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Racial/Ethnic Differences in Women's Life Event Exposure Across Midlife

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Abstract

Objective: Stressful life events are associated with poorer physical, cognitive, and mental health. Examining life events trends across midlife illustrates normative experiences of stress in a critical life period for intervention and disease prevention. Further, there is a critical need for research with racially/ethnically diverse samples to identify differences in life event exposure, as they may relate to later health disparities.
Method: Annual life event reports were analyzed from 3,066 White, Black, Hispanic, Chinese, and Japanese women in the Study of Women's Health Across the Nation. Across ages 43–65, longitudinal trajectories were fit to annual number of life events and 9 subcategories of life events (i.e., work problems, economic problems, partner unemployment, illness/accident of loved one, caregiving, bereavement, relationship problems, family legal/police problems, and violent events that happened to the self or family). Racial/ethnic differences were examined, controlling for education.
Results: Number of annual life events declined with age and plateaued in later midlife. This pattern was largely consistent across types of life events, though family health and bereavement-related life events increased in later midlife. Compared to White women, Black women experienced more life events, while Chinese, Hispanic, and Japanese women experienced fewer life events. Racial/ethnic differences were amplified in specific subtypes of life events.
Discussion: Racial/ethnic differences in exposure to life events across midlife may contribute to racial/ethnic health disparities in later life.

Keywords: Life events and context, Longitudinal change, Minority and diverse populations

Accumulation of stressful life events in different domains is associated with poorer mental, physical, and cognitive health, as well as increased disease risk (Binstock & George, 2011; Cohen et al., 2007). Specifically, work stress and economic troubles are associated with depression, poorer self-rated health, and increased mortality risk (Kahn & Pearlin, 2006; Matthews & Gump, 2002; Shippee et al., 2012). Events related to family health, such as caregiving or bereavement, are associated with poorer immune health and increased risk of depression (George & Lynch, 2003; Phillips et al., 2006). Relationship problems are associated with worse immune functioning, poorer cardio-

metabolic health, and mortality (Kiecolt-Glaser & Newton, 2001; Matthews & Gump, 2002). Violent events or accidents are associated with clinical and subclinical cardiovascular disease and posttraumatic stress disorder (PTSD) (Edmondson & Cohen, 2013; Roberts et al., 2011; Thurston & Miller, 2019). Midlife is a life stage before the onset of many clinical diseases. Thus, examining life events trends across midlife in a large, diverse group of women allows us to identify normative experiences of stress occurring in a critical life period for intervention and disease prevention.

The overall number and types of life events may vary across the life course. Midlife often includes the

continuation of multiple roles (e.g., work, family), change in other roles (e.g., parental caregiving), and beginning of some role losses (e.g., retirement, spousal death; Brim & Ryff, 1980). Cross-sectional evidence suggests younger adults tend to report more life events than those at midlife and older adults, which may relate to differences in taking on versus changing social roles (Hatch & Dohrenwend, 2007; Lachman & James, 1997). However, few studies have examined changes in life events over a decade or more, and evidence for change in life events over midlife is mixed. For example, a 12-year longitudinal cohort study found that life events varied by birth cohort; middle-aged men and women had fewer life events than other age groups, but there was no longitudinal linear decline (Chiriboga, 1997). Data were collected at 5-, 7-, and 12- year follow-ups, so longitudinal patterns may have emerged with closer sampling intervals. Also using three time-points of life event data, an 18-year study of middle-aged to older men found linear decreases in life events over time (Aldwin et al., 2011). Long-term longitudinal research of midlife is particularly needed for women because women simultaneously face social role transitions along with the biological changes of menopause, and often report facing many co-occurring stressors (Thomas et al., 2018).

Life course theories suggest that developmentally normative role transitions at midlife change the landscape of life events across older age (Neugarten, 1974; Pearlin & Skaff, 1998). Transitions from the peak of one's career into retirement likely mean fewer work-related issues for working women. Middle-aged adults, known as the "sandwich generation," often must provide care for both their children and their older parents (Friedman et al., 2017). Children are likely to move away from home while their parents are in midlife, decreasing some caregiving burden (Erickson et al., 2010). However, as chronic illnesses develop through midlife, we might also expect to see higher incidence of illnesses and deaths of loved ones toward later midlife. Changes in relationships and living situations are more likely to happen in younger adulthood than in midlife (Almeida & Horn, 2004). Thus, we would broadly expect to see a decline in work-related events across midlife, decline and then increase in caregiving and loss of loved ones, and decline in relationship issues.

Much of what is known from life event research has come from racially homogenous U.S. samples. Few studies have examined racial/ethnic differences in life events, and even fewer have included Hispanic and Asian racial/ethnic minority groups. There is evidence that Black individuals face more life events than White individuals (see Hatch & Dohrenwend, 2007). Limited evidence also suggests Hispanic populations experience more life events—but these findings are primarily from younger adults, and may not generalize into midlife (Hatch & Dohrenwend, 2007; Tabak & Mickelson, 2009). Asian women in the United States are also understudied and frequently grouped together despite cultural diversity and stressors that vary by country of origin (Park et al., 2018). Multiethnic research allows for better understanding of the variation in life course life events among different social groups within the U.S. population that are not well represented in current research (Syed et al., 2018).

Considering intersectional racial/ethnic and educational differences in life events across midlife in the United States may help uncover sources of health disparities in later life. For instance, racial/ethnic disparities in education, housing, employment and earnings, health care, and criminal justice are a few of the ways that systemic racism infiltrates life experiences (Berchick et al., 2019; Schmitt et al., 2017; U.S. Census Bureau, 2018, 2019; U.S. Department of Health and Human Services, Health Resources and Services Administration, Office of Health Equity, 2020). For example, lower education is linked to both more and specific types of life events (e.g., divorce, economic events, violent assault; Hatch & Dohrenwend, 2007). The weathering hypothesis suggests that Black people within the systemically racist American society, and Black women in particular, experience earlier health decline due to cumulative sociopolitical and economic adversity; and the resulting health disparities widen through midlife (Geronimus et al., 2006). Importantly, most studies of racial differences in life events do not account for socioeconomic status differences, which may confound or exacerbate racial differences (Hatch & Dohrenwend, 2007; Vitaliano et al., 2018). It is through these exposures and available resources that socioeconomic status, including educational attainment, serves as a fundamental cause of health disparities (Phelan et al., 2010) and warrants study as a source of social advantage/disadvantage in life event exposure. Cumulative disadvantage may be further exacerbated by the timing of life transitions for marginalized populations (Hatch, 2005). Thus, women's cumulative exposure to major life events may differ by race/ethnicity and education and could contribute to wider health disparities with older age.

The present study aims to identify numbers of and change in life events across midlife in women. The study is important, first, because stress increases risk of disease progression and deteriorated mental, physical, and cognitive health. Thus, common major life events across midlife, before disease onset, may be key targets for intervention. Second, understanding racial/ethnic differences in experiences provides clarity on groups that are at greater risk during midlife, which is particularly important in a race-conscious, ethnically and culturally diverse society. Finally, examining particular types of life events, in addition to overall number of life events, provides a clearer view of the life domains most affected across midlife.

Method

Participants and Procedures

The Study of Women's Health Across the Nation (SWAN) is a multiracial/ethnic observational cohort study of the menopausal transition in 3,302 women. Each of seven sites across the United States recruited one local minority population (Black, Hispanic, Chinese, Japanese) and one local White population (see Sowers et al., 2000). Eligible women were between the ages of 42 and 52 years with an intact uterus and at least one ovary, who did not use exogenous hormones and had at least one menstrual period in the past 3 months.

The baseline interview and annual assessments were completed in a clinic setting, and the questionnaires relevant to the present study were self-administered. Instruments were developed with ethnically diverse focus groups to facilitate multilingual (i.e., English, Cantonese, Japanese, Spanish) comprehension. Each site adhered to its Institutional Review Board's guidelines for human research, with all participants providing written informed consent. Women returned for follow-up assessments approximately each year for 15 years (14 visits over 22 years of the study).

To provide reliable trajectory estimates, the present analyses restricted the sample to women who participated in at least two annual visits. We also required at least 30 women of each racial/ethnic background at each age, resulting in restricting the age range to 43–65. At baseline, missing reports for life events ranged from $N = 7$ (family legal/police problems) to $N = 16$ (economic problems). Twenty-one women did not report education. These requirements resulted in an analytical sample of 3,066 women, of which 2,756 women had baseline data. Compared to the total sample, the analytical sample consisted of fewer Black and Hispanic women, and fewer women with high school or less education (ps < .05).

Measures

Life events

Using an 18-item version of the Psychiatric Epidemiology Research Interview Life Events Scale (Dohrenwend et al., 1978), participants reported life events that occurred in the past year (at baseline) or since their last study visit. A total life event score for each year (annual total life events) was computed as the sum total of all events reported at that visit. Based on conceptual alignment, life events were grouped into nine major categories: *work problems* (starting school/training program/new job, trouble with boss/conditions at work got worse, quit/fired/laid off from job, greatly increased work load at job); *economic problems* ("major money problems"); partner became unemployed; *relationship problems* ("relations with husband/partner changed for the worse but without separation or divorce," and "separated or divorced or a long-term relationship ended"); *family legal/police problems* ("family member had legal problems or a problem with police"); *caregiving* ("took on responsibility for the care of another child, grandchild, parent, other family member, or friend"); *bereavement* ("close relative [husband/partner, child, or parent] died," "close friend or family member other than a husband/partner, child, or parent died"); *violent event to self or family* ("major accident, assault, disaster, robbery, or other violent event happened to yourself," "major accident, assault, disaster, robbery, or other violent event happened to a family member"); and *illness or accident of loved one* ("serious physical illness, injury, or drug/alcohol problem in family member, partner, or close friend"). Two items were not included in the cross-event comparison: "had a serious problem with a child or family member (other than husband/partner) or with a close friend" was removed because it lacked specificity and potentially overlapped with multiple other categories; "a child moved out of the house or left the area" was removed as the transition to empty nest is often a positive life transition (Davis et al., 2016). To enable comparisons across life event types, which varied in number of items from one to four, these categories were made into binary indicators (0 = none of the events in that category occurred, 1 = any of the events in that category occurred) for each year. An additional reason for collapsing to binary data was the relatively small proportions of women who experienced more than one life event, even in domains with multiple options (i.e., 2.91% of the sample reported two deaths at baseline; 2.42% of the sample reported two relationship problems at baseline; 1.93% of the sample reported two violent events at baseline; 34.47% of the sample reported more than one work related issue at baseline). Subtypes of work-related life events were separately examined in Supplementary Table A5.

Ethnicity

Participants indicated ethnicity in response to the open-ended question: "How would you describe your primary racial or ethnic group?" Responses were categorized as White, Black, Chinese, Hispanic, or Japanese.

Education

Self-reported maximum level of education attained included 20 possible response choices, ranging from "did not go to school" to "doctoral degree." The present analyses used three categories to compare educational attainment: completed high school or less, some college or vocational education, and completed college or additional higher degrees.

Study site

SWAN's study design sampled White women at all study sites, Black women at four study sites (Boston, MA; Southeast Michigan; Chicago, IL; and Pittsburgh, PA), and Chinese, Japanese, and Hispanic women each at one study site (Oakland, CA; Los Angeles, CA; and Newark, NJ, respectively). Thus, study site is included

in the present analyses as a categorical covariate to serve as a crude proxy for location characteristics (e.g., geography, regional socioeconomic status). See Supplementary Table A1 for racial/ethnic participation by study site.

Statistical Analysis

At baseline, total annual life events, proportion of women who experienced life events in each subcategory, sociodemographic characteristics (age, marital status, educational attainment), and total number of study visits attended were compared across races using analysis of variance.

Likelihood of experiencing life events over time-varying age is modeled with generalized estimating equations (GEEs; Liang & Zeger, 1986) to account for the longitudinal data structure with binomially distributed (yes/no specific life event type) or negative binomially distributed (annual total number of life events) outcomes. The following model was fit to test whether and how age, race, and education related to experience of each life event type for person i at time t:

$$\text{Logit}\,\{E\,(\text{Life Event}_{it})\} = \beta_0 + \beta_1 \text{Age}_{it}$$
$$+ \beta_2 \text{Age}_{it}^2 + \beta_3 \text{Race}_i + \beta_4 \text{Education}_i$$
$$+ \beta_5 \text{Race}_i * \text{Education}_i + \beta_6 \text{Age}_{it} * \text{Race}_i$$
$$+ \beta_7 \text{Age}_{it} * \text{Education}_i + \beta_8 \text{Age}_{it}^2 * \text{Race}_i$$
$$+ \beta_9 \text{Baseline Age}_i + \beta_{10} \text{Site}_i$$

where individuals' baseline age (centered at 45) and study site are included as covariates. Longitudinal age was centered at 54. Due to the sampling design, White is the reference group for race/ethnicity. Completing high school or less education is the reference group for education.

A negative linear age effect (β_1) is interpreted as a general decline in likelihood of life event occurrence over time. In the context of a negative linear effect, a positive quadratic age effect (β_2) is interpreted as a plateauing decline in likelihood of life event occurrence over time or a decline that reaches a minimum then begins to increase, depending on the size of the effect. Race/ethnicity and education interactions with linear and quadratic age were included in the model where significant. These are also interpreted in respect to the main effects of linear and quadratic age. For example, if the interaction between Black race and linear age is positive, Black women face less of a decline in life event likelihood with age, compared to White women. Similarly, if the interaction between Black race and quadratic age is positive, Black women face a more pronounced curve over time in their likelihood of experiencing that life event.

To explore whether the effect of race varied by education, we also included an interaction term of race/ethnicity and education. Only one of the 72 tests was statistically significant so these results are not discussed further. The interested reader is referred to Supplementary Table A6.

All statistical testing was performed in SAS 9.4, with alpha = .05. SAS PROC GEE was used for analysis and PROC GENMOD with PROC PLM data exported into R was used for plotting, with incomplete data treated as missing at random.

Results

Sample Characteristics at Baseline

Table 1 presents sociodemographic characteristics of the sample at baseline by race/ethnicity. Age at baseline was similar across racial/ethnic groups. Marital status was similar across racial/ethnic groups (~78% married), except for Black women, who had the lowest marriage rate (47.86%). Hispanic women reported the lowest levels of education,

Table 1. Racial Differences and Sample-Level Sociodemographic Characteristics at Baseline

Sociodemographic characteristic	White (N = 1,305) N (%) or M (SD)	Black (N = 775) N (%) or M (SD)	Japanese (N = 249) N (%) or M (SD)	Chinese (N = 223) N (%) or M (SD)	Hispanic (N = 204) N (%) or M (SD)	Total sample (N = 2,756) N (%) or M (SD)
Baseline age	46.32 (2.51)	46.23 (2.43)	46.59 (2.41)	46.38 (2.36)	46.31 (2.50)	46.32 (2.47)
Married	916 (71.56)	369 (48.05)[a]	202 (81.45)	177 (80.09)	143 (74.87)	1,807 (66.73)
Education						
High school or less	210 (16.19)	195 (25.46)[a]	47 (18.88)	66 (29.60)[a]	135 (68.53)[a]	653 (23.90)
Some college	389 (29.99)	310 (40.47)[a]	85 (34.14)	46 (20.63)	41 (20.81)	871 (31.88)
College or more	698 (53.82)	261 (34.07)[a]	117 (46.99)	111 (49.78)	21 (10.66)[a]	1,208 (44.22)
# Study visits attended	11.57 (3.48)	10.87 (3.77)[a]	12.82 (2.44)[a]	12.57 (2.89)[a]	7.43 (3.13)[a]	11.26 (3.63)

Notes: Baseline *N* is less than total sample *N* as some women in the sample did not have their baseline data included due to age restriction.
[a]Statistical significance at alpha = .05 tested by analysis of variance with Tukey's studentized range procedure, with White women as the reference group.

while White, Chinese, and Japanese women reported the highest levels. The average number of study visits attended ranged from 8.30 for Hispanic women to 13.00 for Japanese women (though the Hispanic women's numbers were affected by clinic closures spanning two visits).

Table 2 displays baseline total number of life events and percentage of the sample who experienced each subtype of life event, reported by race. At baseline, Black women reported the most life events, followed by White women; then Japanese, Chinese, and Hispanic women had similar numbers of life events. The highest reported life events were work problems, relationship problems, loved one's illness/accident, and economic problems. Black women were most likely to report economic problems, caregiving, death of a loved one, relationship problems, family legal/police problems, and violent events to the self or family.

Racial/Ethnic Differences in Annual Total Life Events Over Midlife

Table 3 displays results for the change in annual total life events over midlife by race/ethnicity and education. Due to centering, estimates reflect women at age 54 with a high school or less education. Life events slightly declined with age, with a quadratic trend indicating a plateauing number of life events with older ages. Figure 1

demonstrates notable racial differences in number of life events. Compared to White women, Black women experienced more life events, while Chinese, Hispanic, and Japanese women experienced fewer life events. These differences across racial/ethnic groups remained across age, except for Hispanic women. Hispanic women experienced a much steeper decline in life events over age and a quadratic trend that indicates they quickly reached their minimum number of life events at approximately age 53 then began to increase in number of life events thereafter.

Specific Life Event Categories Over Midlife: Sociodemographic Differences

Figure 2 displays racial/ethnic differences in specific life events over midlife (Supplementary Tables A2–A4 have full models). Intercepts reflect women at age 54, with a high school or less education. Across all life event domains, women who were older at baseline had a higher likelihood of experiencing each event over midlife (in each model baseline age odds ratio (OR) > 1, $p < .01$).

Work/finance-related life events
The top row of Figure 2 and Supplementary Table A2 display results for racial/ethnic differences in work- and finance-related life events over midlife.

Table 2. Total Life Events Reported by Race and Type of Life Event at Baseline

	White (N = 1,305)	Black (N = 775)	Japanese (N = 249)	Chinese (N = 223)	Hispanic (N = 204)	Total sample (N = 2,756)
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
Annual total number, M (SD)	3.79 (2.46)	4.32 (2.73)[a]	2.92 (2.12)[a]	3.01 (2.64)[a]	2.33 (2.36)[a]	3.68 (2.58)
Any work/finance problem						
Work problem	892 (68.51)	484 (63.02)	155 (62.25)	135 (60.54)	52 (25.49)[a]	1,718 (62.56)
Economic problems	402 (30.95)	340 (44.44)[a]	48 (19.28)[a]	36 (16.14)[a]	75 (36.76)	901 (32.88)
Partner unemployed	103 (7.92)	65 (8.52)	7 (2.81)[a]	16 (7.17)	23 (11.27)	214 (7.81)
Any family health problem						
Illness/accident of loved one	508 (39.05)	273 (35.64)	59 (23.69)[a]	52 (23.42)[a]	36 (17.73)[a]	928 (33.86)
Caregiving	194 (14.91)	181 (23.51)[a]	37 (14.86)	23 (10.31)	24 (11.76)	459 (16.71)
Bereavement	353 (27.17)	285 (37.06)[a]	68 (27.31)	51 (22.87)	50 (24.51)	807 (29.41)
Any domestic/domestic legal problem						
Relationship problem	628 (48.20)	354 (53.97)[a]	86 (34.54)[a]	69 (30.94)[a]	44 (21.57)[a]	1,242 (45.20)
Family legal/police problem	189 (14.50)	182 (23.64)[a]	19 (7.63)[a]	17 (7.62)	11 (5.39)[a]	418 (15.21)
Violence to self/family	168 (12.94)	146 (19.01)[a]	30 (12.05)	29 (13.06)	32 (15.69)	405 (14.78)

Notes: Baseline N is less than total sample N as some women in the sample did not have their baseline data included due to age restriction.

[a]Statistical significance tested by analysis of variance with Tukey's studentized range procedure, with White women as the reference group and alpha = .05.

Table 3. Racial/Ethnic and Educational Differences in Annual Total Life Events Over Age

Parameter	Annual total events	
	β	(SE)
Intercept	1.12	(0.04)[a]
Baseline age	−0.01	(0.004)
Linear age	−0.02	(0.004)[a]
Quadratic age	0.0005	(0.0002)[a]
Race/ethnicity (reference: White)		
Black	0.16	(0.03)[a]
Chinese	−0.27	(0.07)[a]
Hispanic	−0.44	(0.09)[a]
Japanese	−0.27	(0.06)[a]
Education (reference: high school or less)		
Some college	0.11	(0.03)[a]
College or more	0.11	(0.03)[a]
Interaction of race/ethnicity and linear age (reference: White)		
Black	−0.002	(0.006)
Chinese	−0.001	(0.01)
Hispanic	−0.04	(0.02)[a]
Japanese	0.01	(0.01)
Interaction of race/ethnicity and quadratic age (reference: White)		
Black	0.0001	(0.0003)
Chinese	0.0004	(0.0006)
Hispanic	0.004	(0.0009)[a]
Japanese	−0.0002	(0.0005)

Notes: Estimates for Generalized Estimating Equations using negative binomial distribution. *N* = 3,066.
[a]Significance at alpha = .05.
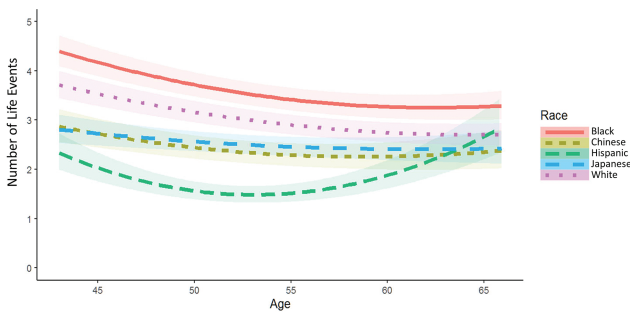
Figure 1. Total annual number of life events across midlife differs by race/ethnicity. Full color version is available within the online issue.

Work problems.—The likelihood of experiencing work problems declined with age, and plateaued in later midlife. Hispanic, Chinese, and Japanese women had lower overall likelihood of experiencing work problems than White women. However, in later midlife, Hispanic women experienced more sustained work problems compared to White women. Women who completed high school or less education were less likely to report work problems than their more educated counterparts.

Economic problems.—The likelihood of experiencing economic problems declined with age, plateaued, and then slightly increased in later midlife. Black women had a
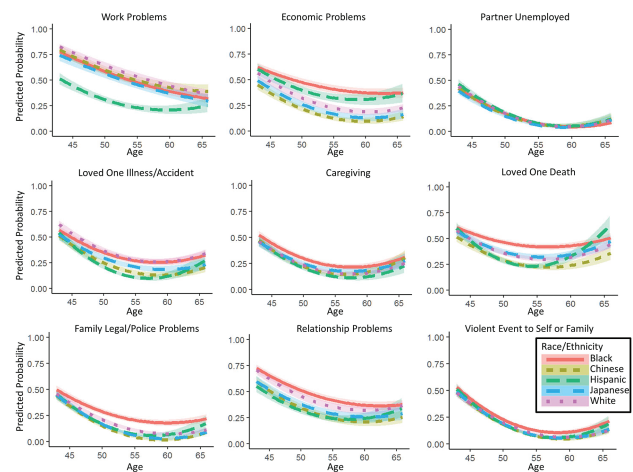
Figure 2. Predicted probabilities for life event occurrence by race with 95% confidence limits. Full color version is available within the online issue.

higher likelihood of experiencing economic problems, had smaller declines with age, and faced a more gradual plateau in later midlife than White women. Chinese women were less likely to experience economic problems than White women. Women with a college degree or higher were less likely to experience economic problems than women with a high school degree or less.

Partner unemployed.—The likelihood of partner unemployment declined with age, plateaued, and then slightly increased in later midlife across racial/ethnic groups. However, Black women had smaller declines in partner unemployment and a lesser uptick in later midlife. Compared to women who completed high school or less, women with at least a college degree experienced lower likelihood of partner unemployment.

Summary.—Overall, work- and finance-related life events declined and plateaued with advancing age. Black women experienced higher levels of economic problems and smaller declines in economic problems and partner unemployment than White women. Chinese women experienced fewer work and economic problems than White women. Women with a higher education experienced more work problems, but fewer economic problems and partner unemployment.

Family health events
The middle row of Figure 2 and Supplementary Table A3 display results for racial/ethnic differences in family health events over midlife.

Illness/accident of loved one.—The likelihood of a loved one having an illness/accident declined with age, plateaued around age 55, and slightly increased in later midlife. Compared to White women, Black, Chinese, Japanese, and Hispanic women all had a lower initial likelihood of a loved one having an illness or accident. Hispanic women experienced a steeper decline in loved ones' illnesses or accidents with age, but the likelihood began to increase around age 60. There were no educational differences in initial likelihood of loved ones experiencing illnesses/accidents, but women with a college degree or higher had less of a decline in these events over age relative to their less educated counterparts.

Caregiving.—The likelihood of caregiving declined with age, reaching its lowest rate between ages 55 and 60 and increasing thereafter. Compared to White women, Black women had more caregiving burden. There were no educational differences in likelihood of caregiving.

Bereavement.—The likelihood of a loved one's death declined with age, reaching the lowest likelihood around ages 55–60 and increasing thereafter. Black women experienced higher initial likelihood of experiencing loved ones' deaths, less decline with age, and a lesser increase in later midlife. Hispanic women experienced greater decline in loved ones' deaths in early midlife, which then more markedly increased after age 55. Chinese women had lower likelihood of experiencing loved ones' deaths. Compared to women who completed high school or less education, women with some college education had higher initial likelihood of experiencing a loved one's death. There was no significant

difference in likelihood of experiencing the death of a loved one for those with a college degree or more.

Summary.—Overall, family health-related life events declined until ages 55–60, at which point they increase again. White women were most likely to report loved ones' illnesses/accidents. Black women had higher levels of caregiving and bereavement, with smaller declines with age. Hispanic women reported larger declines in early midlife and larger increases in later midlife in loved ones' illnesses/accidents and deaths.

Domestic/domestic legal issues
The bottom row of Figure 2 and Supplementary Table A4 display results for racial/ethnic differences in likelihood of domestic and domestic legal life events over midlife.

Relationship problems.—The likelihood of relationship problems declined with age and plateaued around age 55. Compared to White women, Black women were more likely to experience relationship problems, while Japanese, Chinese, and Hispanic women were less likely to experience them. Hispanic women, however, experienced less decline in relationship problems with age. There were no educational differences in likelihood of experiencing relationship problems.

Legal/police problems.—Likelihood of family legal/police problems declined with age, plateauing around age 55. There were no racial/ethnic differences in initial likelihood of family legal/police problems, but there were racial/ethnic differences in these events with age. Compared to White women, Black women experienced more sustained family legal/police problems with age, while Japanese, Chinese, and Hispanic women experienced even less family legal/police problems with age. In later midlife, Hispanic women experienced a slight increase in family legal/police problems. Compared to women who completed high school or less, women with a college degree or higher had lower likelihood of family legal/police problems.

Violence to self or family.—Likelihood of violent events declined with age, and plateaued around age 55 with slight increases in later midlife. Compared to White women, Black women experienced higher likelihood of violent events. Hispanic women experienced a sharper decline in violent events with age, but also a greater increase in violent events in later midlife. There were no educational differences in likelihood of violent events.

Summary.—Domestic and domestic legal life events declined and plateaued with advancing age. Relative to White women, Black women experienced an attenuated decline in each of these events with age. White women were more likely than Hispanic, Chinese, and Japanese women to

report more relationship problems and sustained legal/police problems with age. Hispanic women uniquely experienced larger increases in violent events and family legal/police problems in later midlife. As a sensitivity analysis, all analyses were performed without the Hispanic subsample, with a similar pattern of results.

Discussion

The present study was the first to longitudinally examine midlife life event exposure across diverse racial/ethnic groups. As hypothesized, work- and finance-related life events along with relationship and domestic issues declined with advancing age until later midlife, at which time their decline plateaued. Also as expected, family health-related life events declined until ages 55–60, whereupon they increased again. After accounting for educational differences, Black women often faced higher rates of life events (e.g., work, economic, caregiving, death of a loved one, relationship problems, violent events to self or family) and smaller declines in life events with age (e.g., economic problems, partner unemployed, death of loved one, family legal/police problems) compared to other racial/ethnic groups. Chinese and Japanese women experienced fewer life events across many of the domains. Unexpectedly, of the racial/ethnic groups, Hispanic women often faced stronger initial declines and greater later increases in life events.

That midlife broadly consists of decreasing life events aligns with theoretical social role and socioemotional changes with age. Particularly, during midlife, diversity of social roles is at its peak, but particular roles are shifting (Lachman, 2004). Through this time, women shift away from direct caregiving for children and toward caregiving for parents, away from work and toward retirement. Reduction in network-based life events may have several underlying sources. Social networks tend to narrow, to focus on those who matter most to the individual and who provide more meaningful, positive experiences (Lang & Carstensen, 1994; Lansford et al., 1998). Additionally, socioemotional aging theories suggest older adults may be better at avoiding major stressful events, particularly social stressors (e.g., avoiding arguments that lead to major relationship dissolution; Carstensen et al., 1999; Charles, 2010). Finally, with age, adults may find that they are "protected" from exposure to life events by younger relatives, as younger adults are less likely to convey negative emotions to older adults (Fingerman et al., 2008). Notably, older age at baseline was associated with higher likelihood of experiencing each life event, while the likelihood of experiencing each event declined with advancing age. These findings highlight the importance of examining aging processes as a key contribution to life event literature that has primarily relied on cross-sectional age differences.

While higher life stress exposure for Black and Hispanic women is in line with the limited available literature (Hatch & Dohrenwend, 2007; Kahn & Pearlin, 2006),

results should consider the context of other characteristics to understand the implications of such exposure. For instance, Black women are less likely to be married, but they have more relationship problems and partner unemployment over age than other racial/ethnic groups. This effect may indicate the confluence of economic and relationship problems, which have particularly affected Black women's marital patterns (Raley et al., 2015). That Black women experience more work and economic issues than all other racial/ethnic groups in our sample characterizes life in a nation with widening income gaps between Black and White individuals since 1967 (U.S. Census Bureau, 2018). Higher exposure rates to events that lead to chronic stress or trauma can lead to health disparities in later life (Geronimus et al., 2006). Higher rates of caregiving for Black women compared to other racial/ethnic groups may be more chronic and burdensome due to findings suggesting Black and Hispanic individuals spend more time on and provide higher intensity of care (Cohen et al., 2019; National Alliance for Caregiving [NAC] & AARP, 2020). The increased exposure to death of a loved one experienced by Black women in America is also a potential source of health disparities partly due to health risks of bereavement (Umberson et al., 2017). Finally, over-policing and police brutality, as potentially reflected in present findings on family legal and police problems, are experienced to a greater degree by Black and Hispanic individuals and are a known public health concern (Alang et al., 2017; Edwards et al., 2018). Importantly, simply comparing racial/ethnic groups does not capture the underlying systems of racism and White supremacy that are likely key contributors to differences in life events, either directly or indirectly.

Several limitations of the present study can be addressed in future work. While the current study provided a much needed description of life events by race/ethnicity in the United States, the embedded systems of racism and White supremacy in which these women live need to be disentangled, as well as underlying ethnic and cultural heterogeneity. For instance, Black women's more sustained experience of legal/police problems is likely directly due to racism. The present study also focuses on racial/ethnic experiences in the United States, which has a unique historical and sociocultural context as well as pervasive mechanisms to support continued systemic racism (Roberts & Rizzo, 2020). However, life events measures have been established with cross-cultural validity (McAndrew et al., 1998), and further work is needed to determine whether the sociocultural contextual factors that lead to differing life events by race/ethnicity in our American sample extend to other countries.

Relatedly, the racial/ethnic differences in the present study may have been overestimated due to underestimated regional and contextual effects (Ford & Harawa, 2010). Controlling for study site accounted for some location and recruitment-based variance (see Sowers et al., 2000), but could not account for the many contextual characteristics (e.g., neighborhood characteristics) that

can lead to differences in life event experiences. Further, as Chinese, Japanese, and Hispanic women are only sampled at one study site each, future work is needed to test whether these findings generalize nationally. Hispanic women's unique patterns of life events in the present sample should be viewed cautiously, given the comparatively small number of Hispanic women in the sample, and that their differing pattern may reflect unique attributes of life in Newark, New Jersey during the study period. This is corroborated by similar patterns of life event probabilities for White women in Newark, New Jersey compared to Hispanic women in the sample (data not shown). Similarly, in a previous analysis of racial/ethnic differences in perceived stress with SWAN data, both the Hispanic women and White women at the New Jersey site increased in their stress over time in the first 5 years of the study, contrary to the general decline in perceived stress experienced by all other racial/ethnic groups and sites (Hedgeman et al., 2018). While more detailed contextual data are not available for the current sample, future research in this area is vital for disentangling structural foundations of racial/ethnic disparities (Ford & Harawa, 2010; Volpe et al., 2019).

The present analysis was also unable to investigate within-group cultural diversity, as broader racial/ethnic groups were needed for statistical power. For instance, the Hispanic subgroup in the present study included Central American, South American, Puerto Rican, Dominican, and Cuban women. Different countries of origin affect acculturation and health (Green et al., 2010), which might relate to life event likelihood and timing. Furthermore, while the sample is diverse, more disenfranchised women may have been under-represented here. Black and Hispanic women, and those with high school or less education, were less likely to be included in the sample.

Future work should address limitations in measures/analysis, as well. Due to the nature of the interview questions, we cannot know whether events reported on a particular visit constitute one life event that cascaded into the next visit or separate life events (e.g., relationship problems including separation in one visit may have led to economic problems). Future work should ask follow-up questions about events' relatedness and timing. Additionally, to aid comparisons by life event domain and to specifically address racial/ethnic differences, the modeling approach compared likelihood of experiencing any versus no life event using GEEs. This approach meant that it was not possible to reflect the increased burden on women experiencing two, three, or four life events, as they were treated the same as those who had experienced just one in that category. The approach was in part due to the categories being composed of relatively few events. Further, the use of GEEs did not allow for examination of how individuals within each racial/ethnic group differ in their life event trajectories over time (i.e., random effects). Finally, recruiting White women at each study site but limiting recruitment of other

racial/ethnic groups to specific sites (Supplementary Table A1) leads to an analytical approach that centers on White women. Future studies should not use White women as the reference group, instead centering marginalized experiences (Volpe et al., 2019).

Findings provide robust evidence for racial/ethnic differences in life events across midlife. The present study added to a small number of longitudinal studies of life events across midlife, and findings were strengthened by ensuring education was not confounded with race/ethnicity. Beyond identifying racial/ethnic differences in the annual number of life events, our results showed more nuanced racial/ethnic differences in life event domains that are particularly relevant for mental, physical, and cognitive health. With evidence of racial/ethnic differences in access to treatment for mental health (e.g., PTSD: Roberts et al., 2011; depression: George & Lynch, 2003), understanding the patterns of life events might help target prevention efforts to those in greatest need before health issues arise.

The present study provided the first long-term longitudinal examination of diverse racial/ethnic differences in life events across midlife. Generally, life events decline over midlife. However, family health and bereavement life events begin to increase in later midlife. Black women face a greater number of and often slower declines in life event exposure across midlife than other racial/ethnic groups. Hispanic women may face increased risk of life event exposure later in midlife, although this effect may be more reflective of the environment that recruited both Hispanic and White women. Chinese and Japanese women faced the lowest number of life events, below Hispanic women and White women. Future work may delve deeper into the underlying mechanisms of the current findings, especially systemic racism and cultural differences, and examine how life event trajectories relate to risk for disease.

Supplementary Material

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

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Conflict of Interest

None declared.

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