Three Essays Linking Life Path Commonness to Women's Depressive Symptoms in Older Age

by

Sara R. Zobl

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
(Sociology)
in the University of Michigan
2024

Doctoral Committee:

Professor Barbara A. Anderson, Chair
Professor Sarah A. Burgard
Professor Erin A. Cech
Professor Jacqui Smith

Sara R Zobl

szobl@umich.edu

ORCID iD: 0000-0002-6884-9559

© Sara R Zobl 2024

Dedication

For Ken, who said for better or worse
then put his money where his mouth is.

Acknowledgements

I would like to thank the members of my dissertation committee for the time and energy that each has spent on me and for their dedication to seeing me through the drafting and defense of this dissertation. Barbara, you have been my safety net and springboard. I would not have made it through the doctoral program without your support, guidance, wisdom, and friendship. Our weekly check-ins have truly been lifelines and I will be forever grateful to you for advancing the ways that I think about social issues, for teaching me how to turn my curiosity into meaningful and interesting research questions, and for being the one person who is able to help me to resist being derailed by the trees and return my focus to the forest. You have been a most generous and trustworthy mentor. Sarah, I know that I was a sixth gallon poured into your proverbial five-gallon bucket when you agreed to be a part of my publishable paper committee and then my dissertation committee; I truly appreciate you sticking with me during these past several years. Your feedback and questions have pushed my thinking and my writing to be more direct and more effective, and future Reviewer 2s' jobs will be less fun as a result. Erin, you have known my dissertation project since its inception and I am honored that you chose to be a part of its evolution. I am grateful to you for sharing your clear and systematic approach to writing with me: the legendary Funnel will help me to structure my work more effectively for the duration of my career. Your feedback on my drafts has consistently been timely, thoughtful, and thorough, and you have helped me to make my work more relevant and accessible to a wider audience. Jacqui, it was a pleasure to meet you and I appreciate how easily you were able to identify interesting future directions for my research. Thank you all for your commitment to me and your patience with me, for helping to build my confidence, and for believing in me and in the value and potential of my research.

Table of Contents

Dedication....ii

Acknowledgements....iii

List of Tables....v

List of Figures....vii

Abstract....ix

Chapter 1 Introduction....1

Chapter 2 Country-level Contextual Factors, Stress Across the Life Course, and Depression in Older Age Among European Women....18

Chapter 3 Life Path Commonness and Depressive Symptoms among Older White, Black, and Hispanic Women in the United States....60

Chapter 4 Life Path Commonness, Psychosocial Factors, and Black Women's Depressive Symptom Levels in Later Life....94

Appendix....135

List of Tables

Table 2.1 European countries by Global Gender Gap Index score, 2008 (N = 9).....49

Table 2.2 Women's Independence and Employment Attitudes by country: Ratio of women's Did not disagree responses to men's Did not disagree responses.....50

Table 2.3 Proportion of women in each region and country who completed each life event 51

Table 2.4 Women reporting any depressive symptoms, women reporting a high level of depressive symptoms, and mean depression score by region and country.....52

Table 2.5 Bivariate results: Pearson and Spearman correlation of RSF with depression score and high level of depressive symptoms, by region and country.....53

Table 2.6 OLS regression of CES-D8 score on RSF, GGGI score, and country-level attitudinal factors..54

Table 2.7 Logistic regression of High depression level on RSF, GGGI score, and country-level contextual factors 55

Figure 2.1 Table 2.8 Logistic regression of High depression level on RSF, GGGI score, and country-level contextual factors.....55

Table 3.1 Selected sample characteristics: Before and after restrictions applied, and after survey weights applied to restricted sample 88

Table 3.2 Chapter 3 analytic sample characteristics.....89

Table 3.3 Bivariate results: All women (N = 3,517) 90

Table 3.4 OLS regression of CES-D7 score on RSF and on RSF and depression score at age 28–37: All women.....90

Table 3.5 Bivariate results by race/ethnicity and by education level 91

Table 3.6 OLS models estimating the effects of RSF on CES-D7 score at age 50, by race/ethnicity and by education level.....92

Table 3.7 Correlation matrix for RSF, CES-D7 score at age 28-37, and CES-D7 score at age 50 by race and education level 93

Table 4.1 Chapter 4 Analytic Sample (N = 1,050).....125

Table 4.2 Weighted descriptive statistics 127

Table 4.3 Scale measure components and scoring 129

Table 4.4 Pearson correlation matrix, CES-D7 score at age 50 with RSF and demographic predictors...131

Table 4.5 Partial correlation coefficients showing the relationship between CES-D7 score at age 50 and RSF after removing the estimated impact of each demographic and psychosocial factor 132

Table 4.6 OLS regression of CES-D7 score at age 50 on demographic and psychosocial factors 133

List of Figures

Figure 2.1 Nine European countries by GGGI score, descending order 56

Figure 2.2 Nine European countries by mean depression score, ascending order..... 57

Figure 2.3 Nine European countries by percent of women with high depression (CES-D8 score 11+), ascending order..... 58

Figure 2.4 Change in total fertility rate (TFR) 1961 - 2018, by country (N = 9) 59

Appendix Figure 1: Graph of RSF, Austria (Chapter 2 analytic sample, N = 417). Weighted percentages shown. 136

Appendix Figure 2: Graph of RSF, German women (Paper 1 analytic sample, N = 438). Weighted percentages shown. 137

Appendix Figure 3: Graph of RSF, Swedish women (Chapter 2 analytic sample, N = 618). Weighted percentages shown. 138

Appendix Figure 4: Graph of RSF, Dutch women (Chapter 2 analytic sample, N = 568). Weighted percentages shown. 139

Appendix Figure 5: Graph of RSF, Spanish women (Chapter 2 analytic sample, N = 511). Weighted percentages shown. 140

Appendix Figure 6:Graph of RSF, Italian women (Chapter 2 analytic sample, N = 486). Weighted percentages shown. 141

Appendix Figure 7: Graph of RSF, French women (Chapter 2 analytic sample, N = 335). Weighted percentages shown. 142

Appendix Figure 8: Graph of RSF, Danish women (Chapter 2 analytical sample, N = 379). Weighted percentages shown. 143

Appendix Figure 9: Graph of RSF, Belgian women (Chapter 2 analytic sample, N = 833). Weighted percentages shown. 144

Appendix Figure 10: Graph of RSF, White women (Chapter 3 analytic sample, N = 1,813). Weighted percentages shown. 145

Appendix Figure 11: Graph of RSF, Black women (Chapter 3 analytic sample, N = 1,093). Weighted percentages shown. 146

Appendix Figure 12: Graph of RSF, Hispanic women (Chapter 3 analytic sample, N = 611). Weighted percentages shown. 147

Appendix Figure 13: Graph of RSF, Black women (Chapter 4 analytic sample, N = 1,050). Weighted percentages shown. 148

Abstract

Depression is a common manifestation of psychological distress that disproportionately impacts women around the world. A large body of sociological research has linked elevated levels of stress across the life course to increased risk of experiencing depressive symptoms in later life. Globally, women are at greater risk of experiencing both stressful experiences and depression over the life course compared to men, especially women who live in highly gender-unequal contexts, women who are racial/ethnic minorities, and women who are socioeconomically disadvantaged. One source of stress that could raise women's risk of experiencing depressive symptoms in later life is completing major life events in relatively uncommon orders. Early sociological research on variation in life event ordering suggested that social institutions are designed to be compatible with a socially-prescribed ordering of events, and that individuals experience disharmony between their own lives and the social contexts in which they live when they complete major life events in orders that are inconsistent with socially-prescribed behaviors.

In this dissertation, I propose that following a less-common life path is a potential source of stress that could lead to differences in older women's depressive symptom levels. To test this relationship, I introduce a method for identifying the relative commonness of the life paths (completion of formal education, beginning a first paid job, first marriage, and birth of a first child) that women in a particular context followed, and then I demonstrate the utility of life path commonness as an independent variable in analyses linking life path commonness to depressive symptom levels in later life.

In the first chapter I introduce *relative sequence frequency*, a measure of the relative commonness of women's life paths that enables linking women's behavior across the life course to later-life health outcomes. I describe how relative sequence frequency is calculated and I discuss some potential future applications for the measure. In the three empirical chapters that follow, I explore the relationship between life path commonness and women's depressive symptom levels in different contexts. In Chapter

2, I draw data from the first wave of the Survey of Health, Ageing, and Retirement in Europe (SHARE) and from SHARELIFE, the survey's third wave that collected respondents' retrospective life histories. Using a sample of women aged 50 and older from nine countries spanning three regions, I assess variation in the relationship between life path commonness and women's depressive symptom levels in later life between European countries that have more-traditional value systems and high levels of gender inequality and those that have adopted more-progressive attitudes and behaviors in favor of a more egalitarian division of labor.

In Chapters 3 and 4, I use data from the National Longitudinal Survey of Youth's 1979 cohort (NLSY79); women in this cohort were born between 1957 and 1964 and were aged 54 - 61 in 2018 when the most recent round of data used in this chapter were collected. In Chapter 3, I use NLSY79 data to compare the relationship between life path commonness and depressive symptom levels between White, Black, and Hispanic women and between women with different levels of education; in Chapter 4, I examine the relationship between life path commonness and depressive symptom levels among Black women, a population group that is known to be "doubly disadvantaged" in the United States due to experiencing the adverse impacts of both racism and sexism across the life course.

I find an inverse relationship between life path commonness and women's depressive symptom levels across European countries, in the United States, and across racial/ethnic groups and education levels in the United States; I show that the association is strongest among women in the highly gender-unequal Southern European region (Chapter 2) and among Black and Hispanic women in the United States (Chapter 3). In Chapter 4, I find that life path commonness remains significantly associated with Black women's depressive symptom levels when controlling for education level, religious attendance in early- and midlife, sense of control over one's own life circumstances, and gendered attitudes.

Despite documenting *that* life path commonness is related to depressive symptom levels in older age across multiple contexts, it is not yet possible to explain exactly *why* it matters. In each chapter I speculate why following a less-common life path is likely related to elevated depressive symptom levels in that particular context, but additional research will be needed to identify potential mechanisms through

which women's more- or less-common ordering of major life events in earlier adulthood are likely to lead to differences in depressive symptom levels in older age.

Chapter 1
Introduction

Life course research emerged as an interdisciplinary field in the mid-20th century; over subsequent decades, the maturation of the life course perspective has brought about significant theoretical advancement in the ways that social scientists think about how people live their lives, what heterogeneity in human lives across time and place looks like, and what kinds of implications that heterogeneity might have for individuals' and population groups' socioeconomic and health outcomes. The evolution of life course research was accelerated by the availability of rich data generated by a number of longitudinal surveys that began in the United States and Europe during the 1960s: examples of longitudinal projects that made possible a more complex analysis of human lives by collecting detailed information about multiple realms of life include the National Longitudinal Surveys and the National Longitudinal Study of Mature Women (U. S. Bureau of Labor Statistics), the Panel Study of Income Dynamics (Survey Research Center at the University of Michigan), the Wisconsin Longitudinal Study (University of Wisconsin-Madison), the British National Birth Cohort Studies (1946, 1958, and 1970 cohorts; Center for Longitudinal Studies at University College London) and several others (Elder et al. 2003:6).

Life course sociology in particular is concerned with differences in the *social pathways* (trajectories of education, work, family, and residences) that are followed by individuals and population groups through society. Life paths are shaped by historical context and are heavily influenced by social institutions; a key tenet of the life course perspective is that individuals choose their own life paths, but their choices are bounded by opportunities and limitations that are structured by contextual factors (Elder et al. 2003). It is therefore no surprise that there are observable differences in the life trajectories of individuals and groups across geographic contexts and across demographic groups, and that linking those

differences in life paths to variation in a range of socioeconomic and health outcomes across the life course and into older age has garnered much research attention among life course sociologists.

In this introductory chapter, I will first briefly summarize the methods that are currently most commonly used in quantitative life course studies. I will then introduce *relative sequence frequency* as an additional methodological approach and discuss how this measure differs from other holistic analysis methods and what is gained by using the relative commonness of a particular life path as an independent variable.

Broad Categories of Quantitative Life Course Analytic Methods

Quantitative analysis of the life course generally draws on three broad classes of technique: sequence analysis, latent class analysis, and event history analysis. Sequence analysis and latent class analysis are *holistic methods*, analytical approaches that take an overall view of the life course and regard the individual life path as a meaningful unit of analysis. Several comprehensive reviews and thorough meta-analyses of the differences between these three techniques and the analytic goals to which each is most appropriately suited have already been conducted (see Barban & Billari 2012; Liao et al. 2022; Mikolai & Lyons-Amos 2017; Piccarretta & Studer 2019), so below I will provide a brief description of each of the three approaches to give some context for the subsequent introduction of the relative sequence frequency method.

Sequence analysis (SA) is based on algorithmic or data mining approaches which use measures of dissimilarity ("distance") between individual trajectories (Barban & Billari 2012:765; Billari & Piccaretta 2005); measures of dissimilarity between individual trajectories depend on the observed differences in timing ("when"), sequencing ("in what order"), and duration ("how long") of the states experienced by individuals throughout a period (Piccarreta & Studer 2019). The advent of SA techniques in life course in the 1990s (e.g., Abbott 1990a; Abbott 1990b; Abbott 1995) opened up use of the life course itself as a unit of analysis and introduced the idea of classification according to the types and degrees of differences between life courses. Early life course analysis using SA was generally done by first coding individual

narratives or combinations of events as sequences, then measuring dissimilarities between distinct sequences, and finally performing some form of data reduction such as cluster- or latent-class analysis, thus allowing clusters or classes of trajectories to be used in analyses aimed at identifying the determinants or consequences of particular life course trajectories or "careers" (Barban & Billari 2012; Liao et al. 2022). Dissimilarity between sequences of events is of interest for comparing the degree of difference between the life course trajectories of two individuals or for comparing an observed event sequence to an ideal-type sequence to determine, for example, by how much an individual's life path differs from a normative path and what a greater degree of deviation might mean for various outcomes (e.g., Hogan 1978, in which individual men's life paths are compared to an hypothesized normative American male life path) (Liao et al. 2022).

Cluster analysis uses a set of algorithms to divide samples into smaller groups with shared characteristics. Clustering algorithms rely on arbitrary distance measures to identify clusters of observed sequences, which means that determining the appropriate number of clusters is inherently subjective (Sinha et al. 2021). Latent class analysis (LCA) is used to estimate the probability that an observed life path belongs to each of the different latent classes identified for a study sample. Social scientists use LCA to analyze the determinants or consequences of particular transitions (e.g., to parenthood) or careers (e.g., the pathway from education to employment), or to predict the likelihood of future life transitions (e.g., from married to divorced) based on already-observed behaviors (Piccarreta & Studer 2019).

The event history analysis (EHA) framework differs from holistic methods in its focus on single or competing events, transitions, or career pathways across the life course, such as estimating the likelihood of following different paths through the transition to adulthood, to family formation, or through education-to-employment transitions (Barban & Billari 2012; Piccarreta & Studer 2019).

In the next section of this chapter, I will introduce relative sequence frequency as an additional holistic method of life course analysis. In the dissertation's three empirical chapters, I demonstrate the utility of the method, using it to show to show that among older women, having followed a relatively uncommon life path is associated with higher levels of depressive symptoms compared to having

followed a more-common path. I also show that the link is stronger among women in more restrictive sociopolitical contexts with greater gender inequality and tighter behavioral regulation that is rooted in traditional gender norms, and among socioeconomically disadvantaged women (i.e., racial/ethnic minorities and women with lower levels of education). Developing a complete explanation of the mechanisms underlying the meaning of life path commonness for women's later-life depressive symptom levels is beyond the scope of this dissertation, but I speculate that women who follow less-common life paths have a greater risk of experiencing depressive symptoms in older age due in large part to two factors: first, a cumulation of stress across the life course that could be traced to a lack of institutional support that would have helped women to manage the demands of competing roles, and second, to psychological harm imposed on women via external sanctions (e.g., denial of opportunities, stigmatization, social exclusion) or internal sanctions (e.g., feelings of shame, guilt, or regret) when their life choices violate context-specific behavioral norms and expectations.

When considering how women make life decisions and the factors that they weigh when planning their lives, it is plausible to assume that 1) women reap maximum benefits in the form of economic mobility, social status, and health outcomes when their behavior conforms to norms and expectations set forth by the prevailing social and economic institutions that organize the sociopolitical context in which they live; 2) most women do follow life paths that at least loosely conform to prevailing behavioral norms and expectations[1]; 3) individuals are "doing the best they can with what they have" across the life course, which means leveraging the resources and opportunities that are available based on their socioeconomic station; and 4) women face external sanctions (e.g., denial of opportunities, stigmatization, social

[1] As discussed by Anderson and Dunning (2014), there is little scholarly agreement with regard to the terminology used in the study of social and behavioral norms, but some defining features of norms that are salient across the social psychological literature and that are relevant to women's completion and ordering of their major life events include a rootedness in collective beliefs about how people ought to behave; norms' utility in providing information about which actions are likely to be most effective or adaptive, and which are approved- or disapproved of; and that norms help to coordinate behavior and reflect what most people do.

exclusion) and internal sanctions (e.g., feelings of shame, guilt, or regret) when their *observable behavior* violates norms and expectations, even if their *personal intent* is consistent with norms and expectations.

I acknowledge that there are different ways to be different: in the case of life paths, relative uncommonness can take on very different meanings. Some relatively uncommon life paths are those that are least likely to improve women's life chances, and some relatively uncommon paths are among the most beneficial in a particular context but remain unavailable to the majority of women in that context who lack access to the level of socioeconomic resources, or the ability to assume the level of risk, that following such a path may require. Highly-privileged women who follow less-common life paths may be at the vanguard of social and political change, or they may be following a path that "falls short" of the norms and expectations of upper social strata; similarly, poor women who follow less-common life paths may be doing the best they can within the bounds of constrained access to resources and opportunities, or they may be following a path which breaks from class norms and represents agentive pursuit of social mobility. Rather than attempting to identify the specific reasons *why* particular life paths are uncommon among women in any particular context, however, I argue that *the fact that particular life paths are relatively less common* is the origin of stress over the life course for women who follow those paths. A privileged location along the socioeconomic spectrum alone does not shield a woman from stigmatization, feelings of alienation, or the loss of social support that she is likely to experience when completing life events or combining roles in ways that are much different from her peers.

In the next section, I introduce *relative sequence frequency* as a measure of life path (un)commonness. I will describe how relative sequence frequency is calculated, how I employ the measure in this dissertation's three empirical chapters, and how the calculation of relative sequence frequency compares to other holistic methods. I will also discuss why relative sequence frequency is an approach that is particularly well-suited to linking differences in women's lived behavior across the life course to variation in depressive symptom levels in later life.

Relative Sequence Frequency

In the analyses presented in this dissertation's three empirical chapters, women's life paths are represented by event sequences that combine single-letter abbreviations to indicate the order in which each woman completed up to four major life events: finishing (or permanently leaving) formal education (E), beginning a first paid job (J), first marriage (M), and birth of a first child (C). The first letter of each sequence indicates the first event a woman completed, the second letter indicates the second event completed, and so on. Using this notation, an *EJMC* sequence represents a life path in which a woman first completed her education, then began paid employment, and then married before having her first child. Some women did not complete all four events, resulting in sequences containing just two or three letters. Two examples of shorter sequences observed are *EJC*, which represents a woman finishing her education, beginning paid employment, then bearing her first child, but never marrying, and *JE*, the path of a woman who began working before completing her education, and neither married nor bore a child.

Calculation of relative sequence frequency (RSF) is a two-step process: the first step is the construction of an event sequence that shows which events each woman in a population of interest completed and the order in which she completed them, and the second is documenting all sequence permutations observed among women in that population and calculating the relative frequency of each. The process requires longitudinal- or retrospective life-history data that include the date that each reported life event was completed, ideally with at least monthly precision.

To establish the relative frequency of each event sequence observed among women in each empirical chapter's population of interest[2], I tabulated all sequences observed among women in each population and divided the number of times each sequence was observed by the total number of women in that population. The relative frequency score of each sequence equals the proportion of women in a

[2] In Chapter 1, the populations of interest are those in each of nine European countries. In Chapter 2, the population of interest is White, Black, and Hispanic women in the United States. Chapter 3's population of interest is Black women in the United States.

population who followed the life path represented by that sequence, so a higher RSF score indicates that a life path was relatively more common among women in a particular population.

There is the possibility that some women completed two or more events during one time period; this is a limitation imposed by the structure of datasets, with increased potential for events to be reported as having occurred during the same period when only the *year* is reported. The potential for events to be reported as having occurred during the same period decreases as dates of event completion become more granular. More-accurate dates reduce the potential for error in sequence identification that is related to concurrent events; however, out of concern for the privacy of survey respondents, life history data is typically available in YYYY or YYYYMM format and not in YYYYMMDD format.

Cases of concurrent events can be handled in one of two ways: by dropping the individual observation from the analytical sample, or by using a predetermined set of assumptions to consistently determine the order in which concurrent events will be recorded in women's event sequences. In the interest of maintaining the size of my samples used in this dissertation's three empirical chapters, I chose not to exclude cases with two concurrent events. I did, however, drop women who reported having completed three or four events in the same time period (during the same calendar year in Chapter 2, and during the same month of the same calendar year in Chapters 3 and 4).

In managing cases of two concurrent events, I opted to take what I consider to be a conservative approach: I assumed that women completed their events in an *EJMC* order that is consistent with a more-traditional progression through life statuses. For example, if a woman reported completing her education and beginning paid employment during the same month of a calendar year, then I assigned an E-J ordering to the concurrent events. If that woman also reported marrying or having a first child, then the dates of those events determined the placement of the *EJ* combination in her event sequence relative to *M* and *C*. Assuming that concurrent events occurred in an order consistent with traditional life course norms does introduce the possibility that some event sequences are being undercounted and others overcounted, but the number of cases in which events were reported as having occurred within the same period is

small, and the number of cases for which my assumption led to erroneous ordering of completed events in women's sequences even smaller.

In an early study using the life course as the unit of analysis and exploring variation in event ordering, Hogan (1978) proposed that the variable order of events in the life course is a factor of some importance in the life cycle, and hypothesized that American men who completed life events in an order that deviated from a hypothesized normative order would be more likely to experience disharmony between their life style patterns and social institutions compared to men whose life event ordering conformed to that hypothesized normative order. He posited that "the three events marking the passage to adulthood occur in a normative order only when a man first completes school, next starts work, and lastly marries" (1978:576) and that [there would be] "substantial differences among birth cohorts in the proportions of men who succeeded in" completing their life events in this prescribed normative order (1978:578). The hypothesized normative event ordering (education—employment—marriage) was used as the benchmark for life path normativity among White, Black, and Hispanic men in nine four-year birth cohorts spanning the years 1907 – 1952.

This dissertation research is closely related to Hogan's inquiry but differs in several fundamental ways. First, I focus exclusively on *women's* life courses and add *entry into motherhood* as a fourth possible event in women's sequences. Consideration of childbearing is necessary in my empirical analyses because fertility and family-formation expectations and behaviors exert such strong influence on women's lives regardless of whether they actually become mothers, and because there is wide variation in the ways that women who *do* become mothers navigate family responsibilities in addition to the duties associated with the other roles they occupy.

Second, rather than relying on a hypothesized normative event sequence as the benchmark against which life path normativity and deviance are determined, I draw on longitudinal data that include the dates on which women reported completing specific life events. These dates permit the construction of event sequences representing the orders in which all women in a sample completed their life events; once

the full range of life paths followed by women in a population is identified, it becomes possible to calculate the relative commonness of each distinct life path.

Third, the work in my three empirical chapters is aimed at identifying whether women who follow less-common life paths suffer negative mental health consequences in later life, and whether those potential negative effects are equally strong for women living in different geographic contexts with more- or less egalitarian gender attitudes (Chapter 2), for women of different racial/ethnic backgrounds or with different levels of education (Chapter 3), or for women of the same race with different demographic and psychosocial characteristics (Chapter 4).

Like SA and LCA techniques, the RSF measure introduced in this chapter is consistent with the holistic perspective in its reliance on individual life paths as meaningful units of analysis. However, there are key differences between RSF and the other methods briefly summarized at the beginning of this chapter. First, RSF is a simpler approach to holistic analysis of the life course compared to methods originating in statistical culture. Second, the calculation of RSF for the range of life paths observed among members of a population group fulfills a different goal than either calculating degrees of similarity or difference between pairs of sequences or the identification of clusters of similar sequences.

The simplicity of RSF lies in its calculation rather than in its data requirements. The demands that RSF calculation places on data are similar to those which SA or LCA entail: all three methods involve the mapping of individual trajectories with accurate ordering of focal event completion, which necessitates longitudinal- or detailed event history data containing the dates on which focal life events or transitions occurred. RSF can be calculated once all individuals' event sequences are documented: additional data-reduction steps such as identifying clusters of typical sequences within a sample are not required.

Neither the concept of RSF nor its calculation centers specific characteristics of the life course event sequence *per se* in the way that SA or LCA methods do (e.g., the degree of difference or similarity between any two sequences based on the duration of individual states or characteristics of particular careers or subtrajectories). Whereas the goals of SA and LCA techniques are "to describe trajectories and identify their most salient features" (Piccarreta & Studer 2019), to identify relationships between

particular classes and specified determinants or consequences of class membership (Barban & Billari 2012), or to estimate the likelihood that an individual (i.e., an individual life path) belongs to one of the finite number of unobservable classes identified within a sample during data-reduction processes, the purpose of RSF is to quantify the commonness of each distinct life path relative to all other life paths observed within a particular population. RSF is not intended to measure intrinsic sequence characteristics, it is intended to capture the commonness of women's lived behavior.

Establishing the relative frequency of particular life paths allows life path commonness to be used as an independent variable in analyses assessing the relationship between more- or less-common lived behavior and a variety of outcomes of interest. The analyses in this dissertation's three empirical chapters assess whether there is a relationship between relatively uncommon behavior across the life course and elevated risk of experiencing depressive symptoms in later life; for this purpose, the *amount of time* women spent in a particular state (e.g., working for pay before completing formal education, or length of time married before bearing a first child) does not matter as much as the fact *that* a woman completed major life events in a more- or less-common order relative to women in her home country, other women in her own racial/ethnic group, or other women with her same level of education. To clarify, if one woman bore all of her children outside of marriage and another was a single mother for several years before marrying, both women would have lived the experience of single motherhood and would have endured similar stressful circumstances despite spending a different number of years in the same state. In this case, SA would reveal sequence (dis)similarity in the occurrence and duration of spells of single motherhood; cluster analysis may classify these women as having followed similar life paths based on having had nonmarital births, depending on childbearing patterns among women in my study sample; EHA may reveal differences in the two women's likelihood of bearing an additional child based on childbearing history and marital status; and RSF would show how common each woman's life path was compared to other women in the same geographic context or demographic group.

Life path commonness and later-life health

A definitive answer to the question *Why does life path commonness matter for women's later-life mental health?* falls outside the scope of this dissertation. In each of the next three empirical chapters, I will speculate about why following a less-common life path is *likely* to be associated with elevated levels of depressive symptoms in later life at a particular analytical level or within a particular population group, but—because relative sequence frequency has not yet been tested with multiple populations, subgroups, contexts, or outcomes—we do not yet know enough about the mechanisms underlying its association with mental health in older age to draw firm conclusions. True progress in uncovering and understanding those mechanisms will require further research, especially inquiry that takes a phenomenological approach and centers the voices of women who themselves followed uncommon life paths. Their perspectives would be more useful than continued arms-length statistical analysis alone in shaping future scholarly inquiry.

Sociological study of cohabitation in the United States, now a major topic in the household and family demographic literature, unfolded in an analogous way: initial inquiry into the phenomenon of unmarried couples living together began as a small series of interviews with Cornell University students; the goal of this door-opening research was to "obtain a more complete picture of the various forms which living together might take" and to estimate the prevalence of cohabitation among college students (Macklin 1972:463). Movement between quantitative and qualitative research methods resulted in enormous gains in knowledge about cohabitation and its place in American family life by the early 2000s; researchers' previously-unanswered questions about cohabitation's purpose, meaning, and future trajectory have been addressed in subsequent work that used early quantitative inquiry and researchers' speculation as springboards. From there, studies of cohabitation have generally taken one of two forms that organize much of family demographic scholarship: documentation of the prevalence of the phenomenon and the characteristics of cohabiting couples at given points or over time, which has provided insight into the prevalence and persistence of cohabitation in American family life; or studies

that focus on the social, cultural, and economic correlates, origins, and consequences of the living arrangement for the people involved (Smock & Schwartz 2020).

While initial quantitative research linking life path commonness to depressive symptom levels in older age can tell us *that* women follow different trajectories and that the relative commonness of those trajectories *is* linked to depressive symptom levels in later life, supporting quantitative findings with qualitative research will be necessary to draw out the underlying mechanisms that explain *why* the link is there and what combining life events and roles in relatively uncommon ways actually means in the lives of women in different socioeconomic positions. Future qualitative research might aim to increase sociological understanding of the different types of sanctioning women endure when they complete life events and occupy roles in less-common ways.

I do not claim that this dissertation's analyses are the first to use the entire life course as a unit of analysis, or the first to link heterogeneity in the ordering of specific life events and role transitions to socioeconomic inequality and divergent health outcomes. Prior research using sequence analysis techniques or latent-class analysis methods (see Aisenbrey & Fasang 2010 for a discussion of "second-wave" sequence analysis applications; see Han et al. 2017 for a comparison of sequence- and latent class analysis techniques), for example, have documented and grouped life course event sequences and trajectories based on particular attributes such as the degree of (de)standardization of the life course (Aboim & Vasconcelos 2019), geographic concentration of similar trajectories (Malmberg & Andersson 2023), or have documented links between disadvantageous sequencing of events related to particular life course "careers" (e.g., fertility or employment) and worse health outcomes (Barban 2013).

What is novel about my approach is my focus on uncommonness as an attribute of the life course that could *itself* have potentially detrimental implications for women's mental health: to date, it has not been suggested elsewhere that life path commonness matters independently for women's later-life health. My contribution to life course scholarship and to sociological inequality scholarship lies in my proposal—and identification—of a link between the relative uncommonness of the life path as a whole and higher levels of depressive symptoms in later life.

In the empirical chapters of this dissertation, I posit that following a relatively less-common life path is associated with elevated levels of depressive symptoms among older women and I hypothesize that the relationship is stronger in Southern European countries where traditional value systems predominate, and, in the United States—a context where high levels of racialized and socioeconomic inequality persist—among nonwhite women and women with the lowest levels of educational attainment. Throughout the three empirical chapters, questions about the relationship between life path commonness and depressive symptom levels will be raised and—because they fall outside the scope of this research—left unanswered. This is not problematic. Rather, these unanswered questions lay the groundwork for a potentially substantial research agenda.

References

Abbott, Andrew (1990a). Conceptions of Time and Events in Social Science Methods: Causal and Narrative Approaches. *Historical Methods: A Journal of Quantitative and Interdisciplinary History*, 23(4), 140-50. DOI: 10.1080/01615440.1990.10594204

Abbott, Andrew (1990b). "A Primer on Sequence Methods." *Organization Science* 1:373-92.

Abbott, Andrew (1995). "Sequence Analysis: New Methods for Old Ideas." *Annual Review of Sociology* 21:93-113.

Aboim, S., & Vasconcelos, P. (2019). Reassessing (de)standardization: Life course trajectories across three generations. *Portuguese Journal of Social Science*, 18(3), 299–318. https://doi-org.proxy.lib.umich.edu/10.1386/pjss_00012_1

Aisenbrey, S., & Fasang, A. E. (2010). New Life for Old Ideas: The "Second Wave" of Sequence Analysis Bringing the "Course" Back Into the Life Course. *Sociological Methods & Research*, 38(3), 420-62. https://doi.org.proxy.lib.umich.edu/10.1177/0049124109357532

Anderson, J. E. & D. Dunning (2014). Behavioral Norms: Variants and Their Identification. *Social and Personality Psychology Compass* 8(12), 721-38.

Aneshensel, C. (2009). Toward Explaining Mental Health Disparities. *Journal of Health and Social Behavior* 50:377-94.

Barban, N. (2013). Family Trajectories and Health: A Life Course Perspective / Trajectoires familiales et santé: une approche sous l'angle de parcours de vie. *European Journal of Population / Revue Européenne de Démographie*, 29(4), 357–85. http://www.jstor.org/stable/24571481

Barban, N., & Billari, F. C. (2012). Classifying life course trajectories: a comparison of latent class and sequence analysis. *Journal of the Royal Statistical Society Series C: Applied Statistics*, 61(5), 765-84.

Berg, J.A. & N. F. Woods (2009). Global Women's Health: A Spotlight on Caregiving. *Nurs Clin N Am* 44:375-84.

Billari, F. C. & R. Piccarreta (2005). Analyzing Demographic Life Courses through Sequence Analysis, *Mathematical Population Studies*, 12(2), 81-106. DOI: 10.1080/08898480590932287

Boaz, R. F. & C. F. Muller (1992). Paid work and unpaid help by caregivers of the disabled and frail elders, *Medical Care* 30:149–58.

Cleary, P. D., & D. Mechanic (1983). Sex differences in psychological distress among married people. *Journal of Health and Social Behavior*, 24(2), 111–21.

Elder, G.H., M. K. Johnson, & R. Crosnoe (2003). The Emergence and Development of Life Course Theory. In: Mortimer, J.T., Shanahan, M.J. (eds) *Handbook of the Life Course*. Handbooks of Sociology and Social Research. Springer, Boston, MA. https://doi-org.proxy.lib.umich.edu/10.1007/978-0-306-48247-2_1

George, L. K. (1993). Sociological Perspectives on Life Transitions. *Annual Review of Sociology*, 19:353–73. http://www.jstor.org/stable/2083392

Han, S., Y. Han, A. Liefbroer & C. Elzinga (2017). Comparing methods of classifying life courses: sequence analysis and latent class analysis. *Longitudinal and Life Course Studies* 8(4), 319-41.

Hirst M. (2005). Caregiver distress: a prospective, population-based study. *Soc Sci Med*, 61:697–708.

Hogan, D. 1978. "The Variable Order of Events in the Life Course," *American Sociological Review* 43(4), 573-86.

Kessler Ronald C. (2003). Epidemiology of Women and Depression. *Journal of Affective Disorders* 74:5–13.

Macklin, E. D. (1972). Heterosexual Cohabitation among Unmarried College Students. *The Family Coordinator*, 21(4), 463–72. https://doi.org/10.2307/582689

Malmberg, B. & E. K. Andersson (2023) Exploring Life-Course Trajectories in Local Spatial Contexts Across Sweden, *Annals of the American Association of Geographers*, 113(2), 448-68. DOI: 10.1080/24694452.2022.2105684

Matud, M.P., J.M. Bethencourt, and I. Ibáñez (2014). Gender differences in psychological distress in Spain. *International Journal of Social Psychiatry*, 61(6), 560-68.

Mikolai, J. & M. Lyons-Amos (2017). Longitudinal methods for life course research: A comparison of sequence analysis, latent class growth models, and multi-state event history models for studying partnership transitions. *Longitudinal and Life Course Studies*, 8(2), 191-208.

Mirowsky, J., & C. E. Ross (1995). Sex Differences in Distress: Real or Artifact? *American Sociological Review*, 60(3), 449–68. https://doi.org/10.2307/2096424

Nolen-Hoeksema, S. (2001). Gender Differences in Depression. *Current Directions in Psychological Science* 10(5), 173-76.

Nolen-Hoeksema, S., & L. M. Hilt (2009). Gender differences in depression. In I. H. Gotlib & C. L. Hammen (Eds.), *Handbook of Depression* (pp. 386–404). NewYork: Guilford Press.

Pearlin, L. (1975). Sex Roles and Depression. In N. Dalton and L. Ginsberg (Eds.), *Life-Span Developmental Psychology: Normative Life Crises* (pp. 191-207). New York: Academic Press.

Pearlin, L. (1989). The Sociological Study of Stress. *Journal of Health and Social Behavior* 30(3), 241-56.

Pearlin, L. I., J. T. Mullan, S. J. Semple, & M. M. Skaff (1990). Caregiving and the stress process: An overview of concepts and their measures. *The Gerontologist*, 30:583–94

Penning, M. J., & Z. Wu (2016). Caregiver stress and mental health: Impact of caregiving relationship and gender. *The Gerontologist*, 56:1102–13.

Sinha, P. C., S. Calfee, & K. L. Delucchi (2021). Practitioner's Guide to Latent Class Analysis: Methodological Considerations and Common Pitfalls. *Crit Care Med*, 49(1), e63-e79.

Skaff, M. M., & L. I. Pearlin (1992). Caregiving: Role engulfment and the loss of self. *The Gerontologist*, 32:656–64.

Smock, P.J. and C. R. Schwartz (2020), The Demography of Families: A Review of Patterns and Change. *Journal of Marriage and Family*, 82:9–34. https://doi.org/10.1111/jomf.12612

Wakabayashi, C., & K. M. Donato (2005). The Consequences of Caregiving: Effects on Women's Employment and Earnings. *Popul Res Policy Rev* 24:467–88.

World Health Organization. (2023, 31 March). *Depressive disorder (depression*). World Health Organization Newsroom. Retrieved May 4, 2023, from https://www.who.int/news-room/fact-sheets/detail/depression

Chapter 2

Country-level Contextual Factors, Stress Across the Life Course, and Depression in Older Age Among European Women

Abstract

In this chapter I examine the relationship between older women's depressive symptoms and their experiences over the life course. Women's life expectancy at birth exceeds men's in every European country; however, women spend more of their later years in poor physical and mental health. As European populations grow both older and more female, depression among older women is becoming an increasingly salient public health concern.

Stress across the life course predicts elevated levels of depressive symptoms in later life. One source of stress that women experience across the life course is gender inequality: repeated exposure to situations in which women's autonomy is restricted and in which their access to available resources and opportunities is limited leaves women with a diminished sense of personal control, which is associated with elevated levels of depressive symptoms among older women.

As the second demographic transition (SDT) moved throughout Europe, the adoption of progressive values led to attitudinal shifts that opened a wider variety of life options to women. However, macro-level ideological change has occurred unevenly across Europe and, as a result, there is regional variation in the range of life options available to women and in women's freedom to pursue a life path of their own choosing.

In this chapter I consider the contributions of individual factors and social structural factors to the link between stress across the life course and depressive symptom levels in later life. I use the Survey of Health, Ageing, and Retirement in Europe's retrospective life history data (SHARELIFE) to construct event sequences representing the order in which women in nine European countries completed four major life events: finishing formal education, beginning paid employment, first marriage, and the birth a first child. I calculate a relative frequency score for each event sequence observed that indicates whether that specific combination of life events was common or uncommon among women in a particular country. To represent unobservable structural factors in my analyses, I include Global Gender Gap Index scores and the results from a principal component analysis of a set of attitudinal variables drawn from the European Values Study. These country-level variables represent the social, political, and economic conditions of women relative to men.

I find evidence that women who follow less-common life paths experience elevated levels of depressive symptoms in later life compared to women who follow more-common paths, and I demonstrate that country-level structural factors are predictors of the likelihood that a woman will experience high levels of depressive symptoms in later life. Results show that the relationship between following a less-common life path and elevated levels of depressive symptoms in older age is particularly strong for women in the highly gender-unequal Southern European region.

Introduction

Depression is a serious mental health condition that currently affects approximately 280 million people worldwide, a number that continues to rise (World Health Organization 2023). Depression is not distributed evenly throughout populations: women are approximately twice as likely as men to report depressive symptoms (Van de Velde et al. 2010) and women experience depression at a higher rate than men at every age (World Health Organization 2023). Women also experience higher levels of stress, both as somatic symptoms and as psychological distress (Matud 2004). Structural sexism—gender-based inequality in distribution of power, opportunities, and resources in society—disadvantages women across the life span and contributes to gendered gaps in physical and mental health across the life course (Homan 2019).

In this chapter, I explore the relationship between having followed a more- or less-common life path and depressive symptom levels in older age among women in nine countries across Europe's Northern, Central, and Southern regions. I consider ways that cross-country differences in behavioral norms, welfare state generosity, and country-level contextual factors—Global Gender Gap Index scores and measures of gender equality and men's and women's attitudes about employment and women's independence—are likely to make following a relatively less-common life path more "costly" for women in countries where ideological and behavioral shifts associated with the second demographic transition have not fully materialized or driven the evolution of work-family policy that would aid women in combining family and work roles.

Background

Europe's first demographic transition emerged with a gradual decline in mortality rates beginning in the early 19th century, followed by fertility decline beginning around 1880 in most countries (van de Kaa 1987). As agricultural production and transportation capabilities evolved, the region's food supply became able to sustain a larger population; better nutrition and public health practices led to improved

population health and lower mortality. The subsequent fertility decline was driven by increased reliance on parity-related contraceptive practices within marriage, as couples sought to reduce completed family size (Coale 1984).

19th century population change was followed by widespread ideological change, evident in most of Europe's shift toward more progressive values and attitudes following World War II. The movement away from conservative, family-centric values and toward secular, individualistic values reflects a population-level shift from prioritizing basic survival needs to addressing higher-order needs. This shift explains many of the ideological and demographic changes that have been observed across Europe in the postwar period (Lesthaeghe 2010; van de Kaa 1987). Collectively, these patterns of demographic and ideological change are known as the second demographic transition (SDT).

The SDT emerged in Scandinavia during the mid-20th century and from there spread westward and southward throughout Europe, then through other Western nations and Japan. The SDT's key demographic changes include shifts from near-universal marriage toward cohabitation; from emphasis on children as the central focus of a family to family formation as a source of fulfillment for the adult couple; from use of contraception to reduce completed family size by preventing higher-order births, to the use of birth control methods as a means to bring fertility in line with personal desires by deliberately timing and spacing births, or by preventing conception entirely; and from uniform, nuclear-family households to a wide variety of living arrangements and family configurations (van de Kaa 1987). Key ideological changes brought about by the SDT include a shift from prioritizing conformity to strong behavioral norms and collective-based values to emphasizing autonomy, self-expression, and individual achievement. A quest for more symmetrical gender relations is part of the shift toward progressive values, and revision of gender roles in countries where SDT changes have firmly taken hold has had a significant positive impact on women's lives and wellbeing. While the order in which specific demographic and ideological changes have occurred has been relatively uniform across countries, the timing and speed at which the changes have occurred have varied substantially between countries (van de Kaa 1987).

Differences in how early the SDT emerged and in how rapidly it has progressed in specific countries are due to underlying cultural factors that make societies more or less receptive to the adoption of progressive values, attitudes, and behaviors that eventually cause social norms to shift (Lesthaeghe 2014). Country-level variation in behavioral norms and the value systems they sustain has been attributed to differences in countries' modernization trajectories: historical heritage, economic development, population distribution, religious tradition, and level of existential and economic security are all factors that determine whether a nation retains a traditional, survival-value system protected by strict behavioral norms, or develops a secular-rational value system and more flexible norms that accommodate diversity and self-expression in behavior (Inglehart & Baker 2000).

Anthropological research has long classified nations based on the strength of their social norms and their level of tolerance for deviant behavior: "tight" nations are rigorously formal and orderly, while "loose" nations are individualistic and expressive (Pelto 1968). Tightness and looseness are evident at the structural level in social institutions and norms, and at the individual level in psychological and behavioral differences (Gelfand et al. 2011). In a study of 33 nations, Gelfand and colleagues (2011) found that nations that have faced ecological and historical threats have much stronger norms and lower tolerance for deviant behavior than nations that have not been similarly threatened. Compared to looser nations, tight nations tend to have higher population density, higher projected population increase, fewer natural resources, more natural disasters, histories of more territorial threats from neighboring nations, greater historical prevalence of pathogens, higher numbers of years of life lost to communicable disease, and higher infant and child mortality rates (Gelfand et al. 2011).

As a result of these pressures, tight nations have developed strong behavioral norms and low tolerance for deviant behavior in order to maintain social order and protect against further threats (Gelfand 2011). In tight countries, deviations from social norms represent threats to the order and security maintained through upholding traditional values. Diversity is perceived as threatening, and people cling to customs and tradition, emphasizing familiar roles and rigid rules to maximize predictability and preserve a sense of security in the face of uncertainty (Inglehart & Baker 2000). The structuring of adult lives

around a nuclear family organized around strict gender roles in which men are providers and women are caregivers is typical within traditional value systems and may create a sense of order and predictability, but the patriarchal gender norms embedded within this structure undermines women's autonomy and adversely impacts women's mental health (Berg & Woods 2009).

As ideological changes brought about by the SDT took hold, the transition from traditional gender relations to a more progressive dynamic proved disruptive before the eventual benefits of more egalitarian arrangements were realized. The large-scale entry of women into the labor force—what Goldscheider and colleagues (2015) refer to as "the first half of the gender revolution"—was highly disruptive to the nuclear family and to the gendered distribution of labor, power, and opportunities. The dramatic rise in female labor force participation and the accompanying increase in women's responsibility to contribute economically to the household led to delays in marriage and childbearing as more of women's time was being spent outside the home, and also led to lower completed fertility among employed women. The increase in women's employment outside the home has also been associated with elevated divorce rates as women's economic dependence on men has loosened (Goldscheider et al. 2015:210).

The gender revolution reshaped the fundamental relationship between men and women by undermining the structural separation of men into paid employment and women into home and family care, a "separate spheres" dynamic that emerged with industrialization and served as the dominant force structuring gender relations over the next century (Stanfors & Goldscheider 2017). In countries where women entered the labor force in large numbers, attitudes toward women working outside the home became more permissive and the pursuit of postsecondary education and building a career became feasible and personally-rewarding life options for women. Women who forgo labor-force participation entirely in order to stay home and fulfill household labor and family care duties have worse health in older age compared to either women who combine paid employment and unpaid caregiving or women who alternate spells of employment and domestic duties across the life course (Zella & Harper 2020); assuming domestic labor and informal caregiving responsibilities is especially psychologically harmful to

women when those roles are undesired, unexpected, or when the labor demands are heavy and enduring (Pearlin et al. 1981). Autonomy in making decisions about the directions of their own lives has long-term mental health benefits for women.

The degree to which ideological and behavioral changes associated with the gender revolution and the SDT have progressed and influenced gender attitudes and social welfare policy are important country-level factors that shape the contexts within which women make major life decisions. For example, the progress of the SDT within a country matters with regard to the relationship between prevailing gender attitudes and the strength of expectations that women plan their lives around marriage and childbearing (Kolpashnikova et al. 2021). Because ideological and behavioral change occurred at different times and tempos in different countries, there is geographic variation in the range of life options that are available to women, and in the normative range of women's life paths. In countries where the SDT has progressed furthest, the relatively high level of individualism that has diffused into the private sphere means that there has been a weakening of the attachment between childbearing and marriage and of the centrality of those events in women's life planning (Kolpashnikova et al. 2021:305); this is evident in the wider variety of life options exercised by Nordic women compared to women in Southern European countries, particularly in the higher incidence of life paths in which childbearing precedes, or occurs without, marriage. Ideological and behavioral variation among Central European countries that lie between these two regions reflects geographic proximity to Nordic or Southern countries and countries' Protestant or Catholic religious traditions.

As the SDT has moved from North to South and from West to East throughout Europe, countries where its ideological and behavioral shifts have been embraced have developed more-egalitarian societies with redistributive welfare states that promote full employment and individual autonomy from the labor market (Moller & Cai 2020). Family norms have relaxed the most in the Nordic countries, which has enabled women living in that region to pursue a widened range of potential life paths with minimal threat of stigmatization or sanctioning; having the freedom to follow an individualized life path could help to protect the mental health of women in the Nordic region who combine life events and roles in less-

common ways. In contrast, the non-redistributive welfare states in Southern, Christian Democratic countries where SDT ideological shifts have not progressed to the same degree reinforce a status quo that privileges heterosexual, male-headed nuclear families that are sustained by a gendered division of labor in which men are the sole- or primary wage earners and women perform unpaid domestic labor and caregiving (Fraser 1994) Welfare states in countries where traditional family norms prevail tend to exacerbate, rather than lessen, inequalities (Moller & Cai 2020). In these contexts, women's life options are restricted to those which support the family realm, and women who wish to follow less-common but more personally-fulfilling paths—or women who *do* follow such paths—are likely to experience stress across the life course as they endure (or face the threat of) stigmatization and sanctioning; one of the global indicators of stress that is especially well-suited to studies of stress with social antecedents, such as being subjected to social control and having one's autonomy constrained across the life course by gender inequality, is depression[3] (Pearlin et al. 1981). Disadvantages that women face across the life course tend to be cumulative, which leads to particularly low feelings of personal control and higher levels of depression in later life (Bracke et al. 2020; Ross & Mirowsky 2002).

In countries with high degrees of gender equality, both men and women are less likely to be depressed compared to men and women who live in gender-unequal countries: the strength of the relationship between perceived gender discrimination and mental health problems depends on the societal degree of gender equality (Van de Velde et al. 2021). Even in the most gender-egalitarian contexts, however, women can experience stress and its adverse effects on their mental health to a greater degree than men. In less-egalitarian contexts, where women have even lower social status and less autonomy than men, and where welfare policy is likely to be much less supportive of women following nontraditional life paths, women would be expected to suffer greater levels of stress and worse mental health. A study of women and men who combined paid employment and unpaid caregiving duties in

[3] In this chapter's analyses, I operationalize depression using women's self-reported depressive symptoms rather than formal clinical diagnoses because subclinical symptom levels still adversely impact older women's lives.

Sweden—a context where policymakers have intentionally sought to mitigate work-family conflicts by implementing gender-neutral policies aimed at promoting a dual-earner/dual-caregiving economic model (universal parental leave programs, income support, and publicly funded care facilities and services) found that combining paid employment and unpaid caregiving responsibilities is highly stressful for women but not for men, especially among those who spent one hour or more per day on caregiving duties (Stanfors & Jacobs 2023).

When women make plans and decisions about their lives, they exercise agency and mobilize available resources within the set of social relations, institutions, social policies, and behavioral norms and expectations that are specific to the context in which they live. The ability of women to complete major life events and combine roles according to their personal preferences varies across different contexts and depends on factors including the degree of autonomy that women have to pursue their desired options, the generosity of the welfare state, and the existence of social policy that enables women to follow life paths which include a variety of role combinations. Women who perceive that gender inequality limits their life options are more likely than either men or women who do not perceive gender discrimination as a constraining factor to report worse mental health (Van de Velde et al. 2021). Van de Velde et al. (2021) point out that this difference may be due to confirmation bias if women who perceive gender discrimination as a harmful part of daily life also perceive their environment as more hostile, but it seems unlikely that confirmation bias would explain the link between perceived gender discrimination and women's worse mental health in countries where objective measures of gender inequality, such as the GGGI, indicate that women's political, economic, and health outcomes are worse than men's.

In this chapter, I explore the relationship between life path commonness and depressive symptom levels in older age among women living in nine European countries. As a result of ideological and behavioral changes associated with the second demographic transition, some of these countries' relaxed life course norms are more permissive of women following individualized life paths (i.e., the Nordic region), while some countries' (i.e., the Southern region) norms remain strong and restrictive. My goal is to determine if following a relatively less-common life path in a more-restrictive context is more strongly

associated with elevated risk of experiencing depressive symptoms in older age compared to following a relatively less-common path in a more egalitarian context.

Methods

Data

This paper uses data from the first and third waves of the Survey of Health, Ageing, and Retirement in Europe[4] (SHARE and SHARELIFE), from the 1990 wave of the European Values Study (EVS), and from the World Economic Forum's Global Gender Gap Index (GGGI) Report (Hausmann et al. 2009). I use data from SHARE and SHARELIFE to construct individual-level depression and life course measures, I use EVS data to construct country-level variables that capture exogenous context-specific factors, and I use GGGI scores to represent the state of gender equality in each of the nine countries included in my analyses.

SHARE is a multidisciplinary and cross-national panel database that currently includes microdata on the health, socioeconomic status, social networks, and family networks of more than 140,000 individuals aged 50 and older from nearly all European Union countries and Israel. The survey's panel design enables individual respondents' retrospective life histories collected in Wave 3 to be linked to their self-reports of health status across all other waves, which makes it possible to link behaviors in earlier life to physical and mental health conditions in older age. The aim of the survey design is to use probability-

[4] This paper uses data from SHARE Waves 1 and 3 (DOIs: 10.6103/SHARE.w1.800 and 10.6103/SHARE.w3.800) see Börsch-Supan et al. (2013) for methodological details.(1) The SHARE data collection has been funded by the European Commission, DG RTD through FP5 (QLK6-CT-2001-00360), FP6 (SHARE-I3: RII-CT-2006-062193, COMPARE: CIT5-CT-2005-028857, SHARELIFE: CIT4-CT-2006-028812), FP7 (SHARE-PREP: GA N°211909, SHARE-LEAP: GA N°227822, SHARE M4: GA N°261982, DASISH: GA N°283646) and Horizon 2020 (SHARE-DEV3: GA N°676536, SHARE-COHESION: GA N°870628, SERISS: GA N°654221, SSHOC: GA N°823782, SHARE-COVID19: GA N°101015924) and by DG Employment, Social Affairs & Inclusion through VS 2015/0195, VS 2016/0135, VS 2018/0285, VS 2019/0332, and VS 2020/0313. Additional funding from the German Ministry of Education and Research, the Max Planck Society for the Advancement of Science, the U.S. National Institute on Aging (U01_AG09740-13S2, P01_AG005842, P01_AG08291, P30_AG12815, R21_AG025169, Y1-AG-4553-01, IAG_BSR06-11, OGHA_04-064, HHSN271201300071C, RAG052527A) and from various national funding sources is gratefully acknowledged (see www.share-project.org).

based sampling to enable drawing inferences about the population of adults aged 50 and over across participating countries (Bergmann et al. 2019). In countries where detailed population registers were available, those registers were used as sampling frames; in countries where no population register was available, or where the available register did not contain detailed age information, additional screening steps were needed to ensure that individuals aged 50 and over could be identified (Bergmann et al. 2019).

SHARE's Wave 1 interviews were conducted in Austria, Belgium, Switzerland, Germany, Denmark, Spain, France, Greece, Italy, the Netherlands, Sweden, and Israel between 2004 and 2006. Sharelife, Wave 3, was fielded during 2008 and 2009 in all Wave 1 countries plus Ireland, Poland, and the Czech Republic. My sample includes women from nine of the 11 European countries that participated in both the first and third waves. The countries fall into three geographic regions: Northern Europe (Denmark and Sweden), Central Europe (Austria, Belgium, France, Germany, and the Netherlands), and Southern Europe (Italy and Spain).

My analytical sample is restricted to women aged 50 to 95 years who have valid depression score data (Wave 1) and valid life event completion dates (Wave 3) and whose survey responses were not completed entirely by proxy. After merging Wave 1 and Wave 3 data, there were 15,954 women in the initial sample. I dropped 5,148 women from Greece, Switzerland, the Czech Republic, Poland, and Ireland, 1,154 women under age 50, 4,944 women with missing depression scores, 70 women whose responses were confirmed to have been reported only by proxy, 37 women with missing education information (i.e., nonresponse on number of years or highest grade or degree completed, or missing year of completion of or exit from formal education). Excluded respondents were distributed evenly by country and age. Final analytical sample size is 4,586 women; Table 2.1 shows the distribution of the sample by region and by country.

I draw on data from the European Values Study 1990 – Integrated Dataset (EVS) to create a set of variables intended to capture differences in values and attitudes between the nine countries included in this chapter's analyses. The EVS is a large-scale, cross-national, repeated cross-sectional survey that measures differences and changes in basic human values. It currently covers the period from 1981 to 2020

and provides insights into the ideas, beliefs, preferences, attitudes, values, and opinions of citizens all over Europe; main topics concern family, work, environment, perceptions of life, politics and society, religion and morality, and national identity (https://europeanvaluesstudy.eu). I use data from the EVS's 1990 wave because it is the earliest wave in which all nine countries that I include in this chapter's analyses participated. Drawing data from this wave means that the country-level social context variables will reflect between-country similarities and differences at the time SHARE respondents were between 36 and 81 years old. It would be ideal to have these data from slightly earlier in SHARE respondents' lives in order to represent variation in the social, political, and economic conditions during the period when the majority of respondents were completing their major life events, but these data are the best available that fit my intended purpose.

I use Global Gender Gap Index (GGGI) scores to represent the degree of gender disparity in each of my nine focal countries. The GGGI is a measure introduced by the World Economic Forum in 2006 as a framework for capturing the magnitude of gender-based disparities and tracking progress toward gender equity over time (*www3.weforum.org*). The World Economic Forum's primary objectives in tracking the gender gap across countries and over time are to help provide an annual overview to policymakers about the extent to which resources and opportunities in their countries are being equally distributed among men and women, to allow them to track progress over time, and to encourage continued action to close the gender gap (Hausmann et al. 2007). I use GGGI data from 2008 because that is the year that almost all SHARE respondents reported their depression scores.

Individual countries' GGGI scores are the average of four subindex scores: *Economic participation and opportunity*, *Educational attainment*, *Political empowerment*, and *Health and survival*. Economic participation and opportunity scores are based on the ratio of women's to men's labor force participation rates, the ratio of women's to men's earned income, the ratio of women to men among legislators, senior officials and managers, and the ratio of women to men among technical and professional workers. Educational attainment scores are based on the ratio of women to men in primary-, secondary-, and tertiary-level education and on the ratio of the female literacy rate to the male literacy

rate. Political empowerment scores reflect gendered differences in high-level decision-making power and are based on the ratio of women to men in minister-level and parliamentary positions, and the ratio of women to men in terms of years in executive office (prime minister or president) over the last 50 years. Health and survival scores are based on the ratio of women's to men's healthy life expectancy and the sex ratio at birth (Hausmann et al. 2009).

When evaluating GGGI scores, it is important to remember three things: first, the GGGI measures gaps and not levels. The GGGI score is intended to reward countries for smaller gaps in resource levels rather than level of resources available, which would favor more-developed countries; for example, GGGI rankings penalize or reward countries based on the size of the gap between male and female enrollment rates, but not for the overall levels of education in each country. Second, the GGGI is intended to provide a snapshot of women's and men's relative position with regard to fundamental outcomes related to basic human rights; it evaluates countries based on outcomes rather than input or "means" variables such as country-specific culture, customs, or policy. Third, the GGGI is a measure of countries' nearness to having achieved gender equality and not a measure of women's empowerment; GGGI rankings reward countries for reaching a point where women's and men's outcomes are equal, and not for reaching a point where women outperform men in certain areas (Hausmann et al. 2009).

Measures

Depression Score. My main outcome variable is a numeric value representing the frequency and severity with which a respondent reported having experienced depressive symptoms. As part of SHARE's baseline interview, respondents were left a self-administer pencil-and-paper questionnaire that included questions about overall life satisfaction and mental health. The questionnaire asked respondents about how often they had experienced depressive symptoms during the last week using questions included in the shortened, eight-item version of the Center for Epidemiological Studies Depression Scale (CES-D8).

CES-D8 measures include six negative items (*I felt depressed, I felt that everything I did was an effort, My sleep was restless, I felt lonely, I felt sad,* and *I couldn't get going*) and two positive items (*I was happy* and *I enjoyed life*). Respondents reported how frequently they had experienced each of the eight emotions during the last week using four response categories ranging from *Almost all of the time* (1) to *Almost none of the time* (4).

To calculate a score for which a larger value indicates that a respondent has experienced more or stronger depressive symptoms, I reverse-coded the six negative measures and converted SHARE's 1 – 4 point scale with a 0 – 3 point scale so that experiencing a negative emotion almost all of the time (or experiencing a positive emotion almost none of the time) contributes 3 points to the depression score and experiencing a negative emotion almost none of the time (or experiencing a positive emotion almost all of the time) contributes 0 points. I then summed the eight values to yield an aggregate depression score for each woman. Using this coding scheme, the possible range for the *depression score* outcome is from a low of 0 to a high of 24.

Because this is a cross-country comparison of depressive symptom levels, it is important to ensure that the same concept is being measured across all countries of interest; it is only possible to compare depressive symptom levels across countries if measurement equivalence has first been established. Missinne et al. (2014) assessed the measurement equivalence of the eight-item version of the CES-D8 across older age groups in 11 European countries[5] and established full metric invariance, which implies that covariances and unstandardized regression coefficients between depressive symptoms and covariates of interest can be correctly calculated among the elderly European population (Missinne et al. 2014:44).

High level of depressive symptoms. Using the CES-D8 scores from SHARE Wave 1, I created a binary measure (1 = High level of depressive symptoms) that captures the subset of women who reported experiencing the highest levels of depressive symptoms (n=771). I included any woman whose depression

[5] The 11 countries are the nine included in this chapter's analyses plus Greece and Switzerland.

score was 11 or above in this category; I chose 11 as the threshold because it is one standard deviation above the sample mean depression score (N = 4,586). 16.81% of women in my analytical sample overall scored 11 or higher on the CES-D8 depression scale, and the percentage of women in my sample who reported this high a depression level varies widely at the country level, from a low of 5.54% in Denmark to a high of 28.77% in Spain. Regional differences in incidence of high depressive symptom levels are consistent with findings from previous studies of variation in depression levels across European countries (Missinne & Bracke 2012; Van de Velde et al. 2010b): in my analytic sample, 8.43% of the women in the Nordic region, 15.66% of women in the Central region, and 28.18% of women in the Southern region reported high levels of depressive symptoms.

Relative Sequence Frequency. To document the range of life paths followed by European women, I first constructed an event sequence representing the order in which each woman in my sample completed up to four major life events: completion of formal schooling (E), beginning a first paid job (J), first marriage (M), and birth of a first child (C). Each woman's sequence represents the number of events she completed as well as the order in which she completed them. The following examples of sequences identified among women in my sample illustrate the observed range variation in women's lives: *EJMC* is the path of a woman who would have first finished her education, then begun working, then married, and then had her first child; *EMC* is the path of a woman who completed her education, then married, then bore her first child, but never entered the labor force; and *MC* is the path of a woman who neither received formal education nor worked for pay but did marry and have a child.

I use my key independent variable, *relative sequence frequency* (RSF), to measure the proportion of women in each country who followed each distinct life path observed in that country. To calculate RSF, I divided the number of times each sequence was observed by the total number of women in my sample from that country. The resulting proportion is each sequence's RSF score. A high RSF value indicates that a life path represented by a particular ordering of events was relatively common among women in a particular country, and a low RSF value indicates that a particular life path was relatively less

common. The range of RSF varies widely across the nine countries in my sample, with an observed low of 0.02 in multiple countries to a high of 69.43 (*EJMC* in Germany).

Reasons that a particular life path might be more- or less common among women in a country include women's personal preferences, the context-specific set of social norms and social, economic, and political conditions that constrain women's life options, and contextual factors such as the generosity of the welfare state toward individuals who combine roles in nonnormative or nontraditional ways (e.g., single mothers).

I speculate that between-country differences in women's event sequences themselves and in observed ranges of RSF are likely to suggest two things: first, that the types of behavioral norms and expectations that influence women's life decisions in a particular country are likely to be apparent in the most-common life paths observed in that country (e.g., nearly all women's life paths would be expected to include marriage, and few would be expected to bear a child before marrying, in a country where strong religious beliefs persist and women have little autonomy). Second, the strength of behavioral norms and expectations in a country are likely to be evident in the shape of the distribution of RSF (i.e., strict behavioral norms and expectations are likely to be reflected in a combination of a fairly small number of high-RSF sequences that capture most women's life paths, plus a number of sequences with low RSF that represent "deviant" behavior; weaker behavioral norms are more likely to be reflected in a flatter distribution of RSF, with a larger number of event sequences needed to represent the majority of women's life paths.

Global Gender Gap Index (GGGI) Score. I include a gender gap measure to identify countries where women are most likely to experience gender discrimination and to have their life options restricted by traditional gender roles. Gender-based restriction of women's life options is a structural limitation that shapes women's life choices and limits their access to opportunities and resources, which in turn carries implications for women's health and wellbeing across the life span and into older age. The closer a country's index score is to 1, the closer that country is to having achieved gender parity. The range of the GGGI score variable for the countries included in my analyses is from a low of 0.6727 in Greece to a high

of 0.8139 in Sweden. All nine countries' GGGI scores, as well as the four subindex scores, are shown in Table 2.1.

Unobservable Country-Level Factors. I include two variables—*Women's Independence* and *Employment Attitudes*—to serve as proxy measures of country-level social factors that are not directly observable but have real impact across the life course on women's day-to-day lives. These variables are the results of a principal component analysis of five attitudinal variables drawn from the European Values Study. The first factor, which I call *Women's Independence*, loads predominantly on three variables: *Approval/disapproval of the women's movement*, *Approval/disapproval of a woman wanting to have a child as a single mother but not a stable relationship with a man,* and *Having a job is the best way for a woman to be an independent person*. The second factor, which I call *Employment Attitudes,* loads predominantly on two: *When jobs are scarce, men's employment should be prioritized* and *Both husband and wife should contribute to household income*. Each of the five variables is coded as a binary measure of non-disagreement in which a response of 'Disagree' or 'Strongly Disagree' receives a value of 0 and a response not indicating disagreement—'Agree', 'Strongly Agree', or 'It depends'—receives a value of 1. The closer a variable's value is to 1, the more similar men's and women's attitudes are on that particular measure; if the variable's value exceeds 1, then more women than men did not disagree with the survey question, while a value below 1 indicates that more men than women did not disagree with the question. The ratios of women's to men's *Did not disagree* responses for all five variables are shown in Table 2.2.

It is important to consider country-level gender attitudes when assessing the potential impact of the order in which women completed major life events on variation in women's depressive symptom levels in older age: this means considering both women's *and* men's attitudes about gender roles and women's rights. Women do not live or make important life decisions in a vacuum; because of women's disadvantaged position relative to men in hierarchical societies and the power that men in all societies have over women's lives, albeit to different degrees, men's receptiveness to progressive social change and gender equality has direct and indirect impacts on women's life chances and, by extension, to women's health.

Analytic Strategy

My overarching goal is to determine if following a relatively less-common life path in a more-restrictive context is associated with elevated risk of experiencing depressive symptoms in older age. My first analytical aim is to establish context by showing how the countries in my sample differ with regard to gender inequality and gender relations. To meet this aim, I present countries' GGGI scores and the proportions of women and men in each country who did not disagree with three statements measuring attitudes about Women's Independence and two statement measuring Employment Attitudes. My second aim is to document the relationship between life path commonness and depressive symptom levels overall, by region, and by country. I do this using bivariate analysis and multivariate regression modeling. Finally, I aim to explore whether the relationship between following a less-common life path and depressive symptom levels in older age is stronger in Southern countries where women's behavior is more highly regulated by behavioral norms and expectations rooted in a traditional gendered division of labor. To meet this aim, I first use Ordinary Least Squares (OLS) regression modeling to estimate the effect of life path commonness on the later-life depressive symptom levels of women in each region and country, and then use logistic regression modeling with a binary *High depressive symptom level* outcome to estimate the odds of experiencing a high level of depressive symptoms based on life path commonness, GGGI score, and country-specific contextual factors.

Results

The four life events I consider in my documentation of women's life paths are completion of formal education (E), beginning a first paid job (J), first marriage (M), and the birth of a first child (C). Table 2.3 shows the size of the sample from each region and country and the proportion of women in each region and country who completed each of these four focal events. In the table, educational attainment is broken down into two subcategories (*High school or less* and *Some college or more*) to illustrate regional and between-country variation in women's educational attainment. Education level is not included in

multivariate analyses but is presented here to show between-country differences in the life options available to women.

Women's educational attainment and labor force participation are much higher in the Nordic region compared to the South. Over a third of Nordic women and a fifth of women in the Central region completed some college or more, whereas a very large majority of Southern European women completed high school or less. While nearly all Nordic women reported having ever held paid employment, over a third of Southern European women reported never working. Regional differences in educational attainment levels and labor force participation are consistent with what we know about attitudinal and behavioral differences due to the earlier emergence and further progression of the SDT in the North compared to the South. The percentages of women ever marrying and ever bearing at least one child are similar and high across all three subgroups.

Figure 2.1 illustrates geographic variation in GGGI score. The legend lists the nine countries included in my analytic sample and their respective GGGI scores; the countries are listed in descending order with respect to GGGI score. The highest level of overall gender equality is indicated with dark green (Sweden) and the greatest gender disparity is indicated with yellow (Italy). North-to-South and West-to-East gradients are clearly visible. The index score, which enables country-level comparison of the gap between women's and men's access to resources and opportunities, is an aggregate measure based on the gender gap in four subcategories: economic participation and opportunity, educational attainment, health and survival, and political empowerment. A high index score indicates a high level of gender equality overall, while a high subindex score indicates a high level of gender equality in a particular area; neither necessarily means that a country's population fares particularly well compared to another country.

Geographic Differences in Incidence of Depression

Percentages of women in each region and country who reported any depression and who reported high levels of depression are shown in the second and third columns of Table 2.4; the table's final column shows the mean depression score for each region and country. I conducted a one-way ANOVA to

determine if the between-group differences in mean depression scores among the Nordic, Central, and Southern regions are statistically significant. Between-group differences in depression score are statistically significant ($p<.0001$); post-hoc testing confirmed that women's mean depression score is significantly higher in the Central region than in the Nordic region, higher in the Southern region than in the Nordic region, and significantly higher in the Southern region than in the Central region.

Nearly all women in every country reported having experienced at least some depression: the percentage of women who reported having experienced any depressive symptom ranges from 89.71% in Denmark to 97.93% in both Italy and Germany. Of the six negative emotions on the CES-D8 scale, the most commonly reported by women in the entire sample were *feeling that everything was an effort* (64.26%), *restless sleep* (58.89%) and *feeling sad* (54.43%). Of the two positive CES-D8 emotions, 35.76% of all women reported enjoying life just some- or almost none of the time, and 33.63% of all women felt happy just some of the time or almost none of the time.

There is high between-region variation in mean depression scores but lower variation between countries within each region, particularly in the South (range 8.20-8.45), where mean scores are highest, and in the Nordic region (range 4.25-5.36), where mean scores are lowest. There is slightly higher within-region variation in mean depression score among the Central European countries (range 5.67-7.23), which are situated between the Nordic and Southern regions; the greater variation is likely due in part to that region including a larger number of countries than the other two regions, and also to greater heterogeneity in country-level cultural and religious factors within the Central region.

The North-to-South gradient in mean depression score by country is illustrated in Figure 2.2. The legend shows the nine countries and their mean depression scores in descending order; the map's color spectrum indicates the lowest mean depression score using light yellow and the highest with dark blue. Overall, there is wide between-country variability, but in almost all cases women in neighboring countries report similar depression levels.

The percentage of women reporting a high level of depressive symptoms varies widely at the regional- and country levels and also increases from North to South, as shown in Figure 2.3. The legend

lists the nine countries by percentage of women in each country who reported a high level of depressive symptoms in ascending order; light yellow indicates the smallest percentage of women experiencing a high level of depressive symptoms (Denmark) and dark red indicates the largest percentage (Spain). 23.58% of Nordic women reported experiencing a high level of depression compared to 34.87% of Central European women and 49.85% of Southern European women. At the country level, the percentage ranges from a low of 5.54% in Denmark to a high of 28.77% in Spain.

Relative Sequence Frequency and Depression in Older Age

Bivariate analysis shows that overall, there is a statistically significant negative relationship between relative sequence frequency and depression score, and also between relative sequence frequency and a high level of depressive symptoms. By either measure, the less common a woman's life path is in her home country, the more likely she is to experience worse depression in older age. Table 2.5 shows the results of Pearson product-moment and Spearman rank correlations between relative sequence frequency and depression score in the first two results columns, and between relative sequence frequency and high depressive symptom level in the last two results columns. Results are shown at the regional- and country levels.

Multivariate analysis confirms that individual- and country-level factors are significant predictors of differences in the levels of depressive symptoms experienced by older women. The results of an ordinary least squares (OLS) regression of depression score on relative sequence frequency, Global Gender Gap Index score (GGGI), and two country-level composite measures, *Women's Independence* and *Employment Attitudes*, are presented in Table 2.6. The value of depression score ranges from 0 (no- or very low level of depressive symptoms, meaning a respondent reported experiencing depressive symptoms almost none of the time) to 24 (very high level of depressive symptoms, meaning a respondent reported having experienced all eight symptoms almost all of the time).

Model 1 shows a small but highly significant negative relationship between relative sequence frequency, an individual-level factor, and depression score. A higher relative sequence frequency, which

indicates that a respondent's life path was more common in her home country, is associated with a lower level of depressive symptoms in older age. Model 2 shows the estimated effects of the addition of GGGI score on the relationship between relative sequence frequency and depression score. In Model 3 I substitute country-level attitudinal measures for GGGI score. While both country-level approaches consider context-specific factors that impact women's opportunities and decision-making processes, GGGI components can be observed and directly quantified while attitudinal measures serve as proxies for invisible characteristics that reflect country-level social- and cultural differences.

Logistic regression results are shown in Table 2.7, below; the main difference is that the dependent variable in the logistic regression is a binary indicator in which a value of 1 represents women with the highest self-reported levels of depressive symptoms, while a value of 0 represents women who reported experiencing fewer or no symptoms. The results of the logistic regression are less straightforward to interpret than the OLS results: OLS results reflect differences in predicted depression score, while logistic regression results show differences in the odds that a woman will experience a high level of depressive symptoms.

Logistic regression results are consistent with OLS regression results but do not achieve the same level of statistical significance overall. Model 1 shows that an increase in relative sequence frequency corresponds to a small but highly significant reduction in the odds that a woman will experience a high level of depressive symptoms. In Model 2, the addition of Global Gender Gap index score shows that this country-level factor is also a highly significant predictor: women in countries characterized by greater gender equality are less likely to experience a high level of depressive symptoms in older age. In Model 3, I substitute two other country-level factors for GGGI score—*Women's Independence* and *Employment Attitudes*—and find that doing so eliminates the statistical significance of relative sequence frequency as a predictor of older-age depressive symptoms; the country-level factor Employment Attitudes, however, does significantly predict a higher likelihood of experiencing depressive symptoms.

Discussion and Conclusion

In this chapter I examined the relationship between life path commonness on incidence of depression in older age and of variation of European women's different life experiences. My main goal was to determine whether following a nonnormative life path elevates women's risk of experiencing depressive symptoms in later life. I found that following a life path that is relatively less common in her home country significantly predicts a higher likelihood that a woman will experience a higher level of depressive symptoms in older age. I also demonstrated that GGGI score is inversely related to depressive symptom levels in older age: living an uncommon life path in a country with a low level of gender equality further raises a woman's likelihood of experiencing a higher level of depressive symptoms in older age.

As seen in Figures 2.2 and 2.3, there is clear geographic variation in women's self-reported depressive symptoms: the Nordic countries have the lowest mean depression scores and the Southern countries have the highest, with the Central countries falling in between; this pattern maps clearly onto the path of the second demographic transition throughout Europe. This observed regional variation is not due to geography *per se*, but to the underlying country-level social and cultural factors that made Nordic and Central European countries more amenable to adopting the SDT's changes in family behaviors, gender relations, and progressive attitudes. Behavioral and attitudinal changes emerged earlier and progressed more quickly in the North than in the South; this is reflected in the different degrees of actual behavioral change observed among women in different regions and countries.

In Southern Europe, the structural constraints that shape women's life courses—especially traditional gender roles and gender inequality—are also known to be associated with poorer physical and mental health outcomes for women throughout their lives and in older age. In contexts where social norms dissuade women from pursuing advanced education and taking on paid employment in favor of maintaining "separate spheres" of labor, the cost of maintaining social order is borne by women. It is plausible that women in restrictive contexts experience chronic stress across the life course because they recognize the constraints that patriarchal societies place on their lives, yet they are not empowered to

change the status quo. It is also plausible that psychological distress caused by frustration and regret about forgone opportunities and unrealized potential across the life course could persist into older age and manifest as depressive symptoms.

As European populations grow older and women's life expectancy continues to surpass men's, depression among women in older age will remain a growing public health issue. The relationship between individual-level factors, context-specific geographic, social, and cultural factors, and older women's mental health outcomes is highly complex and cannot be explained by any single study. My contribution to this area of research is conceptual: I use a holistic life course approach to examine how following a life path that is more- or less-common among women in a particular context impacts mental health in older age. I cannot claim to have identified the key causal factor in elevated depression levels among older women: despite the statistical significance of the relationship between life path commonness, gender equality, country-specific attitudinal factors, and later-life depression level, the size of the estimated effect on later-life depression that can be estimated to be attributed to the sequencing of life events is small. The small magnitude is, however, not surprising nor is it problematic, as the ordering of one's life events and roles represents a series of decisions and negotiations that are undertaken by an individual amid dynamic social, economic, and political conditions. The degree to which a woman is free to choose from available options as she constructs her own life path depends on factors that are hardly mutable at the individual level: access to resources and power are often determined by the specific set of conditions into which an individual is born, and gender inequality plays a large role in determining women's access to socioeconomic resources and opportunities across the life course. These factors strongly impact the range of life options available to women, and the factors are themselves known to also be related to mental health outcomes.

The central aim of this paper is not to study the effects of policy change on women's lives, but the role of policy in determining which life options are possible for women in different contexts must be acknowledged. Policies that target childbearing behavior tend to affect other dimensions of the life course, including employment patterns, provision of universal childcare, and the division of work and

caregiving responsibilities among women and men (Thévenon & Neyer 2014:2). Policies that facilitate the combination of employment and family roles result in higher fertility and higher levels of workplace participation among women, whereas a lack of comprehensive family policy results in role conflict and reduced or forgone fertility (Mills et al. 2008). Policies that enable women to complete events and combine roles in particular ways and the social climate that leads to the development and adoption of such policies share an iterative relationship: policy that does not reflect reality is likely to fall short of achieving its intended goal, and insufficient policy provision for women seeking to combine roles in diverse ways means that nonnormative combinations are more likely to lack recognition and support, and would therefore be more likely to remain uncommon.

The contrasting approaches taken by the Nordic countries—which have implemented generous policies to ensure the availability of childcare, to encourage mothers' labor force participation, and to promote fathers' sharing of family responsibilities—and the Southern European countries—which lack support for working families in the form of financial support or childcare provision—have contributed to regional divergence in women's life paths. In the Nordic countries, where policy provides economic support for new parents, promotes a more equitable sharing of economic and caregiving responsibilities, and reduces the stigma attached to men's increased participation in caregiving, the majority of women choose to combine work and motherhood. In the South, where lack of comprehensive family policy makes such role combination difficult, however, the traditional gendered division of labor persists and many women forgo employment outside the home. This is illustrated in Table 1, with the nearly identical percentages of women bearing children in the Nordic (88.51%) and Southern (88.41%) regions and the large between-region gap in women's workforce participation (98.8% of Nordic women and 71.97% of Southern European women reported working outside the home).

The impact of differential levels of support for combining work and motherhood is also evident in regional- and country-level differences in fertility. Figure 2.4 illustrates trends in total fertility rate (TFR) over time for all 9 countries I included in my analyses; the three regions into which the countries fall are identified by color. The graph shows that fertility decline, one hallmark of the second demographic

transition, begins in the Nordic countries (identified using green trend lines) in the mid-1960s, approximately 10 years earlier than in the Southern region (red trend lines). To illustrate the impact of comprehensive family policy on women's fertility, I indicate four points at which key policy implementation or modification occurred using vertical lines; I have labeled the points A through D.

In 1979 (A), at approximately the same time fertility began its sharp decline in the South, Sweden implemented the world's first gender-neutral parental leave program, which granted new parents six months' paid leave after the birth of each child (Duvander et al. 2010). This leave was extended from six to 15 months in 1989 (B), then extended again in 2002 (D), from 15 months to 16. In 1995 (C), Sweden became the second country to mandate that part of the guaranteed parental leave be taken by fathers only; the father's designated two-week portion is forfeited if not used, a condition that has resulted in over 80% of fathers taking leave (Duvander et al. 2010). The "use it or lose it" aspect has turned taking the leave into a wise economic decision for men and their families, and the increase in men's taking leave to bond with their families has served to reduce the stigma attached to men's increased participation in family-care duties. In addition to the generous leave length, Sweden also offers a great deal of flexibility for new parents by allowing the leave to be taken full time or at different degrees of part time until the child reaches age 8 (Duvander et al. 2010:47).

Generous family leave policies are effective at helping to alleviate stress on families and also at making it possible for women to combine work and family roles; improvements at the individual level translate into country-level differences in fertility because women who are able to combine employment and motherhood are not forced to choose one or the other. The large-scale effects are evident in Figure 2.4, which shows that there was a crossover in the Nordic and Southern countries' TFRs that occurred between the implementation and substantial extension of parental leave in Sweden.

The Southern countries' TFRs have remained at or below 1.5 births per woman since approximately 1988, while the Nordic countries have returned to near-replacement fertility. This shows the contrasting macro-level effects of women's ability to successfully combine roles in the Nordic countries, while negotiating life roles remains a series of tradeoffs for women in the South.

References

Berg, J.A. & N. F. Woods (2009). Global Women's Health: A Spotlight on Caregiving. *Nurs Clin N Am* 44:375-84.

Bergmann, M. Kneip, T., De Luca, G., & Scherpenzeel, A. (2019). Survey participation in the Survey of Health, Ageing and Retirement in Europe (SHARE), Wave 1-7. Based on Release 7.0.0. SHARE Working Paper Series 41-2019. Munich: SHARE-ERIC.

Börsch-Supan, A. (2022). Survey of Health, Ageing and Retirement in Europe (SHARE) Wave 1. Release version: 8.0.0. SHARE-ERIC. Data set. DOI: 10.6103/SHARE.w1.800

Börsch-Supan, A. (2022). Survey of Health, Ageing and Retirement in Europe (SHARE) Wave 3 – SHARELIFE. Release version: 8.0.0. SHARE-ERIC. Data set. DOI: 10.6103/SHARE.w3.800

Börsch-Supan, A., M. Brandt, K. Hank and M. Schröder (Eds). (2011). The individual and the welfare state. Life histories in Europe. Heidelberg: Springer.

Börsch-Supan, A., Brandt, M., Hunkler, C., Kneip, T., Korbmacher, J., Malter, F., Schaan, B., Stuck, S., Zuber, S. (2013). Data Resource Profile: The Survey of Health, Ageing and Retirement in Europe (SHARE). International Journal of Epidemiology DOI: 10.1093/ije/dyt088.

Bracke, P., K. Delaruelle, R. Dereuddre, & S. Van de Velde (2020). "Depression in women and men, cumulative disadvantage and gender inequality in 29 European countries." *Social Science & Medicine* (1982), 267, 113354. https://doi.org.proxy.lib.umich.edu/10.1016/j.socscimed.2020.113354

Coale, A. J. 1984. "The Demographic Transition," *The Pakistan Development Review* 23(4), 531-52.

Duvander, A-Z., T. Lappegård, & G. Andersson. 2010. Family policy and fertility: fathers' and mothers' use of parental leave and continued childbearing in Norway and Sweden," *Journal of European Social* Policy 20(1), 45-57.

EVS (2011). EVS - European Values Study 1990 - Integrated Dataset. GESIS Data Archive, Cologne. ZA4460 Data file Version 3.0.0, https://doi.org/10.4232/1.10790.

Fraser, N. (1994). After The Family Wage: Gender Equity and the Welfare State. *Political Theory*, 22(4), 591–618. https://doi.org/10.1177/0090591794022004003

Gelfand, M. J., Raver, J. L., Nishii, L., Leslie, L. M., Lun, J., Lim, B. C., Duan, L., Almaliach, A., Ang, S., Arnadottir, J., Aycan, Z., Boehnke, K., Boski, P., Cabecinhas, R., Chan, D., Chhokar, J., D'Amato, A., Ferrer, M., Fischlmayr, I. C., … Yamaguchi, S. (2011). Differences Between Tight and Loose Cultures: A 33-Nation Study. *Science*, 332(6033), 1100–04. https://doi.org/10.1126/science.1197754

Goldscheider, F., Bernhardt, E., & Lappegård, T. (2015). The Gender Revolution: A Framework for Understanding Changing Family and Demographic Behavior. *Population and Development Review*, 41(2), 207–39. https://doi.org/10.1111/j.1728-4457.2015.00045.x

Hausmann, R., L.D. Tyson & S. Zahidi (2007). "The Global Gender Gap Report 2006", World Economic Forum. Available at https://www.weforum.org/publications/global-gender-gap-report-2006

Hausmann, R., L.D. Tyson & S. Zahidi (2009). "The Global Gender Gap Report 2008", World Economic Forum. Available at https://www.weforum.org/publications/global-gender-gap-report-2008

Homan, P. (2019). Structural Sexism and Health in the United States: A New Perspective on Health Inequality and the Gender System. *American Sociological Review*, 84(3), 486–516. https://doi.org/10.1177/0003122419848723

Inglehart, R. and W. E. Baker. 2000. "Modernization, Cultural Change, and the Persistence of Traditional Values," *American Sociological Review* 65:19-51.

Kolpashnikova, K., Zhou, M., & Kan, M.-Y. (2020). Country differences in the link between gender-role attitudes and marital centrality: Evidence from 24 countries. *International Journal of Comparative Sociology*, 61(5), 291–309. https://doi.org/10.1177/0020715220985922

Lesthaeghe, R. (2010). The Unfolding Story of the Second Demographic Transition. *Population and Development Review*, 36(2), 211–51. https://doi.org/10.1111/j.1728-4457.2010.00328.x

Lesthaeghe R. (2014). The second demographic transition: a concise overview of its development. *Proceedings of the National Academy of Sciences of the United States of America*, 111(51), 18112–18115. https://doi.org/10.1073/pnas.1420441111

Matud, P. (2004). Gender differences in stress and coping styles. *Personality and Individual Differences*, 37:1401-15.

Mills, M., L. Mencarini, M. L. Tanturri, & K. Begall. 2008. "Gender equity and fertility intentions in Italy and the Netherlands," *Demographic Research* 18:1-26.

Missinne, S., Bracke, P., 2012. Depressive symptoms among immigrants and ethnic minorities: a population-based study in 23 European countries. *Soc. Psychiatry Psychiatr. Epidemiol*. 47(1), 97–109.

Missinne, S., Vandeviver, C., Van de Velde, S., & Bracke, P. (2014). Measurement equivalence of the CES-D 8 depression-scale among the ageing population in eleven European countries. *Social science research*, 46:38–47. https://doi-org.proxy.lib.umich.edu/10.1016/j.ssresearch.2014.02.006

Moller, S., & Cai, T. (2020). Welfare State Policies and Their Effects. In T. Janoski, C. De Leon, J. Misra, & I. Martin (Eds.), *The New Handbook of Political Sociology* (pp. 812-841). Cambridge: Cambridge University Press. doi:10.1017/9781108147828.032

Pearlin, Leonard I., Elizabeth G. Menaghan, Morton A. Lieberman and Joseph T. Mullan. (1981). The Stress Process. *Journal of Health and Social Behavior*, 22(4), 337–356.

Pelto, P. J. 1968. "The Differences Between "Tight" and "Loose" Societies," *Transactions*, 5:37-40.

Ross, C. E., & J. Mirowsky. 2002. Age and the gender gap in the sense of personal control. *Social Psychology Quarterly* 65(2), 125–145.

Schröder, M. (2011). Retrospective data collection in the Survey of Health, Ageing and Retirement in Europe. SHARELIFE methodology. Mannheim: Mannheim Research Institute for the Economics of Aging (MEA).

SHARE Waves Overview: Wave 3. (2022, February 10). Retrieved November 2, 2022, from https://www.share-eric.eu/data/data-documentation/waves-overview/wave-3

Stanfors, M., & Goldscheider, F. (2017). The forest and the trees: Industrialization, demographic change, and the ongoing gender revolution in Sweden and the United States, 1870-2010. *Demographic Research*, 36:173–226. https://doi.org/10.4054/DemRes.2017.36.6

Stanfors, M., & Jacobs, J. (2023). Unpaid caregiving and stress among older working-age men and women in Sweden. *SSM - Population Health*, 23, 101458. https://doi.org/10.1016/j.ssmph.2023.101458

Thévenon, O. & Neyer, G. (Eds.) 2014. *Family policies and diversity in Europe: The state-of-the-art regarding fertility, work, care, leave, laws and self-sufficiency*. Families and Societies Working Paper 7(2014).

van de Kaa, D. J. 1987. "Europe's second demographic transition," *Population bulletin*, 42(1), 1–59.

Van de Velde, S., P. Bracke, & K. Levecque (2010a). Gender differences in depression in 23 European countries. Cross-national variation in the gender gap in depression. *Social Science & Medicine* 71(2), 305–13.

Van de Velde, S., Bracke, P., Levecque, K., Meuleman, B. (2010b). Gender differences in depression in 25 European countries after eliminating measurement bias in the CES-D 8. *Soc. Sci. Res.* 39(3), 396–404.

Van de Velde, S., K. Delaruelle, N. Van Eekert, and P. Bracke (2021). Perceived group discrimination based on one's gender and the gender gap in depression in Europe. *Scandinavian Journal of Public Health*, 49(6), 598-605.

World Health Organization (2023, March 31). *Depressive disorder (depression)*. World Health Organization Newsroom. Retrieved May 4, 2023, from https://www.who.int/news-room/fact-sheets/detail/depression

Zella, S., & Harper, S. (2020). The Impact of Life Course Employment and Domestic Duties on the Well-Being of Retired Women and the Social Protection Systems That Frame This. *Journal of Aging and Health*, 32(5–6), 285–295. https://doi.org/10.1177/089826431882120

Tables and Figures

Table 2.1 European countries by Global Gender Gap Index score, 2008 (N = 9)

Country	N	World Ranking*	Index score	Subindex scores			
				Economic participation	Educational attainment	Health and survival	Political empowerment
Sweden	618	3	0.814	0.784	0.999	0.974	0.499
Denmark	379	7	0.754	0.712	1.000	0.970	0.334
Netherlands	568	9	0.740	0.667	0.994	0.974	0.324
Germany	438	11	0.739	0.688	0.995	0.978	0.296
France	335	15	0.734	0.663	1.000	0.980	0.294
Spain	511	17	0.728	0.577	0.994	0.973	0.369
Belgium	834	28	0.716	0.652	0.991	0.979	0.243
Austria	417	29	0.715	0.587	0.989	0.980	0.306
Italy	486	67	0.679	0.587	0.996	0.972	0.160
Total	4,586						

Notes: Global Gender Gap data from the World Economic Forum's 2008 Global Gender Gap Report (*http://www3.weforum.org*).
Countries ordered by GGG Index world ranking.
* Out of 130 countries included in the 2008 Report

Table 2.2 Women's Independence and Employment Attitudes by country: Ratio of women's Did not disagree responses to men's Did not disagree responses

Country	Factor 1: Women's Independence			Factor 2: Employment Attitudes	
	Approval of the women's movement	Approval of a woman wanting a child but not a stable relationship with a man	Having a job is the best way for a woman to be an independent person	When jobs are scarce, men's employment should be prioritized	Both husband and wife should contribute to household income
Austria	1.136	0.914	1.057	0.906	1.110
Belgium	1.075	1.065	1.063	0.966	1.023
Denmark	1.016	1.033	1.030	1.478	1.098
France	0.986	1.047	1.050	0.775	1.007
Germany	1.244	0.964	1.059	0.746	1.123
Italy	1.244	0.933	1.118	0.861	1.087
Netherlands	1.004	1.160	1.062	1.245	1.224
Spain	1.162	0.980	1.039	0.788	1.067
Sweden	1.114	1.326	0.951	0.931	1.004

Note: Ratios are the proportion of women in each country who did not disagree (i.e., *Strongly agree*, *Agree*, or *It depends*) with each statement divided by the proportion of men in each country who did not disagree with each statement.

Table 2.3 Proportion of women in each region and country who completed each life event

Region/Country	N	% of women who completed each event				
		HS or less	Some college +	Ever worked for pay	Ever married	Ever bore a child
Nordic	997	63.89	36.11	98.89	93.78	88.57
Denmark	379	64.64	35.36	98.68	94.72	89.71
Sweden	618	63.43	36.57	99.02	93.20	87.86
Central European	2,592	78.12	21.88	91.77	93.79	88.04
Netherlands	568	81.51	18.49	95.07	91.02	83.42
Germany	438	73.29	26.71	97.03	98.40	92.69
Belgium	834	75.30	24.70	86.78	95.44	90.29
Austria	417	81.53	18.47	91.37	92.33	86.81
France	335	81.49	18.51	92.22	90.12	85.67
Southern European	997	94.48	5.52	72.19	94.88	88.47
Italy	486	92.8	7.20	75.62	96.30	90.12
Spain	511	96.09	3.91	68.79	93.54	86.89
Total	4,586	78.59	21.41	89.15	94.02	88.24

Table 2.4 Women reporting any depressive symptoms, women reporting a high level of depressive symptoms, and mean depression score by region and country

Region / Country		Any depressive symptoms %	High level of depressive symptoms %	Mean Depression Score (SD)
Nordic	997	92.11	23.58	4.94 (3.87)
Denmark	379	89.71	17.68	4.25 (3.49)
Sweden	618	93.57	27.17	5.36 (4.04)
Central	2,592	96.87	33.80	6.53 (4.15)
Netherlands	568	96.68	25.70	5.67 (3.85)
Germany	438	97.93	30.80	6.15 (3.46)
Belgium	834	96.41	37.08	6.77 (4.33)
Austria	417	96.64	43.65	7.06 (3.94)
France	335	97.61	39.40	7.24 (4.95)
Southern	997	98.03	48.81	8.33 (5.13)
Italy	486	97.93	49.17	8.20 (4.68)
Spain	511	95.74	50.48	8.45 (5.53)
Total	4,586	95.85	35.68	6.57 (4.47)

Notes: *Any depressive symptoms* includes women with a CES-D8 score of at least 1 out of a possible 24 points, and *High level of depressive symptoms* includes women with a score of 11 or higher, which is at least one standard deviation above the sample mean depression score. Unweighted sample statistics shown.

Table 2.5 Bivariate results: Pearson and Spearman correlation of RSF with depression score and high level of depressive symptoms, by region and country

Region / Country		Any depressive symptoms %	High level of depressive symptoms %	Mean Depression Score (SD)
Nordic	997	92.11	23.58	4.94 (3.87)
Denmark	379	89.71	17.68	4.25 (3.49)
Sweden	618	93.57	27.17	5.36 (4.04)
Central	2,592	96.87	33.80	6.53 (4.15)
Netherlands	568	96.68	25.70	5.67 (3.85)
Germany	438	97.93	30.80	6.15 (3.46)
Belgium	834	96.41	37.08	6.77 (4.33)
Austria	417	96.64	43.65	7.06 (3.94)
France	335	97.61	39.40	7.24 (4.95)
Southern	997	98.03	48.81	8.33 (5.13)
Italy	486	97.93	49.17	8.20 (4.68)
Spain	511	95.74	50.48	8.45 (5.53)
Total	4,586	95.85	35.68	6.57 (4.47)

Notes: *Any depressive symptoms* includes women with a CES-D8 score of at least 1 out of a possible 24 points, and *High level of depressive symptoms* includes women with a score of 11 or higher, which is at least one standard deviation above the sample mean depression score. Unweighted sample statistics shown.

Table 2.6 OLS regression of CES-D8 score on RSF, GGGI score, and country-level attitudinal factors

	Model 1		Model 2		Model 3	
	Coef	95% CI	Coef	95% CI	Coef	95% CI
Relative Sequence Frequency	-0.0132 ***	[-.0202 - -.0062]	-0.0113 **	[-.0182 - -.0043]	-0.0117 **	[-.0187 - -.0046]
GGGI Score			-0.2448 ***	[-.3083 - -.1814]		
Factor 1: Women's Independence					0.4601 ***	[.3226 - .5975]
Factor 2: Employment Attitudes					-0.5278 ***	[-.6598 - -.3958]
Intercept	7.6567 ***	[7.3422 - 7.9713]	25.3797 ***	[20.6952 - 30.0643]	7.1189 ***	[6.8286 - 7.4092]
R^2	0.0064		0.0310		0.0325	
F (df)	13.56 (1, 4595) ***		32.57 (2, 4594) ***		44.28 (3, 4593) ***	

Data source: Survey of Health, Ageing, and Retirement in Europe, Waves 1 (SHARE) and 3 (SHARELIFE), the World Economic Forum's Global Gender Gap Report (2008), and the 1990 Wave of the European Values Study.

Notes : *Relative sequence frequency* has a potential range of 0.01 to 100. *Depression Score* ranges from 0 (least depressed) to 24 (most depressed). *Global Gender Gap Index score* has a potential range of 0 (perfect inequality) to 100 (perfect equality). *Women's Independence* loads predominantly on three variables: *Approval for the women's movement* , *Acceptability of a woman choosing single motherhood but not a stable relationship with a man* , and *Having a job is the best way for a woman to be an independent person* . *Employment Attitudes* loads predominantly on two variables: *When jobs are scarce, men's employment should be prioritized* and *A husband and wife should both contribute to household income* .

N individuals = 4,597. N countries = 9.

Table 2.7 Logistic regression of High depression level on RSF, GGGI score, and country-level contextual factors

	Model 1		Model 2		Model 3	
	OR	95% CI	OR	95% CI	OR	95% CI
RSF	0.995 ***	[.992 - .997]	0.9945 **	[.9909 - .9981]	0.9969	[.9931 - 1.0007]
GGGI Score			0.9154 ***	[.8893 - .9423]		
Principal Component 1: Women's Independence					1.1060	[.9884 - 1.2376]
Principal Component 2: Employment Attitudes					1.1569 *	[1.0298 - 1.2997]
Intercept	0.244 ***	[.7426 - 1.0021]	516.1051 ***	[62.4772 - 4263.388]	0.6793 ***	[.5720 - .8068]
F (df)	11.72 ***		206.82*** (3)		0.6793*** (3, 4593)	
df						
Pseudo R^2	0.0084		0.0343		0.0325	

Data source : Survey of Health, Ageing, and Retirement in Europe, Waves 1 (SHARE) and 3 (SHARELIFE). Data weighted using survey weights provided by SHARE.

Notes : *High Depression* indicates a depression score of 7 or higher. *Relative sequence frequency* has a potential range of 0.01 to 100, with an observed range from 0.12 - 69.43. *Global Gender Gap Index score* has a potental range of 0 (perfect inequality) to 100 (perfect equality), with an observed range from 67.88 to 81.39.

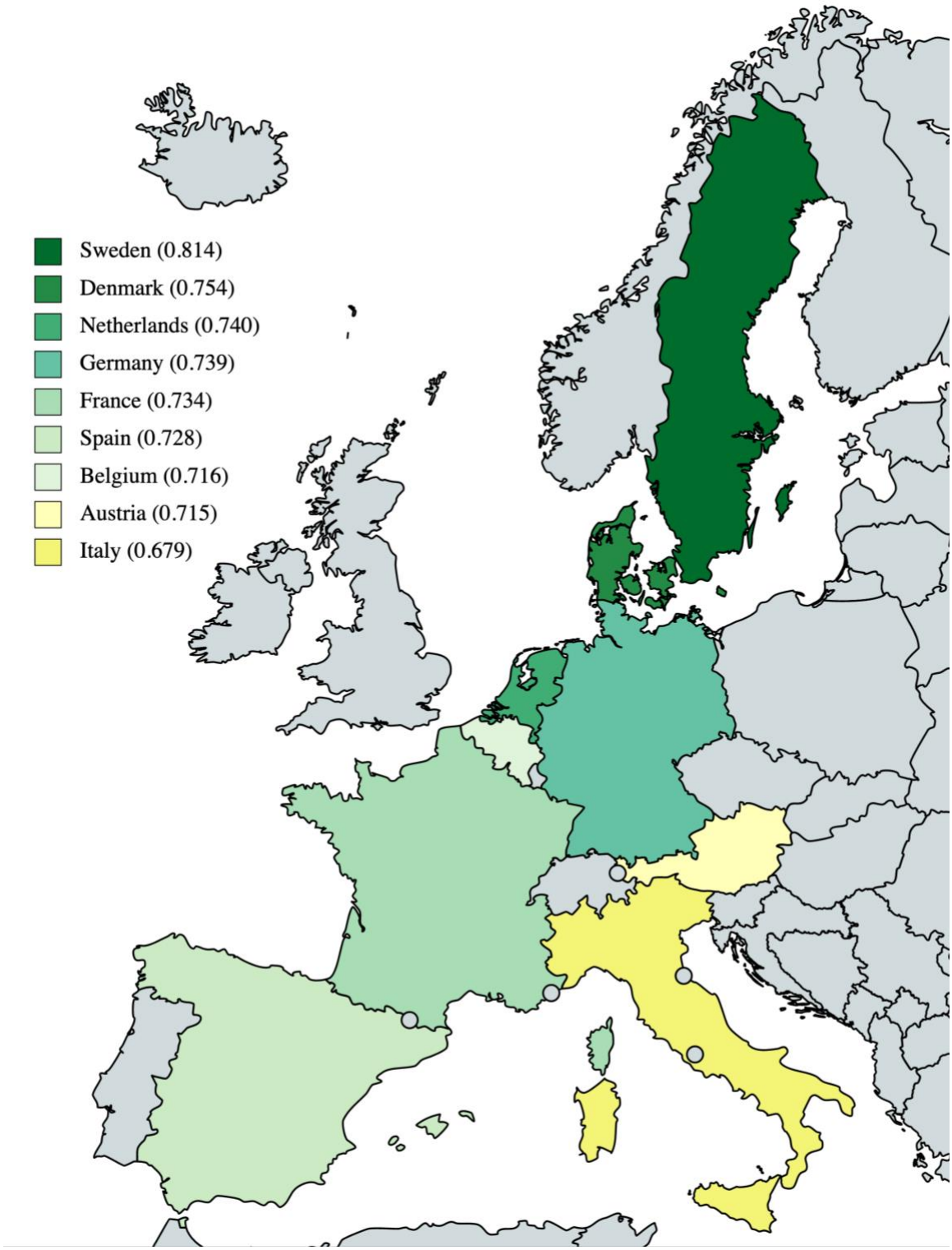


Figure 2.2 Nine European countries by GGGI score, descending order

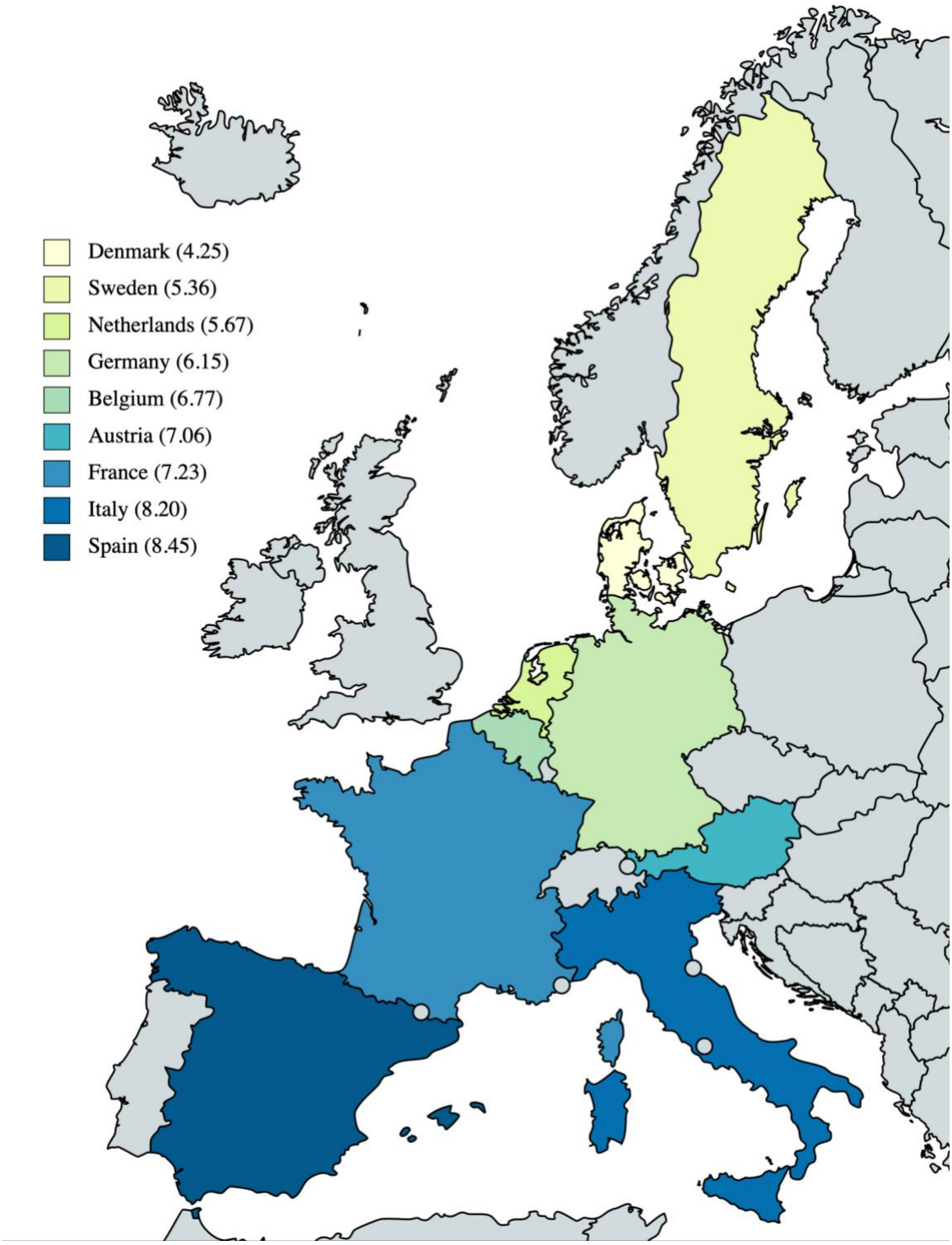


Figure 2.3 Nine European countries by mean depression score, ascending order

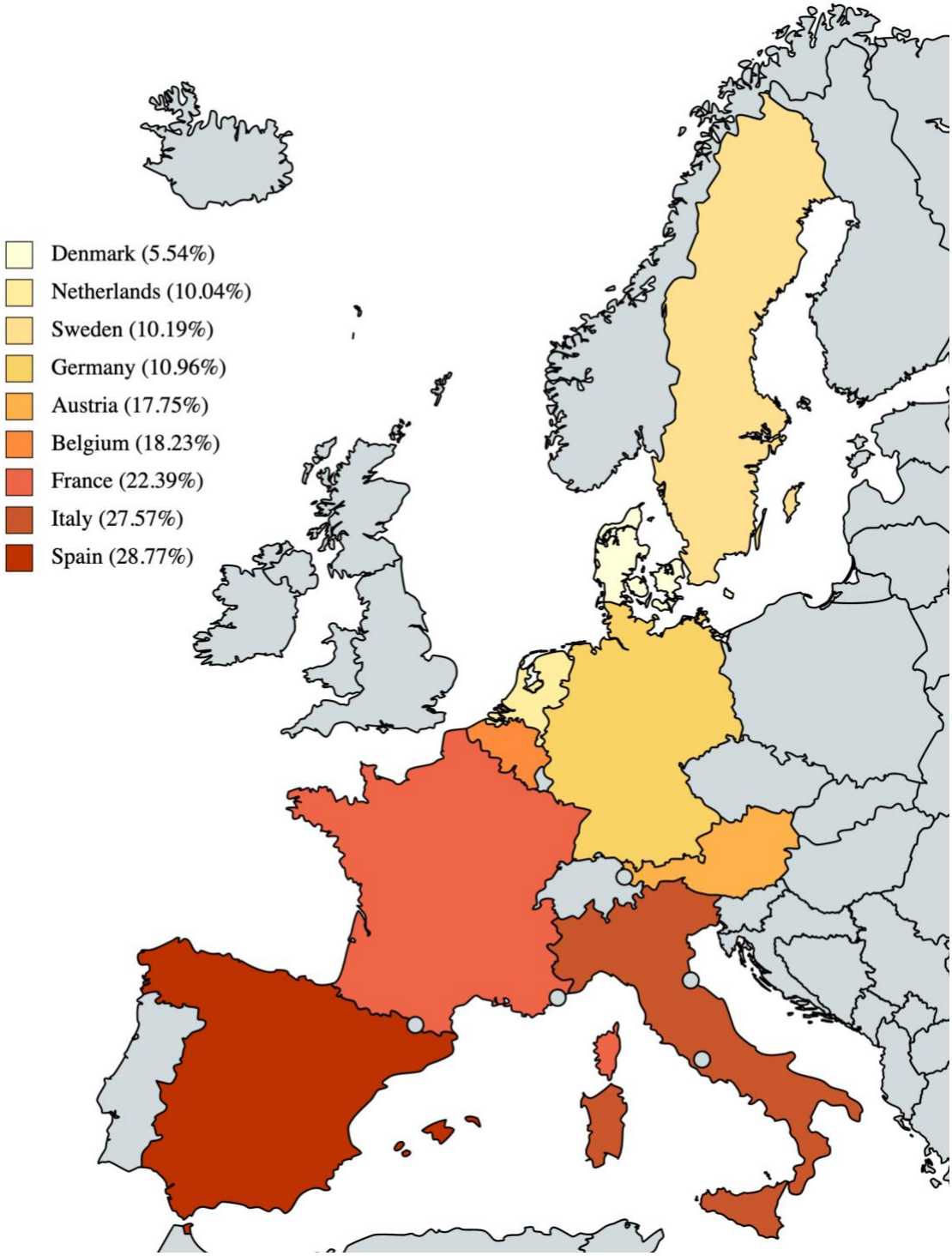


Figure 2.4 Nine European countries by percent of women with high depression (CES-D8 score 11+), ascending order

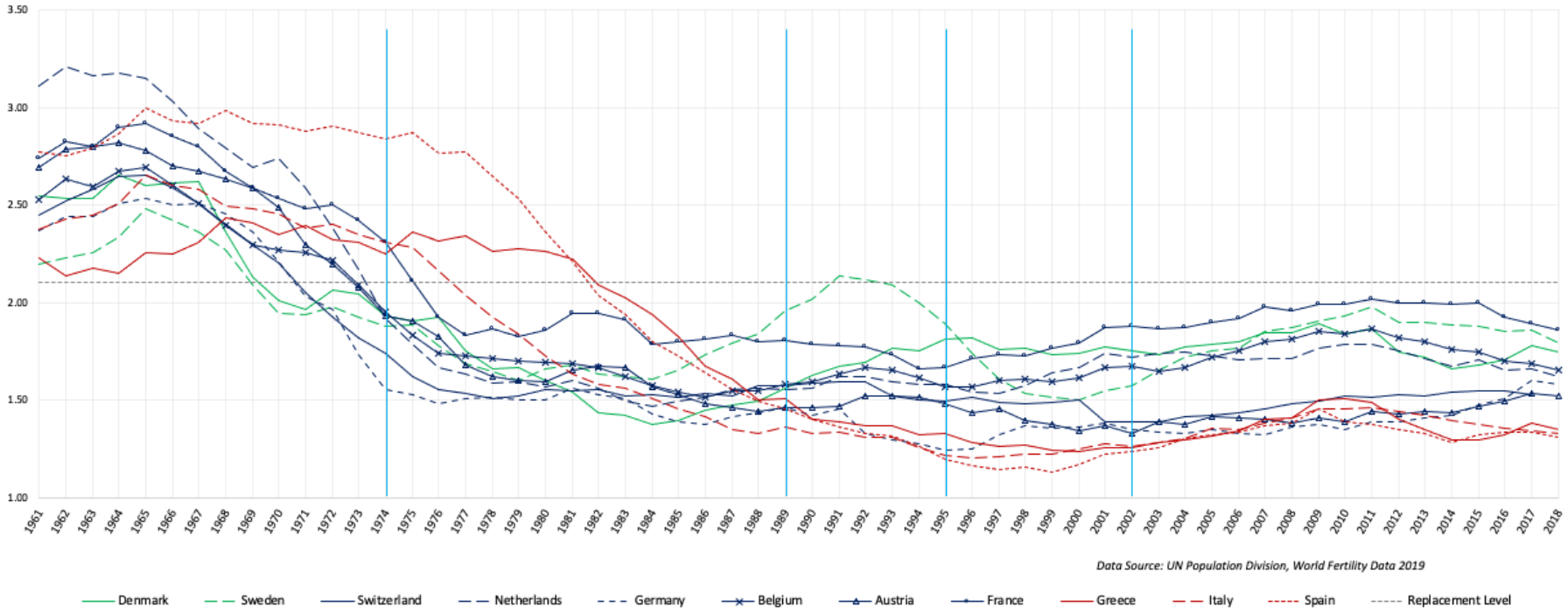


Figure 2.5 Change in total fertility rate (TFR) 1961 - 2018, by country (N = 9)

Chapter 3

Life Path Commonness and Depressive Symptoms among Older White, Black, and Hispanic Women in the United States

Abstract

Depression is a public health concern that disproportionately affects women and the socioeconomically disadvantaged. One known antecedent of depression is stress, which is also concentrated among women and the socioeconomically disadvantaged. Experiences with depressive symptoms across the life course and into later life can have severe consequences for older women's quality of life. As populations age and women continue to outlive men, the social and economic costs of depression among older women will continue to increase. In this chapter, I propose that women who complete life events and combine roles in relatively uncommon ways experience higher levels of stress across the life course as a result of diminished institutional and social support, which elevates their risk of experiencing depressive symptoms in later life. Using data from the National Longitudinal Survey of Youth's 1979 Cohort (NLSY79), I document the relationship between life path commonness and depressive symptom levels at age 50 among women in different racial/ethnic groups and at different education levels in the United States. Life path commonness is inversely related to depressive symptom levels among women overall and among women in each racial/ethnic- and education group, and bivariate- and multivariate results suggest that the association reflects well-known patterns of structural disadvantage. RSF is significantly correlated with depression score at age 50 for all racial/ethnic- and education groups, and partial correlation and regression modeling indicate that the relationship remains significant among Black women, Hispanic women, and women who completed some college but less than a Bachelor's degree even when accounting for the estimated effect of level of depressive symptoms in earlier adulthood.

Introduction

Depression is a common and serious manifestation of psychological distress. It is the most common mental disorder in the United States: as of 2020, approximately 18.4% of adults aged 18 and over in the US had been formally diagnosed with depression at some point in their lives, including 18.4% of adults aged 45-64 and 23.4% of women (Lee et al. 2023) The proportion of the population experiencing subclinical (subsyndromal- or subthreshold-) depressive symptoms is even larger. Common mental symptoms of depression include sadness, loss of interest, loneliness, feeling like a failure, feeling like things never turn out right, irritability, and even losing the will to live; common physical symptoms include diminished appetite, trouble sleeping, difficulty concentrating or remembering, talking less, and feeling unable to "get going" and like everything is an effort (Ross 2003). These symptoms can have significant negative effects on affected individuals' quality of life, such as severely impacting how they feel and think, and rendering them unable to manage daily activities such as sleeping, eating, working, and socializing (National Institute of Mental Health 2023). Subclinical symptoms, even in people who do not meet diagnostic criteria for major depression or dysthymia, have been found to be associated with significant psychosocial dysfunction and impairment in important domains of everyday function, to the point of exceeding the level of disability associated with some common medical conditions (Judd et al. 2002; Wakefield 1992). Depression is a public health concern that is associated with elevated morbidity and mortality rates, with increased risk of physical and functional impairment, and with negative consequences for the economy and society (Kessler 2012; Mc Laughlin 2011).

Depression can affect people of all ages, races/ethnicities, socioeconomic statuses, and genders, but it is not distributed evenly throughout populations (National Institute of Mental Health 2023). Socioeconomic disadvantage increases individuals' risk of depression: low educational attainment, low income and wealth, and low social support all predict elevated levels of depressive symptoms across the life course and into older age (Ettman et al. 2020; Kim et al. 2013; Ross & Mirowsky 2006; Turner & Lloyd 1999; Miech & Shanahan 2000; Miller & Weller 2019; Mirowsky & Ross 1992). Women

consistently report higher levels of distress and depressive symptoms than men (Nolen-Hoeksema 2001; World Health Organization 2023).

A well-known antecedent of depression in the health and aging literature is stress; the emergence of the stress process paradigm in the 1970s spurred a proliferation of empirical studies linking the location of individuals within hierarchical social structures to the number and types of eventful stressors and chronic strains that people experience, and to the severity of the negative impacts of those stressors on individuals' psychological outcomes (Pearlin et al. 1981; Hammen 1992; Aneshensel 1992). Stress is unevenly distributed throughout populations and its risk factors strongly overlap those that predict increased risk of depression: low educational attainment, living in poverty, low levels of social support, and being female are consistently associated with high levels of stress across the life course as well (Aneshensel & Stone 1982; Dohrenwend 1973; Kessler 1979).

In the interest of working toward reducing socioeconomic status-based discrepancy in health outcomes among older people, it is important to link health disparities that become apparent in late middle age to circumstances earlier in the life course, especially circumstances in which women in less-privileged socioeconomic groups have a higher chance of exposure to stressors with potential negative health consequences and fewer buffering resources at their disposal that could be leveraged to mitigate their exposure (Pearlin et al. 2005). To date, patterns of variation in women's behavior throughout adulthood, as reflected in the relative (un)commonness of the life paths that women follow, has not been linked to depressive symptom levels in later life. In this chapter, I look at the established link between stressful experiences across the life course and elevated risk of depression in older age from a new angle: I suggest that women who complete major life events in relatively uncommon orders experience more stress across the life course compared to women who follow more-common life paths. I assess the relationship between life path commonness and women's depressive symptom levels at age 50 and explore potential variation in the relationship along socioeconomic dimensions by documenting the association first for all women, and then for women within different racial/ethnic groups and at different levels of education.

Disorder in the life course as a source of stress

The transition to adulthood in the United States is a diffuse, though not unregulated, process (Hogan 1978). There are three types of norms that regulate demographic behavior: *age norms* (expectations about the appropriate age at, or age range within, behaviors should occur); *quantum norms* (expectations about how many times an event should or should not be experienced); and *sequencing norms* (expectations regarding the order in which two or more events should occur in the life course) (Liefbroer & Billari 2010). The gender and sexual revolutions relaxed norms that restricted women to the private sphere and created opportunities for women to pursue a wider range of life options. Women have responded by planning and living lives that are no longer strictly based on the traditional nuclear family with its gendered division of labor; women are freer to follow more personally-fulfilling life paths that include advanced education and career building.

As women's behavior has shifted, the ordering of women's life events has diversified, increasing the range of observable life paths that women follow. Despite the loosening of restrictive norms that limit women's life options, institutional factors and behavioral expectations continue to exert influence on women when they make life decisions. Social and economic institutions in the United States were created to accommodate a traditional gendered division of labor in which men worked for pay to financially support a household and family, and women supported the family through unpaid domestic labor and caregiving. Women's labor force participation has increased dramatically since the mid-20th century, but institutions and work-family policy have not kept pace: accommodations such as extended paid parental leave, universal childcare, and child subsidy transfers are intended to increase gender equality and facilitate a dual-earner household with a more equitable distribution of unpaid domestic labor and caregiving responsibilities, but these accommodations have largely not taken root in the United States, so women continue to experience role conflict and stress when combining education, employment, and

family roles in an order that is consistent with traditional event-sequencing norms, and especially when combining roles in relatively-uncommon orders.

Even in societies where values have shifted toward individualism, people are aware of social norms related to the timing and ordering of major demographic events and roles, and they expect to be subjected to sanctioning when they violate life course norms and behavioral expectations (Liefbroer & Billari 2010). Behavioral sanctioning is a form of social control that is intended to encourage people to act in ways that are consistent with prevailing norms in order to maintain a sense of order and predictability in society; sanctioning can be either external, as stigmatization or social exclusion by others, or internal, as one's own feelings of shame, guilt, or regret. It is possible that external sanctioning may be less important to maintaining social order now than it was in the past because behavioral norms have become more internalized; as behavioral regulations have become more lenient, behavior over the life course has become increasingly regulated by internalized norms about age-appropriate behavior, age-specific events, and expectations for the order in which particular events should occur (e.g., you must finish school before having a family) (Heckhausen 1999: 35; Liefbroer & Billari 2010). A woman's feelings of shame, guilt, or regret about the order in which she completed her life events or about the direction of her life, especially if she feels she had or has little power to change her circumstances, could be a source of chronic stress that has the potential to contribute to psychological distress across the life course and eventually raise the likelihood of experiencing depressive symptoms in later life.

In addition to being subject to sanctioning, whether external or internal, women who complete life events and role transitions in relatively uncommon ways have more difficulty working within the confines of major institutions than women whose behavior is more consistent with the prevailing norms on which those institutions were based. Completing major life events and combining roles in ways that are inconsistent with the rules and expectations of social institutions creates disharmony between the individual and the social context in which they live (Hogan 1978); this disharmony is borne by individuals as stress across the life course.

Difficulties that women experience when their events and role transitions occur in a relatively uncommon order tend to be strains of a chronic, rather than acute, nature. Chronic strains have significant effects on psychological distress across the life course, and the burden of chronic strain accounts for the majority of the stress-psychological distress relationship among the elderly (Avison & Turner 1988). For example, women who combine the pursuit of postsecondary education with familial responsibilities or full-time employment contend with obstacles that women who complete their education linearly, before beginning a family or entering the labor force, do not. Women who return to postsecondary education as nontraditional students experience elevated stress partly because they are sensitive to the fact that they are embodying a role outside of a typical age range, especially when matriculating at four-year institutions, and also because combining education with the obligations of other roles places tremendous demands on their time and energy. Nontraditional students tend to spend more time studying *and* more hours in paid employment compared to their younger peers who entered postsecondary education directly from high school (Eppler & Harju 1997). Many women nontraditional students also have family obligations to meet; combining education, paid employment, and reserving time for family makes full-time school attendance incredibly challenging and stressful (Chen 2015).

Women who complete life events and combine roles in relatively uncommon ways are also likely to be following a life path that diverges from the paths of other women in their kin- or social networks. This life path divergence could be a source of feelings of alienation and could result in low support from a woman's family or her peer group; previous studies have found that social support is a buffering mechanism against psychological distress, and that perceived low social support and social negativity are risk factors for depression in older age (Altintas et al. 2012; Helgeson 1993; Bertera 2005[6]). For example,

[6] Bertera (2005) explains that "In social exchanges, the costs are symbolic, not material, and include social disapproval, inattention, and tense relationships. The present findings (i.e., a strong positive association between negative social interactions with spouses, family members, and friends and number of anxiety or mood disorder episodes experienced) support the notion that disapproval, inattention, and tense relationships are more salient when they involve spouses or relatives rather than friends." This is relevant to the current study because women who place high value on close relationships within their families and communities could be at risk of having

women who have children much earlier or much later than other women in their networks will lack many of the social opportunities and the help of the support "village" that mothers who have their children during the same period as their friends or similarly-aged relatives frequently depend on. Some research suggests that off-time childbearing may not be as significant a source of stress for Black and Hispanic women as for White women because Black and Hispanic women are more likely than White women to deal with stressful circumstances by seeking support from kin- and social networks. This coping strategy may be shaped by cultural factors such as familism (strong attachment, reciprocity, and loyalty to family members), a core value of the Hispanic community and African American culture (Lanza di Scalea 2012). Cultural emphasis on the positive aspects of family may explain Black mothers' lower reports of high depressive symptoms compared to White mothers, and highly-stressed Hispanic women's lower odds of low social functioning compared to White women (Lanza di Scalea 2012) despite both groups' lower socioeconomic position relative to Whites, though the idea that disadvantaged groups possess better coping resources than advantaged groups has been contested (Barnes & Bates 2017).

A large body of social psychological literature has documented the role of the stress process—a complex interplay of life events, chronic life strains, self-concepts, coping mechanisms, and social supports—in the development of depression (Pearlin 1981; House et al. 2004 Pearlin et al. 2005). Though this body of research has consistently linked disadvantage to elevated levels of stress across the life course, and elevated levels of stress across the life course to higher incidence of depression and its symptoms in older age, the source of disadvantage that has received the most attention has been socioeconomic; the way that race/ethnicity factors into the stress process is less straightforward. This is partly because much of the theoretical work on the stress process considers gender but does not explicitly aim to disentangle minority race/ethnicity from other forms of structural disadvantage.

---

their behavior monitored and sanctioned by a larger number of people in addition to the increased support that a larger social network would be expected to provide.

Previous research has found that Blacks and Hispanics are exposed to higher levels of chronic stress than Whites as a result of their relative socioeconomic disadvantage, through exposure to racism, and because of residential segregation; for older Blacks, disproportionate stress exposure remains even after accounting for socioeconomic status (Brown et al. 2018). Lifetime prevalence of psychiatric disorder among Hispanics has been found to be lower than among Whites, but higher than among Blacks (Breslau et al. 2006). Kessler (1979) found no significant difference between the average level of distress reported by nonwhites and Whites, but nonwhites were twice as likely to report extreme distress. The more extreme distress identified among nonwhite groups was found to be a function of differential exposure to stressful experiences; stress exposure differentials remain a factor in the present-day US, where Blacks and Hispanics experience racism and discrimination in daily life that Whites do not. Clark et al. (1999) proposed a biopsychosocial model which links racialized experiences to "exaggerated psychological and physiological stress responses that are influenced by constitutional factors, sociodemographic factors, psychological and behavioral factors, and coping responses." Over time, Clark et al. (1999) proposed, these psychological and physical responses erode Blacks' and Hispanics' mental and physical wellbeing, contributing to disparity in health outcomes. Subsequent studies have confirmed a link between perceived racism and depression among Black and Hispanic populations (Flores et al. 2008; Handwerker 1999; Quist et al. 2022; Ricci et al. 2023), and between gendered racism and elevated rates of stress, anxiety, and depression among women (Jones et al. 2022; Nelson et al. 2021). Non-Hispanic Blacks and Hispanics have been found to have a lower lifetime risk of psychiatric disorder than non-Hispanic Whites, but Blacks and Hispanics who *do* develop a disorder tend to have more persistent illnesses (Breslau et al. 2004; Barnes & Bates 2017).

Despite greater stress exposure, racial/ethnic minorities have also been found to report lower levels of depression and depressive symptoms in older age than Whites; this has led to the recognition of a pair of racial depression paradoxes in which 1) depression is less prevalent among Blacks relative to Whites despite greater exposure to social and economic stressors and worse physical health outcomes, and 2) despite lower incidence of depression, Blacks consistently report higher levels of psychological

distress compared to Whites (Barnes & Bates 2017). Patterns of racial/ethnic variation in depressive symptom levels among older women in the United States are not as clear as those corresponding to socioeconomic (dis)advantage; there is a need for additional research focused on racial/ethnic differences in later-life depressive symptoms (Vyas et al. 2020). There has been greater research attention to differences in recent (usually a period of 12 months or two years) and lifetime incidence of depression between Black and White women than comparing across White, Black, and Hispanic women; part of the reason for this is the greater nativity of United States White and Black populations compared to the Hispanic population, a group that cannot be considered monolithically because it includes a large proportion of migrants whose health varies widely based on both country of origin and duration in the United States, which makes drawing clear conclusions about between-group differences difficult (see Adame et al. 2022).

Mental health differences in early middle age primarily reflect variation in exposure to psychosocial risk factors that correspond to education and income level, and these differences are narrowed in later middle- and old age by some combination of social and biological factors; however, the health impact of some psychosocial risk factors— lack of social relationships and social support, chronic and acute stress, low mastery and control over one's own life direction—increases in later middle- and older age, which means that these risk factors continue to widen health disparities at older ages (House et al. 2004). Women are likely to experience diminished institutional and social support, elevated levels of acute and chronic stress, and feelings of having less control over their own life circumstances when they follow life paths in which they complete major events and occupy roles in relatively uncommon orders.

The Current Study

My overarching goal in this chapter is to demonstrate that following a more- or less-common life path is linked to women's depressive symptom levels at age 50, and to test whether the strength of the association between life path commonness and depressive symptom levels at age 50 is similar among all women or varies by race/ethnicity or by education level. My first analytical aim is to assess the

relationship between having followed an uncommon life path and depressive symptom levels in later adulthood among all women. I expect that women who follow less-common life paths will report higher levels of depressive symptoms at age 50 than women who followed more-common paths.

H1: Following a less-common life path will be associated with higher levels of depressive symptoms at age 50.

My second analytical aim is to determine whether the relationship between life path commonness and level of depressive symptoms at age 50 is consistent for all women or varies across racial/ethnic groups. While my data do not allow me to empirically test for differences between White, Black, and Hispanic women's psychological distress levels across the life course, I expect that the relationship between completing life events in a more- or less-common order and depressive symptom levels in later life will resemble racial/ethnic differences in women's reports of psychological distress throughout adulthood that has been documented in prior literature. That is, I expect to observe a negative relationship between life path commonness and depressive symptom levels among women in all three racial/ethnic groups, and I expect that deviation from life course norms will be more "costly" for nonwhite women's psychological wellbeing; this would manifest as a stronger negative association between life path commonness and depressive symptom levels at age 50 among Black and Hispanic women.

H2: The relationship between life path commonness and depressive symptom levels at age 50 will be negative within all three racial/ethnic groups, and the effect size will be larger among Black and Hispanic women than among White women.

My third analytical aim is to determine whether variation in the strength of the association between life path commonness and older women's depressive symptom levels is consistent with well-documented health disparities in later life that correspond to socioeconomic status across the life course.

Given that less-educated women have constrained access to socioeconomic resources and social capital with which to counter the impact of stressful experiences (e.g., economic strain, heavy demands on time, feelings of exclusion and alienation) that are likely to accompany relatively uncommon event ordering and role combinations, I expect that following a relatively less-common life path will be more "costly" for less-educated women: I hypothesize that the negative relationship between life path commonness and depression score at age 50 will be stronger for women with a high school education or less.

H3: The strength of the negative relationship between life path commonness and depressive symptom levels will vary inversely with education level: the strongest negative relationship will be observed among women with a high school education or less.

Methods

Data

I draw data from the National Longitudinal Survey of Youth's 1979 cohort (NLSY79). The NLSY79 survey is sponsored and directed by the U.S. Bureau of Labor Statistics and managed by the Center for Human Resource Research (CHRR) at The Ohio State University. Interviews are conducted by the National Opinion Research Center (NORC) at the University of Chicago. The 1979 cohort is a nationally-representative sample of 12,686 women and men born between 1957 and 1964 who were living in the United States at the time the survey began (Bureau of Labor Statistics, U.S. Department of Labor 2019). The NLSY79 includes an oversample of Blacks and Hispanics. The 6,283 women and 6,403 men in the original cohort were aged 14 to 21 years when first interviewed in 1979, and between 56 and 63 years old in 2020 when the most recent (29th round) data were collected.

My analytical sample for this paper is restricted to White, Black, and Hispanic women with nonmissing educational attainment information; valid MM/YY dates of completion of formal education, beginning paid work (if ever worked for pay), first marriage (if ever married), and birth of a first child (if ever had a live birth); and valid depression scores at both baseline (either 1992 or 1994) and age 50. I

excluded 1,454 women with missing education information (61.42% White, 19.94% Black, 18.64% Hispanic), 763 women with missing baseline depression score (90.43% White, 7.73% Black, 1.83% Hispanic), and 549 women with no depression score at age 50 (59.02% White, 21.68% Black, 19.31% Hispanic). The mean age of women in the NLSY79 cohort was 57.14 years (SE .03), and the mean age in my analytic sample is 56.92 years (SE .04). My final sample includes 3,517 women; Table 3.1 shows the differences on key characteristics between all women in the NLSY79 cohort, my restricted sample, and the sample after applying NLSY-generated survey weights. Detailed sample descriptive statistics are presented by race/ethnicity and by education level in Table 3.2.

Measures

Depressive symptoms. Women's depressive symptom levels were first measured between ages 28 and 37 years, depending on whether NLSY79 respondents completed the initial depression screen in 1992 (97.89%) or 1994 (2.11%), and again at age 50 using the seven-item Center for Epidemiological Studies Depression Scale (CES-D7), a shortened version of the 20-item CES-D. The shortened version of the CES-D scale has been shown in prior studies to be strongly correlated (.92) with the full, 20-question version and to have high reliability and internal consistency (Miech & Shanahan 2000; Mirwosky & Ross 1992).

NLSY79 respondents were asked "How many days during the past week have you":

"not felt like eating?"

"had trouble keeping your mind on what you were doing?"

"felt depressed?"

"felt that everything you did was an effort?"

"had restless sleep?"

"felt sad?"

"felt like you could not get 'going'?"

Respondents reported their experiences with these seven symptoms using the following point values:

0 points : Rarely or none of the time (< 1 day)

1 point : Some or a little of the time (1-2 days)

2 points: Occasionally or a moderate amount of the time (3-4 days)

3 points: Most or all of the time (5-7 days).

The seven items' point values were summed to yield an index score ranging from a possible low of 0 points to a possible high of 21.

Relative sequence frequency (RSF). This measure of life path commonness is the focal predictor variable in this study. Each distinct event sequence has a RSF score that indicates the proportion of women in the population who completed that particular set of events in that specific order. A higher RSF value indicates a relatively more common life path within a given population of interest and a lower RSF value indicates a relatively less common path.

The range of RSF is from a possible low of 0 (life path not observed within a population of interest) to 100 (all members of that population followed the same life path), but the range actually observed is much smaller. When *all women* is the population of interest, the actual range of RSF observed is from a low of 0.02 (The least common sequences are C*EM*, which represents a life path in which a woman first has a child, then completes her formal education, and then marries, and *ME*, a sequence representing a path in which a woman married before completing her education, but neither had a child nor worked for pay) to a high of 25.12 (The most common sequence is *JEMC*, a life path in which a woman first began working for pay, next completed formal education, then married before having her

first child.). RSF was calculated after dropping women with missing educational attainment information but before dropping women with missing depression scores at baseline or age 50.[7]

Stratification variables. Bivariate- and multivariate results are stratified by race/ethnicity (three mutually-exclusive categories: non-Hispanic White, non-Hispanic Black, and Hispanic of any race) and education level (three mutually-exclusive categories: *High school or less*, *Some college*, or *Bachelor's degree or more*). For the sake of simplicity, I will refer to the racial/ethnic categories as *White*, *Black*, and *Hispanic*. Women are assigned to the education level that corresponds to the highest grade or degree that they had completed at the time they finished or left formal education.

Analytic Strategy

In the next section, I will test my three hypotheses in order:

H1: Following a less-common life path will be associated with higher levels of depressive symptoms at age 50.

H2: The relationship between life path commonness and depressive symptom levels at age 50 will be negative within all three racial/ethnic groups, and the effect size will be larger among Black and Hispanic women than among White women.

H3: The strength of the negative relationship between life path commonness and depressive symptom levels will vary inversely with education level: the strongest negative relationship will be observed among women with a high school education or less.

---

[7] Establishing the commonness of women's life paths at this point means that the sequences' RSF values more closely reflect the life paths that were more- and less-common among women in the United States, rather than among women who have valid depression scores in earlier- and later adulthood. Calculating RSF using the entire set of 6,283 women in the NLSY79 cohort would have been ideal, but it is impossible to establish event sequences for women who, given the option to report exiting formal education at any point, did not report any last date of attendance or highest grade or degree completed at all.

I will first demonstrate the strength and direction of the relationship between RSF and CES-D7 score at age 50 among women overall by showing correlation and partial correlation coefficients; partial correlation will be used to estimate the relationship after removing the influence of depression score in earlier adulthood. I will then use Ordinary Least Squares (OLS) regression models to estimate 1) the effect of RSF on CES-D7 score at age 50, and 2) the effect of RSF on CES-D7 score at age 50 controlling for depression score in earlier adulthood.

I will then examine variation in the relationship between RSF and CES-D7 score at age 50 by racial/ethnic group and by level of education. I conduct the same bivariate- and multivariate analyses used to identify the relationship between life path commonness and later-life depressive symptom levels among women overall, but this set of analyses will be stratified and presented separately by racial/ethnic group and education level.

Results

Table 3.1 shows the racial/ethnic composition and educational attainment of the entire sample (top panel) as well as more detailed characteristics stratified by race/ethnicity and education level (bottom panel). The mean depression score for Black women in my sample was slightly higher both at age 28-37 and at age 50 compared to White or Hispanic women. Mean depressive symptom levels for education categories were inversely related to education level: women with a high school education or less reported the highest depressive symptom levels, and women with a Bachelor's degree or more reported the lowest levels.

Table 3.2 shows the bivariate relationships between RSF and CES-D7 score at age 50, between CES-D7 score at age 28-37 and CES-D7 score at age 50, and the results of a partial correlation indicating the relationship between RSF and CES-D7 score at age 50 after removing the estimated influence of depressive symptom level at age 28-37. I included a measure of depressive symptoms in earlier adulthood

as a control in multivariate analyses because prior research has shown that later-life depression scores tend to be strongly related to scores in earlier life; this is also the case among women in my sample. Comparing the first-order and partial correlation coefficients shows that among all women, the relationship between RSF and CES-D7 score at age 50 is not fully explained by women's earlier-life depressive symptom levels.

Table 3.3 presents the results of two Ordinary Least Squares (OLS) regression models that estimate the effect of RSF on depressive symptom levels at age 50: column 1 shows that there is a small but significant negative relationship between RSF and CES-D7 score at age 50, and column 2 shows that the relationship is virtually unchanged when controlling for depressive symptom level in earlier adulthood. These results are unsurprising given the bivariate results presented in Table 3.2; together, the results shown in Tables 3.2 and 3.3 support my hypothesis that following a less-common life path is associated with higher levels of depressive symptoms at age 50.

Table 3.4 shows the results of bivariate analyses identical to those presented in Table 3.2, except this set of analyses was stratified by race/ethnicity (top panel) and also by education level (bottom panel). My second hypothesis was that the relationship between life path commonness and depressive symptom levels at age 50 would be negative within all three racial/ethnic groups, and that the effect size would be larger among Black and Hispanic women compared to White women. The top panel of the table shows that Pearson correlation coefficients and the results of partial correlation, which removes the estimated influence of prior depressive symptom level from the relationship between RSF and CES-D7 score at age 50, are statistically significant (with the exception of the partial correlation coefficient for White women) and consistent with my expectations. The most interesting results in the top panel are those for Black women: compared to White and Hispanic women, the relationship between life event ordering and level of depressive symptoms at age 50 is stronger among Black women, and the relationship between depressive symptom levels earlier in adulthood and at age 50 is weaker.

The bottom panel of the table shows bivariate results stratified by education level. I expected to observe an inverse relationship between RSF and CES-D7 score within each education level, and I

expected that the strength of that relationship would be strongest among women with a high school education or less, followed by women who had completed some college but not a Bachelor's degree. The Pearson correlation coefficients show the expected inverse relationship between RSF and CES-D7 score at age 50 within all three education groups, but the correlation is not strongest among the least-educated women as I expected: instead, a stronger relationship between these variables is observed among women with some college. Interestingly, the strength of the correlation between women's depressive symptom levels at age 28-37 and at age 50 increases with higher educational attainment. The results of partial correlation do not support my hypothesis either: the strength and statistical significance of the correlation between RSF and CES-D7 score at age 50 remains virtually unchanged among women with some college when the influence of depressive symptom level in earlier adulthood is accounted for, but the correlation is weaker and no longer statistically significant for the *High school or less* or the *Bachelor's degree or more* groups.

The regression results in Table 3.5 support the stronger relationship between RSF and depressive symptoms at age 50 among Black and Hispanic women compared to White women that I expected to observe; results by education level, however, do not. Column *a* under each racial/ethnic category heading shows that when only RSF and CES-D7 scores are considered, the relationship is negative and statistically significant. When depressive symptom level at age 28-37 is controlled, however, the relationship between RSF and depressive symptoms at age 50 is no longer statistically significant among White women. Regression results stratified by race/ethnicity show that a change in life path commonness predicts a larger difference in depressive symptom levels for Black women than for either White or Hispanic women whether previous depressive symptom level is held constant or not.

On its own, a one-point change in RSF is associated with an estimated tenth-of-a-point reduction in CES-D7 score at age 50 among Black women; the CES-D scale is scored in full-point increments, however, so on average, an increase of approximately ten points in RSF would be associated with a one-point reduction in depression score at age 50. When controlling for depression score in earlier adulthood, an approximate 12-point higher RSF value would be associated with a one-point lower CES-D7 score at

age 50. In both cases, the magnitude of the effect among Hispanic women is approximately half that for Black women: when RSF alone is considered, an approximate 19-point increase in RSF would be associated with a one-point decrease in CES-D7 score at age 50; when controlling for depressive symptom level in earlier adulthood, an approximate 23-point increase in RSF would be associated with a one-point-lower CES-D7 score at age 50[8]. This means that Black women who followed the most common life path would be expected to have a CES-D7 score at age 50 that was two points lower than women who followed the least common path, and Hispanic women who followed the most common path would be expected to have a CES-D7 score that was one point lower than women who followed the least common path.

Regardless of whether depressive symptom level in earlier adulthood is controlled, RSF is only significantly associated with depressive symptom level at age 50 for women in the *Some college* category. The magnitude of the estimated effect of RSF on depressive symptom levels among women with some college falls between that for Black and Hispanic women, though controlling for CES-D7 score in earlier adulthood has little impact on the relationship: a difference of 15.6 points in RSF is associated with a one-point change in depression score at age 50, and a difference of 17.9 points in RSF is associated with a one-point change in depression score at age 50 when controlling for symptom levels in earlier adulthood ($\mu_{RSF} = 10.41$, $\Sigma_{RSF} = 9.06$; $\mu_{CES\text{-}D7} = 4.47$, $\Sigma_{CES\text{-}D7} = 4.60$).

Discussion and Conclusion

Overall, results show support for a stronger inverse relationship between life path commonness and depressive symptom levels at age 50 for Black and Hispanic women compared to White women, and for women who completed some college but did not earn a Bachelor's degree compared to women with less- or more education. Among White women, the relationship is no longer achieves statistical

[8] For context, the estimated population standard deviation of RSF among Black women is 6.81 points ($\mu = 5.38$) and the estimated population standard deviation of CES-D7 score among Black women is 4.77 ($\mu = 4.46$). The estimated population standard deviation of RSF among Hispanic women is 8.88 ($\mu = 9.53$) and the estimated population standard deviation of CES-D7 score at age 50 among Hispanic women is 4.61 ($\mu = 3.94$).

significance when the estimated effect of earlier-adulthood depression score is accounted for in bivariate analysis or controlled in an OLS regression model. Results show that on average, following a more common life path is associated with a larger decrease in depression score at age 50 among Black women than Hispanic or White women, and that an equal increase in earlier-adulthood depression score predicts a slightly smaller increase in age-50 depression score for Black women than for White or Hispanic women.

Results did not support an inverse relationship between education level and the strength of the association between RSF and later-life depressive symptoms. Instead, the association was strongest for women with some college but no Bachelor's degree, and this is the only group for whom the relationship remained statistically significant after accounting for the estimated effect of earlier-life depressive symptom levels. It is important to note that the *Black* (N=1,093; 34.68% completed some college but no Bachelor's degree) and *Some college* (N=1,045; 36.27% are Black) categories in my analytic sample have just 379 women in common, so it is unlikely that the significance of both groups' results is attributable to sample overlap.

The empirical results in this chapter cannot explain exactly *why* the link between life path commonness and depressive symptom levels might be strongest among Black women and women with some college, but they do create an opportunity for speculation about some potential underlying mechanisms. For example: given the legacy of structural racism in the United States and racial/ethnic minority women's experiences of gendered racism in their daily lives, it is possible that Black women are sanctioned particularly harshly or that they experience a greater degree of disharmony with institutions compared to White or Hispanic women when they complete life events outside of expected age ranges. Differences in cultural behavioral norms and prevailing social and institutional norms may clash at times in ways that add stress to minority women's lives: early and nonmarital childbearing rates are higher than the population average among Blacks and Latinas (Yang DeLeone et al. 2009) and are not as stigmatized in Black and Hispanic communities as they tend to be among Whites, in part because of the strength of family ties and kin networks that provide strong support systems for young and single mothers. However, prevailing social norms, behavioral expectations, and major institutions are informed by the values and

history of the majority White population; as a result, some of the behavioral patterns that are more accepted and more common among nonwhite populations may result in social exclusion or stigmatization, which is likely to add chronic stress to women's lives.

People who enter postsecondary education at older ages, resume schooling after having children, or combine full-time employment and education are referred to as *nontraditional students* or *adult learners*. These labels call attention to students who are pursuing higher education in a way that violates life course norms. Nontraditional students are more likely than students who entered postsecondary education immediately after graduating high school to be shouldering obligations that accompany paid employment, parenting or caring for older or ailing family members, and supporting themselves as independent adults. While social institutions have made some accommodations to allow for the disorderly sequencing of events, such as part-time employment, evening classes for employed students, and provision of low-cost married student housing, such arrangements tend to be of a remedial nature (Hogan 1978). Because the institutions that people interact with regularly tend to be structured around a traditional male life course, which is less impacted by family processes as the female life course, it is not surprising that most women encounter institutional obstacles that create more stress in their lives.

This study does have several limitations. First, RSF is a measure of the proportion of women in a particular population who completed major life events in a specific order. RSF is not intended to gauge individuals' adherence to, or deviation from, prevailing social norms; there are different types of relatively-uncommon life paths that women follow that could share a RSF value but lead to entirely different life outcomes. I speculate, however, that it is *the experience of following an uncommon life path* that leads to individual-institutional disharmony and alienation from one's peers, and that that experience is the source of chronic stress which erodes women's mental health across the life course and leads to elevated risk of depressive symptoms in later life. Without more-detailed data, though, perhaps from personal interviews with women whose life paths were relatively uncommon but in different ways, I cannot explain a direct link from following an uncommon life path to experiencing more depressive symptoms in later life. A second limitation is that the demands that accurately reconstructing a life course

places on data are heavy: there are tradeoffs between collecting precise information and protecting respondents' privacy, and between precision and sample retention. For that reason, I chose to assume that women completed their life events in a way that reflected prevailing social norms; however, in doing so, there is a chance that some life paths' RSF values could have been recorded as higher or lower than what they actually would have been had exact event dates been available. The number of concurrent-event cases was not large, so it is unlikely that retaining cases by calculating RSF based on assumptions drastically affected my results, but the precision with which event dates were recorded during data collection is a factor in life course study that focuses on event sequencing.

This study helps to meet the need for longitudinal research on the relationship between race, socioeconomic status, and depression that has been identified in prior research (Gazmararian et al. 1995). It is not perfect, and it raises questions that, at this point, are not answerable. However, there is value in taking a new approach to exploring life-course antecedents of disparities in women's later-life health.

Future directions

The data used in this study do not support an inquiry aimed at identifying group-specific social norms that influence women's behavior across the life course, but one related direction that could be pursued is a close examination of the specific event combinations that were particularly (un)common among women in each racial/ethnic group or at each educational level. Dedicating research attention to the specific event combinations that are most prevalent among women in different socioeconomic- or racial/ethnic groups could shed light on the types and strength of the norms that influence women's behavior. Women in different racial/ethnic groups and at different education levels share many values and aspirations, yet they live very different lives; while I do not have data on group-specific values or norms, or on how women in different positions across the socioeconomic spectrum plan their lives differently based on their ability to access and leverage social and economic resources, I *do* have data that allow me to identify variation in women's lived behavior and to demonstrate that an association between lived behavior and later-life depressive symptoms exists and varies across groups. The results of this study

suggest that further research focused on nonwhite women and women with some college but less than a Bachelor's degree could yield some interesting insights into why life path commonness might matter for these women more than others.

It is possible that nonwhite women who deviate from common life paths pay a steeper cost than White women as a result of social negativity, depending both on the nature of the behavioral deviation and on the set of norms and expectations that guide a woman's own expectations and lived behaviors. The source of sanctioning could be disapproval and exclusion by proximal members of a woman's social network, such as family members or friends of her same racial-/ethnic group; this could prove particularly harmful to Black or Hispanic women's mental health given the centrality of family and community in Black and Hispanic cultures. Additionally, it is already well-known that nonwhite women, and especially Black women, are subjected to racism and racial microaggressions in addition to the sexism experienced by all women. The psychological distress that is derived from either of these sources may not be captured adequately by the CES-D scale, which means that it is possible that the link between having followed a less-common life path and depressive symptom levels in later life could be even stronger for Black or Hispanic women than I have estimated using CES-D7 score as my outcome variable.

References

Adame, J.L., C. C. Lo, & T. C. Cheng (2022). Ethnicity and Self-reported Depression Among Hispanic Immigrants in the U.S. *Community Mental Health* J 58:121–35. https://doi org.proxy.lib.umich.edu/10.1007/s10597-021-00801-0

Altintas, E., K. Gallouj, & A. Guerrien (2012). Social support, depression and self-esteem in older persons: Cluster analysis results. *Annales Medico-Psychologiques*, 170(4), 256-62.

Aneshensel, C. S. (1992). Social Stress: Theory and Research, *Annual Review of Sociology*, 18:15-38.

Aneshensel, C. S & J. D. Stone (1982). Stress and Depression: A Test of the Buffering Model of Social Support. *Arch Gen Psychiatry*, 39(12), 1392–96. doi:10.1001/archpsyc.1982.04290120028005

Avison, W. R. & R. J. Turner (1988). Stressful Life Events and Depressive Symptoms: Disaggregating the Effects of Acute Stressors and Chronic Strains. *Journal of Health and Social Behavior*, 29:253-64.

Barnes, D.M. & L. M. Bates (2017). Do racial patterns in psychological distress shed light on the Black–White depression paradox? A systematic review. *Social Psychiatry and Psychiatric Epidemiology*, 52:913–28. https://doiorg.proxy.lib.umich.edu/10.1007/s00127-017-1394-9

Bertera, E. M. (2005). Mental health in U.S. adults: The role of positive social support and social negativity in personal relationships. *Journal of Social and Personal Relationships*, 22(1), 33-48. https://doi-org.proxy.lib.umich.edu/10.1177/0265407505049320

Breslau J, S. Aguilar-Gaxiola, K. S. Kendler, M. Su, D. Williams, & R. C. Kessler (2006). Specifying race-ethnic differences in risk for psychiatric disorder in a US national sample. *Psychol Med* 36:57–68.

Brown, L. L., Mitchell, U. A., & Ailshire, J. A. (2020). Disentangling the Stress Process: Race/Ethnic Differences in the Exposure and Appraisal of Chronic Stressors Among Older Adults. *The Journals of Gerontology: Series B*, 75(3), 650–60. https://doi.org/10.1093/geronb/gby072

Bureau of Labor Statistics, U.S. Department of Labor. National Longitudinal Survey of Youth 1979 cohort, 1979-2016 (rounds 1-27). Produced and distributed by the Center for Human Resource Research (CHRR), The Ohio State University. Columbus, OH: 2019.

Chen, M. B. (2015). Returning to Learning: Conversations with Nontraditional Students. *International Journal of Adult Vocational Education and Technology*, 6(3), 45-60.

Clark, R., N. B. Anderson, V. R. Clark, & D. Williams (1999). Racism as a stressor for African Americans: A biopsychosocial model. *American Psychologist*, 54(10), 805–16. https://doi-org.proxy.lib.umich.edu/10.1037/0003-066X.54.10.805

Dohrenwend, B. S. (1973). Social Status and Stressful Life Events. *Journal of Personality and Social Psychology*, 28(2), 225-35.

Eppler, M. A. & B. L. Harju (1997). Achievement motivation goals in relation to academic performance in traditional and nontraditional college students. *Research in Higher Education*, 38(5), 557-73. doi:10.1023/A:1024944429347

Ettman, C. K., G. H. Cohen, & S. Galea (2020). Is wealth associated with depressive symptoms in the United States? *Ann Epidemiol*, 43:25-31

Flores E, Tschann JM, Dimas JM, Bachen EA, Pasch LA, de Groat CL (2008). Perceived discrimination, perceived stress, and mental and physical health among Mexican-origin adults. *Hispanic Journal of Behavioral Sciences* 30(4), 401–24.

Gazmararian, J. A., James, S. A., & Lepkowski, J. M. (1995). Depression in Black and White Women: The Role of Marriage and Socioeconomic Status. *Annals of Epidemiology*, 5(6), 455–63. https://doi.org/10.1016/1047-2797(95)00061-5

Hammen, C. (1992). Life events and depression: The plot thickens. *American Journal of Community Psychology*, 20(2), 179–93. https://doi.org/10.1007/BF00940835

Hammen, C., E. Y. Kim, N. K. Eberhart, P. A. Brennan. 2009. "Chronic and acute stress and the prediction of major depression in women," *Depression and Anxiety* 26(8), 718-23.

Handwerker, W. P. (1999). Cultural diversity, stress and depression: Working women in the Americas. *Journal of Women's Health & Gender-Based Medicine*, 8:1303-11.

Hargrove, T. W., Halpern, C. T., Gaydosh, L., Hussey, J. M., Whitsel, E. A., Dole, N., Hummer, R. A., & Harris, K. M. (2020). Race/Ethnicity, Gender, and Trajectories of Depressive Symptoms Across Early- and Mid-Life Among the Add Health Cohort. *Journal of racial and ethnic health disparities*, 7(4), 619–29. https://doi-org.proxy.lib.umich.edu/10.1007/s40615-019-00692-8

Hasin DS, Goodwin RD, Stinson FS, Grant BF (2005) Epidemiology of major depressive disorder: results from the National Epidemiologic Survey on Alcoholism and Related Conditions. *Arch Gen Psychiatry* 62:1097–1106.

Heckhausen J. (1999). Developmental Regulation in Adulthood. *Age-Normative and Sociostructural Constraints as Adaptive Challenges*. Cambridge University Press: Cambridge.

Helgeson, V.S. (1993). Two Important Distinctions in Social Support: Kind of Support and Perceived Versus Received. Journal of Applied Social Psychology, 23: 825-45. https://doi.org/10.1111/j.1559-1816.1993.tb01008.x

Hogan, D. (1978) The Variable Order of Events in the Life Course. *American Sociological Review*, 43:573-86.

House, J. S., Lepkowski, J. M., Kinney, A. M., Mero, R. P., Kessler, R. C., & Herzog, A. R. (1994). The Social Stratification of Aging and Health. *Journal of Health and Social Behavior*, 35(3), 213. https://doi.org/10.2307/2137277

Jones, M. K., Leath, S., Settles, I. H., Doty, D., & Conner, K. (2022). Gendered racism and depression among Black women: Examining the roles of social support and identity. *Cultural Diversity and Ethnic Minority Psychology*, 28(1), 39–48. https://doi.org.proxy.lib.umich.edu/10.1037/cdp0000486

Judd, L.L., P.J. Schettler, H.S. Akiskal (2002). The prevalence, clinical relevance, and public health significance of subthreshold depressions. *Psychiatr Clin North Am*, 25(4), 685-98.

Kessler, R. C. (1979). Stress, Social Status, and Psychological Distress. *Journal of Health and Social Behavior*, 20(3), 259–72. https://doi.org/10.2307/2136450

Kessler, R. C. (2012). The Costs of Depression. *Psychiatric Clinics of North America*, 35(1):1-14.

Kim, Jinhyun, Virginia Richardson, Byunghyun Park & Mijin Park (2013) A Multilevel Perspective on Gender Differences in the Relationship Between Poverty Status and Depression Among Older Adults in the United States, *Journal of Women & Aging*, 25(3), 207-26. DOI: 10.1080/08952841.2013.795751

Lanza Di Scalea, T., Matthews, K. A., Avis, N. E., Thurston, R. C., Brown, C., Harlow, S., & Bromberger, J. T. (2012). Role Stress, Role Reward, and Mental Health in a Multiethnic Sample of Midlife Women: Results from the Study of Women's Health Across the Nation (SWAN). *Journal of Women's Health*, 21(5), 481–89. https://doi.org/10.1089/jwh.2011.3180

Lee B, Wang Y, Carlson SA, et al. (2023). National, State-Level, and County-Level Prevalence Estimates of Adults Aged ≥18 Years Self-Reporting a Lifetime Diagnosis of Depression — United States, 2020. *MMWR Morb Mortal Wkly Rep*, 72:644–50.

Liefbroer, A. C., & Billari, F. C. (2010). Bringing norms back in: A theoretical and empirical discussion of their importance for understanding demographic behaviour: Bringing Norms Back In. *Population, Space and Place*, 16(4), 287–305. https://doi.org/10.1002/psp.552

McLaughlin K. A. (2011). The public health impact of major depression: a call for interdisciplinary prevention efforts. *Prevention science : the official journal of the Society for Prevention Research*, 12(4), 361–71. https://doi.org/10.1007/s11121-011-0231-8

Miech, R. A., & Shanahan, M. J. (2000). Socioeconomic Status and Depression over the Life Course. *Journal of Health and Social Behavior*, 41(2), 162–76. https://doi.org/10.2307/2676303

Miller, P.K. & B. E. Weller (2019). Uncovering Profiles of Economic, Social, and Cultural Capital to Explore Depression Across Racial Groups. *J. Racial and Ethnic Health Disparities*, 6:1167–81. https://doi-org.proxy.lib.umich.edu/10.1007/s40615-019-00618-4

Mirowsky, J., & Ross, C. E. (1992). Age and Depression. *Journal of Health and Social Behavior*, 33(3), 187–205. https://doi.org/10.2307/2137349

Monroe, S. M., & Reid, M. W. (2009). Life Stress and Major Depression. *Current Directions in Psychological Science*, 18(2), 68–72. http://www.jstor.org/stable/20696000

National Institute of Mental Health (2023). Depression. National Institutes of Health, National Institute of Mental Health. https://www.nimh.nih.gov/health/topics/depression

Nelson, Tamara, Monique J. Brown, Isis Garcia-Rodriguez & Oswaldo Moreno (2023). Gendered racism, anxiety, and depression: the mediating roles of gendered racialized stress and social isolation, *Ethnicity & Health*, 28(1),12-28. DOI: 10.1080/13557858.2021.2002826

Nolen-Hoeksema, S. (2001). Gender Differences in Depression. *Current Directions In Psychological Science*, 10(5), 173-76.

Pearlin, L. I., Schieman, S., Fazio, E. M., & Meersman, S. C. (2005). Stress, Health, and the Life Course: Some Conceptual Perspectives. *Journal of Health and Social Behavior*, 46(2), 205–19. https://doi.org/10.1177/002214650504600206PEARLIN ET AL 2005

Pearlin, Leonard I., Elizabeth G. Menaghan, Morton A. Lieberman and Joseph T. Mullan. (1981). The Stress Process. *Journal of Health and Social Behavior*, 22(4), 337–56.

Quist, A.J.L., Han, X., Baird, D.D. et al. (2022). Life Course Racism and Depressive Symptoms among Young Black Women. *J Urban Health* 99:55–66. https://doi.org.proxy.lib.umich.edu/10.1007/s11524-021-00574-7

Ricci, Fabiana, Julio Torales, Abdulbari Bener, João Mauricio Castaldelli-Maia, Egor Chumakov, Antonello Bellomo & Antonio Ventriglio (2023) Mental health of ethnic minorities: the role of racism, *International Review of Psychiatry*, 35(3-4), 258–67. DOI:10.1080/09540261.2023.2189951

Ross, C. E. (2003). *Social Causes of Psychological Distress: Vol. 2nd ed*. Routledge.

Ross, C. E., & Mirowsky, J. (2006). Sex differences in the effect of education on depression: Resource multiplication or resource substitution? *Social Science and Medicine*, 63:1400–1413.

Spence, N., D. Adkins, & M. Dupre (2011). Racial Differences in Depression Trajectories among Older Women: Socioeconomic, Family, and Health Influences. *Journal of Health and Social Behavior*, 52(4), 444-59.

Turner, R. J., & Lloyd, D. A. (1999). The Stress Process and the Social Distribution of Depression. *Journal of Health and Social Behavior*, 40(4), 374–404. https://doi.org/10.2307/2676332

Vyas, C. M., Donneyong, M., Mischoulon, D., Chang, G., Gibson, H., Cook, N. R., Manson, J. E., Reynolds, C. F., 3rd, & Okereke, O. I. (2020). Association of Race and Ethnicity With Late-Life Depression Severity, Symptom Burden, and Care. *JAMA network open*, 3(3), e201606. https://doi.org.proxy.lib.umich.edu/10.1001/ jamanetworkopen.2020.1606

Wakefield, J.C. (1992). Disorder as harmful dysfunction: a conceptual critique of DSM-III-R's definition of a mental disorder. *Psychol Rev*, 99:232-47.

Williams DR, Gonzalez HM, Neighbors H, Nesse R, Abelson JM, Sweetman J, Jackson JS (2007) Prevalence and distribution of major depressive disorder in African Americans, Caribbean blacks, and non-Hispanic whites: results from the National Survey of American Life. *Arch Gen Psychiatry* 64:305.

World Health Organization (2023, 31 March). *Depressive disorder (depression).* World Health Organization. https://www.who.int/news-room/fact-sheets/detail/depression

Yang DeLeone, F., D.T. Lichter, & R.L. Strawderman (2009). *Perspectives on Sexual and Reproductive Health*, 41(3), 166–72. doi: 10.1363/4116609

Tables and Figures

Table 3.1 Selected sample characteristics: Before and after restrictions applied, and after survey weights applied to restricted sample

	Before sample restrictions (N = 6,283)		After sample restrictions (N = 3,517)		Weighted
	n	*%*	*n*	*%*	*%*
White	3,720	59.21	1,813	51.55	79.24
Black	1,561	24.84	1,093	31.08	15.11
Hispanic	1,002	15.95	611	17.37	5.65
HS or less	3,269	52.04	1,476	41.97	40.98
Some college	1,593	25.36	1,045	29.71	26.95
Bachelor's degree +	1,420	22.60	996	28.32	32.07
Age (2018)					
Mean	57.14		56.92		57.04
(SE)	*(.03)*		*(.04)*		*(.05)*
SD	2.24		2.22		2.28
Median	57.25		56.83		57.08
CES-D7 score (age 28-37)					
Mean	4.64		4.50		4.30
(SE)	*(.06)*		*(.07)*		*(.08)*
SD	4.29		4.13		4.02
Median	4		3		3
CES-D7 score (age 50)					
Mean	4.44		4.50		4.21
(SE)	*(.08)*		*(.07)*		*(.09)*
SD	4.76		4.13		4.54
Median	3		3		3

Table 3.2 Chapter 3 analytic sample characteristics

Entire sample (N = 3,517)		
	n	*%*
Race/Ethnicity		
White	1,813	51.55
Black	1,093	31.08
Hispanic	611	17.37
Education level		
≤ HS diploma	1,476	41.97
Some college[a]	1,045	29.71
≥ Bachelor's degree	996	28.32

Selected characteristics by race/ethnicity and by education level						
	White %	*Black %*	*Hispanic %*	*HS or less %*	*Some college %*	*Bachelor's or more %*
Education Level						
≤ HS diploma	41.75	41.08	44.19	100	0	0
Some college[a]	24.82	34.68	35.35	0	100	0
≥ Bachelor's degree	33.43	24.25	20.46	0	0	100
Ever worked for pay	99.12	98.99	99.67	98.78	99.52	99.60
Ever married	93.11	72.64	86.42	84.82	84.88	87.45
Ever bore a child	82.13	83.90	86.42	88.55	84.40	74.80
Mean depression score						
Age 28-37	4.23	4.81	4.71	4.89	4.66	3.74
(SE)	*(.09)*	*(.12)*	*(.18)*	*(.11)*	*(.13)*	*(.12)*
Age 50	4.22	4.39	3.89	4.73	4.32	3.33
(SE)	*(.11)*	*(.14)*	*(.19)*	*(.13)*	*(.14)*	*(.13)*

[a] The *Some college* category includes only women who completed some postsecondary education or an Associate's degree but did not earn a Bachelor's degree.

Table 3.3 Bivariate results: All women (N = 3,517)

Pearson correlation	
RSF by CES-D7 score at age 50	-0.084***
Baseline CES-D7 score by CES-D7 score at age 50	0.299***
Partial correlation	
RSF by CES-D7 score at age 50, accounting for the influence of depressive symptom level in earlier adulthood	-0.065***

**** p<.00 1, ** p<.01, * p<.05*

Table 3.4 OLS regression of CES-D7 score on RSF and on RSF and depression score at age 28–37: All women

	(1)	**(2)**
RSF	-.032***	-.025**
	(.009)	*(.009)*
CES-D7 score at age 28–37		.332*** (.025)
Constant	4.566***	3.053***
	(.138)	*(.165)*
N	3,517	3,517

**** p<.001, ** p<.01, * p<.05*
Standard errors in parentheses.
Analyses weighted using NLSY-generated survey weights to adjust for complex sampling methods.

Table 3.5 Bivariate results by race/ethnicity and by education level

	(1) White	(2) Black	(3) Hispanic
Pearson correlation			
CES-D7 score at age 50 by RSF	-0.053*	-0.142***	-0.100*
CES-D7 score at age 50 and baseline CES-D7 score	0.325***	0.242***	0.331***
Partial correlation			
CES-D7 score at age 50 and RSF, accounting for the influence of depressive symptom level in earlier adulthood	-0.0411	-0.125***	-0.080**
N	1,813	1,093	611
	(4) HS or less	**(5) Some college**	**(6) Bachelor's degree +**
Pearson correlation			
CES-D7 score at age 50 and RSF	-0.065*	-0.130***	-0.030
CES-D7 score at age 50 and baseline CES-D7 score	0.266***	0.280***	0.349***
Partial correlation			
CES-D7 score at age 50 and RSF, accounting for the influence of depressive symptom level in earlier adulthood	-0.049	-0.111***	-0.013
N	1,476	1,045	996

**** p<.001, ** p<.01, * p<.05*

Table 3.6 OLS models estimating the effects of RSF on CES-D7 score at age 50, by race/ethnicity and by education level

	(1) White		(2) Black		(3) Hispanic	
	(a)	*(b)*	*(a)*	*(b)*	*(a)*	*(b)*
RSF	-.024*	-.019	-.097***	-.084***	-.052***	-.043*
	(.011)	*(.011)*	*(.019)*	*(.019)*	*(.019)*	*(.019)*
CES-D7 score at age 28–37		.354***		.239***		.301***
		(.031)		*(.038)*		*(.050)*
Constant	4.480***	2.940***	4.975***	3.763***	4.443***	2.939***
	(.183)	*(.205)*	*(.203)*	*(.287)*	*(.298)*	*(.366)*
N	1,808		1,089		609	

	(4) HS or less		(5) Some college		(6) Bachelor's degree +	
	(a)	*(b)*	*(a)*	*(b)*	*(a)*	*(b)*
RSF	-.025	-.019	-.064***	-.056**	-.001	.002
	(.015)	*(.015)*	*(.018)*	*(.018)*	*(.014)*	*(.013)*
CES-D7 score at age 28–37		.315***		.263***		.388***
		(.038)		*(.045)*		*(.046)*
Constant	4.982***	3.429***	5.143***	3.894***	3.367***	1.897***
	(.215)	*(.263)*	*(.264)*	*(.334)*	*(.233)*	*(.254)*
N	1,471		1,042		993	

**** p<.001, ** p<.01, * p<.05*

Standard errors are in parentheses. Analyses weighted using NLSY-generated survey weights to adjust for complex sampling methods.

Table 3.7 Correlation matrix for RSF, CES-D7 score at age 28-37, and CES-D7 score at age 50 by race and education level

		White			Black			Hispanic		
		(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
HS or less	(1) RSF	1.000			1.000			1.000		
	(2) CES-D7 @ 28-37	-0.057	1.000		-0.042	1.000		-0.053	1.000	
	(3) CES-D7 @ 50	-0.023	0.319***	1.000	-0.094*	0.182***	1.000	-0.080	0.253***	1.000
Some college	(1) RSF	1.000			1.000			1.000		
	(2) CES-D7 @ 28-37	-0.036	1.000		-0.092	1.000		-0.136*	1.000	
	(3) CES-D7 @ 50	-0.153**	0.271***	1.000	-0.166**	0.237***	1.000	-0.107	0.376***	1.000
Bachelors +	(1) RSF	1.000			1.000			1.000		
	(2) CES-D7 @ 28-37	-0.011	1.000		-0.101	1.000		-0.036	1.000	
	(3) CES-D7 @ 50	0.003	0.347***	1.000	-0.085	0.330***	1.000	-0.162	0.440***	1.000

Chapter 4

Life Path Commonness, Psychosocial Factors, and Black Women's Depressive Symptom Levels in Later Life

Abstract

In Chapter 3, I showed that following a less-common life path is a stronger predictor of a higher depression score at age 50 for Black women than for either White or Hispanic women. In this study, I focus exclusively on the inverse relationship between life path commonness and depressive symptom levels in older adulthood among Black women. I consider how cultural norms and expectations that shape Black women's self-concepts might influence the meaning of lived behavior, and I explore some potential mechanisms that could help to explain the stronger significance of life path commonness as a predictor of later-life depressive symptom levels within this specific population group.

I use a sample of Black women (N=1,050) from the National Longitudinal Survey of Youth's 1979 cohort (NLSY79) to test whether life path commonness independently influences depression score at age 50 or whether the relationship is explained by other factors, including demographic characteristics (education level and religious service attendance), psychosocial characteristics (self-esteem, mastery, and locus of control), or attitudes about gendered family roles. I find that these factors do not explain the relationship between life path commonness and depressive symptom levels at age 50: the association between life path commonness and depressive symptom level persists and remains statistically significant even when accounting for the influence of these factors.

Introduction

In Chapter 3, bivariate- and multivariate results showed that the relationship between following a less-common life path and reporting higher levels of depressive symptoms at age 50 was strongest for Black women and women with an intermediate level of education (some college but no Bachelor's degree). Partial correlation coefficients and ordinary least squares regression results showed that for Black women—but not for White women—the relationship between having followed a relatively uncommon life path and reporting higher levels of depressive symptoms at age 50 remains statistically significant when controlling for depressive symptom levels in earlier adulthood. In this chapter I take a deeper look at life path commonness as a predictor of depressive symptoms at age 50 among Black women in the United States, with the overarching goal of exploring some potential mechanisms that might explain why life path commonness is more strongly linked to later-life depressive symptom levels for Black women than for White women.

Compared to the amount of research focused on specific factors associated with elevated depressive symptom levels among older women (e.g., poverty, divorce, single motherhood) or comparing depressive symptom levels across racial/ethnic groups, there has been relatively little scholarly attention dedicated to identifying factors that lead to elevated levels of depressive symptoms specifically among Black women. Previous research has noted that we know relatively little about Black women's mental health compared to White women's and has called for additional research focused on Black women to help fill this gap.

Prior studies have also highlighted the importance of using culturally-relevant instruments and reference populations when studying links between Black women's psychological characteristics and behaviors and their mental health (Jones 2008). This study helps to meet each of these needs by focusing exclusively on Black women, and by relying on within-group comparisons that use other Black women as a reference instead of cross-group comparisons in which the life paths and depressive symptom levels of Black women are compared to other racial/ethnic groups. The relative frequency of any given life path

can be determined within any population of interest, which means that it is possible to identify which paths are more- or less common specifically among Black women. This is valuable because in addition to documenting the range of life paths followed by Black women and identifying which paths are more- or less common within this population, it is possible to speculate about how culture-specific behavioral norms and expectations influence women's life paths, how adhering to (or deviating from) prescribed life course behaviors might protect (or harm) Black women's mental health in later life, and why the relationship between life path commonness and later-life depression scores is more stable and persistent for Black women than for other racial/ethnic groups.

In this chapter, I use data from the 1979 – 2018 waves of the National Longitudinal Survey of Youth (NLSY79) to document the orders in which Black women completed major life events, and to take a more in-depth look at the relationship between life path commonness and later-life depressive symptom levels exclusively among Black women in the United States. This approach is intended to deepen existing knowledge about how life course processes lead to health inequalities in older age among Black women, an understudied population group. The analyses in this chapter aim to enrich sociological knowledge about factors linked to Black women's mental health and to highlight the need to consider the strong influence of sociocultural factors on Black women's life path construction and interpretation.

Background

Black women in the United States face structural disadvantage resulting from both racism and sexism, which means that Black women's day-to-day lives are extremely and negatively impacted by a compound form of oppression called *gendered racism* (Essed 1991; Thomas, Witherspoon & Speight 2008; Szymanski & Lewis 2016). Gendered and racist stereotypes about Black women have been disseminated throughout the United States as a form of social control since these stereotypes were used to

justify the enslavement and exploitation of Black women, and negative portrayals of Black women[9] continue to be used to justify the persistence of gendered racism and the concomitant denial of equitable access to socioeconomic resources and opportunities to Black women. One form that negative stereotyping takes in Black women's daily lives is the *gendered racial microaggression*, a subtle everyday form of racism and negative racial slights against people of color that could be outward expressions of others' monitoring and sanctioning of Black women's behavior. (Sue et al. 2007). Gendered racial microaggressions have been found to be significantly associated with traumatic stress symptoms among Black women; the more microaggressions Black women endure, the greater the increase in their traumatic stress levels (Moody et al. 2019).

Another way that negative stereotyping affects women's lives is through *stereotype threat*, a social-psychological predicament that arises from well-known stereotypes about one's group (Steele & Aronson 1995:797) When a person finds herself in a situation or doing something to which a well-known negative stereotype about her group applies, anything she does or any of her features that conform to that stereotype are likely to give it credence, making the characterization of that person in terms of the negative stereotype more plausible to others and possibly even adversely altering the person's self-concept (Steele & Aronson 1995:797). At its introduction (cf. Steele & Aronson 1995; Steele 1997), stereotype threat was exemplified using the intellectual test performance of African Americans. Subsequent research has focused on the impact of negative stereotypes on stigmatized groups in academic settings, such as women in mathematics (Pronin,et al. 2004) and Latinx undergraduate engineering students (Turochy et al. 2023), and research on the topic has also extended to non-academic realms: stereotype threat has been found to exert influence on feedback seeking and -acceptance in the workplace

[9] As described by Nelson et al. (2016), "Stereotypes of Black women are pervasive in the U.S. culture. Four prominent controlling images of Black women include (1) the nurturing, asexual, overly selfless "mammy"; (2) the argumentative, highly hostile, emasculating "sapphire"; (3) the lazy, dependent "welfare queen"; and (4) the sexually promiscuous "jezebel" (Collins, 2000; Jewell, 1993; Stephens & Phillips, 2003; West, 1995, 2004).

(Roberson et al. 2003), on Black and White men's performance in golf putting (Stone et al. 1999), and on older adults' confidence in their cognitive abilities (Barber 2017).

Given the range of contexts in which previous research has found stereotype threat to apply, it is reasonable to expect that Black women who complete major life events in relatively uncommon orders would experience stress at times when their lived behavior is consistent with negative conceptions of Black women and clashes with societal norms and expectation. A clear example would be labeling a Black woman who had her first child before completing high school as "promiscuous", or a woman who became pregnant during college and delayed completing her degree and beginning a career until her child(ren) were older as "lazy" or "dependent". In the case of a Black woman who chooses to pursue a high-power professional career instead of raising a family, she could be sanctioned both by her (likely White male) colleagues as "aggressive", "hostile", or "cold", and potentially also by her social network for "acting White" or for not prioritizing the care of others at her own expense. These women could very well experience stereotype threat when finding themselves in the relatively uncommon role of teen mother; when realizing that an intentional decision to delay a self-fulfilling college degree and higher earnings in favor of providing care for her very young child(ren) could easily be perceived as laziness or failure; or when actively navigating actions and interactions in the workplace, where confidence and decisive action could be most beneficial career-wise but might also be interpreted as consistent with the "angry Black woman" stereotype.

Black women experience stereotype threat regularly when they live, work, or attend school in predominantly White- or male-dominated spaces. Societal preconceptions about groups can adversely impact the psychological functioning of, and inform personal identity development among, individual group members (Steele 1997). Enduring racial microaggressions and stereotype threat is a daily hassle and a source of chronic stress for Black women, especially if they are judged more harshly than White women for similar actions. Both are relevant to social control of Black women's behaviors across the life course: racial microaggressions are one way that White people could sanction Black women who complete life events and combine roles in ways that are relatively less common, and women who

experience stereotype threat are highly conscious about their own behaviors and how they violate—or could be perceived to be violating—prevailing behavioral norms and expectations.

The alienation perspective proposes that people at the bottom of a social hierarchy lack attachment to prevailing cultural norms, values, and institutions; the history of racism in the United States has resulted in the emergence of a distinctive Black subculture with its own norms and values (Broman et al. 1988; McCarthy & Yancey 1971). This racial subculture provides Blacks with alternative criteria for social and psychological evaluation (Broman et al. 1988); rather than comparing themselves to all women or to Whites, Blacks use their own cultural norms and values as benchmarks.

According to social identity theory, individual members of a minority group that is subjected to prejudice and discrimination by a large and powerful majority will develop a stronger identification with their minority in-group (Tajfel & Turner 1986). When members of a low-status minority group perceive social mobility to be impossible, identification with the low-status in-group tends to be stronger compared to when group members feel that they could achieve a higher socioeconomic status on their own (Ellemers 1993). When discrimination is perceived as originating from individuals acting alone, targets of discrimination respond in an individualistic fashion; when the discrimination comes from multiple members of a more powerful group, however, more collectivistic responses are evoked (Abelson et al. 1998).

Compared to White women, Black women's concept of self tends to be much more community based, to include components of racial identity, and to be rooted in collective experiences. According to the insulation hypothesis, Black women form their identities and concepts of self using other Black women—rather than all women—as a reference group; this manner of comparison, based on positive aspects of Black womanhood rather than on White society's standards, may help to protect Black women's psychological wellbeing (Settles et al. 2010). High private regard, or individuals' positive feelings about their own race and other members of their racial group, is related to higher self-esteem and lower levels of depression among Black women (Settles et al. 2010).

Black women in the United States have long embraced a racially- and culturally-specific feminine identity in which personal struggle, strength in the face of adversity, and deep connection to the Black community play central roles (Harris-Lacewell 2001). The Strong Black Woman race-gender schema (SBW; sometimes also called the Black Superwoman schema) was developed by Black women as a positive alternative self-image that could be adopted in place of internalizing society's negative characterizations of Black women; it was intended to provide armor against a society which has historically mistreated Black people and in which racism has come to be expected (Settles et al. 2008). Black women have identified five defining characteristics of the SBW: outward projection of strength; emotional containment; independence; the ability to conquer adversity despite limited resources; and prioritizing taking care of family members and others over self-care (Woods-Giscombé 2018; Nelson et al. 2016; Woods-Giscombé 2010). Black women who endorse the SBW schema define themselves by their inner strength and resilience, and they hold characteristics such as the ability to stand up for themselves, the ability to overcome all challenges placed before them, resistance to vulnerability, and independence as integral parts of their identities (Settles et al. 2008; Woods-Giscombé 2010). Research has found near-universal awareness of the SBW Schema among Black women but wide variation in the proportions of women who endorse its ideals: one study found that over 80 percent of women in a sample endorsed SBW ideals (Abrams et al. 2018), while others have found that less than half of women fully endorse the Schema or only conditionally adopt an SBW identity.

Endorsement of the SBW Schema carries both psychological benefits and mental and physical health risks for Black women. Women who adopt the SBW as a facet of their personal identity do experience some psychosocial benefits. Advantages that women perceive include a belief in their ability to overcome persistent hardship, such as regular encounters with gendered racism and limited access to resources; the ability to support family members, especially children or parents; and the ability to improve the lives of others through giving back to the Black community (Woods-Giscombe 2010). Those perceived advantages, however, come at great cost to Black women's mental and physical health. Strong adherence to SBW ideals precludes Black women from voicing their personal needs, especially as related

to self-care; when their needs go unacknowledged and ignored, Black women eventually suffer adverse mental and physical health effects (Nelson et al. 2016).

Prior research has found a positive association between endorsement of the SBW schema and Black women's depressive symptom levels, and that stronger endorsement of the Schema's ideals is associated with worse depressive symptoms. Donovan and West (2015) found an increase in the positive relationship between stress and depressive symptoms among women who highly- or moderately endorsed the SBW schema but no increase among women whose endorsement of the schema was low. Watson and Hunter (2015) demonstrated that endorsement of the SBW race-gender schema is associated with increased anxiety, greater depression, and predicts negative attitudes toward seeking professional mental health care, while Abrams and coauthors (2018) confirmed a positive relationship between internalizing the SBW Schema and experiencing psychological distress. Black women's negative attitudes toward seeking psychological help are, in turn, associated with elevated levels of psychological distress (Watson & Hunter 2015).

The decision whether or not to build a personal identity on a foundation of SBW ideals and behavioral expectations is complicated: when Black women endorse the SBW race-gender schema, their mental and physical health are likely to suffer; however, when Black women *do not* endorse these ideals, they may find themselves at risk of having the authenticity of their Black identities questioned by members of their own community. Strong identification with a Black feminine identity as a means of rejecting the prejudice and discrimination directed toward Black women by mainstream society does not fully insulate Black women from the policing of their behavior.

The ideal of the Black woman as a central source of support to both her family and community, and the importance of collective experience to Black feminine identity, means that actions taken in the interest of personal achievement (e.g., leaving home to attend University, attempting to build personal financial security instead of directing earned income toward supporting extended family) may, in some contexts, be viewed as a threat to the strong communal bond or collective Black female identity. Black women may encounter challenges to the authenticity of their Black womanhood from members of their

own peer groups when their lives don't include—or don't *appear* to include—adequate adversity, since demonstration of strength while overcoming adversity is a core value of strong Black womanhood (Beauboeuf-Lafontant 2009). Black women whose behavior is perceived as inconsistent with authentic Black womanhood may find themselves labeled by family members and peers as "weak," "White," or "not Black" (Beauboeuf-Lafontant 2007).

In this chapter, I focus on the relative (un)commonness of Black women's life paths as a potential source of stress that contributes to elevated risk of experiencing depressive symptoms in later life. It is plausible that completing major life events and embodying roles in relatively less-common ways is a source of stress for Black women, whose doubly-disadvantaged status in White, patriarchal society leaves their behavior subject to scrutiny; in addition, Black women may experience exclusion or alienation when their behavior violates gendered and cultural norms in the Black community, which would also be a source of stress across the life course. I use a sample of Black women (N=1,050) from the National Longitudinal Survey of Youth's 1979 cohort (NLSY79) to test whether life path commonness independently influences depression score at age 50 or whether the relationship between life path commonness and depressive symptom levels at age 50 is explained by other factors, including demographic characteristics (education level, religiosity), psychosocial characteristics (self-esteem, mastery, and locus of control), or attitudes about gendered family roles.

Methods

Data and Sample

The data used in this study come from rounds 1 – 28 of the National Longitudinal Survey of Youth 1979 (NLSY79); the NLSY79 survey is sponsored and directed by the U.S. Bureau of Labor Statistics and managed by the Center for Human Resource Research (CHRR) at The Ohio State University. Interviews are conducted by the National Opinion Research Center (NORC) at the University of Chicago. The NLSY79 Cohort (N=12,686) initially comprised three independent probability samples:

a cross-sectional sample of 6,111 respondents designed to represent the noninstitutionalized civilian segment of young people living in the United States in 1979 and born January 1, 1957, through December 31, 1964 (ages 14 to 21 as of December 31, 1978); a supplemental sample of 5,295 respondents designed to oversample civilian Hispanic or Latino, black, and economically disadvantaged, nonblack/non-Hispanic youths born in the same time period; and a military sample of 1,280 respondents designed to represent the population born January 1, 1957, through December 31, 1961, serving in the military as of September 30, 1978 (*bls.gov*). 1,079 members of the survey's military sample were dropped following the 1984 interview, and the entire economically disadvantaged, nonblack/non-Hispanic sample was dropped following the 1990 interview; 9,964 respondents aged 55 to 64 years remain in the eligible sample as of the most recent (2020) round of interviews (*bls.gov*).

29 rounds of interviews have gathered extensive information about NLSY79 cohort members' family background, educational attainment, labor market behavior, fertility and family life, and physical and mental health issues (*bls.gov*). The longitudinal nature of the survey, the monthly precision with which the dates of major life events have been recorded over time, and the repeated assessment of psychosocial characteristics and depressive symptom levels make NLSY79 data particularly well-suited to this life course study.

My analytic sample was selected as follows. Beginning with the 1,561 Black women interviewed in 1979, I dropped 175 women who were missing a baseline (age 28-35) depression score, 203 women who were missing depression scores at age 40 or age 50, and 133 women with incomplete educational attainment information (*e.g.*, highest degree ever completed was reported, but no completion date was given). My final analytic sample includes 1,050 Black women with valid depression scores at all three points and with complete educational attainment information. Characteristics of my analytic sample are presented in Table 4.1, and weighted descriptive statistics are presented in Table 4.2.

Dependent Variable

My dependent (outcome) variable, *depression score at age 50*, is women's Center for Epidemiological Studies Depression Scale (CES-D7) score. The CES-D7 scale is a measure of depressive symptom levels and is not a clinical depression diagnostic tool. In prior studies focused on some causes of elevated depressive symptom levels among Black women and on the negative physical health outcomes of Black women who experience higher levels of depressive symptoms, the CES-D7 has been found to have good internal consistency and construct validity; it has also been used in prior studies focused on the relationship between psychosocial characteristics and depressive symptoms exclusively among Black women (Abrams et al. 2018; Hawkins et al. 2015; Jones 2008).

Table 4.3 presents a description of the components and scoring scheme for the CES-D7 scale measure, as well as a description of the components and scoring schemes used to calculate several other scale measures used as predictor variables in bivariate- and multivariate analyses.

Independent Variables

My key independent variable is *relative sequence frequency (RSF)*, which measures the relative (un)commonness of the life paths observed within a population of interest. Prior research aimed at improving our understanding of Black women's depression has called attention to the importance of using culturally-relevant tools when assessing patterns of depression and depressive symptoms among Black women, both in clinical settings and in academic research. Many conventional measures of mental health outcomes and of the psychological factors that underlie differences in mental health outcomes are based on knowledge of patterns of depression and its symptoms among Whites; these assessments are often used with other racial/ethnic groups but are not designed to account for cultural factors that influence behaviors or the formation of self-concepts among non-White populations (Hatcher 2007). RSF does not make assumptions about cultural factors or behavioral norms, it is an objective measure of the order in which life events occurred: the relative frequency of a life path tells us *how many* women followed a particular life path but is not intended to explain *why* they followed that particular path or why some paths were more common than others. Though RSF is not intended to identify specific cultural factors that

influence Black women's behavior, it is reasonable to expect that once the relative commonness of Black women's life paths is established, the most prevalent event combinations observed will be consistent with group-specific behavioral norms and expectations; it would not be reasonable, however, to draw inferences about factors influencing Black women's behavior based on the RSF of Black women's life paths if RSF were calculated using *All women* as the denominator, because observed patterns would be driven by White women's behavior.

In theory, RSF values could range from a low of 0 (event sequence not observed) to a high of 100 (every member of a particular group followed the same life path), but the range of actually-observed values is much narrower: for the life paths observed within my study sample, the range is from 0.10 (least common) to 9.33 (most common)[10]; when weighted using NLSY-generated sample weights, the range of RSF is 0.06 – 8.93.

Demographic predictors include education level and frequency of religious attendance. *Education level* is a three-category measure of the highest level of formal education each woman completed (High school or less, Some college, and Bachelor's degree or more). *Religious attendance* is a three-category measure of how frequently a woman has attended religious services (Several times per year or less, Once per month to several times per month, and Once per week or more).

Mastery is a scale measure of self-concept and the extent to which an individual perceives herself to be in control of forces that significantly impact her life (*nls.info*). Mastery was assessed once, in 1992, when respondents were aged 28-35. If one of a respondent's seven mastery scale items is missing, her entire mastery scale score was coded by the NLSY as missing; 27 women (2.57%) in my analytical sample are missing mastery scores.

---

[10] For this study, I calculated relative sequence frequency (RSF) after dropping women with missing educational attainment information from my sample but before dropping women with missing depression score at age 28-35, age 40, or age 50. I chose to calculate at this point because establishing the timing of educational completion relative to the completion of other events is important to ensuring that women's life paths are recorded as accurately as possible, and because while women's depression scores are the outcome of interest in this study, whether an NLSY79 respondent reported her depressive symptoms or not would not change the order in which she actually completed her life events.

Some previous studies have reported the Pearlin mastery scale to have moderately high internal consistency when used with Black/African American samples (α = .67, Jang et al. 2003; α = 0.76, Neff & Hoppe 1993; α = .77, Keith et al. 2010), while others use the mastery scale with exclusively Black samples without reporting its psychometric properties (Goosby et al. 2012; Assari 2019).

Locus of Control measures the extent to which individuals believe they have control over their own lives through self-motivation or self-determination (internal locus of control) as opposed to the environment (i.e., chance, fate, or luck) controlling their lives (external locus of control). A high Rotter locus of control scale score indicates an external locus of control, and a low score indicates an internal locus of control. The NLSY included the in the 1979 (respondents aged 15-22), 2014 (respondents aged 50-57), 2016 (respondents aged 52-59), and 2018 wave (respondents aged 54-61) survey rounds. I use only the baseline (1979) and 2014 scores in my analyses because there is a sharp increase in missing data after 2014 (*i.e*., 99.21% of respondents have a valid locus of control score for 1979, 85.02% have a valid score for 2014, and 3.19% have a valid score for 2016). Eight women (0.76%) in my analytic sample have missing scores in 1979 and 139 (13.24%) are missing 2014 scores; 2 women (0.19%) in my sample are missing both scores.

Previous studies have noted the consistent reliability and validity of the Rotter locus of control scale, though psychometric properties frequently are not reported separately by race (e.g., Zahodne et al. 2015). A study comparing sense of personal control among Black and White men and women reported an average reliability of .67 but did not report separately by race or sex (Brusce & Thornton 2004); a meta-analysis of 94 studies reported an average reliability of .70 but did not identify variation by racial/ethnic group (Ng et al. 2006).

Gendered family attitudes represent women's attitudes toward women's family roles and labor force participation; repeated measure of family and gender role attitudes provides insight into how women's beliefs have shifted over the life cycle (*nlsinfo.org*). Women were asked about their family and gender role attitudes in the 1979 (respondents aged 15-22), 1982 (respondents aged 18-25), 1987

(respondents aged 23-30), and 2004 (respondents aged 40-47) survey rounds. I include women's attitude scale scores from 1979 as a baseline measure and from 1987 because most women were completing most of the life events that they eventually completed between ages 23 and 30. 48 women (4.57%) in my sample are missing baseline gender attitudes index scores, and 145 (13.81%) are missing the age 23-30 score; 7 women (0.67%) are missing both scores.

Analysis

I begin by using bivariate analysis to illustrate the relationships among the variables used in my analyses. I first show a Pearson correlation matrix which includes CES-D7 score at age 50, RSF, and demographic and psychosocial controls. Next, I use partial correlation to estimate the relationship between CES-D7 score at age 50 and RSF when controlling for the effect of each demographic and psychosocial control. I include two depression scores measured at earlier points in women's lives in partial correlation analysis to show that the relationship between CES-D7 score at age 50 and RSF is not explained by depressive symptom levels reported at earlier ages. Finally, I demonstrate that RSF retains significance as a predictor of Black women's later-life depressive symptom levels through a series of six ordinary least squares (OLS) regression models: the first model is a simple linear regression of CES-D7 score on RSF, and subsequent models add either an individual independent variable or a block of independent variables.

Results

Table 4.4 shows a Pearson correlation matrix which includes CES-D7 score at age 50, RSF, and each demographic and psychosocial predictor used in multivariate modeling. Asterisks next to the coefficients indicate which correlations are statistically significant and to what level.

Depression score at age 50 is most strongly correlated with locus of control at age 50 – 57 (r = .280, p<.001) and mastery at age 28 – 35 (r = -.202, p<.001), and also shares a moderately strong inverse

relationship with education level (r = -.180, p<.001) and RSF (r = -.150, p<.001). The positive relationship between depression score and locus of control[11] is consistent with the results of earlier research finding that at every age, Blacks tend to report a lower sense of personal control and are significantly more likely than Whites to have scores indicating an external locus of control (Shaw & Krause 2001; Zahodne et al. 2015); it has been suggested that this is likely the result of societal and institutional forces like racial discrimination and sexism that places Black people, and especially Black women, at relative socioeconomic disadvantage compared to Whites. The inverse relationship between education level and locus of control at age 15-22 (r = -.124, p<.001) and at age 50-57 (r = -.233, p<.001) is also consistent with previous findings that increased educational attainment is associated with a greater sense of personal control and a more internal locus of control (Ross & Mirowsky 2002). Sense of personal control reflects the constraints and opportunities that accompany individuals' ascribed and achieved statuses; when viewed across groups, individuals' perceptions of personal control follow patterns of structural inequalities: sense of personal control increases with education, earnings, income, employment, occupational status, work autonomy, work fulfillment, and status of origin, and decreases with higher levels of religiosity (Ross & Mirowsky 2002; Shaw & Krause 2001).

Mastery scores follow similar patterns in my sample: a higher mastery score indicates greater perceived control over one's own life direction, and is significantly associated with a more internal locus of control at age 15-22 (r = -.140, p<.001) and at age 50-57 (r = -.289, p<.001), with more progressive attitudes about family and gender roles at age 15-22 (r = -.209, p<.0001) and 23-30 (r = -.262, p<.001), and with higher educational attainment (r = .274, p<.001). Mastery is also significantly and inversely related to depression score at age 50 (r = -.202, p<.001)

A higher RSF score indicates that a woman followed a more common life path; RSF is most strongly related to mastery at age 28 – 35 (r = 0.178, p<.05), education level (r = 0.174, p<.001), gender

[11] A higher Rotter locus of control score indicates a more external locus of control, and not a greater sense of personal control.

and family attitudes at age 23-30 (r = -.116, $p<.001$), and religious attendance at age 15-22 (r = 0.113, $p<.001$). The relationship between RSF and frequency of religious attendance is positive in young adulthood and negative at midlife (r = -.080, $p<.01$). These results show that following a more-common life path is significantly associated with a higher level of education, more frequent religious attendance in earlier life but less frequent attendance in middle age, a greater sense of control over one's own life circumstances, and more gender-egalitarian attitudes.

[Table 4.5 about here]

Table 4.5 provides additional insight into the relationship between depression score at age 50 and life path commonness by showing the estimated strength of the relationship between CES-D7 score at age 50 and RSF after the influence of a third variable is removed. Each row shows the third variable whose effect is being accounted for, as well as the partial correlation coefficient indicating the strength of the relationship between depression score at age 50 and RSF after accounting for the influence of that variable. It is important to note that overall, controlling for each third variable has minimal impact on the relationship between CES-D7 at age 50 and RSF; there is very little change from the Pearson correlation (r = 0.150, $p<.001$), which suggests that RSF and CES-D7 score are independently related and that RSF could be a stable predictor of later-life depressive symptom levels among Black women.

Table 4.6 shows the results of a series of six nested ordinary least squares (OLS) regression models that estimate the independent effect of RSF on CES-D7 score at age 50 when selected demographic and psychosocial factors, religious attendance, and gendered family attitudes on women's CES-D7 scores at age 50 are controlled. Beginning with the simplest model, individual- and blocks of independent variables are added progressively so that subsequent models increase in complexity through Model 6, which is the full regression model. Model 1 is a simple linear regression of CES-D7 score on RSF. Model 2 controls for education level, Model 3 adds the first block of control variables (religious attendance at ages 15-22 and 36-43), Model 4 adds mastery at age 28-35, Model 5 adds the second block

(locus of control at ages 15-22 and 50-57), and Model 6 adds the third block (gendered family attitudes at ages 15-22 and 23-30). Horizontal lines throughout the table indicate which individual- or blocks of variables are added to each subsequent model.

The bottom portion of Table 4.6 is divided into two sections: *Model* and *Block*. The Model section shows *F*-statistics, degrees of freedom, and asterisks indicating the level of statistical significance for each regression model overall, as well as each model's coefficient of determination (R^2). The Block section contains statistics that indicate the effects of adding each individual independent variable or block of variables to the previous model, indicate whether each block of variables is jointly significant in the full model, and estimate the change in R^2 resulting from the addition of each variable or block.

The *F*-statistics shown in the first row of the Block section indicate the significance of each single variable or joint significance of each block of variables added to a nested model (columns 1 – 5): the *F*-statistic in column 1 of the first row ($F_{(1, 702)} = 28.07$, $p<.001$) is that from the regression of CES-D7 on RSF alone; column 2 indicates the significance of education level in the regression of CES-D7 score on RSF and education level ($F_{(3, 700)} = 15.93$, $p<.001$); the third column shows that religious attendance at age 15-22 and age 36-43 are not jointly significant in Model 3 ($F_{(4, 702)} = 1.92$, $p = .107$). Mastery ($F_{(1,702)} = 10.03$, $p<.01$) and locus of control ($F_{(2,702)} = 14.26$, $p<.001$) are each statistically significant in their respective models.

The F-statistics in the second row of the Block section are the results of Wald tests of the significance of each individual variable, or joint significance of each block of variables, in the full model (Model 6); they were calculated in postestimation using `testparm` in Stata 18. For the blocks of independent variables, the fact that religious attendance and gender attitudes are statistically significant in neither the nested models nor jointly significant in the full regression model indicates that potential multicollinearity does not explain the lack of joint significance for either block.

The final row of the Block section shows the change in R^2 that can be attributed to the addition of each single variable (Models 1 – 3) or block of variables (Models 4 – 6) to the previous model. The R^2 of Model 1 (shown in the last row of column 1 in the Model section), in which RSF is the lone independent

variable, is .036; as shown in the last row of column 2 in the Block section, the addition of education level as a second independent variable results in a .032 increase in R^2.

Linear regression results (Model 1) show that when RSF alone is used to predict CES-D7 score at age 50, each one-point increase in RSF is significantly associated with a 0.334-point lower depression score at age 50. CES-D scores are measured in full points, so on average, a 3-point increase in RSF would be associated with a full-point reduction in depression score. For context, the observed range of RSF in weighted analyses was from 0.06 to 8.93 points (population mean = 4.55, *SD* = 2.57 points).

Model 2, which adds education level as an additional predictor, shows that both RSF and education level have a significant negative relationship with depression score at age 50; the strong association between education level and later-life depressive symptom level observed here is consistent with previous research that has established that increased educational attainment is associated with many social, economic, and health advantages, including lower incidence of depression in older age. Accounting for education attenuates the estimated effect of RSF somewhat, but life path commonness remains a significant predictor of depression score.

Model 3 results show that frequency of religious service attendance at ages 15-22 and 36-43 is positively related to depression score, and that the two measures are not jointly significant in either the nested model or the full model (column 6). Because the coefficient for monthly-to-several-times-monthly attendance at age 36-43 is marginally significant (ß=.785, *p*=.074) and significant at a 95% confidence level for weekly attendance or more, I ran the regression model shown in column 3 with attendance at age 36-43 and without including attendance at age 15-22. The coefficients and significance levels for monthly (ß= .767, *p*=.074) and weekly attendance (ß= 1.010, p=.016) at age 36-43 remained virtually identical, and Wald test showed that religious attendance was statistically significant at a 95% confidence level ($F_{(2, 704)} = 3.57$, $p = .029$) in the nested model. I also ran the full model omitting attendance at age 15-22. The coefficients and significance levels for monthly (ß= .545, *p*=.201) and weekly-or-more (ß= .866, *p*=.048) attendance in this version of the full model is nearly identical to the model in Table 4.6, but religious

attendance achieves statistical significance in the full model when only attendance at age 36-43 is considered ($F_{(10, 695)} = 3.93$, p=.048).

Psychosocial characteristics are introduced in Models 4 (Mastery) and 5 (Locus of control); on par with the consistent inverse relationship between feelings of having control over one's life circumstances and depressive symptom levels that previous research has established, higher mastery and an internal locus of control (i.e., lower locus of control scale score) are shown here to predict a lower level of depressive symptoms at age 50: women who feel that they have more personal control over the factors and events that impact their lives have lower depression scores on average than women who perceive that their lives are more heavily impacted by external forces that are outside of their control. An increase in mastery significantly predicts a decrease in CES-D7 score in Models 4 through 6, and is significant in both the nested- ($F_{(1, 703)} = 10.03$, $p<.01$) and full ($F_{(10, 703)} = 5.00$, $p<.05$) regression models. Locus of control at ages 15-22 and 50-57 are jointly significant in Models 5 and 6; however, only mastery at age 50-57 significantly predicts a difference in age-50 depression score.

The addition of gender attitudes index scores to Model 6 completes the full regression model. Gendered attitudes are not statistically significant predictors of differences in Black women's CES-D7 score at age 50, and gendered attitudes at ages 15-22 and 23-30 are not jointly significant in the full regression model. The coefficient for RSF in Model 6 (ß= -.233, p<.001) shows that when controlling for education level, frequency of religious attendance in early- and middle adulthood, sense of control over one's own life circumstances (i.e., mastery and locus of control), and attitudes about gender and family roles, RSF remains a statistically significant predictor of depression score at age 50.

Discussion and Conclusion

The results presented in this chapter support life path commonness having an independent influence on Black women's depressive symptom levels at age 50. Black women who follow life paths that are relatively less common among Black women report higher levels of depressive symptoms at age

50 than those who follow life paths that are relatively more common among Black women. The relationship between life path commonness and depressive symptom levels persists even when controlling for the effects of demographic and psychosocial characteristics that prior research has found to be associated with Black women's levels of depressive symptoms, particularly mastery and locus of control.

It is important to note the amount of time elapsed between women's completion of their major life events and the measurement of their depressive symptom levels at age 50: a third of the women in my sample (36%) completed all of the four focal life events that they reported ever having completed by age 25, which means that, in some cases, differences in women's mental health in older age could be related to differences in lived behavior up to 30 years before their depressive symptom levels were measured. Given the known deleterious effects of chronic stress on women's mental health, it is reasonable to expect that women whose relatively uncommon life paths were undesired, unfulfilling, or involved chronic role strain and role conflict would experience stress across their adult lives to a degree that would raise their risk of experiencing depressive symptoms at age 50. House and coauthors (1994) noted that mental health differences in early middle age primarily reflect variation in *exposure* to psychosocial risk factors that correspond to socioeconomic characteristics such as education and income level. In late middle- and older age, the health *impact* of some psychosocial risk factors— namely, lack of social relationships and social support, chronic and acute stress, low mastery and perceptions of having little control over one's own life direction—increases and continues to widen health disparities at older ages (House et al. 1994).

Because of the centrality of the events that I consider in my documentation of women's life paths to women's lives, the influence of the order in which events were completed would not end at the time the final event in a woman's sequence was completed; rather, many of the less-common ways that women complete (or forego) events and combine roles have ripple effects throughout adulthood that introduce additional and compounding hassles and stress to their lives. An example of a relatively uncommon sequence that could have such ripple effects is *CE*, a life path in which a woman bore at least one child before completing (or leaving) formal education. Three women in my sample followed this particular life path, and all completed high school or less; two of the women had their first child at age 17 and the third

had hers at age 19. Of the two women who had their first birth at 17, one completed her education shortly before turning 20 and the other at age 51; the woman who had her first child at 19 completed her education at age 23. Based on available data I cannot know for sure exactly how these women lived their lives, but their depression scores at age 50 (7, 8, and 14; population mean depression score is 4.47, SD 4.77) are relatively high, and it is plausible that women who had early unmarried births, completed a low level of education, and did not report ever working for pay or marrying did not follow a life path that they had imagined for themselves, and that they experienced more daily hassles and chronic stress across their lives than women who followed the most common life path (*JEMC*).

The magnitude of the estimated impact of following a less-common life path on later-life depressive symptoms is fairly small, but that is to be expected given the wide array of factors that contribute to women's risk of depressive symptoms across the life course. Some of these factors are easily-identifiable acute shocks, such as a major economic disruption, the death of a loved one, or a catastrophic event or health crisis; others are chronic or more subtle and complex, like the persistent hardships experienced by many women with low educational attainment, gendered racism, or the role strain, exhaustion, and eventual health deterioration that accompany many Black women's attempts to "be everything to everybody" while denying their own physical and psychological needs. Following a less-common life path falls into the second category.

This study makes two important contributions to sociological and life course literature that build on existing knowledge about Black women's mental health. First, this chapter is consistent with the need for additional work using the entire life course as a unit of analysis that has been identified in prior life course research. This study links a characteristic of the aggregate life course—its commonness relative to the other life paths observed within a population of interest—directly to differences in older-age mental health; focusing on commonness as an attribute of the individual life course that is linked to women's depressive symptom levels in later life is a fresh approach to studying the association between heterogeneity in lived behavior across the life course and inequality in older-age health outcomes.

Second, this study identifies life path commonness as a stable predictor of variation in later-life depressive symptom levels among Black women. Due to the historical legacy of gendered racism and socioeconomic exclusion in the United States, Black women are most likely to "turn inward" and use other Black women as their reference group when they form personal identities and evaluate themselves instead of comparing themselves to all women. This study takes that fact into account and uses Black women as the reference group for quantitative analysis of Black women's behavior. In this way, I avoid the risk of obscuring the within-group heterogeneity that is a potential pitfall in analyses that compare patterns and outcomes across racial/ethnic groups using assessment tools that are designed for use with majority White populations and that do not intentionally account for cultural factors that influence behavioral norms and expectations that guide Black women's lived behaviors or influence how Black women develop their self-concepts.

Future directions

Factors that determine Black women's and White women's psychological wellbeing overlap, but there are cultural and socioeconomic factors that affect Black women's stress levels and psychological health that do not impact White women in comparable ways; similarly, Black women do not express psychological distress and depression in the same ways that White women do. Studies using nationally-representative data from noninstitutionalized Black and White adults in the United States have revealed two health paradoxes: first, there is a lower prevalence of depression among Blacks than among Whites despite Blacks' relative socioeconomic disadvantage (Barnes et al. 2013; Blazer & Kessler 1994; Breslau et al. 2006; Hasin et al. 2005; Williams et al. 2007); second, despite Blacks' lower prevalence of depression relative to Whites, Blacks report significantly higher levels of psychological distress than Whites (for a systematic review of studies with paradoxical findings, see Barnes & Bates 2017). While these paradoxes have yet to be resolved, Barnes and Bates (2017) propose that the consistency of the second paradox supports an artifactual explanation for the first. One potential explanation for the lower prevalence of depression among Blacks is the exclusion of depressive episodes following bereavement or

episodes linked to physiological ailments such as hypothyroidism from the depression diagnostic algorithm; given Blacks' worse morbidity and mortality rates overall compared to Whites, an overapplication of these exclusions in epidemiological studies could lead to disproportionate undercounting of depression among Blacks (Barnes & Bates 2017). A second potential explanation put forth by Barnes and Bates (2017) is that depression diagnostic criteria advantage psychological expressions of depression over somatic manifestations: the diagnostic symptoms for major depression are accepted as capturing both somatic and psychological attributes of the illness, but the screening symptoms are both psychological; as a result, if Blacks in the United States express depression more somatically than Whites (see Ayalon & Young 2003; Baker 2001; Carter 1974), then depression among Blacks would likely be underestimated. It could prove fruitful to conduct future inquiries into the relationship between life path commonness and Black women's psychological health in later life using an outcome measure other than depressive symptoms as captured by traditional clinical assessment tools; based on previous research findings, a reasonable approach might be to use outcome measures of somatic symptoms or psychological distress that extend beyond those conventionally used to identify clinical depression.

References

Abelson, R. P., Dasgupta, N., Park, J., & Banaji, M. R. (1998). Perceptions of the collective other. *Personality and Social Psychology Review*, 2:243-50.

Abrams, J. A., A. Hill, & M. Maxwell (2018). Underneath the Mask of the Strong Black Woman Schema: Disentangling Influences of Strength and Self-Silencing on Depressive Symptoms among U. S. Black Women. *Sex Roles*, 80, 517-26.

Abrams, J. A., Maxwell, M., Pope, M., & Belgrave, F. Z. (2014). Carrying the World With the Grace of a Lady and the Grit of a Warrior: Deepening Our Understanding of the "Strong Black Woman" Schema. *Psychology of Women Quarterly*, 38(4): 503-18.

Assari S. (2019). High sense of mastery reduces psychological distress for African American women but not African American men. *Archives of general internal medicine*, *3*(1), 5–9.

Ayalon, L., & Young, M. A. (2003). A comparison of depressive symptoms in African Americans and Caucasian Americans. Journal of Cross-Cultural Psychology, 34(1), 111–24. https://doi.org/10.1177/0022022102239158BAKER 2001

Baker, Tamara A., Nicole T. Buchanan, and Nicole Corson (2008). Factors Influencing Chronic Pain Intensity in Older Black Women: Examining Depression, Locus of Control, and Physical Health. *Journal of Women's Health*, 17(5), 869-78. http://doi.org.proxy.lib.umich.edu/10.1089/jwh.2007.0452

Barber, S. J. (2017). An Examination of Age-Based Stereotype Threat About Cognitive Decline: Implications for Stereotype-Threat Research and Theory Development. *Perspectives on Psychological Science*, 12(1), 62-90. https://doi.org.proxy.lib.umich.edu/10.1177/1745691616656345

Barnes, D.M. & L.M. Bates (2017). Do racial patterns in psychological distress shed light on the Black-White depression paradox? A systematic review, *Soc Psychiatry and Epidemiology* 52:v913-28.

Beauboeuf-Lafontant, T. (2007). “You have to show strength”: An Exploration of Gender, Race, and Depression. *Gender & Society*, 21(1), 28-51.

Beauboeuf-Lafontant, T. (2009). *Behind the mask of the strong black woman : Voice and the embodiment of a costly performance*. Temple University Press.

Blascovich, J., Spencer, S. J., Quinn, D., & Steele, C. (2001). African Americans and High Blood Pressure: The Role of Stereotype Threat. *Psychological Science*, 12(3), 225-29. https://doi-org.proxy.lib.umich.edu/10.1111/1467-9280.00340

Blazer D. G. & R. C. Kessler (1994) The prevalence and distribution of major depression in a national community sample: the National Comorbidity Survey. *Am J Psychiatry* 151:979–86.

Breslau, J., Kendler, K., Su, M., Gaxiola-Aguilar, S., & Kessler, R. (2005). Lifetime risk and persistence of psychiatric disorders across ethnic groups in the United States. *Psychological Medicine*, 35(3), 317-27. doi:10.1017/S0033291704003514

Brody, G. H., & Flor, D. L. (1997). Maternal psychological functioning, family processes, and child adjustment in rural, single-parent, African American families. *Developmental Psychology*, 33(6), 1000-11.

Broman, C. L., Neighbors, H. W., & Jackson, J. S. (1988). Racial Group Identification among Black Adults. *Social Forces*, 67(1), 146–58. https://doi.org/10.2307/2579104

Brown, D.R. and Gary, L.E. (1987). Stressful life events, social support networks, and physical and mental health of urban Black adults. *Journal of Human Stress*, 13:165–74.

Bureau of Labor Statistics, U.S. Department of Labor. National Longitudinal Survey of Youth 1979 cohort, 1979-2018 (rounds 1-28). Produced and distributed by the Center for Human Resource Research (CHRR), The Ohio State University. Columbus, OH: 2021.

Carter J. H. (1974). Recognizing psychiatric symptoms in black Americans. *Geriatrics*, 29(11), 95–99.

Cochran, D.L., D.R. Brown, & K.C. McGregor (1999). Racial differences in the multiple social roles of older women: implications for depressive symptoms. *Gerontologist*, 39(4), 465-72.

Donovan, R. A., & West, L. M. (2015). Stress and Mental Health: Moderating Role of the Strong Black Woman Stereotype. *Journal of Black Psychology*, 41(4), 384–96.

Ellemers, N. (1993). The influence on socio-structural variables on identity management strategies. In W. Stroebe & M. Hewstone (Eds.), *European Review of Social Psychology* (Vol. 4, pp. 27-58). New York: Wiley.

Essed, Philomena. (1991). *Understanding everyday racism : an interdisciplinary theory. SAGE series on race and ethnic relations*, v.2. Newbury Park: SAGE.

Goosby, B. J., Caldwell, C. H., Bellatorre, A., & Jackson, J. S. (2012). Ethnic Differences in Family Stress Processes Among African-Americans and Black Caribbeans. *Journal of African American studies (New Brunswick, N.J.)*, 16(3), 406–22. https://doi.org.proxy.lib.umich.edu/10.1007/s12111-011-9203-0

Harris-Lacewell, M. (2001). No Place to Rest: African American Political Attitudes and the Myth of Black Women's Strength. *Women & Politics*, 23(3), 1-33. DOI: 10.1300/J014v23n03_01

Hasin, D. S., Goodwin, R. D., Stinson, F. S., & Grant, B. F. (2005). Epidemiology of Major Depressive Disorder: Results from the National Epidemiologic Survey on Alcoholism and Related Conditions. Archives of General Psychiatry, 62(10), 1097–1106. https://doi.org/10.1001/archpsyc.62.10.1097

Hatcher, J. (2007). The State of Measurement of Self-Esteem of African American Women. *Journal of Transcultural Nursing*, 18(3), 224-32.

Hawkins, M.A.W., Miller, D.K. and Stewart, J.C. (2015). A 9-year, bidirectional prospective analysis of depressive symptoms and adiposity: The African American Health Study. *Obesity*, 23:192-99.

House, J. S., Lepkowski, J. M., Kinney, A. M., Mero, R. P., Kessler, R. C., & Herzog, A. R. (1994). The Social Stratification of Aging and Health. *Journal of Health and Social Behavior*, 35(3), 213. https://doi.org/10.2307/2137277

Nelson, T., Cardemil, E. V., & Adeoye, C. T. (2016). Rethinking Strength: Black Women's Perceptions of the "Strong Black Woman" Role. *Psychology of Women Quarterly*, 40(4), 551–63.

Jang, Yuri, Amy Borenstein-Graves, William E. Haley, Brent J. Small, James A. Mortimer (2003). Determinants of a Sense of Mastery in African American and White Older Adults, *The Journals of Gerontology: Series B*, 58(4): S221–24. https://doi.org/10.1093/geronb/58.4.S221

Jones, Lani V. (2008). Preventing Depression: Culturally Relevant Group Work with Black Women. *Research on Social Work Practice*, 18(6), 626-34.

Keith, V.M., Lincoln, K.D., Taylor, R.J. & Jackson, J.S. (2010). Discriminatory Experiences and Depressive Symptoms among African American Women: Do Skin Tone and Mastery Matter?. *Sex Roles* 62:48–59. https://doi-org.proxy.lib.umich.edu/10.1007/s11199-009-9706-5

McCarthy, J. D., & Yancey, W. L. (1971). Uncle Tom and Mr. Charlie: metaphysical pathos in the study of racism and personal disorganization. AJS; *American Journal of Sociology*, 76(4), 648–672. https://doi-org.proxy.lib.umich.edu/10.1086/224976

Miller, P.K., Weller, B.E. (2019). Uncovering Profiles of Economic, Social, and Cultural Capital to Explore Depression Across Racial Groups. *Journal of Racial and Ethnic Health Disparities*, 6, 1167–81.

Moody, A. T., & Lewis, J. A. (2019). Gendered Racial Microaggressions and Traumatic Stress Symptoms Among Black Women. *Psychology of Women Quarterly*, 43(2), 201-14. https://doi-org.proxy.lib.umich.edu/10.1177/0361684319828288

National Institute of Mental Health (2023). *Depression*. National Institutes of Health, National Institute of Mental Health. https://www.nimh.nih.gov/health/topics/depression

Neff, J. A., & Hoppe, S. K. (1993). Race/ethnicity, acculturation, and psychological distress: Fatalism and religiosity as cultural resources. *Journal of Community Psychology*, 21(1), 3–20.

Nelson, T., Cardemil, E. V., & Adeoye, C. T. (2016). Rethinking Strength: Black Women's Perceptions of the "Strong Black Woman" Role. *Psychology of Women Quarterly*, 40(4), 551-63. https://doi-org.proxy.lib.umich.edu/10.1177/0361684316646716

Ng, T.W.H., Sorensen, K.L. and Eby, L.T. (2006), Locus of control at work: a meta-analysis. *J. Organiz. Behav*., 27:1057-87. https://doi-org.proxy.lib.umich.edu/10.1002/job.416

Pronin, E., C. M. Steele, & L. Ross (2004). Identity bifurcation in response to stereotype threat: Women and mathematics. *Journal of Experimental Social Psychology*, 40(2), 152-68.

Roberson, L., Deitch, E. A., Brief, A. P., & Block, C. J. (2003). Stereotype threat and feedback seeking in the workplace. *Journal of Vocational Behavior*, 62(1), 176–88.

Ross, C. E., & Mirowsky, J. (2002). Age and the Gender Gap in the Sense of Personal Control. *Social Psychology Quarterly*, 65(2), 125–45. https://doi.org/10.2307/3090097

Settles, I. H., Pratt-Hyatt, J. S., & Buchanan, N. T. (2008). Through the Lens of Race: Black and White Women's Perceptions of Womanhood. *Psychology of Women Quarterly*, 32(4), 454–68.

Settles, Isis H.; Navarrete, Carlos David; Pagano, Sabrina J.; Abdou, Cleopatra M.; Sidanius, James (2010). Racial identity and depression among African American women. *Cultural Diversity and Ethnic Minority Psychology*, 16(2), 248-56. Doi: 10.1037/a0016442

Shaw, Benjamin A., & Neal Krause (2001). Exploring Race Variations in Aging and Personal Control, *The Journals of Gerontology: Series B*, Volume 56(2), S119–24. https://doi.org/10.1093/geronb/56.2.S119

Steele C. M. (1997). A threat in the air. How stereotypes shape intellectual identity and performance. *The American psychologist*, 52(6), 613–29. https://doi-org.proxy.lib.umich.edu/10.1037//0003-066x.52.6.613

Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology*, 69(5), 797–811. https://doi-org.proxy.lib.umich.edu/10.1037/0022-3514.69.5.797

Stone, J., Lynch, C. I., Sjomeling, M., & Darley, J. M. (1999). Stereotype threat effects on Black and White athletic performance. *Journal of Personality and Social Psychology*, 77(6), 1213–27. https://doi-org.proxy.lib.umich.edu/10.1037/0022-3514.77.6.1213

Sue D. W., Capodilupo C. M., Torino G. C., Bucceri J. M., Holder A. M. B., Nadal K. L., Esquilin M. (2007). Racial microaggressions in everyday life: Implications for clinical practice. *American Psychologist*, 62:271–86. doi:10.1037/0003-066X.62.4.271

Szymanski, D. M., & Lewis, J. A. (2016). Gendered racism, coping, identity centrality, and African American college women's psychological distress. Psychology of Women Quarterly, 40(2), 229–43. https://doi.org/10.1177/0361684315616113

Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behavior. In S. Worchel & W. Austin (Eds.), *Psychology of intergroup relations* (pp. 33-48). Chicago: Nelson-Hall.

Thomas, Anita Jones ; Witherspoon, Karen M ; Speight, Suzette L. (2008). Gendered Racism, Psychological Distress, and Coping Styles of African American Women. *Cultural Diversity & Ethnic Minority Psychology*, 14(4), 307-14. doi:10.1037/1099-9809.14.4.307.

Turochy, E, Ballesteros, LMS, Nelson, TNT, Perez, M., Estes, K. Poleacovschi, C., Doran, E., Yuen, T (2023). Stereotypes and Stereotype Threats Experienced by Latinx Engineering Undergraduates. *International Journal of Engineering Education*, 39(5), 1181-95.

Watson, N. N., & C. D. Hunter (2015). Anxiety and depression among African American women: The costs of strength and negative attitudes toward psychological help-seeking. *Cultural Diversity and Ethnic Minority Psychology*, 21(4), 604–12.

Williams DR, González HM, Neighbors H. (2007). Prevalence and Distribution of Major Depressive Disorder in African Americans, Caribbean Blacks, and Non-Hispanic Whites: Results from the National Survey of American Life. *Arch Gen Psychiatry*, 64(3), 305–15. doi:10.1001/archpsyc.64.3.305

Woods-Giscombé, C. L. (2010). Superwoman Schema: African American Women's Views on Stress, Strength, and Health. *Qualitative Health Research* 20(5), 668-83.

Woods-Giscombé, C. L. (2018). Reflections on the Development of the Superwoman Schema Conceptual Framework: An Intersectional Approach Guided by African American Womanist Perspectives. *Meridians* 16(2), 333–42.

Woods-Giscombe, C. L., Allen, A. M., Black, A. R., Steed, T. C., Li, Y., & Lackey, C. (2019). The Giscombe Superwoman Schema Questionnaire: Psychometric Properties and Associations with Mental Health and Health Behaviors in African American Women. *Issues in mental health nursing* 40(8), 672–81. https://doi.org/10.1080/01612840.2019.1584654

Zahodne, L. B., Meyer, O. L., Choi, E., Thomas, M. L., Willis, S. L., Marsiske, M., Gross, A. L., Rebok, G. W., & Parisi, J. M. (2015). External locus of control contributes to racial disparities in memory and reasoning training gains in ACTIVE. *Psychology and aging*, 30(3), 561–72. https://doi-org.proxy.lib.umich.edu/10.1037/pag0000042

Tables and Figures

Table 4.1 Chapter 4 Analytic Sample (N = 1,050)

Education level	*n*	%	
≤ HS diploma	432	41.14	
Some college	362	34.48	
≥ Bachelor's degree	256	24.38	
Total	1,050		
Ever worked for pay	1,039	98.95	
Ever married	763	72.67	
Ever bore a child	882	84.00	
Had nonmarital first birth	589	56.10	
Religious attendance			
Age 15 - 22			
Several times per year or less	317	30.28	
Once to several times per month	310	29.61	
Once per week or more	420	40.11	
Total	1,047		
Age 18 - 25			
Several times per year or less	394	37.85	
Once to several times per month	341	32.76	
Once per week or more	306	29.39	
Total	1,041		
Age 36 - 43			
Several times per year or less	437	44.01	
Once to several times per month	276	27.79	
Once per week or more	280	28.20	
Total	993		
Age 48 - 55			
Several times per year or less	267	26.97	
Once to several times per month	261	53.33	
Once per week or more	462	46.67	
Total	990		
	n	*Mean*	*SD*
Depression score (CES-D7)			
Age 28 - 35	1,050	4.81	4.11
Age 40	1,050	4.17	4.64
Age 50	1,050	4.41	4.66
Mastery scale score (Pearlin)			
Age 28 – 35	1,023	22.07	3.27
Locus of control scale score (Rotter)			
Age 15 – 22	1,042	9.05	2.33

Age 50 – 57	911	7.77	2.35
Gendered family attitudes index			
Age 15 – 22	1,002	16.15	3.33
Age 23 – 30	905	14.84	3.23

Observed range of RSF: 0.06 to 10.39

Notes:

Table 4.2 Weighted descriptive statistics

	n	Proportion	
Education level	1,050		
≤ HS diploma		.405	
Some college		.353	
≥ Bachelor's degree		.242	
Total			
Ever worked for pay	1,050	.990	
Ever married	1,050	.726	
Ever bore a child	1,050	.843	
Had nonmarital first birth	1,050	.564	
Religious attendance			
Age 15 – 22	1,047		
Several times per year or less		.318	
Once to several times per month		.291	
Once per week or more		.392	
Age 18 – 25	1,041		
Several times per year or less		.397	
Once to several times per month		.320	
Once per week or more		.283	
Age 36 – 43	993		
Several times per year or less		.428	
Once to several times per month		.281	
Once per week or more		.290	
Age 48 – 55	990		
Several times per year or less		.288	
Once to several times per month		.258	
Once per week or more		.454	
	n	Mean	SE
Depression score (CES-D7)			
Age 28 - 35	1,050	4.79	.13
Age 40	1,050	4.13	.15
Age 50	1,050	4.47	.16
Mastery (Pearlin)			
Age 28 – 35	1,023	22.09	.11
Self-esteem scale score (Rosenberg)			
Age 16 – 23	1,017	22.59	.13
Age 23 – 30	1,013	23.58	.13
Age 42 – 49	962	24.23	.15

Locus of control scale score (Rotter)			
Age 15 – 22	1,042	9.00	.08
Age 50 – 57	912	7.78	.08
Gendered family attitudes index			
Age 15 – 22	1,002	16.10	.11
Age 18 – 25	965	14.94	.11
Age 23 – 30	905	14.89	.11
Age 40 – 47	868	15.59	.11
Observed range of RSF: 0.06 to 8.93			

Notes:

Table 4.3 Scale measure components and scoring

Scale measure	Scale component	Values	Range of scale measure
CES-D7 score	I did not feel like eating. My appetite was poor. I had trouble keeping my mind on what I was doing. I felt depressed. I felt that everything I did was an effort. My sleep was restless; I felt sad. I could not “get going."	0 (Rarely or none of the time) to 3 (Most or all of the time) points	0 – 21; higher score indicates more or worse depressive symptoms
Mastery (Pearlin)	[There is] no way I can solve some of the problems I have. Sometimes I feel that I am being pushed around in life. I have little control over the things that happen to me. I can do just about anything I really set my mind to.* I often feel helpless in dealing with the problems of life. What happens to me in the future mostly depends on me.* There is little I can do to change many of the important things in my life.	1 (Strongly agree) to 4 (Strongly disagree) points	7 - 28; higher score indicates greater perceived control over one’s own life circumstances
Locus of control (Rotter)	Pair 1, statement A: Degree of control R has over direction of her own life Pair 1, statement B: Degree of control R has over direction of her own life Pair 2, statement A: Importance of planning Pair 2, statement B: Importance of planning Pair 3, statement A: Importance of luck Pair 3, statement B: Importance of luck Pair 4, statement A: Degree of influence R has over her own life Pair 4, statement B: Degree of influence R has over her own life		4 – 16; higher score indicates a more external locus of control, or feeling that the direction of one’s life is controlled by external factors

Family and gender role attitudes	A woman's place is in the home, not the office or shop.		
	A wife who carries out her full family responsibilities doesn't have time for outside employment.		
	(continued on next page)		
Family and gender role attitudes *(cont.)*	A working wife feels more useful than one who doesn't hold a job.*		
	The employment of wives leads to more juvenile delinquency.	1 (Strongly disagree) to 4 (Strongly agree) points	8 - 32; higher score indicates a more conservative attitude about gendered family roles
	Employment of both parents is necessary to keep up with the high cost of living.*		
	It is much better for everyone concerned if the man is the achiever outside the home and the woman takes care of the home and family.		
	Men should share the work around the house with women, such as cleaning, doing the dishes, and so forth.*		
	Women are much happier if they stay home and take care of their children.		

*Note: Items marked with an asterisk (*) are reverse coded.*

Table 4.4 Pearson correlation matrix, CES-D7 score at age 50 with RSF and demographic predictors

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) CES-D7 score, age 50	1.000									
(2) RSF	-0.150***	1.000								
(3) Education level	-0.180***	0.174***	1.000							
(4) Religious attendance, age 15-22	-0.002	0.113***	0.069*	1.000						
(5) Religious attendance, age 36-43	0.099**	-0.080**	-0.145***	-0.229***	1.000					
(6) Mastery, age 28-35	-0.202***	0.178*	0.274***	0.036	-0.046	1.000				
(7) Locus of control, age 15-22	0.052‡	-0.032***	-0.124***	0.008	-0.041	-0.140***	1.000			
(8) Locus of control, age 50-57	0.280***	-0.075*	-0.233***	-0.031	0.139***	-0.289***	0.106***	1.000		
(9) Gendered attitudes, age 15-22	0.047	-0.071*	-0.263***	0.043	-0.027	-0.209***	0.132***	0.139***	1.000	
(10) Gendered attitudes, age 23-30	0.060‡	-0.116***	-0.259***	0.018	0.000	-0.262***	0.047	0.119***	0.371***	1.000

**** p<.001, ** p<.01, * p<.05*
‡ denotes marginal statistical significance (p<.10)

Table 4.5 Partial correlation coefficients showing the relationship between CES-D7 score at age 50 and RSF after removing the estimated impact of each demographic and psychosocial factor

Third variable accounted for		*Partial correlation coefficient*
(1)	CES-D7 score, age 40	-0.120***
(2)	CES-D7 score, age 28-35	-0.135***
(3)	Education level	-0.123***
(4)	Locus of control, age 15-22	-0.149***
(5)	Locus of control, age 50-57	-0.153***
(6)	Mastery, age 28-35	-0.116***
(7)	Religious attendance, age 15-22	-0.153***
(8)	Religious attendance, age 36-43	-0.136***

Note: The Pearson correlation between CES-D7 score at age 50 and RSF is -0.150 ($p < 0.001$).

**** p<.001, ** p<.01, * p<.05*

Table 4.6 OLS regression of CES-D7 score at age 50 on demographic and psychosocial factors

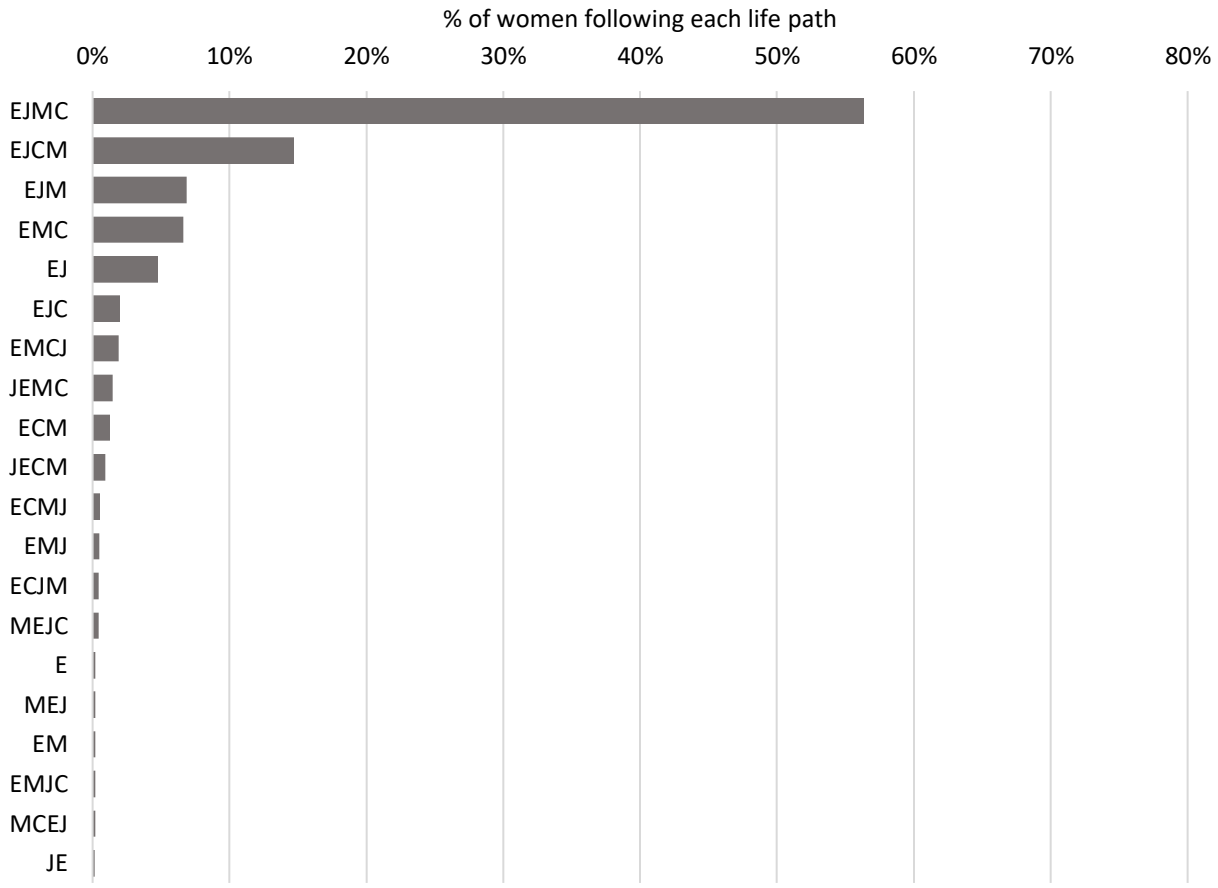
	(1)	(2)	(3)	(4)	(5)	(6)
RSF	-.334*** *(.063)*	-.277*** *(.062)*	-.262*** *(.062)*	-.230*** *(.062)*	-0.231*** *(0.060)*	-0.233*** *(0.060)*
Education level (Reference category is *High school or less*)						
Some college		-1.168** *(.420)*	-1.075** *(.424)*	-.813‡ *(.422)*	-.676 *(.417)*	-.736‡ *(.437)*
Bachelor's degree or more		-2.158*** *(.436)*	-1.962*** *(.440)*	-1.601*** *(.443)*	-1.243** *(.442)*	-1.313** *(.455)*
Religious attendance, age 15-22 (Reference category is *Attend rarely or never*)						
Once to several times per month			.039 *(.481)*	.033 *(.479)*	.140 *(.474)*	.145 *(.474)*
Once per week or more			.133 *(.450)*	.151 *(.446)*	.188 *(.438)*	.192 *(.437)*
Religious attendance, age 36-43						
Once to several times per month			.785‡ *(.439)*	.759‡ *(.436)*	.545 *(.436)*	.556 *(.436)*
Once per week or more			1.168* *(.462)*	1.210* *(.456)*	.960* *(.443)*	.946* *(.444)*
Mastery, age 28-35				-.193** (.061)	-.124* *(.058)*	-.131* *(.058)*
Locus of control, age 15-22					-.0140 *(.075)*	-.014 *(.076)*
Locus of control, age 50-57					.429*** *(.081)*	0.432*** *(0.087)*
Gender attitudes index, age 15-22						-.017 *(.060)*
Gender attitudes index, age 23-30						-.027 *(.061)*
Constant	6.045*** *(.372)*	6.668*** *(.432)*	5.911*** *(.566)*	9.813*** *(1.393)*	5.019** *(1.785)*	5.875** *(2.224)*
Model	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
F	28.07***	15.93***	8.25***	8.25***	9.70***	8.39***
df	1	3	7	8	10	12
N	703	703	703	703	703	703
R^2	.036	.068	.079	.096	.138	.138
Block						
F (in nested model)	28.07***	12.27***	1.91	10.03**	14.26***	0.21

F (block in full model)	14.91***	4.15*	1.28	5.00*	14.42***	0.21
df	1	2	4	1	2	2
ΔR^2 from previous model		.032	.011	.017	.042	0.001

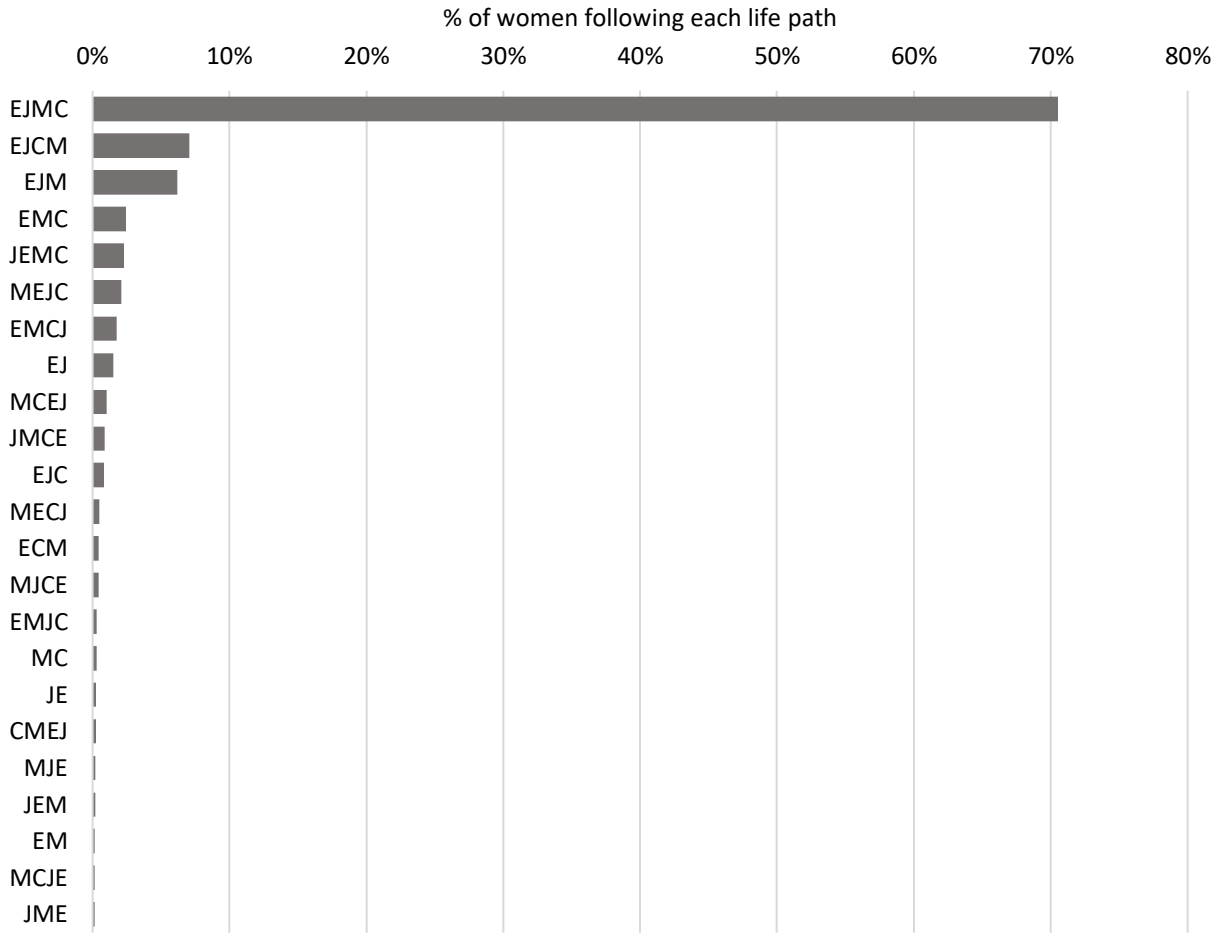
*Notes: Standard errors are in parentheses. *** p<.001, ** p<.01, * p<.05*
‡ denotes marginal statistical significance (p<.10)

Appendix

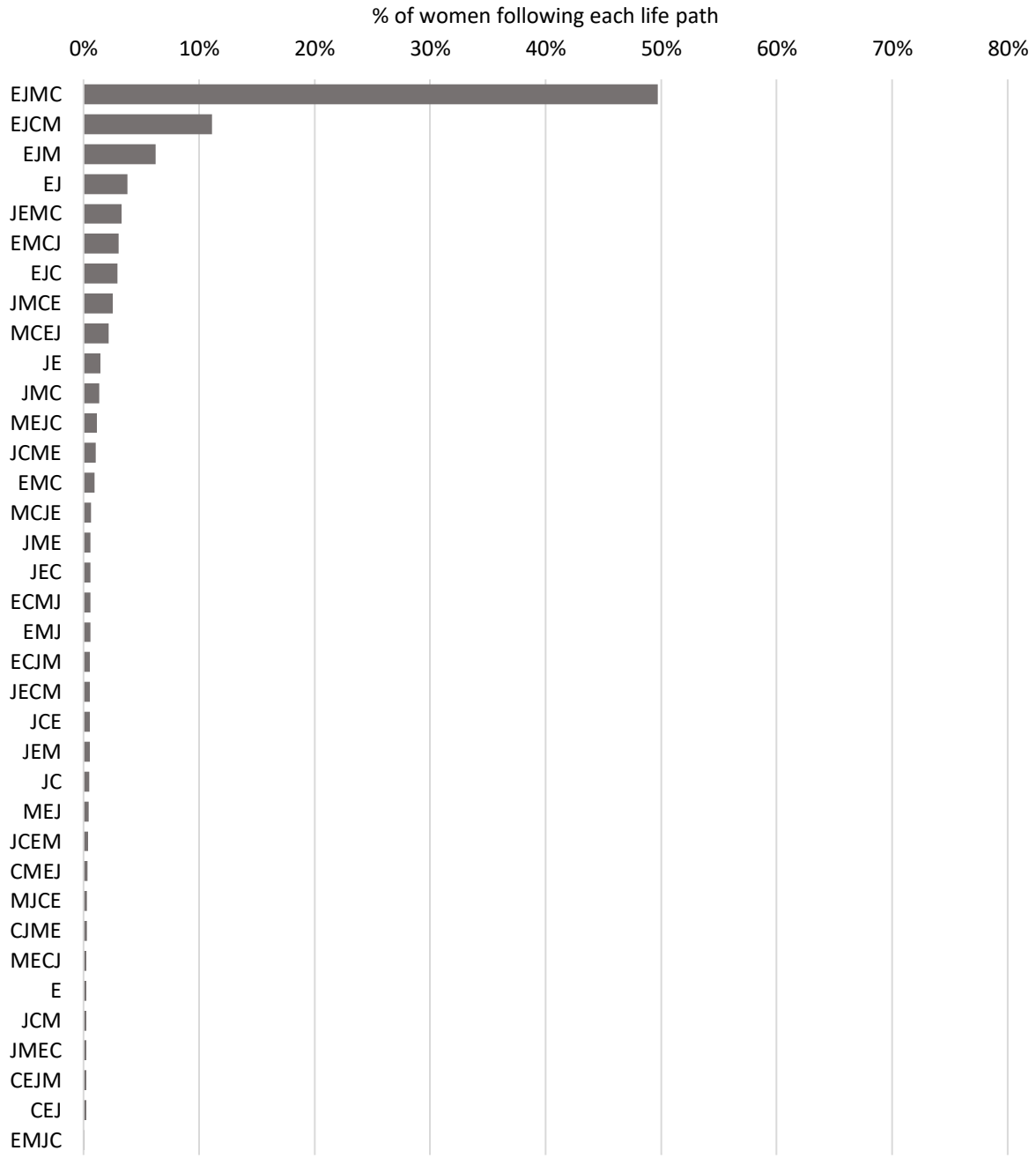
Graphs of RSF for Each Empirical Chapter's Analytic Sample(s)



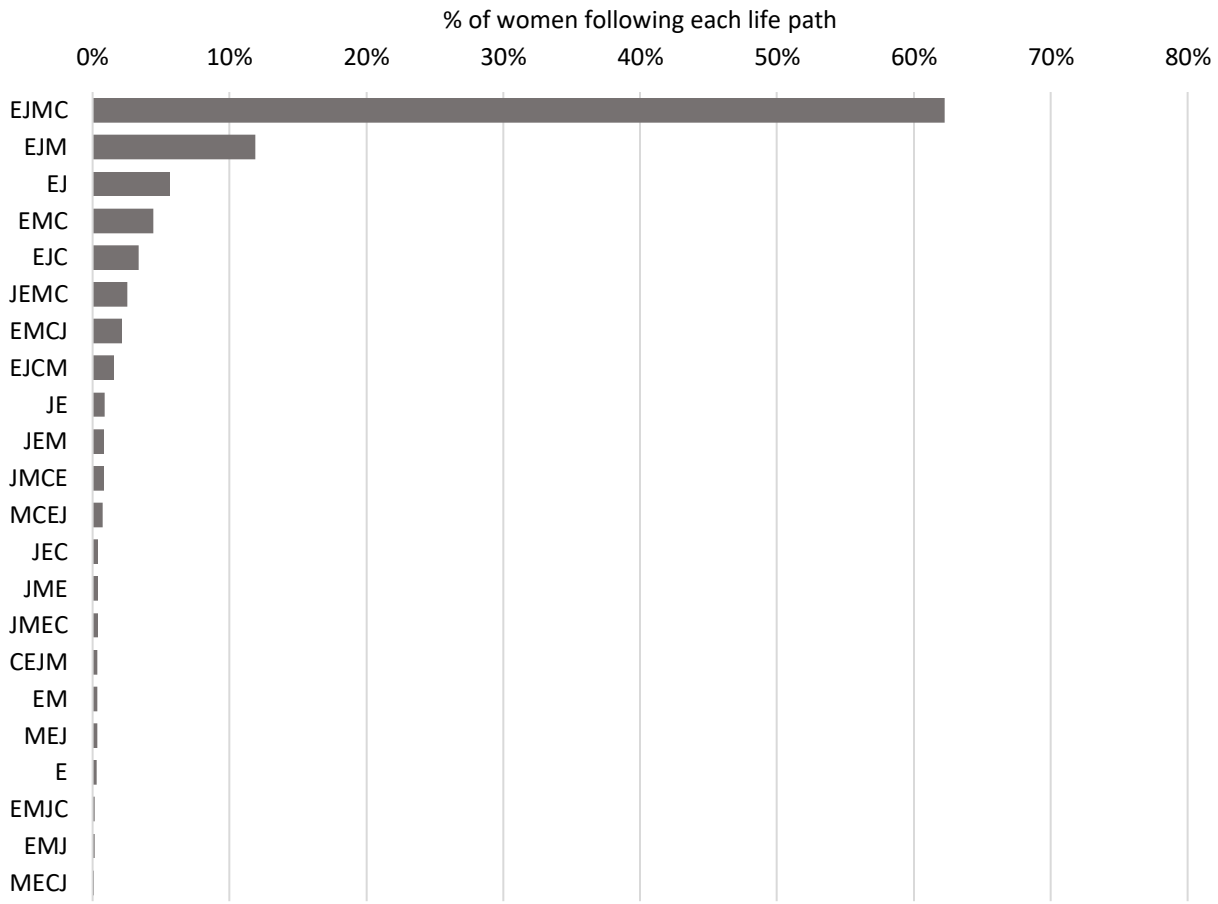
Appendix Figure 1: Graph of RSF, Austria (Chapter 2 analytic sample, N = 417). Weighted percentages shown.



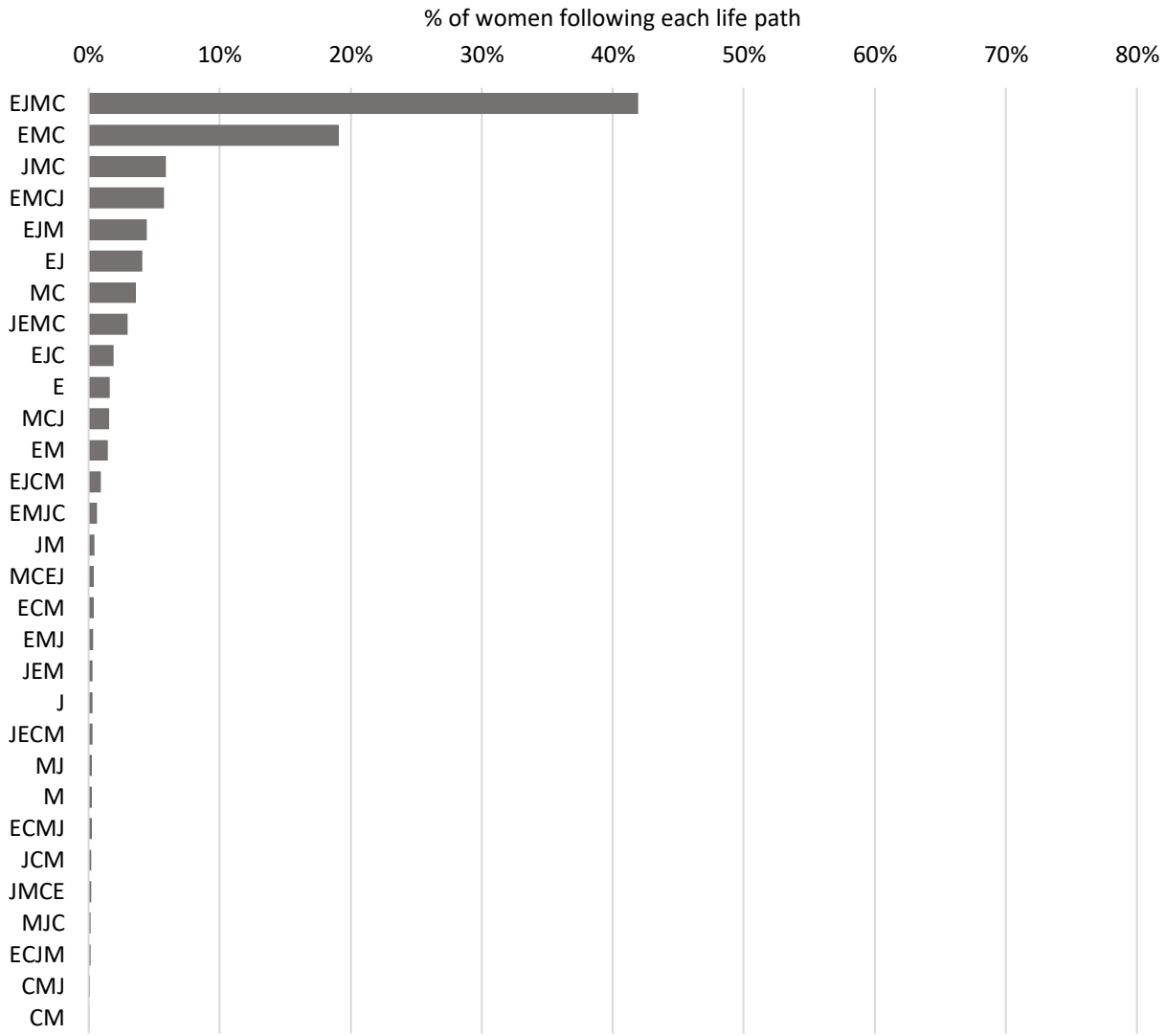
Appendix Figure 2: Graph of RSF, German women (Paper 1 analytic sample, N = 438). Weighted percentages shown.



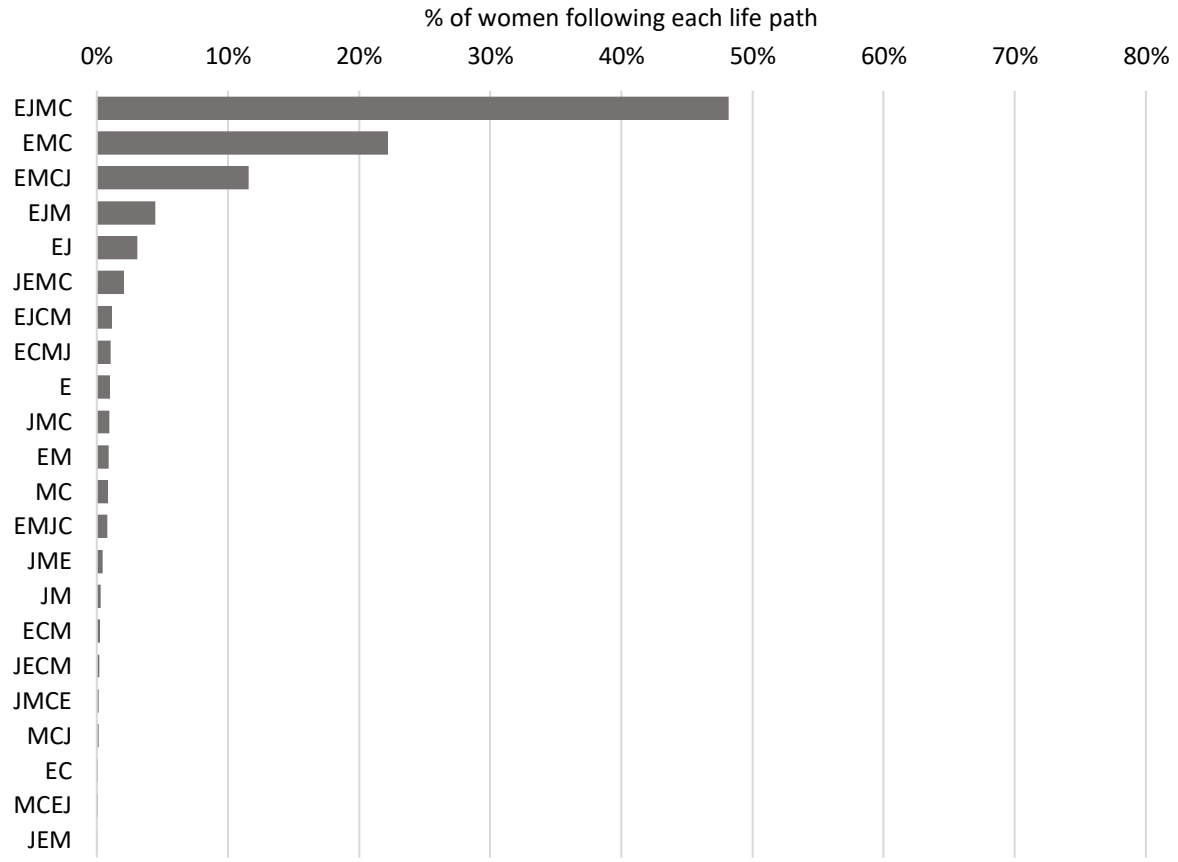
Appendix Figure 3: Graph of RSF, Swedish women (Chapter 2 analytic sample, N = 618). Weighted percentages shown.



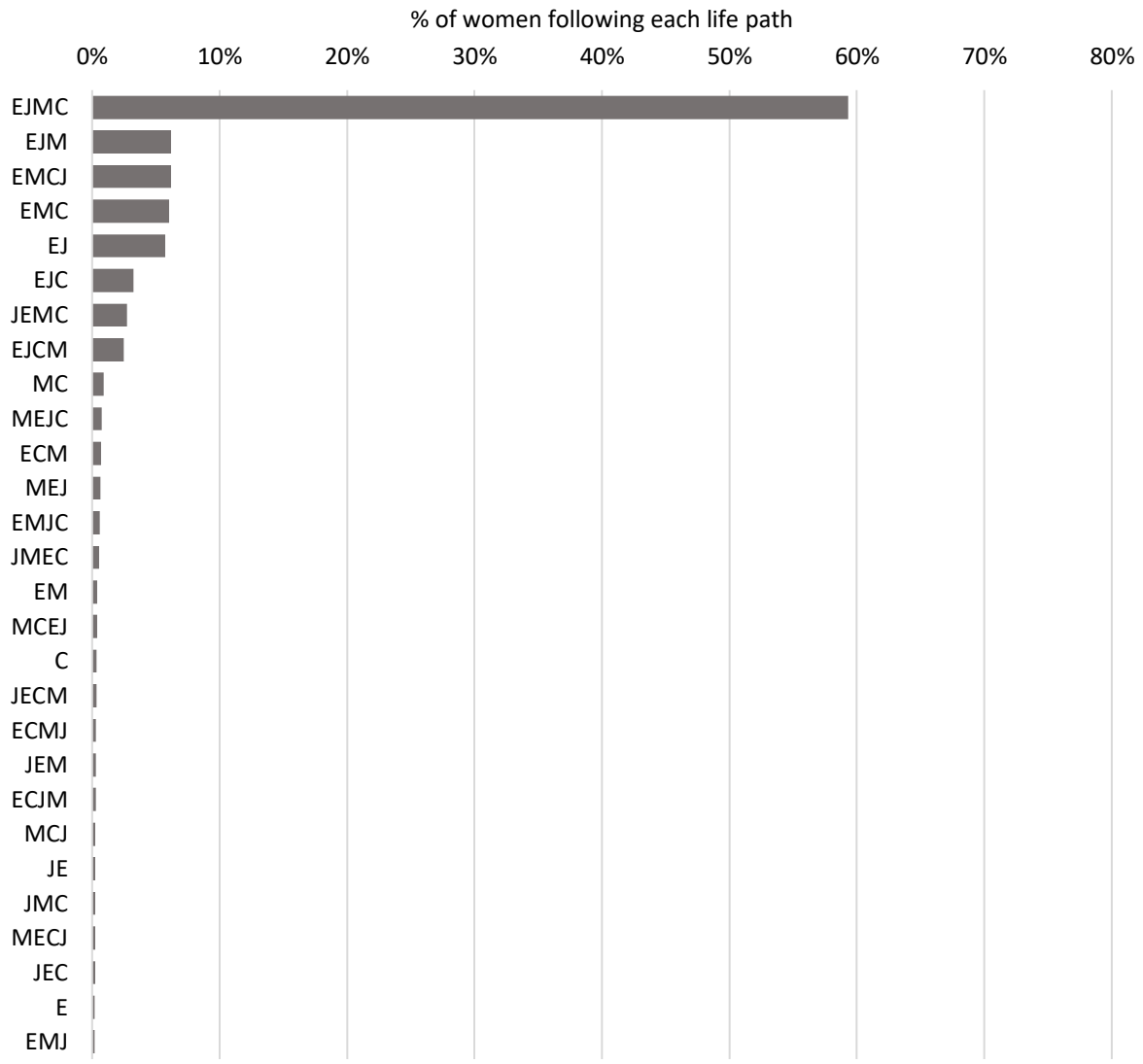
Appendix Figure 4: Graph of RSF, Dutch women (Chapter 2 analytic sample, N = 568). Weighted percentages shown.



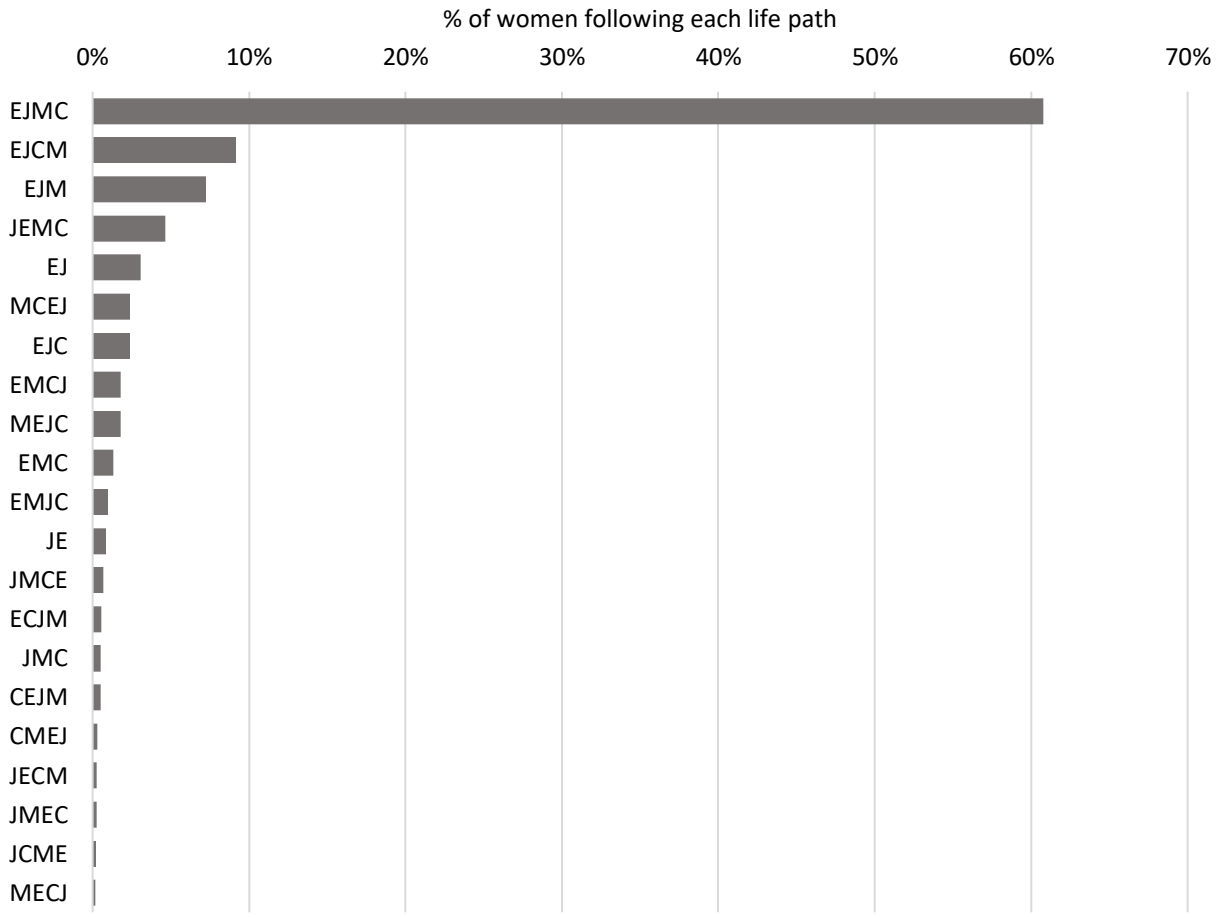
Appendix Figure 5: Graph of RSF, Spanish women (Chapter 2 analytic sample, N = 511). Weighted percentages shown.



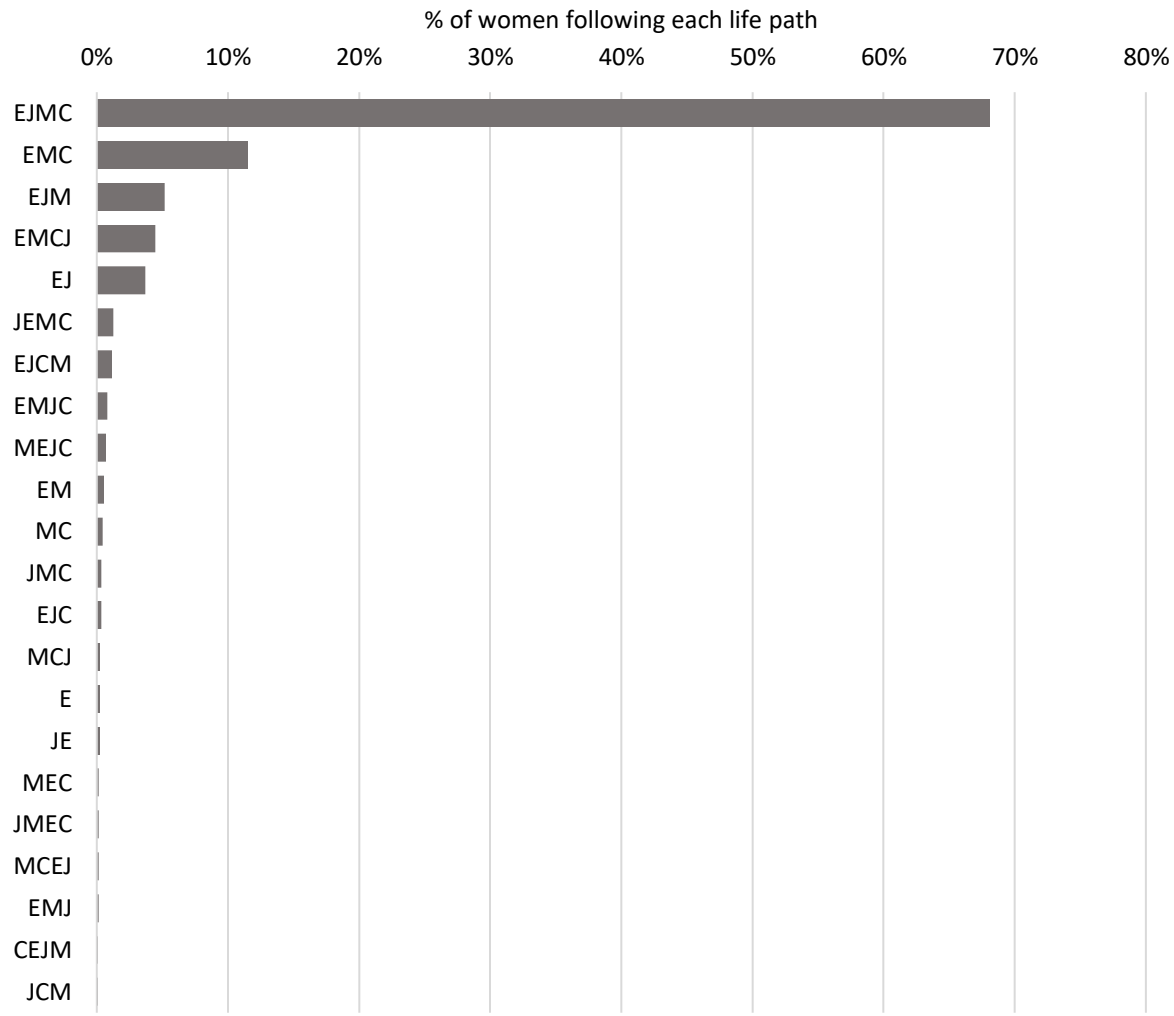
Appendix Figure 6:Graph of RSF, Italian women (Chapter 2 analytic sample, N = 486). Weighted percentages shown.



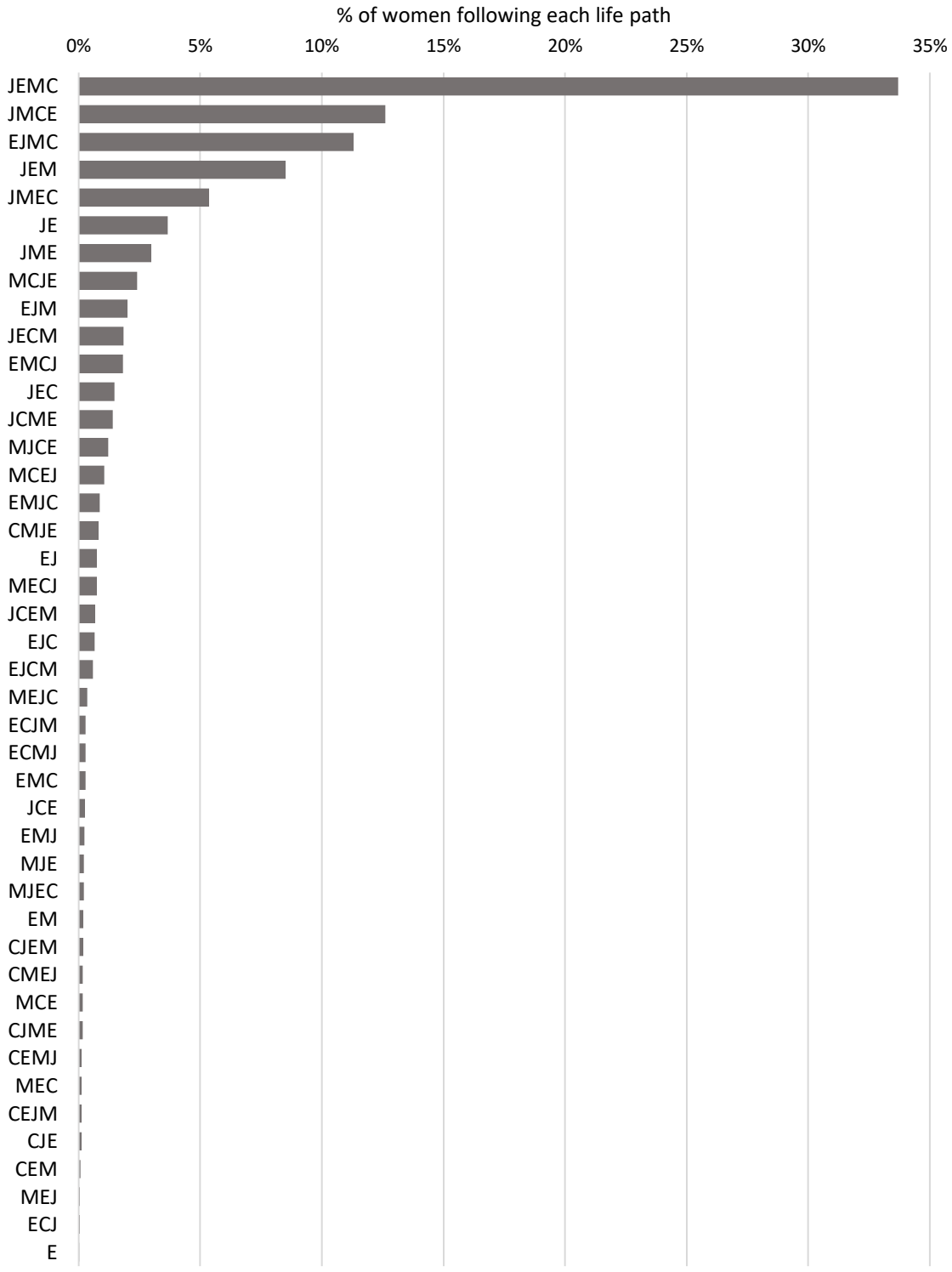
Appendix Figure 7: Graph of RSF, French women (Chapter 2 analytic sample, N = 335). Weighted percentages shown.



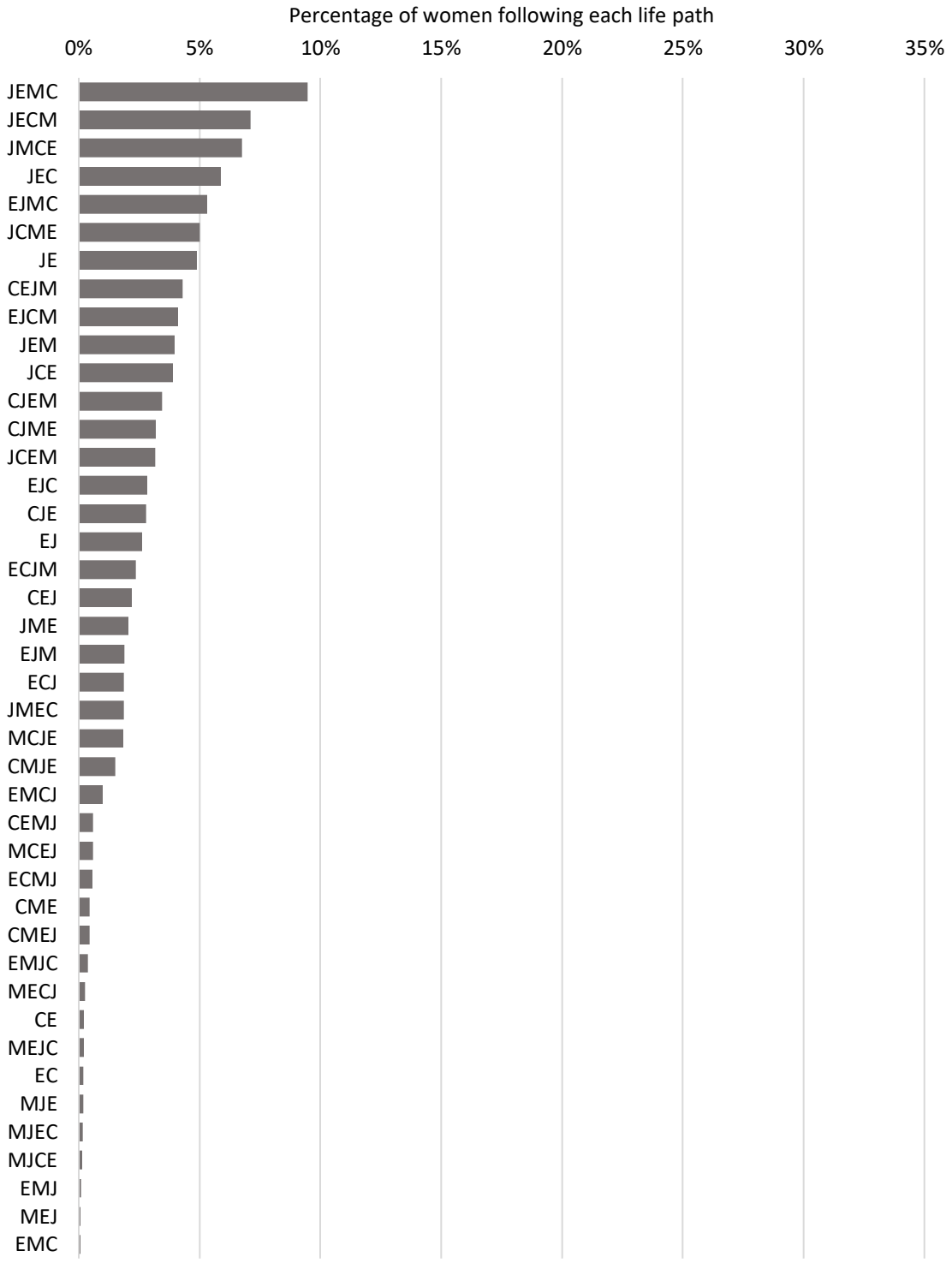
Appendix Figure 8: Graph of RSF, Danish women (Chapter 2 analytical sample, N = 379). Weighted percentages shown.



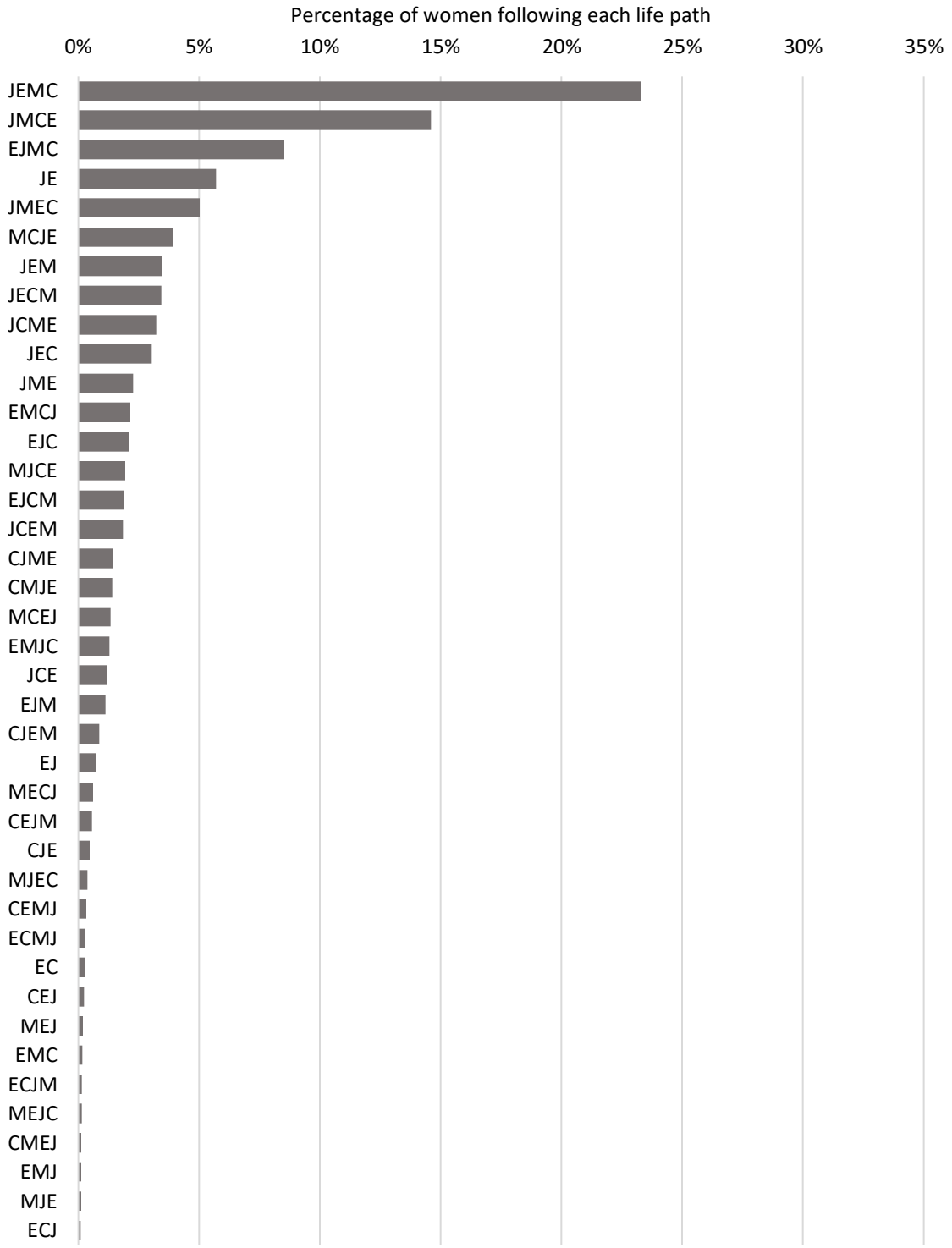
Appendix Figure 9: Graph of RSF, Belgian women (Chapter 2 analytic sample, N = 833). Weighted percentages shown.



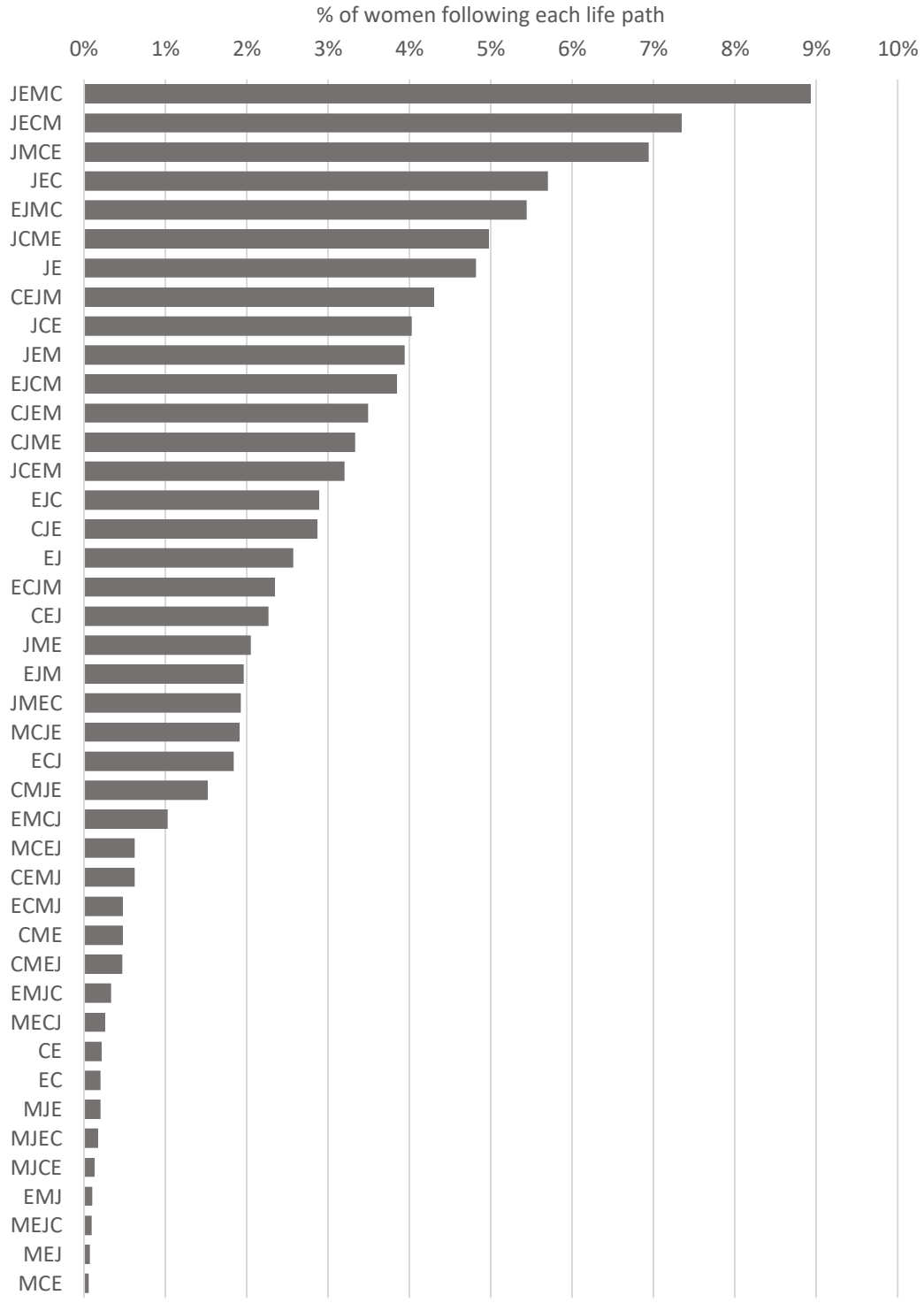
Appendix Figure 10: Graph of RSF, White women (Chapter 3 analytic sample, N = 1,813). Weighted percentages shown.



Appendix Figure 11: Graph of RSF, Black women (Chapter 3 analytic sample, N = 1,093). Weighted percentages shown.



Appendix Figure 12: Graph of RSF, Hispanic women (Chapter 3 analytic sample, N = 611). Weighted percentages shown.



Appendix Figure 13: Graph of RSF, Black women (Chapter 4 analytic sample, N = 1,050). Weighted percentages shown.