's most recent relationship, likely underestimating the number of spouse deaths experienced by respondents in the sample. To

account for measurement differences across waves, responses are pooled for each specific death.

For each death experienced, respondents are asked to report the year the death occurred. This is true for each type of family member death across all waves except for sibling death and spouse death at Wave V. For these sibling deaths, respondents report only whether the death occurred within the previous 12 months. If respondents report a recent sibling death, the year of survey administration is used to calculate age at death. If respondents report a new sibling death between Waves IV and V that did not occur within the past 12 months, the year of death is calculated as the midpoint year between the two waves. Similarly, if respondents report a new spouse loss between Waves IV and V, the midpoint year between waves is used. Final measures of age at time of death exposure are calculated by subtracting the respondent's year of birth from the year of each reported death. If multiple deaths are reported within each specific type of family member death, the age at first death exposure is used.

Covariates

In analyses for HRS and Add Health, we include covariates for sex (1 = female), educational attainment, age (in years), and household size. Given cohort differences in educational attainment, we include slightly different measures in the HRS and Add Health samples. In HRS, categories include less than high school diploma (reference), high school diploma, some college, or college degree or more; in Add Health, we measure educational attainment as high school diploma or less (reference), some college, college degree, or postgraduate degree. We also add a control variable for the total lifetime number of siblings in models predicting sibling death and total number of children born in models predicting child death.

Analytic Strategy

Analyses occurred in two steps. First, to provide a descriptive estimate of exposure to the death of family members by race/ethnicity, we use a nonparametric life table approach. This approach allows us to estimate the probability that an individual will experience the death of a family member by certain ages. For the present study, we estimate the risk of exposure to the death of specific family members beginning with age 10. We continue estimating risk of exposure at 10-year intervals up to age 40 for the Add Health sample and up to age 80 for the HRS sample. Observations are right-censored using the respondent's last reported age if no death is reported. We present the cumulative probabilities of risk by race/ethnicity and we test for differences between groups by comparing 95% confidence intervals. Because the Hispanic subsample sizes are relatively small, we test for group differences using 90% confidence intervals as a supplemental analysis; few additional statistically significant differences emerged (available upon request).

To aide in interpretation, we present the ratio of foreign-born Hispanic/White, U.S.-born Hispanic/White, and non-Hispanic Black/White cumulative risk of specific family member deaths using the nonparametric life table results. To calculate the risk ratios, we separately divide the death exposures for non-Hispanic Black, U.S.-born Hispanic, and foreign-born Hispanic adults by the exposures for non-Hispanic White adults at each age interval.

Although results for Black/White risk have been previously documented (Umberson et al. 2017), albeit using earlier waves of each data set, we include these results to contextualize the results for Hispanic individuals.

The second analytic step examines whether racial/ethnic inequities in exposure to family deaths persist after accounting for sociodemographic covariates. We estimate semiparametric Cox hazard models to predict racial/ethnic inequities in each type of death and to include sociodemographic control variables. Cox models are the preferred model because they do not impose strong constraints on the shape of the baseline hazard (Allison 2014). In these models, we exclude respondents with missing data on covariates, resulting in a slightly smaller sample size for HRS (n = 21,952) and Add Health (n = 11,035). We present the age-specific hazard ratios derived from these models to illustrate changes in the risk of exposure to family deaths across the life course. Results from the Cox models are available in online appendix Tables A1 and A2.

Analyses of each specific family member death are limited to respondents at risk for such a death. Thus, analyses for sibling death are restricted to respondents who report ever having a sibling (HRS: n = 21,569; Add Health: n = 9,946), analyses for child death are restricted to respondents who report ever having a live birth (HRS: n = 12,396; Add Health: n = 7,944), and analyses for spousal death are restricted to respondents who report ever being married (HRS: n = 20,703; Add Health: n = 8,178). Analyses for parent death are restricted to respondents who know if their parent is deceased and, if so, the year of death. This results in subsamples for mother death (HRS: n = 22,163; Add Health: n = 10,983) and father death (HRS: n = 21,237; Add Health: n = 10,836) that differ slightly.

Analyses use normalized weights to account for the study's complex survey design and the unequal probability of selection (Heeringa et al. 2017). For the life table results, we round the normalized weights to the nearest whole number. The Cox models do not require rounding of weights.

Results

Health and Retirement Study: Older Birth Cohort

Descriptive results in Table 1 show that most respondents experience the death of a parent by their final interview in the HRS. About one in four older adults also experience the death of a sibling during the HRS study period. Experiencing the death of a spouse or child is less common, although there are racial/ethnic differences in the likelihood of these events. Table 1 further shows racial/ethnic differences in gender, educational attainment, household size, lifetime number of siblings, and number of children ever born to the respondent.

Table 2 and Figure 1 show the cumulative risk of bereavement exposures across the life course for foreign-born Hispanic, U.S.-born Hispanic, non-Hispanic Black, and non-Hispanic White adults based on the nonparametric life table approach. Starting with the death of a mother, compared with non-Hispanic White adults, U.S.-born Hispanic adults experience higher risk until age 20, and foreign-born Hispanic adults experience higher risk until age 50. For example, Figure 1 shows that foreign-born Hispanic adults were 2.5 times

as likely as non-Hispanic White adults to experience the death of a mother by age 10 (panel a). There were no significant differences between Hispanic individuals and non-Hispanic White individuals when considering the death of a father. Table 2 further shows that the risk of parental death tends to be lower among Hispanic adults relative to non-Hispanic Black adults. Turning to the death of a sibling, U.S.-born Hispanic, foreign-born Hispanic, and non-Hispanic Black adults experience higher risk of sibling death compared with non-Hispanic White adults in mid and later life. The risk of experiencing a sibling death in these periods is relatively comparable for non-Hispanic Black and Hispanic adults. In addition, the risk of experiencing the death of a child is higher for U.S.-born Hispanic and non-Hispanic Black adults compared with non-Hispanic White adults at all ages. Foreign-born Hispanic adults, on the other hand, have a similar risk of exposure to child death as non-Hispanic White adults. When considering the death of a spouse, the risk of spousal death is similar for U.S.-born Hispanic, foreign-born Hispanic, and non-Hispanic White adults.

Overall, nonparametric life table results from the HRS suggest that U.S.-born and foreign-born Hispanic adults experience a higher risk of a mother's death earlier in the life course, as well as sibling death in mid and later life, compared with non-Hispanic White adults. Moreover, U.S.-born Hispanic adults experience additional inequities in exposure to the death of a child, with rates approaching those of non-Hispanic Black adults.

To account for sociodemographic covariates, we estimate Cox hazard models, controlling for sex, educational attainment, baseline age, and household size (online appendix Table A1). We also control for the lifetime number of siblings and number of children in the sibling and child models, respectively. Accounting for covariates explains the higher risk of mother death and sibling death for foreign-born Hispanic adults. In fact, age-specific hazards in Figure 2 show that foreign-born Hispanic individuals experience a lower risk of mother death (panel a), father death (panel b), sibling death (panel c), child death (panel d), and spousal death (panel e) compared with non-Hispanic White adults when adjusting for covariates. That is, if not for their lower levels of educational attainment, foreign-born Hispanic adults would experience a lower risk of family member death relative to non-Hispanic White adults.

For U.S.-born Hispanic individuals, the covariates result in a lower risk of father's death (Table A1) relative to non-Hispanic White individuals. Accounting for the larger number of siblings explained the disadvantage in sibling death for U.S.-born Hispanic adults (Figure 2, panel c), indicating that this group is more likely to experience the death of a sibling in their lifetime because of larger sibship size. Inequities in exposure to child death (panel d) for U.S.-born Hispanic parents persist when accounting for covariates. Overall, controlling for covariates generally results in a lower risk of family member deaths for foreign-born Hispanic individuals, whereas it results in more comparable rates for U.S.-born Hispanic individuals (mother death, sibling death, spousal death) or does not erase the disadvantage (child death) compared with non-Hispanic White individuals. At the same time, Black Americans exhibit higher exposure to family member deaths relative to non-Hispanic Whites even after accounting for sociodemographic covariates.

Add Health: Younger Birth Cohort

Descriptive results in the younger Add Health sample (Table 3) show that the death of a father is the most common family member death exposure for respondents, followed by the death of a mother (for non-Hispanic adults) or the death of a sibling (for Hispanic adults). Table 3 further shows racial/ethnic differences in exposure to family member deaths, as well as differences in educational attainment, household size, the number of siblings, and, to a lesser extent, the number of children born.

In the life table results for the Add Health sample (Table 4 and Figure 3), U.S.-born and foreign-born Hispanic individuals are more likely than non-Hispanic White individuals to experience the death of a father by age 10 and by age 20. Foreign-born Hispanic individuals are also more likely to experience the death of a mother by age 10. Indeed, foreign-born Hispanic individuals were over three times as likely as non-Hispanic White individuals to experience the death of a mother (Figure 3, panel a) and 2.5 times as likely to experience the death of a father by age 10 (panel b).

The risk of exposure to the death of a sibling, child, or spouse are more comparable across U.S.-born Hispanic, foreign-born Hispanic, and non-Hispanic White adults. Non-Hispanic Black adults generally experience the highest risk of family member death across the life course. Overall, the life table results from Add Health suggest that both U.S.-born and foreign-born Hispanic adults are more likely to experience the death of a parent in childhood compared with non-Hispanic White adults.

We examine whether results change after accounting for sociodemographic covariates using Cox hazard models (online appendix Table A2). From these models, we present the age-specific hazard of family member deaths in Figure 4. Results show that foreign-born Hispanic individuals experience lower risk of mother (panel a) and father (panel b) death across the life course relative to non-Hispanic Whites. U.S.-born Hispanic individuals are also marginally less likely to experience the death of a mother compared with non-Hispanic Whites after accounting for covariates (Table A2). That is, the disadvantage in exposure to parent death that emerged in the life table results partially reflects low levels of educational attainment in this population. Similar to in the life table results, the risk of sibling death (panel c) is comparable for foreign-born Hispanic and non-Hispanic White adults, although accounting for sibship size reduces the risk of sibling death for U.S.-born Hispanic adults. Compared with non-Hispanic White adults, U.S.-born Hispanic adults have a slightly higher risk of child death (panel d) and spousal death (Table A2), but this is not statistically significant. Overall, the results from Cox models show that sociodemographic covariates explain the higher risk of parent death early in the life course for U.S.-born and foreign-born Hispanic individuals.

Taken together, findings from the HRS and Add Health samples suggest that racial/ethnic inequities in the risk of exposure to family member deaths depend on the specific family member and vary by age and birth cohort. Results show an increased risk of parental death early in the life course for U.S.-born Hispanic and foreign-born Hispanic individuals compared with non-Hispanic White individuals. This disadvantage is explained by sociodemographic covariates, indicating that Hispanic individuals would experience

lower risk of early parental death if not for their lower levels of educational attainment, for example. The results in the HRS—composed of older birth cohorts—also suggest a higher risk of exposure to the death of a sibling for U.S.-born and foreign-born Hispanic adults, which is due to the larger number of siblings among Hispanic individuals relative to non-Hispanic Whites, and a higher risk of child death for U.S.-born Hispanic adults relative to non-Hispanic White adults.

Discussion

Experiencing the death of a family member has robust and well-documented adverse effects on mental health, physical health, and mortality risk (e.g., Smith et al. 2014; Stroebe et al. 2007; Umberson 2017). Mounting evidence points to stark inequities in the death of family members across the life course between Black and White Americans as an overlooked source of disadvantage (Umberson et al. 2017) contributing to racial inequities in health (e.g., Cha et al. 2022; Donnelly et al. 2020; Shonkoff et al. 2021; Umberson et al. 2020). However, prior research has not documented exposure to the death of family members among Hispanic Americans. We address this gap by analyzing two national data sets to document exposure to family member deaths for foreign-born and U.S.-born Hispanic individuals in the United States, relative to non-Hispanic Black and non-Hispanic White individuals. We find evidence of inequities in exposure to certain family member deaths for Hispanic adults relative to non-Hispanic Whites, which is especially apparent for older U.S.-born Hispanic adults. We discuss three key themes from the findings.

Our first theme concerns the risk of family member deaths among *U.S.-born Hispanic* individuals. In the HRS, U.S.-born Hispanic adults were more likely than non-Hispanic White adults to experience a mother's death before age 20, a sibling death in mid to later life, and a child death at any point in the life course; some of these inequities persisted even after accounting for covariates. Disadvantage in early father death was also found for U.S.-born Hispanic individuals in Add Health. Significant inequities in exposure to certain family member deaths among the U.S.-born Hispanic population relative to non-Hispanic Whites likely reflect the waning mortality advantage of Hispanic populations relative to White Americans across time and generations. That is, some subgroups of U.S.-born Hispanic children, adolescents, and working-age adults have mortality rates that are higher than those of the non-Hispanic White population (Borrell and Lancet 2012; Fenelon et al. 2017; Palloni and Arias 2004; Rogers et al. 2019). Indeed, recent research demonstrates higher mortality rates for Mexican American children compared with non-Hispanic White children in the United States (Rogers et al. 2017), which could contribute to the high risk of child death experienced by older U.S.-born Hispanic parents.

Notably, many subgroups of U.S.-born Hispanic adults experience mortality rates similar to or lower than those of non-Hispanic Whites (e.g., Fenelon et al. 2017), which would suggest comparable rates of death exposures compared with non-Hispanic White adults. Our analyses may be unable to detect additional heterogeneity by ethnicity or country of origin. Moreover, there may be additional explanations for higher rates of child death experienced by U.S.-born Hispanic parents, such as long-term exposure to discrimination and structural racism in the United States (e.g., Gemmill et al. 2019; Novak et al. 2017; Philbin et al.

2018; Torche and Sirois 2019). Overall, our findings highlight important sources of inequity in bereavement exposures for the U.S.-born Hispanic population relative to non-Hispanic Whites. However, we also underscore the importance of distinguishing between U.S. and foreign-born Hispanic populations, as we describe next.

For our second theme, we found that few statistically significant differences in exposure to family member deaths emerged when comparing *foreign-born Hispanic* and non-Hispanic White adults in the HRS and Add Health. With the exception of parental death early in the life course (HRS and Add Health) and sibling death in later life (HRS only), foreign-born Hispanic and non-Hispanic White adults had generally comparable exposures to family member deaths. This finding does not fully align with the Hispanic paradox, wherein foreign-born Hispanic adults tend to have *lower* mortality rates than non-Hispanic White adults (e.g., Fenelon 2013; Hummer and Hayward 2015; Lariscy et al. 2015; Markides and Eschbach 2011), which would conceivably lead to *lower* (not comparable) risk of death exposures. The reasons for comparable rates of exposure to family member deaths are likely complex. For example, some of the mortality advantage among foreign-born Hispanic individuals in the United States is due to immigrant selectivity, but this explanation would not apply to any family members who remain in the country of origin, thereby increasing the risk of death exposures among foreign-born Hispanic individuals. Moreover, we lack important information about the deceased family members of foreign-born Hispanic adults in the United States—such as their country of residence, nativity status, and length of time in the United States if they also lived in the United States. Indeed, in unadjusted results we find higher risk of parental death for foreign-born Hispanic individuals early in the life course in both data sets, and it is possible that the parents of foreign-born Hispanic adults live in countries with higher mortality (Viner et al. 2011; World Health Organization 2021). The present study thus both provides new knowledge about exposure to bereavement among foreign-born Hispanic individuals and points to complex patterns that vary by age and specific family member types.

The third major theme from our results is that the findings from the older HRS cohort are not replicated with the younger Add Health cohort. Indeed, the only similarity between the two data sets was the higher risk of parental death among Hispanic individuals early in the life course in unadjusted results. The lack of significant differences in Add Health could result, in part, from smaller sample sizes, as well as the unique survey design that enrolled adolescents in grades 7 through 12 during the 1994–1995 academic year. Indeed, foreign-born Hispanic students would have immigrated to the United States at a young age and likely have experiences and exposures that differ from foreign-born Hispanic adults who immigrated later in life. However, differences in the findings from Add Health and HRS could also reflect changes in the demographic composition and health of Hispanic adults in the United States over time (Garcia et al. 2022) in ways that may translate to different exposures to family member deaths by birth cohort. Moreover, historical differences in fertility patterns (Landale and Oropesa 2007; Parrado and Morgan 2008; Sweeney and Raley 2014; Tienda and Mitchell 2006) result in differences in the number of siblings between older and younger Hispanic adults, as is evident in the descriptive results (see Tables 1 and 3), which can affect the risk of experiencing the death of a sibling. It is also possible that

additional inequities in exposure to bereavement will emerge as the Add Health sample ages and more respondents marry and have children.

Overall, findings from the present study indicate a complex pattern of bereavement exposures for Hispanic Americans that vary across the life course and by nativity status, type of family member death, and birth cohort. We theorized that the Hispanic paradox would offer insight into patterns of bereavement exposures, as lower mortality rates among foreign-born Hispanic individuals would possibly translate into lower rates of exposure to family member deaths, whereas comparable rates of mortality between U.S.-born Hispanic individuals and non-Hispanic Whites would possibly translate into similar rates of exposure to death. Although these hypotheses were supported at times, there were also numerous instances when foreign-born Hispanic individuals had similar risk of experiencing death of family members and U.S.-born Hispanic individuals had higher risk of experiencing family member deaths relative to non-Hispanic Whites. Thus, this study points to the need to develop new theories and conduct new empirical studies specific to racial/ethnic inequities in exposure to family member deaths. That is, while the Hispanic paradox offers insight into individual mortality experiences, we need a better understanding of bereavement experiences among surviving family members. For example, what are the specific mechanisms contributing to racial/ethnic differences in family member deaths? Central to this endeavor is the need for better data on family member deaths to unpack detailed patterns.

Future research should continue to document lifetime exposure to family member deaths for Hispanic individuals, as patterns of health and mortality may change. For example, scholars note that the mortality advantage of Hispanic adults may decrease in subsequent generations as rates of obesity among Hispanic individuals increase (Flegal et al. 2012; Hummer and Hayward 2015) and as educational attainment becomes increasingly important for mortality risk in the United States (Masters et al. 2012). These changes could contribute to a higher risk of death exposures among Hispanic individuals in the future. Moreover, Hispanic adults experienced a much higher risk of mortality from COVID-19 compared with non-Hispanic White Americans (Andrasfay and Goldman 2022; Sáenz and Garcia 2021), and each COVID-19 death results in approximately nine bereaved family members (Verdery et al. 2020). Hence, the COVID-19 pandemic may lead to more exposure to family member deaths among Hispanic compared with non-Hispanic White adults. Indeed, recent research estimates a striking increase in the number of children losing a parent to COVID-19, a burden that disproportionately affects Black children (Kidman et al. 2021). Although the Kidman et al. study did not examine parental deaths among Hispanic children—an avenue for future research—findings from the present study suggest that Hispanic children, too, may be disproportionately affected by parental deaths during the COVID-19 pandemic.

The present study offers needed insight into exposure to the death of family members among Hispanic individuals; however, limitations should be noted. First, because of data limitations, we could not assess heterogeneity in the Hispanic population based on length of time in the United States or country of origin. And because of sample size issues, we also could not consider the racial identity of Hispanic adults; indeed, prior research indicates that non-White Hispanic adults have lower life expectancy than White Hispanic adults (Arias

et al. 2020). Second, some of the measures of family member death relied on retrospective reports from respondents, which may be biased and may underestimate exposure to death. Moreover, limitations of the questions in HRS and Add Health used to assess some family member deaths (e.g., sibling deaths before age 50 in HRS, spousal death in Add Health) likely underestimate exposures. Finally, the data sets we used lack detailed information about the deceased family members. For example, was a respondent's parent or sibling living in the United States or in another country at the time of their death? Moreover, we lack information about the death of other family members such as grandparents, aunts or uncles, and cousins. Because of the particular importance of extended family networks for non-Hispanic Black and Hispanic families (Cross 2018; Pilkauskas and Cross 2018), we may be underestimating the extent of exposure to family member deaths among populations of color.

The death of a family member is often a turning point in a person's life and has lasting consequences for mental health, physical health, and mortality risk (Jacobs and Bovasso 2009; Maier and Lachman 2000; Smith et al. 2014; Stroebe et al. 2007; Umberson 2017). The death of a parent in childhood can have especially profound effects on long-term health and well-being (Kamis et al 2022; Liu et al. 2022; Maier and Lachman 2000; Mitchell et al. 2017; Shonkoff et al. 2012; Shonkoff et al. 2021; Smith et al. 2014). An unequal burden of family member death among Hispanic and non-Hispanic Black populations, especially early in the life course, likely fuels inequities in health across the life course. Although Hispanic individuals, particularly those who are foreign-born Hispanic, tend to experience a mortality advantage relative to non-Hispanic Whites, this advantage does not extend to mental health and some measures of physical health (e.g., Hummer and Hayward 2015; Sternthal et al. 2011). Thus, unequal exposure to family member death should be considered an urgent public health matter (Cooper and Williams 2020; Jones-Eversley and Rice 2020; Umberson 2017). Inequities in exposure to family member deaths are also a stark reminder of the consequences of systemic racism. Systemic racism fundamentally shapes exposure to stress, which increases the mortality rates of people of color (Gee and Hicken 2021; Shonkoff et al. 2021; Williams et al. 2019), including some U.S.-born Hispanic populations (Borrell and Lancet 2012; Fenelon et al. 2017; Rogers et al. 2019), which leads to a higher risk of exposure to family member death. Our findings point to the need to document exposure to family member deaths across the life course among Hispanic individuals and to reduce racial/ethnic disparities in exposure to death so that all populations can live equally healthy and long lives.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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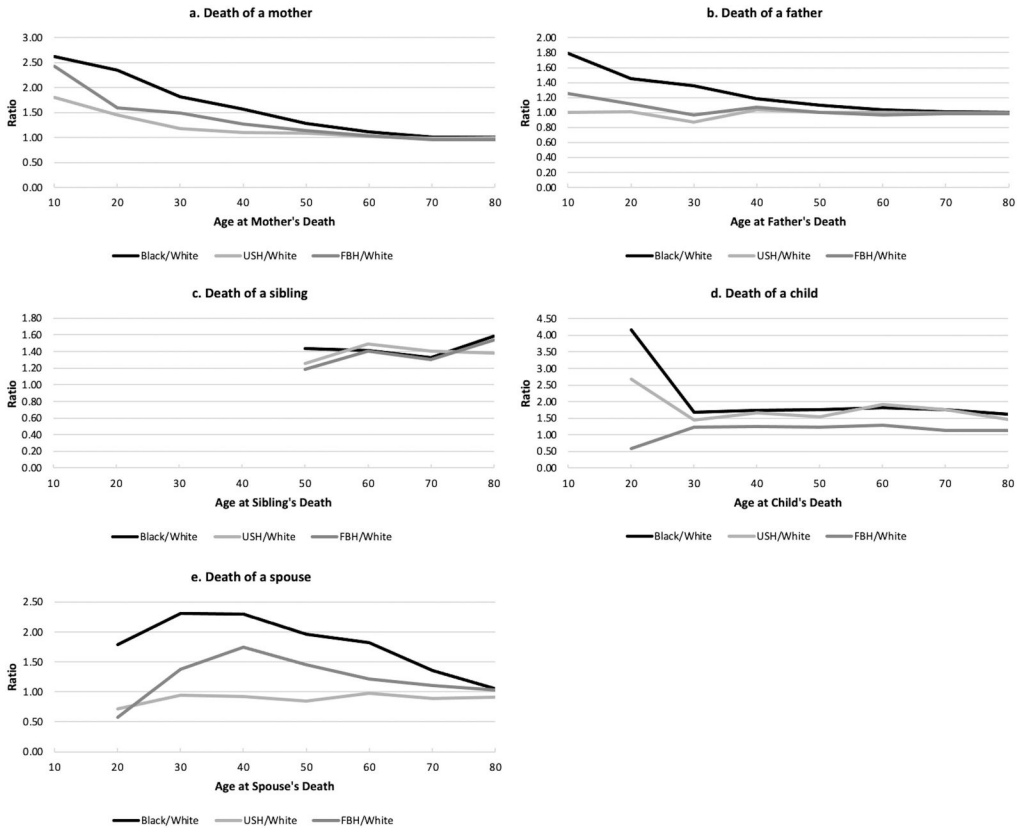

Fig. 1.

Ratio of non-Hispanic Black/non-Hispanic White, U.S.-born Hispanic/non-Hispanic White, and foreign-born Hispanic/non-Hispanic White cumulative risk for specific family member deaths (Health and Retirement Study, 1992–2016). USH = U.S.-born Hispanic. FBH = foreign-born Hispanic.

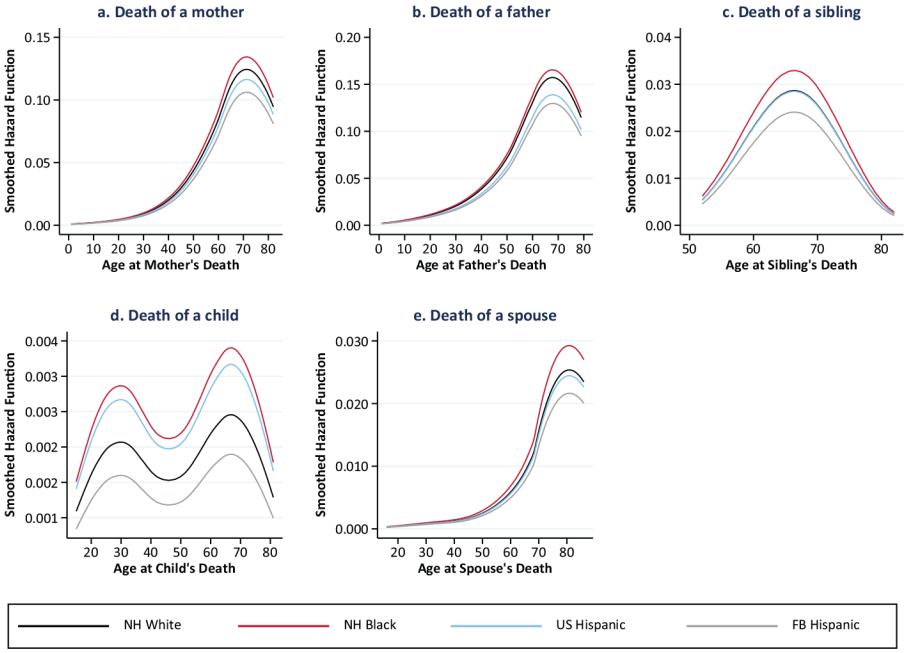

Fig. 2.

Age-specific hazard of family member deaths for non-Hispanic Black, U.S.-born Hispanic, foreign-born Hispanic, and non-Hispanic White adults (Health and Retirement Study, 1992–2016). Estimates from Cox models controlled for gender, educational attainment, age at baseline interview, household size, number of siblings (sibling model only), and number of children born (child model only) (online appendix Table A1). NH = non-Hispanic. US = U.S.-born. FB = foreign-born.

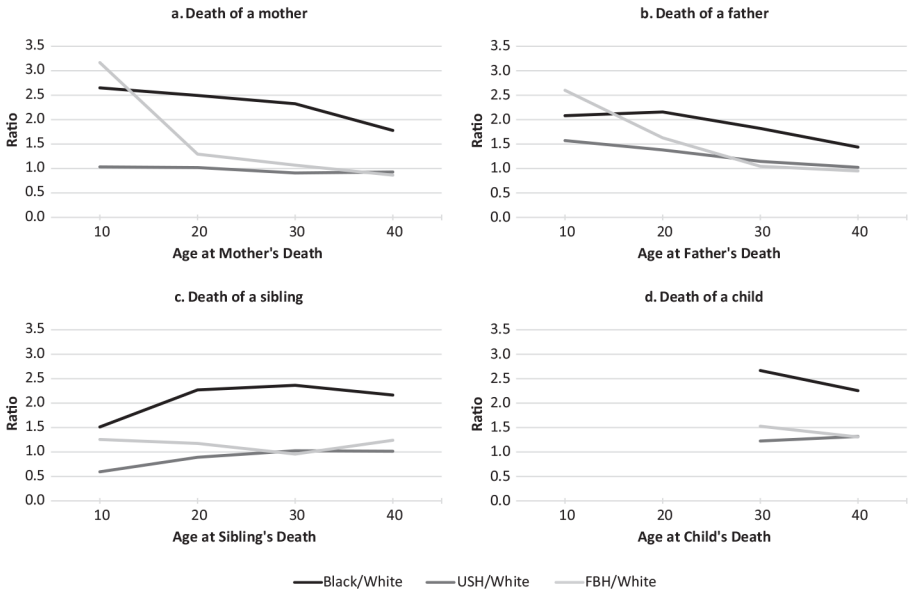

Fig. 3.

Ratio of non-Hispanic Black/non-Hispanic White, U.S.-born Hispanic/non-Hispanic White, and foreign-born Hispanic/non-Hispanic White cumulative risk for specific family member deaths (Add Health, Waves I–V). USH = U.S.-born Hispanic. FBH = foreign-born Hispanic.

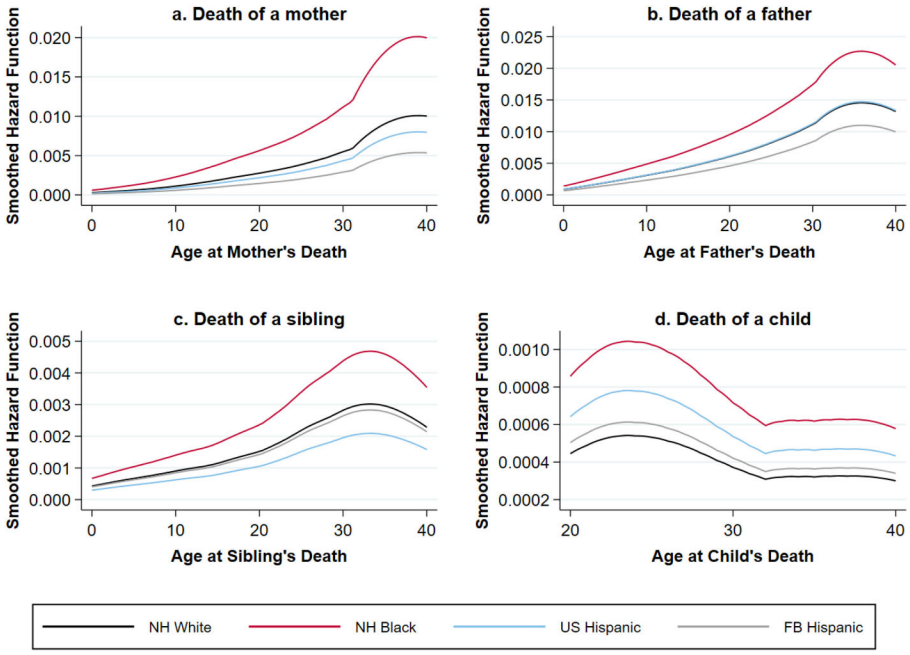

Fig. 4.

Age-specific hazard of family member deaths for non-Hispanic Black, U.S.-born Hispanic, foreign-born Hispanic, and non-Hispanic White adults (Add Health, Waves I–V). Estimates from Cox models controlled for gender, educational attainment, age at baseline interview, household size, number of siblings (sibling model only), and number of children born (child model only). Estimates are provided in online appendix Table A2. NH = non-Hispanic. US = U.S.-born. FB = foreign-born.

Table 1

Weighted descriptive statistics (percentages or means) for the analytic sample by race/ethnicity (Health and Retirement Study, 1992–2016, *N* = 21,952)

	Non-Hispanic White (*n* = 13,737)	**Non-Hispanic Black (*n* = 4,967)**	**U.S.-born Hispanic (*n* = 1,297)**	**Foreign-born Hispanic (*n* = 1,951)**
Mother Death (%)	73.76	68.37	66.44	60.13
Father Death (%)	87.72	86.51	82.28	81.84
Sibling Death (%)	22.26	24.91	25.72	24.68
Child Death (%)	11.28	22.01	19.97	13.84
Spouse Death (%)	15.04	17.35	14.04	12.95
Gender (% female)	47.48	54.46	49.71	52.45
Age	54.43 (0.03)	54.79 (0.06)	54.71 (0.12)	54.66 (0.10)
Educational Attainment (%)				
Less than high school	11.30	23.37	30.32	56.22
High school diploma	31.38	30.12	29.54	18.34
Some college	25.40	27.66	24.97	14.97
College degree or more	31.92	18.85	15.17	10.47
Household Size	2.54 (0.01)	2.64 (0.03)	2.83 (0.05)	3.54 (0.06)
Lifetime Number of Siblings	2.62 (0.02)	4.12 (0.05)	4.49 (0.11)	4.90 (0.09)
Lifetime Number of Children	2.15 (0.01)	2.61 (0.04)	2.86 (0.08)	3.22 (0.06)

Notes: Statistics are presented for the mother's death subsample. Means and standard deviations (in parentheses) are presented for continuous variables, and percentages are presented for categorical variables. Sociodemographic variables were measured at baseline interview. Reported sample sizes are unweighted.

Table 2

Weighted cumulative risk of family member death before age *t* (Health and Retirement Study, 1992–2016)

	Mother (77=22,163)				Father (77=21,237)				Sibling (77=21,569)			
Age *t*	**Black**	**USH**	**FBH**	**White**	**Black**	**USH**	**FBH**	**White**	**Black**	**USH**	**FBH**	**White**
10	0.027^{d}	0.019^{d}	0.025^{d}	0.010^{abc}	0.045^{bd}	0.025^{a}	0.032	0.025^{a}	—	—	—	—
20	0.070^{bcd}	0.043^{ad}	0.048^{ad}	0.030^{abc}	0.115^{bd}	0.080^{a}	0.088	0.079^{a}	—	—	—	—
30	0.126^{bd}	0.081^{a}	0.103^{d}	0.069^{ac}	0.259^{bcd}	0.167^{a}	0.185^{a}	0.191^{a}	—	—	—	—
40	0.239^{bcd}	0.168^{a}	0.194^{ad}	0.152^{ac}	0.423^{bd}	0.371^{a}	0.384	0.358^{a}	—	—	—	—
50	0.415^{bcd}	0.351^{a}	0.367^{ad}	0.324^{ac}	0.642^{bcd}	0.584^{a}	0.588^{a}	0.585^{a}	0.152^{d}	0.133^{d}	0.126^{d}	0.106^{abc}
60	0.678^{bcd}	0.622^{a}	0.626^{a}	0.608^{a}	0.867^{cd}	0.833	0.807^{a}	0.834^{a}	0.431^{d}	0.455^{d}	0.431^{d}	0.306^{abc}
70	0.854^{cd}	0.835	0.809^{ad}	0.849^{ac}	0.967^{cd}	0.950	0.937^{a}	0.953^{a}	0.566^{d}	0.599^{d}	0.554^{d}	0.426^{abc}
80	0.965^{c}	0.959	0.918^{ad}	0.962^{c}	0.994	0.987	0.981	0.996	0.686^{d}	0.599^{d}	0.666^{d}	0.433^{abc}

	Child (*n*= 12,396)				Spouse (*n*=20,703)			
Age *t*	**Black**	**USH**	**FBH**	**White**	**Black**	**USH**	**FBH**	**White**
10	—	—	—	—	—	—	—	—
20	0.017^{cd}	0.011^{d}	0.002^{a}	0.004^{ab}	0.003^{d}	0.001	0.001	0.001^{a}
30	0.067^{d}	0.058^{d}	0.049	0.040^{ab}	0.017^{bd}	0.007^{a}	0.010^{d}	0.007^{ac}
40	0.102^{d}	0.097^{d}	0.073	0.059^{ab}	0.035^{bd}	0.014^{a}	0.027	0.015^{a}
50	0.131^{d}	0.115^{d}	0.092	0.075^{ab}	0.058^{bcd}	0.025^{a}	0.043^{a}	0.030^{a}
60	0.165^{cd}	0.173^{d}	0.116^{a}	0.090^{ab}	0.106^{bd}	0.057^{a}	0.071	0.058^{a}
70	0.210^{cd}	0.210^{cd}	0.136^{abd}	0.120^{abc}	0.183	0.120	0.149	0.135
80	0.283^{cd}	0.255^{cd}	0.197^{ab}	0.173^{ab}	0.343	0.297	0.337	0.326

Notes: USH = U.S.-born Hispanic. FBH = foreign-bom Hispanic.

[a] Statistically different from non-Hispanic Black at $p < .05$.

[b] Statistically different from U.S.-born Hispanic at $p < .05$.

[c]Statistically different from foreign-born Hispanic at $p < .05$.

[d]Statistically different from non-Hispanic White at $p < .05$.

Table 3

Weighted descriptive statistics (percentages or means) for the analytic sample by race/ethnicity (Add Health, Waves I-V, *N*= 10,983)

	Non-Hispanic White (*n*= 6,989)	**Non-Hispanic Black (*n* = 2,320)**	**U.S.-born Hispanic (*n* = 1,268)**	**Foreign-born Hispanic (*n* = 406)**
Mother Death (%)	11.26	23.01	9.28	7.10
Father Death (%)	23.41	36.36	23.54	20.81
Sibling Death (%)	9.81	22.00	11.94	16.67
Child Death (%)	1.88	4.54	2.34	2.36
Spouse Death (%)	0.90	1.44	1.38	0.05
Gender (% female)	49.45	52.07	49.51	49.85
Age	37.29 (0.14)	37.67 (0.21)	37.31 (0.22)	38.08 (0.32)
Educational Attainment (%)				
High school diploma or less	20.10	26.21	24.83	40.98
Some college	40.54	44.86	46.39	35.25
College degree	24.95	16.41	20.57	14.33
Postgraduate degree	14.42	12.52	8.21	9.44
Household Size in Childhood	4.28 (0.04)	4.57 (0.07)	4.87 (0.09)	5.48 (0.15)
Lifetime Number of Siblings	2.23 (0.04)	3.40 (0.10)	2.90 (0.12)	3.12 (0.19)
Lifetime Number of Children	1.51 (0.03)	1.64 (0.05)	1.55 (0.08)	1.67 (0.09)

Notes: Statistics are presented for the mother's death subsample. Means and standard deviations (in parentheses) are presented for continuous variables, and percentages are presented for categorical variables. Household size was measured at Wave I; all other variables were measured at Wave V. Reported sample sizes are unweighted.

Table 4

Cumulative risk of family member death before age *t* (Add Health, Waves I-V)

	Mother (*n*= 10,983)				Father (*n*= 10,836)				Sibling (*n*= 9,946)			
Age *t*	**Black**	**USH**	**FBH**	**White**	**Black**	**USH**	**FBH**	**White**	**Black**	**USH**	**FBH**	**White**
10	0.016^{bd}	0.006^{ac}	0.019^{bd}	0.006^{ac}	0.036^{d}	0.028^{d}	0.046^{d}	0.018^{abc}	0.018^{bd}	0.007^{a}	0.015	0.012^{a}
20	0.052^{bcd}	0.021^{a}	0.027^{a}	0.021^{a}	0.117^{bd}	0.075^{ad}	0.088^{d}	0.054^{abc}	0.053^{bcd}	0.021^{a}	0.027^{a}	0.023^{a}
30	0.127^{bcd}	0.050^{a}	0.059^{a}	0.055^{a}	0.230^{bcd}	0.145^{a}	0.132^{a}	0.127^{a}	0.101^{bcd}	0.041^{a}	0.041^{a}	0.043^{a}
40	0.256^{bcd}	0.134^{a}	0.124^{a}	0.144^{a}	0.398^{bcd}	0.283^{a}	0.263^{a}	0.277^{a}	0.208^{bcd}	0.097^{a}	0.119^{a}	0.096^{a}

	Child (*n*=7,944)				Spouse (*n*=8,178)			
Age *t*	**Black**	**USH**	**FBH**	**White**	**Black**	**USH**	**FBH**	**White**
10	—	—	—	—	—	—	—	—
20	0.010^{d}	0.003	—	0.002^{a}	—	—	—	—
30	0.034^{bd}	0.016^{a}	0.020	0.013^{a}	0.003	—	0.003	0.003
40	0.043^{bd}	0.025^{a}	0.025	0.019^{a}	0.013	0.011	0.003	0.010

Notes: USH = U.S.-born Hispanic. FBH = foreign-born Hispanic.

^{a}Statistically different from non-Hispanic Black at $p < .05$.

^{b}Statistically different from U.S.-born Hispanic at $p < .05$.

^{c}Statistically different from foreign-born Hispanic at $p < .05$.

^{d}Statistically different from non-Hispanic White at $p < .05$.