

# Loneliness in Midlife: Historical Increases and Elevated Levels in the United States Compared With Europe

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Loneliness is gaining attention globally as a public health issue because elevated loneliness increases one's risk for depression, compromised immunity, chronic illness, and mortality. Our objective is to zoom into how loneliness has historically evolved through midlife and investigate whether elevations in loneliness are confined to the United States or are similarly transpiring across peer European nations. We use harmonized data on loneliness from nationally representative longitudinal panel surveys from the United States and 13 European nations to directly quantify similarities and differences in historical change of midlife loneliness trajectories. Compared with any other European nation/region, overall levels of loneliness in the United States are consistently higher by a magnitude of 0.3–0.8 *SDs*. Middle-aged adults in the United States, England, and Mediterranean Europe today report higher levels of loneliness than earlier born cohorts, whereas no historical changes (if not historically lower levels) were observed in Continental and Nordic Europe. Our discussion focuses on possible reasons for cross-national differences in midlife loneliness, including cultural factors, social and economic inequalities, and differences in social safety nets.

## Public Significance Statement

Loneliness is gaining attention globally as a public health issue as shown by the U.S. Surgeon General advisory report and several nations appointing ministers of loneliness. Our findings document cross-national differences in loneliness in midlife and shed light on potential root causes that contribute to cross-national differences in loneliness as well as policy levers that can reverse trends for the better. Changes in cultural norms and economic inequalities, as well as policy models pertaining to work, family, and health care could be driving differences in midlife loneliness.

**Keywords:** midlife, cross-national approach, cohort differences, loneliness, multilevel modeling

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Loneliness in the United States is gaining attention as a public health issue as documented in a recent advisory report issued by the U.S. Surgeon General (Office of the U.S. Surgeon General, 2023). Other nations, such as the U.K. and Japan, have designated ministers focused on alleviating loneliness

(The Lancet, 2023). The consequences of loneliness are profound. Loneliness is linked to increased risk for depression, compromised immunity, chronic illness, and mortality (Cacioppo et al., 2015; Ong et al., 2016). Loneliness being recognized as a public health issue around the world and the

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**Frank J. Infurna**

critical need to address it signify the need to better understand how loneliness has historically changed over time and whether historical trends are similarly transpiring in peer nations.

We focus on middle-aged adults because they form the backbone of society, and empirical evidence demonstrates that U.S. midlife health is lagging peer nations. Middle-aged adults carry much of society's load by constituting most of the workforce, while simultaneously supporting to fulfill the needs of younger and older generations in the family (Infurna et al., 2020; Lachman et al., 2015). The challenges that middle-aged adults nowadays are confronted with have increased in their intensity, magnitude, and sheer load (Infurna et al., 2020). Middle-aged adults are contending with changes in their relationships with aging parents (e.g., greater reliance for caregiving) as well as with their adult children (e.g., who struggle to secure stable employment; Fingerhant, 2017). Middle-aged adults are also struggling with financial challenges because of labor market instability and a shrinking social and health care safety net that is straining household budgets (Infurna et al., 2020). The significance of midlife is further exemplified by empirical evidence demonstrating that better midlife health foreshadows better health and financial assets in old age (Poterba et al., 2017; Rantanen et al., 2012; Willis & Schaie, 2005).

Middle-aged adults in the United States today are doing more poorly in mental and physical health than same-aged peers several decades ago. Specifically, empirical evidence from the Midlife in the United States Study showed that middle-aged adults following the Great Recession (i.e., assessed 2011–2014) reported lower levels of psychological well-being, more physical health symptoms, chronic illness, and functional limitations and exhibited more daily stress, compared to middle-aged adults assessed in 1995–1996 (see Almeida et al., 2020; Goldman et al., 2018; Kirsch et al., 2019). Deaths of despair have risen dramatically, leading to over 600,000 excess lives lost in the past decade (Case & Deaton, 2020). Life expectancy has stagnated/declined in the past decade (3-year decline, mostly driven by rising mortality rates in working-age adults), whereas peer nations are showing continual gains (Harris et al., 2021). Compared to several European nations, U.S. middle-aged adults report more depressive symptoms and higher rates of chronic illness, pain, and disability (Avendano & Kawachi, 2014; Case & Deaton, 2020; Infurna et al., 2021). It is less clear whether the languishing of U.S. middle-aged adults in comparison to peer nations extends to loneliness. Empirical evidence using cross-sectional data reveals cross-nation differences in loneliness (Luhmann et al., 2023). A meta-analysis by Surkalim et al. (2022) found that prevalence rates of loneliness in midlife were lowest in Nordic Europe, followed by Continental and Mediterranean Europe, and prevalence rates were the highest in Eastern Europe and Central and Western Asia. However, there has been little emphasis on how loneliness has changed historically over time and whether such change differs across national contexts.

We use a historical contextualism approach to examine how loneliness is a product of how societies and the world around us are constructed (Drewelies et al., 2019; The Lancet, 2023). Studies examining historical trends in loneliness have either focused on children, adolescence, emerging adults, or older adults. Among children, loneliness has shown stability over historical time (Lempinen et al., 2018; see also Mund et al., 2020). Among high school and college students in the United States, loneliness has declined ( $-0.26$  *SD* in high school students and  $-0.11$  *SD* in college students; Clark et al., 2015). Among emerging adults (ages 18–29), a cross-temporal meta-analysis by Buecker et al. (2021) found that loneliness has increased over historical time from 1976 to 2019 by  $0.56$  *SD*; this trend is largely

Science Framework (<https://osf.io/gnse8/>). The authors note that, due to the timeliness of the loneliness topic and to provide a clear presentation of results, they decided to focus on loneliness for this article. Other articles will address the other outcomes included in the preregistration. Each data set is publicly available and requires access through user agreements.

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confined to North American samples and less so in European and Asian samples. Among older adults, studies have shown either no historical changes in loneliness (Finland: Eloranta et al., 2015; Sweden: Dahlberg et al., 2018; United States: Hawkley et al., 2019), lower levels of loneliness today than in the past ( $-0.63$  *SD* in Germany: Hülür et al., 2016;  $-0.11$  *SD* in the Netherlands: Suanet & van Tilburg, 2019), or higher levels of loneliness today than in the past ( $1.02$  *SD* in China: Yan et al., 2014).

Despite the increased attention to loneliness as a public health issue, little is known regarding how loneliness has been changing historically over time in middle-aged adults. For example, levels of loneliness may or may not be higher today among the baby boomers, compared to same-aged peers in the past among the silent generation. There is added value to examining historical change because it can inform whether elevations in loneliness among middle-aged adults today have only recently emerged, and is thus a byproduct of our current societal environment or has been transpiring for multiple decades. For example, the experience of each cohort differs across historical events (e.g., the Great Recession), changing cultural norms, policy programs, and economic inequalities. Examining historical trends of loneliness between nations will raise awareness of and prompt future inquiry into which social conditions and policy programs (e.g., reducing income inequality, promoting work and family benefits) could help reduce loneliness. The nations in our study differ in types of family support and policy models pertaining to work, family, and health care (Lundberg et al., 2008), which provide impetus for future mechanism-oriented research on why loneliness differs between nations.

We aim to better understand historical changes in loneliness among middle-aged adults by using harmonized data from

representative longitudinal panel surveys to quantify similarities and differences in trajectories of midlife loneliness in the United States and 13 European nations (England, and Continental, Mediterranean, and Nordic Europe). The use of longitudinal panel surveys containing harmonized data permits direct comparison of findings across nations. Each study contains large sample sizes of middle-aged adults born in different historical times, thereby strengthening the statistical power to detect cohort effects. Additionally, the inclusion of refresher samples serves to maintain sample size and cohort heterogeneity. Ultimately, our direct comparative cross-national approach to examining historical changes in loneliness can draw more attention and understanding to potential reasons behind loneliness and policy levers that can improve or even undo these trends.

## Method

### Study Design

Longitudinal panel surveys consisting of nationally representative samples were used from 14 different nations, including the United States (Health and Retirement Study, HRS), England (English Longitudinal Study of Aging, ELSA), and Europe (Survey of Health, Aging, and Retirement in Europe, SHARE; Austria, Belgium, Switzerland, Germany, Denmark, Spain, France, Greece, Italy, Netherlands, Sweden, and Israel). We used data that have been harmonized by the Gateway to Global Aging team and can be accessed via their website (<https://g2aging.org>). Harmonization involves combining data sets from different sources into a consistent, standardized, and comprehensive format for analysis. In the present study, each of the incorporated data sets assessed loneliness using an identical measure and involved midlife participants who were assessed longitudinally. This provides the opportunity to examine historical change in loneliness across the gathered data. We included participants who provided data when they were aged 45 through 65 because this is the generally accepted age range for midlife (Lachman, 2004). Table 1 provides information on the years data were collected, sample size, and sociodemographics for each study.

### Transparency and Openness

This study was preregistered, and the syntax for data preparation and the analyses presented in Tables 2 and 3 are provided on the Open Science Framework (<https://osf.io/gnse8/>). We note that, due to the timeliness of the loneliness topic and to provide a clear presentation of results, we decided to focus on loneliness for this article. Other articles will address the other outcomes included in the preregistration. Each data set is publicly available and requires access through user agreements.



**Tita Gonzalez Avilés**

## Participants and Procedure

The HRS (Sonnega et al., 2014) began in 1992 and is a nationally representative sample of households in the contiguous United States comprising adults aged 50 years and older and their spouse (spouses younger than age 50 were included). Participants provide biennial data on sociological, psychological, and physical health information. Data are collected via in-person and telephone interviews, and every 6 years, a new cohort is recruited to refresh the sample. We used data from 2002 to 2018 because 2002 is when data on loneliness began to be collected. In total, 13,217 participants who provided data when they were aged 45–65 were included in the analyses (60% women). This analysis used data or information from the Harmonized HRS data set and Codebook, Version C, as of January 2022 developed by the Gateway to Global Aging Data.

The ELSA (Banks et al., 2006) began in 2002 and is a nationally representative longitudinal survey that collects multidisciplinary data biennially on adults age 50 and older (and spouses younger than age 50) living in England. We used biennial assessments from 2004 to 2018/2019 because 2004 is when data on loneliness began to be collected. In total, 9,793 participants who provided data when they were aged 45–65 were included in the analyses (56% women). This analysis used data or information from the Harmonized ELSA data set and Codebook, Version G.2, as of July 2021 developed by the Gateway to Global Aging Data.

The SHARE (Börsch-Supan et al., 2013) began in 2004 and is a cross-national longitudinal panel survey on the mental and physical health and social and family networks of individuals in Europe and Israel. In our analyses, we only included nations that began in Wave 1 because these provide enough observations over a long enough time frame that allow for the examination of within-person longitudinal change. These nations were Austria, Belgium, Switzerland, Germany, Denmark, Spain, France, Greece, Italy, Netherlands, Sweden, and Israel. We followed Wallace et al. (2015) who grouped these nations based on the nation's social model into Continental Europe (France, Austria, Belgium, Germany, Switzerland, Israel), Mediterranean Europe (Italy, Spain, and Greece), and Nordic Europe (Denmark, Netherlands, and Sweden). We used data from 2010/2011 to 2019/2020 because 2010/2011 is when data on loneliness began to be collected. In total, 36,020 participants who provided data when they were aged 45–65 were included in the analyses (57% women). This analysis used data or information from the Harmonized SHARE data set and Codebook, Version F, as of June 2022 developed by the Gateway to Global Aging Data.

## Outcomes

Loneliness in each study was assessed using the Three-Item Loneliness Scale (Hughes et al., 2004), which asked

**Table 1**  
*Descriptive Information for Each of the Data Sets Used in the Current Study*

Study information	United States (HRS)	England (ELSA)	Continental Europe (SHARE)	Mediterranean Europe (SHARE)	Nordic Europe (SHARE)
Data collection years	2002–2018 (biennially)	2004–2018/19 (biennially)	2010/11–2019/20 (biennially)	2010/11–2019/20 (biennially)	2010/11–2019/20 (biennially)
Sample size	$N = 13,217$	$N = 9,793$	$N = 18,283$	$N = 9,908$	$N = 7,829$
Age at baseline	$M = 56.51$ ( $SD = 4.45$ ) Range: 45–65	$M = 55.80$ ( $SD = 4.46$ ) Range: 45–65	$M = 56.67$ ( $SD = 4.82$ ) Range: 45–65	$M = 57.01$ ( $SD = 4.84$ ) Range: 45–65	$M = 57.53$ ( $SD = 4.86$ ) Range: 45–65
Gender (% women)	60%	56%	56%	57%	56%
Year of birth	$M = 1953$ ( $SD = 7.16$ ) Range: 1937–1974	$M = 1951$ ( $SD = 7.14$ ) Range: 1939–1974	$M = 1955$ ( $SD = 5.27$ ) Range: 1945–1974	$M = 1955$ ( $SD = 5.31$ ) Range: 1945–1974	$M = 1954$ ( $SD = 5.29$ ) Range: 1945–1974

*Note.* HRS = Health and Retirement Study; ELSA = English Longitudinal Study of Aging; SHARE = Survey of Health, Aging, and Retirement in Europe. Continental Europe consists of France, Austria, Belgium, Germany, Switzerland, and Israel. Mediterranean Europe consists of Italy, Spain, and Greece. Nordic Europe consists of Denmark, Netherlands, and Sweden.





Kevin J. Grimm

how often participants experience the following feelings: They lack companionship, feel left out, and feel isolated from others. Participants answered using the following response

scale: 1 = *hardly ever or never*, 2 = *some of the time*, and 3 = *often*. The three items were averaged, with higher scores indicating higher levels of loneliness. To ease interpretability, we converted the measure to a *T*-score metric ( $M = 50$ ,  $SD = 10$ ), using the entire sample of 59,030 participants.

The Three-Item Loneliness Scale is derived from the longer 20-item University of California, Los Angeles Loneliness Scale and assesses global feelings of loneliness, particularly the isolation facet, as opposed to other facets of loneliness (relational connectedness and collective connectedness; see Hawkley et al., 2005). Using an indirect approach, items had been intentionally formulated to avoid the term loneliness as opposed to a direct approach that asks openly about feelings of loneliness (von Soest et al., 2020). Internal consistencies or Cronbach  $\alpha$  at each wave of assessment in each study were as follows: HRS:  $\alpha$ 's ranged from .78 to .82; ELSA:  $\alpha$ 's ranged from .83 to .84; SHARE:  $\alpha$ 's ranged from .74 to .79). With regard to validity, previous research using this shortened three-item scale found that elevations in loneliness were associated with increased risk for biological aging, morbidity, disability, and mortality (Crowe et al., 2021). Consistent with

**Table 2**

*Results From Multilevel Model Examining Cross-Nation Differences by Generation*

Parameter	Early baby boomer		Late baby boomer		Generation X	
	Estimate	SE	Estimate	SE	Estimate	SE
<b>Fixed effects</b>						
Intercept	54.63**	0.32	54.53**	0.31	53.54**	0.40
Time	-0.02	0.09	0.09	0.08	0.004	0.36
Time-squared	-0.01	0.01	-0.01	0.01	-0.04	0.04
Age	-0.09	0.07	0.08	0.05	0.39	0.18
Age $\times$ Time	-0.03	0.02	-0.03	0.01	-0.26	0.17
England	-2.86**	0.41	-3.08**	0.43	-1.93	1.00
Continental Europe	-5.85**	0.40	-5.91**	0.36	-5.05**	0.88
Mediterranean Europe	-7.56**	0.52	-5.95**	0.41	-3.59**	0.77
Nordic Europe	-7.44**	0.49	-7.25**	0.44	-8.01**	1.22
England $\times$ Time	-0.07	0.11	0.01	0.12	-1.93	1.89
Continental Europe $\times$ Time	-0.005	0.12	0.06	0.09	0.30	0.43
Mediterranean Europe $\times$ Time	0.35	0.16	-0.02	0.11	-0.41	0.42
Nordic Europe $\times$ Time	0.06	0.16	-0.02	0.11	0.55	0.51
England $\times$ Age	-0.03	0.11	0.10	0.07	-0.05	0.448
Continental Europe $\times$ Age	-0.03	0.09	-0.12	0.06	-0.18	0.34
Mediterranean Europe $\times$ Age	0.52**	0.10	0.12	0.07	-0.06	0.32
Nordic Europe $\times$ Age	0.01	0.10	-0.14	0.07	-0.58	0.49
England $\times$ Time $\times$ Age	0.04	0.03	-0.01	0.02	—	—
Continental Europe $\times$ Time $\times$ Age	0.05	0.03	0.01	0.02	0.28	0.20
Mediterranean Europe $\times$ Time $\times$ Age	0.01	0.04	0.02	0.02	0.03	0.20
Nordic Europe $\times$ Time $\times$ Age	0.02	0.04	0.01	0.02	0.46	0.24
<b>Random effects</b>						
Intercept	53.84**	0.78	57.88**	0.89	57.63**	3.91
Time	0.57**	0.05	0.31**	0.03	—	—
Time-squared	0.02**	0.004	0.01**	0.002	—	—
Residual variance	35.01**	0.42	38.27**	0.45	42.54**	2.72

*Note.* Loneliness is in a *T*-score metric ( $M = 50$ ,  $SD = 10$ ), and the United States is the reference group. Early baby boomers (birth years 1946–1954):  $N = 27,067$  and 55,010 observations. The model was centered at age 57, and the ages 57–65 were included. Late baby boomers (birth years 1955–1964):  $N = 24,186$  and 51,738 observations. The model was centered at age 50, and the ages 46–63 were included. Generation X (birth years 1965–1974):  $N = 2,142$  and 2,720 observations. The model was centered at age 50, and the ages 45–63 were included. — in the Generation X column indicates that the parameter was not estimated. *SE* = standard error.

\*\* $p < .0001$ .



**Margie E. Lachman**

Hughes et al. (2004), our loneliness measure was moderately correlated with depressive symptoms in each study ( $r$ 's range from .44 to .48).

### Statistical Analysis

The analysis proceeded as follows. We conducted a conjoint analysis of all 14 nations and included country-level variables as predictors, with the United States being the reference. Results reported in Table 3 are from the conjoint analysis and the pattern of findings was similar when conducted separately by data set/nation. Results reported in Table 2 are from a model that solely included the birth years representing the generations of early baby boomers (1946–1954), late baby boomers (1955–1964), and Generation X (1965–1974) and the age ranges that were available for each data set. This was done because midlife data for the silent generation was available in the HRS and ELSA but not in SHARE. More information is available at the bottom of Table 2 for the ages covered. We acknowledge that, by definition, the data basis for drawing inferences about midlife trajectories among Generation X participants is as of today much smaller than for the earlier born generations. At the same time, the results obtained for Generation X are mirroring the overarching pattern of findings obtained.

### Time-in-Study, Age, and Cohort

Following Gerstorf et al. (2019), we examined intraindividual change as time-in-study, a time-varying variable quantified for each assessment as the number of years since baseline (T1) and centered at the middle of each individual's repeated measures time series. Age-related

**Table 3**

*Results From Multilevel Model Examining Historical Changes in Loneliness Within and Between Nations*

Parameter	Loneliness	
	Estimate	SE
<b>Fixed effects</b>		
Intercept	55.05**	0.29
Time	0.28**	0.07
Time-squared	−0.01**	0.003
Age	−0.003	0.05
Age × Time	−0.10**	0.02
Birth year	0.08	0.03
Birth-year-squared	−0.03**	0.004
Birth Year × Time	−0.07**	0.01
Birth-Year-Squared × Time	0.003	0.001
Birth Year × Age	−0.02**	0.004
Birth-Year-Squared × Age	0.001	0.0002
Birth Year × Age × Time	0.002	0.001
Birth-Year-Squared × Age × Time	−0.0002	0.0001
England	−3.43**	0.39
Continental Europe	−6.94**	0.33
Mediterranean Europe	−9.13**	0.38
Nordic Europe	−7.08**	0.41
England × Time	−0.20	0.11
Continental Europe × Time	−0.20	0.09
Mediterranean Europe × Time	0.21	0.11
Nordic Europe × Time	−0.22	0.12
England × Age	0.19	0.08
Continental Europe × Age	0.16	0.07
Mediterranean Europe × Age	0.88**	0.07
Nordic Europe × Age	−0.24	0.08
England × Time × Age	0.06	0.02
Continental Europe × Time × Age	0.10**	0.02
Mediterranean Europe × Time × Age	−0.02	0.02
Nordic Europe × Time × Age	0.09*	0.02
England × Birth Year	−0.11	0.05
Continental Europe × Birth Year	0.16	0.05
Mediterranean Europe × Birth Year	0.78**	0.06
Nordic Europe × Birth Year	−0.22	0.07
England × Birth-Year-Squared	0.03**	0.005
England × Time × Birth Year	0.08**	0.02
Continental Europe × Time × Birth Year	0.07**	0.02
Mediterranean Europe × Time × Birth Year	−0.06	0.02
Nordic Europe × Time × Birth Year	0.06	0.02
England × Age × Birth Year	0.05**	0.01
England × Time × Age × Birth Year	−0.003	0.002
<b>Random effects</b>		
Intercept	56.55**	0.54
Time	0.37**	0.02
Time-squared	0.01**	0.001
Residual variance	37.53**	0.27

*Note.*  $N = 59,030$  individuals and 125,954 observations. Loneliness is in a  $T$ -score metric ( $M = 50$ ,  $SD = 10$ ). The model was centered at birth year 1960 and age 50, and the United States is the reference group. United States:  $N = 13,217$  and 23,714 observations. England:  $N = 9,793$  and 29,070 observations. Continental Europe:  $N = 18,283$  and 38,864 observations. Mediterranean Europe:  $N = 9,908$  and 18,920 observations. Nordic Europe:  $N = 7,829$  and 15,386 observations.  $SE$  = standard error. \* $p < .001$ . \*\* $p < .0001$ .

differences (age gradients) were examined as individuals' chronological age (at their middle assessment) and centered at age 50. Cohort-related differences were examined as individuals' birth year, which was centered at 1960.



Denis Gerstorf

### Data Analysis

Intraindividual changes, age-related, and history-related differences were examined using growth curve models (Grimm et al., 2017). This permitted for tracking how loneliness develops as people move through midlife (i.e., within-person change) and how this may differ across historical times and nations (i.e., between-person differences). The Supplemental Materials provide more information on the equations of the growth curve model. Given the large sample size for the analyses and to guard against false positives (for discussion, see Lakens et al., 2018), we use the  $p < .0001$  cutoff for statistical significance for intercept-related parameters and  $p < .001$  for time-related parameters. We have chosen these different cutoffs because (a) the statistical power to detect intercept effects is greater than the power to detect slope effects and, (b) as shown by Feingold (2021), the power to detect intercept differences was 9.7 times greater than the power to detect slope differences.

Also, to convey the meaningfulness of our findings and not solely rely on statistical significance, we evaluate our results using an effect size metric akin to Cohen's (1988)  $d$  (small = 0.20, medium = 0.50, large = 0.80). This is made possible by converting the loneliness measure to a  $T$ -score metric where 1 point is equivalent to .1  $SD$ . Cohen (1988) suggested these qualitative descriptors based on "typical" effect sizes in nonexperimental research are useful when little or no other information about effect size is available based on previous research.

### Results

We first contrast historical changes in midlife loneliness across nations/regions and then examine historical changes more directly within a given nation/region. These two sets of

analyses use to some degree nonoverlapping and differently structured parts of the data and so complement one another and shed light on different aspects of the larger phenomenon. Our attention is focused on describing similarities and differences in cohort effects within and across nations. The online Supplemental Materials contain more detailed explanations of findings.

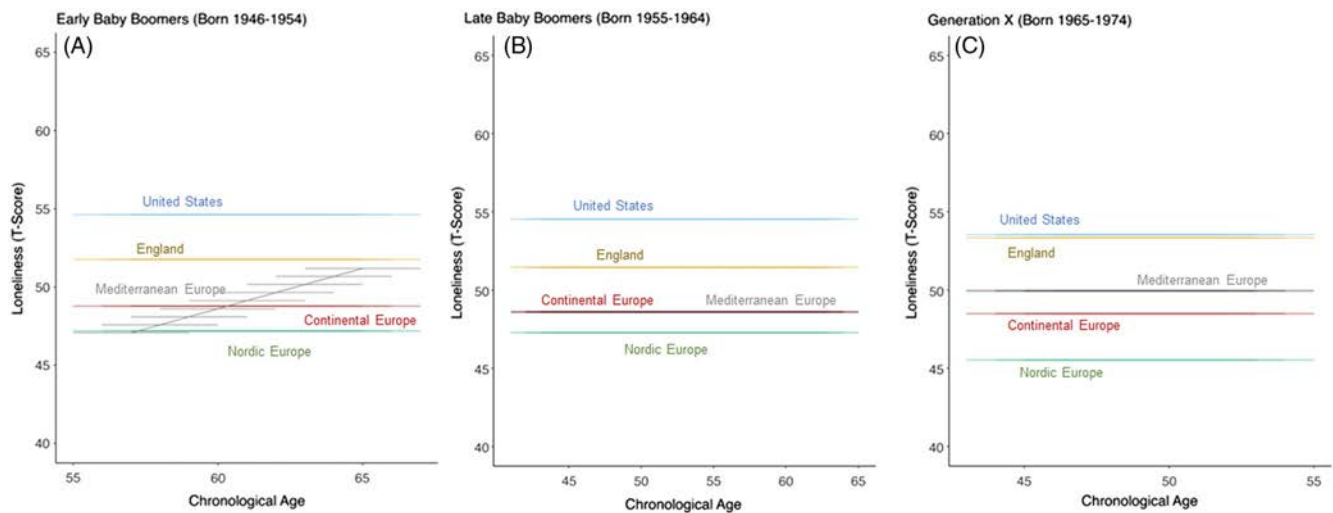
Table 2 presents parameter estimates from conjoint multilevel models that use overlapping birth years and ages to contrast historical changes across nations in how loneliness develops for three generations across the midlife years. From the left-hand panel of Table 2 can be obtained that the average U.S. early baby boomer at age 57 (our centering age) reported 4.6  $T$ -score units (or 0.46  $SD$ ) higher levels of loneliness than the average of the entire data set (intercept = 54.63,  $p < .0001$ ). The nonsignificant parameter estimates for time and age (e.g., time =  $-0.02$ ,  $p > .100$ ) indicate that levels of loneliness were stable across the midlife years for U.S. early baby boomers. The parameter estimates for intercept differences by nation indicate that early baby boomers in each nation/region reported lower levels of loneliness than their peers in the United States. For example, those in England reported 0.29  $SD$  units lower levels of loneliness. The substantive pattern of differences is similar for the late baby boomers (middle panel of Table 2) and Generation X (right-hand panel of Table 2). With one exception, the time and age interactions were not reliably different from zero. This one exception indicates an age trend of increasing loneliness for early baby boomers in Mediterranean Europe (0.05  $SD$  units per year).

Figure 1 plots these historical shifts in age trajectories of loneliness by generation and nation/region. On average, middle-aged early baby boomers in the United States (see Figure 1A) reported higher levels of loneliness than other European nations/regions for whom levels were consistently lower: England ( $-0.29 SD$ ), Continental Europe ( $-0.58 SD$ ), Mediterranean Europe ( $-0.76 SD$ ), and Nordic Europe ( $-0.74 SD$ ). Likewise, middle-aged late baby boomers in the United States (see Figure 1B) reported, on average, higher levels of loneliness as compared to their European peers in England ( $-0.31 SD$ ), Continental Europe ( $-0.59 SD$ ), Mediterranean Europe ( $-0.59 SD$ ), and Nordic Europe ( $-0.72 SD$ ). Finally, U.S. middle-aged adults in Generation X (see Figure 1C) reported higher levels of loneliness than their peers in Continental ( $-0.51 SD$ ), Mediterranean ( $-0.36 SD$ ), and Nordic Europe ( $-0.80 SD$ ), whereas the nominal difference to England ( $-0.19 SD$ ) is not statistically significant. Across the generations examined, middle-aged adults in the United States consistently reported higher levels of loneliness, compared to peer European nations/regions.

Analyses examining historical changes more directly within a given nation/region are shown in Table 3 and illustrated in Figure 2. From Table 3 can be obtained that the average U.S. middle-aged adult born in 1960 at the age of 50

**Figure 1**

*Model-Implied Trajectories of Loneliness for the United States, England, Continental Europe, Mediterranean Europe, and Nordic Europe by Generation*



*Note.* Across the generations examined (early baby boomers in Panel A, late baby boomers in Panel B, and generation X in Panel C), middle-aged adults in the United States showed elevated levels of loneliness trajectories compared with the European nations/regions examined. The multiple lines for early baby boomers from Mediterranean Europe (gray line in Panel A) show the linear age trend of loneliness and how loneliness is increasing across the years examined (later midlife years for the early baby boomers—ages 57–65). We note that (a) none of the other nations showed such age trends (i.e., no significant age by nation interaction in Table 2), (b) none of the other generations showed such age trends (i.e., no significant age by nation interaction among late baby boomers and Generation X), and (c) the horizontal lines indicate that within-person changes in loneliness are stable across the midlife years. See the online article for the color version of this figure.

(our centering birth year and age) reported 5 *T*-score units (or 0.51 *SD*) higher levels of loneliness than the average of the entire data set (intercept = 55.05,  $p < .0001$ ). The significant linear (0.28,  $p < .001$ ) and quadratic time trends ( $-0.001$ ,  $p < .001$ ) together with the significant age by time interaction ( $-0.10$ ,  $p < .001$ ) indicate that loneliness shows for these U.S. adults some curvilinear pattern across the midlife years with initial increases that are leveling off if not declining in later years of midlife. The birth year effects (e.g., linear birth year = 0.08,  $p > .100$ ; quadratic birth year =  $-0.03$ ,  $p < .0001$ ) are graphically illustrated in Figure 2a and indicate that all three later born cohorts of middle-aged adults in the United States and in particular the late baby boomers are reporting higher levels of loneliness than the earlier born silent generation. The illustrations in Figure 2 show for each cohort as a long, thin line the age trends across midlife from age 45 to 65 and as short thick lines the model-implied within-person changes over 5 years with 1-year age increments. The intercept effects for each nation/region in Table 3 indicate that 50-year olds born in 1960 in the United States, on average, reported higher levels of loneliness than their peers in England ( $-3.43$  *T*-score units or  $-0.34$  *SD*) and Continental ( $-0.69$  *SD*), Mediterranean ( $-0.91$  *SD*), and Nordic Europe ( $-0.71$  *SD*).

Several of the time and age interactions were statistically significant (e.g., Mediterranean Europe by birth year = 0.78,  $p < .0001$ ) and are conjointly with the other effects

graphically illustrated in the remaining Panels of Figure 2. The pattern observed in England is similar to the one observed in the United States (see Figure 2B). For Mediterranean Europe (see Figure 2D), increasing levels of loneliness across successive birth cohorts were observed. In contrast, we found no evidence of historical change (i.e., birth cohorts showing differences between one another) in levels of loneliness among middle-aged adults in Continental (see Figure 2C) and Nordic Europe (see Figure 2E).

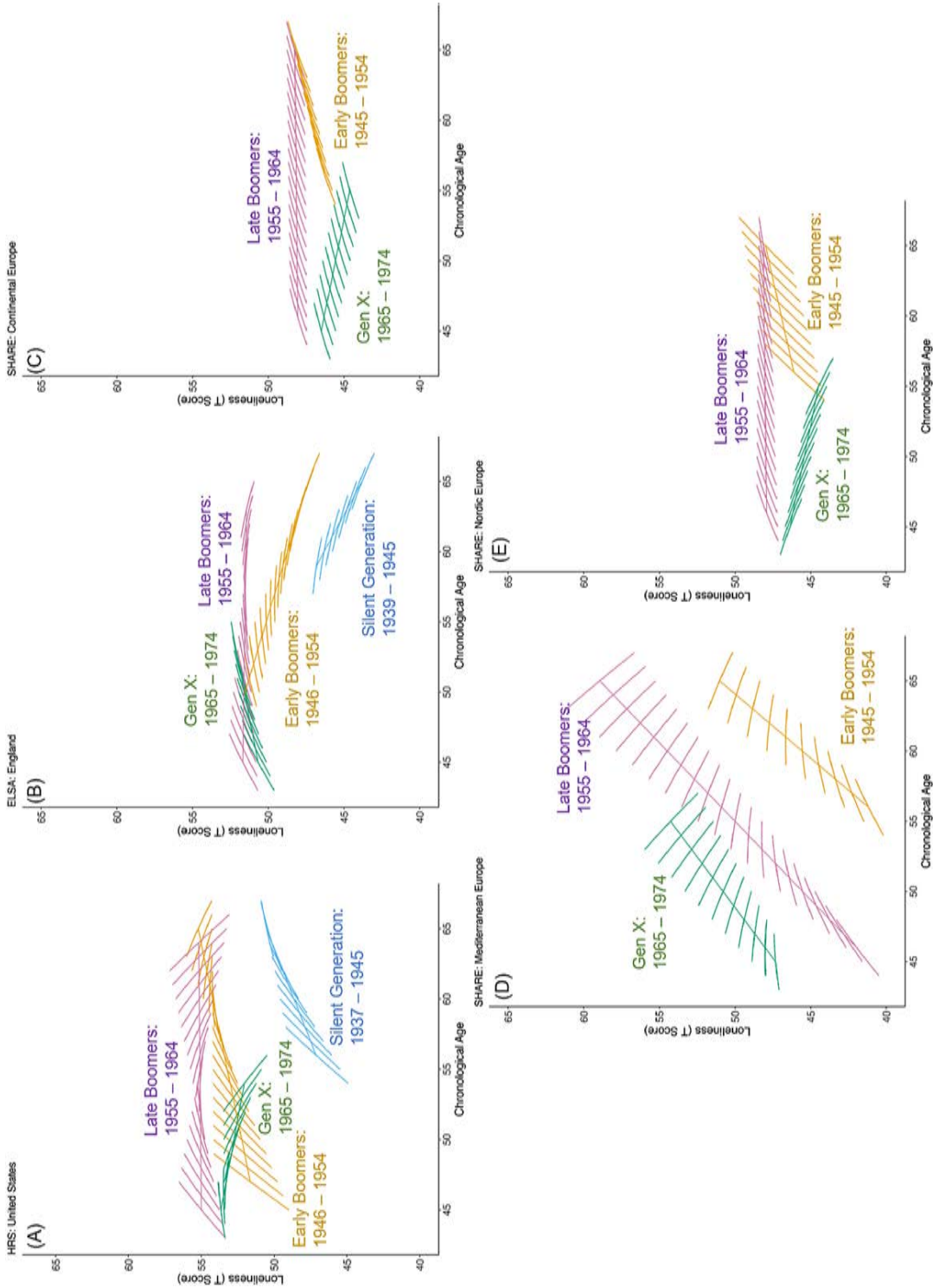
Using the parameter estimates in Table 3, we calculated the extent of historical differences within each nation for 50-year and 60-year olds (see Supplemental Materials, for more details). There was relative stability for 50-year olds over historical time in the United States ( $-0.08$  *SD*) and England ( $-0.12$  *SD*), small historical declines in Continental ( $-0.22$  *SD*) and Nordic Europe ( $-0.22$  *SD*), and historical increases of medium effect size in Mediterranean Europe (0.56 *SD*). Focusing on 60-year olds, medium-to-large historical increases were observed in the United States (0.59 *SD*), England (0.31 *SD*), and Mediterranean Europe (0.96 *SD*) but small historical declines for Continental ( $-0.18$  *SD*) and Nordic Europe ( $-0.18$  *SD*).

## Discussion

Our findings demonstrate that middle-aged adults in the United States report the highest levels of loneliness compared



**Figure 2**  
*Cohort Differences in Model-Implicated Trajectories of Loneliness for the United States, England, Continental Europe, Mediterranean Europe, and Nordic Europe*



*Note.* HRS = Health and Retirement Study; ELSA = English Longitudinal Study of Aging; SHARE = Survey of Health, Aging, and Retirement in Europe. The long thin lines for each generation represent the age trends, and the short thick lines for each cohort represent within-person changes over 5 years with 1-year age increments. Later born cohorts of middle-aged adults in the United States (A), England (B), and Mediterranean Europe (D) reported higher levels of loneliness compared to earlier born cohorts. No cohort differences in loneliness were observed in Continental (C) and Nordic Europe (E). More details on the findings pertaining to these figures and Table 3 can be found in the Supplemental Materials. See the online article for the color version of this figure.

to peer European nations/regions. In the United States, results revealed historical rises in loneliness among later born cohorts compared to the silent generation, a pattern that was found—though at lower overall levels—in some European nations/regions (England and Mediterranean Europe) but not others (Continental and Nordic Europe). Our findings signify that there is also a U.S. disadvantage in midlife loneliness, which is analogous to and extends reports of the United States lagging peer nations in mental and physical health and life expectancy (Crimmins et al., 2019; Infurna et al., 2021). This insight into profound national differences in loneliness prompts discussion about reasons why loneliness is elevated in some nations but not others.

Our historical contextualism approach to studying midlife loneliness across the United States and Europe provides meaningful insights into the nature of such U.S. disadvantage and prompts considering potentially underlying reasons. Because the data we have used are harmonized across nations, we were uniquely positioned to quantify and directly compare national similarities and differences in trajectories of midlife loneliness. Within the United States, multiple generations of middle-aged adults have been reporting elevated levels of loneliness (i.e., baby boomers and Generation X are higher than silent generation), whereas elevations in loneliness are more prevalent for later born cohorts in England and Mediterranean Europe (i.e., late baby boomers and Generation X show higher levels relative to early baby boomers and silent generation). Our findings for midlife in the United States contrast with those of historical declines and stability observed in loneliness among children, high school and college students, and older adults (Clark et al., 2015; Hawkey et al., 2019; Mund et al., 2020) but are similar to historical increases observed among emerging adults (Buecker et al., 2021). Our findings focusing on Europe mirror somewhat those of Surkalim et al. (2022). Specifically, the Nordic and Continental nations in our study reported the lowest levels of loneliness, whereas Mediterranean Europe showed historical increases and elevated levels of loneliness. Historical change in loneliness within a given nation evinced a diverse pattern. There was no historical change (if not historically lower levels) of loneliness among middle-aged adults in Continental and Nordic Europe. In contrast, middle-aged adults in the United States, England, and Mediterranean Europe today report higher levels of loneliness than earlier born cohorts, with effects being of medium-to-large size. These historical trends were obtained using nationwide data. Consequently, effects can be expected to generalize to large parts of the underlying population and thus have public health implications (for discussion, see Holt-Lunstad et al., 2017). With the national differences in levels of loneliness, it would be intriguing to examine whether and how the predictive strength of

loneliness for subsequent depression, chronic illness, and mortality also differs across nations. The cross-national differences observed in midlife loneliness should alert researchers and policymakers to better understand potential root causes that can foster loneliness and policy levers that can change or reverse such trends.

Cultural factors pertaining to changing norms, values, and political polarization could contribute to cross-national differences in loneliness. Individualization and modernization (e.g., social media use was introduced during the periods of assessment) carry psychological costs, such as reductions in social connections and support structures, which are correlates of loneliness (Luhmann et al., 2023). Relative to the other nations, the United States (though historically declining; Buttrick & Oishi, 2021) has higher rates of residential mobility, which are associated with weak social and community ties. Changing family and friend relationships could lead to fewer family members to share family stresses and burdens with, in the context of increasing numbers of middle-aged adults taking on caregiving responsibilities for aging parents and (re)launching children into adulthood (Infurna et al., 2020). Political values and attitudes have been shifting, particularly in the United States, in the form of increasing polarization, which has implications for social connection by driving people apart as opposed to closer together (Luhmann et al., 2023).

The nations included in our analysis show contrasting trends in social and economic inequalities (Crimmins et al., 2019). The Great Recession hit particularly hard the midlife years of the baby boomers in the United States, had sustained economic consequences in the United States, and a similar economic downturn (though a later onset) was experienced in Mediterranean Europe. Deterioration in employment opportunities was observed for baby boomers and Generation X, which could lead to increases in job stressors and insecurity, rising income inequality, wage stagnation, and less social protection and employment benefits (Case & Deaton, 2020). Social and economic inequalities likely have powerful effects on midlife loneliness through undermining one's ability to meet basic needs, restricting opportunities for upward economic mobility, and constraining people's ability to lead lives one has reason to value (Marmot, 2007).

The nations included here also differ in their social safety nets. The United States, England, and Mediterranean Europe are not as comprehensive as Continental and Nordic Europe in their policies pertaining to paid family leave, (un)employment protections, and subsidized childcare and education programs for parents with children. Previous research suggests that public employment and family policies promote health and well-being for both parents and nonparents (Glass et al., 2016). Generous family and work policies likely lessen midlife loneliness through reducing

financial pressures and work–family conflict, as well as enhancing job security and workplace flexibility and addressing health and gender inequities (Glass et al., 2016).

We acknowledge several limitations of our study. To begin with, we only had harmonized data that assessed the same measure of loneliness available from high-income nations. Future research needs to explore historical changes in midlife loneliness in other nations that span the income spectrum from North and South America, Europe, Asia, and Africa and investigate similarities and differences to the trends observed here (The Lancet, 2023). Such future inquiry can capitalize on our approach that overcomes limitations of previous cross-sectional research by using harmonized longitudinal panel survey data to directly compare trajectories of loneliness across nations. Second, loneliness consists of multiple facets that are interrelated (i.e., isolation, relational and collective connectedness, and aloneness), and our measure tapped primarily into the isolation facet. Acknowledging that the different loneliness facets have unique predictors (Hawkey et al., 2005), it is well possible that these evince different historical shifts. For example, the isolation facet could show historical increases due to declining civic engagement and involvement in religious organizations and the social disintegration of work (Case & Deaton, 2020). In contrast, relational and collective connectedness could remain historically stable because individuals have continual means to fulfill their relational needs of companionship and engagement with social network members. We note that loneliness also serves a variety of adaptive functions by, for example, motivating people to seek out new connections (Cacioppo et al., 2014). Likewise, it would be intriguing to examine historical shifts in related yet distinct constructs such as solitude that often encompass more desirable features (e.g., parts of such aloneness reflect personal choice; Hoppmann & Pauly, 2022).

The U.S. Surgeon General advisory report coupled with nations appointing ministers of loneliness has shined a bright light on loneliness being a global public health issue. As opposed to being considered an epidemic (e.g., an outbreak that spreads rapidly and affects many individuals), our findings paint a picture akin to loneliness being endemic (e.g., regularly occurring within an area or community). Midlife levels of loneliness in the United States have been steadily elevated for the baby boomers and Generation X, compared to the silent generation and are much higher than among middle-aged adults in peer European nations/regions. Because of historical increases, middle-aged adults in England and Mediterranean Europe today are not that far behind the United States. Our findings demonstrate how loneliness is changing differently across generations and nations and provides impetus for more future mechanism-oriented research to identify reasons for why certain nations/regions exhibit elevated levels and within-person increases in

midlife loneliness and to inform policy efforts to ameliorate this public health problem.

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