

The Costs and Benefits of Parenthood for Mental and Physical Health in the United States: The Importance of Parenting Stage

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Abstract

Although research finds that parents report greater depression than nonparents, we do not know whether the costs and benefits of parenthood for mental and physical health vary across parenting stages. Using the first wave of data from National Survey of Midlife Development in the United States (MIDUS; N = 2,730), we examine disparities in eight measures of mental and physical health between nonparents and parents whose youngest child is: (1) under 13, (2) 13 to 17, (3) 18 to 29, and (4) 30 years and older. Drawing on insights about stress, the life course, and the changing nature of the parental role, we hypothesize that the associations between parenthood and well-being are contingent on the parenting stage. Our analyses reveal some advantages associated with parenthood; we also find that parents whose children are 30 years and older report better mental and physical health than parents at all other stages. These results suggest that the costs and benefits of parenthood in the U.S. depend on the parenting stage.

Keywords

stress process, emotions, mental health, physical health, parenthood

INTRODUCTION

Despite the cultural belief that parenthood increases adults' happiness and health (Hansen 2012), an abundance of sociological research indicates that parents report higher levels of depression than nonparents in the United States—a pattern that is evident among parents of minor children (i.e., under 18 years) as well as parents of adult offspring (for reviews, see McLanahan and Adams 1987; Simon 2008; Umberson, Pudrovska, and Reczek 2010). Based on these findings, sociologists argue that parenthood is stressful in the United States and that the “costs” of having children cancel out or exceed the “benefits” for individuals' happiness and health (Evenson and Simon 2005; Nomaguchi and Milkie 2003; Umberson and Gove 1989; Woo and Raley

2006). However, there are two reasons why we think it is premature to conclude that the disadvantages of parenthood outweigh the advantages for Americans' mental and physical health.

First, because most studies focus on depression differences between nonparents and parents of either minor *or* adult children, we currently do not know whether parental status disparities in

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depression and other indicators of emotional distress (e.g., anxiety and alcohol abuse) vary across parenting stages. Parents of minor children encompass those at the stage when they have young children (i.e., under 13 years) as well as the stage when they have adolescents (i.e., 13–17 years). Moreover, the period when children are adults spans dozens of years and includes parents at the stage when they have young adult children (i.e., between 18 and 29 years) as well as the stage when their children are 30 years and older. While sociologists have long argued that the parental role changes over time as children age (Rossi 1968), they have not examined the extent to which disparities in depression as well as other dimensions of emotional distress between childless adults and parents depend on their stage of parenthood.

Second, because most of this research focuses on depression, we also do not know whether there are parental status disparities in positive dimensions of mental health, such as the frequency of positive emotions and life satisfaction, and physical health—which may capture the rewards of having children at various parenting stages. The few studies of these dimensions of well-being also focus on comparisons between nonparents and parents of either minor or adult children, obscuring potential variations in the advantages of parenthood across parenting stages. The paucity of research on the associations between parenthood and a range of mental and physical health indicators as well as the lack of attention to potential differences in these associations by parenting stage have resulted in gaps in knowledge about both the costs and benefits of having children for adults' well-being over the life course.

In this paper, we first examine disparities in eight measures of mental and physical health between nonparents and parents at four qualitatively different stages, including the stages when their youngest child is under 13, 13 to 17, 18 to 29, and 30 years and older. In these analyses, we also consider whether parenthood exacerbates or buffers the associations between our respondents' age and their mental and physical health. We then investigate the extent to which parents whose youngest child is 30 years and older differ from parents at the other three parenting stages with respect to mental and physical health. Our twin goals are to: (1) assess whether the costs and benefits associated with parenthood for mental and physical health vary across parenting stages and (2) elucidate differences in mental and physical

health among parents. Guided by theoretical insights about stress, the life course, and the changing nature of the parental role, we hypothesize that the associations between parenthood and mental and physical health are contingent on the parenting stage. Indeed, because the stress and rewards of parenthood change over time as children age, we also hypothesize that parents at the stage when their youngest child is 30 years and older enjoy better mental and perhaps better physical health than parents at the other three parenting stages.

BACKGROUND

Parental Status Disparities in Depression

A long-held and widespread cultural belief in the United States is that parenthood is pivotal for adults' happiness and health (Hansen 2012). Although attitudes about the disadvantages of childlessness have declined over the past several decades (Friedman 2013; Koropecykj-Cox and Pendell 2007; Thornton and DeMarco 2001) and the average age at which adults have children has been rising during this time period, sooner or later, most Americans become parents (U.S. Census Bureau 2013). However, in contrast to this cultural belief, dozens of studies conducted since the 1970s find that parents report higher levels of depression and more frequent negative emotions such as anger than their childless counterparts (Evenson and Simon 2005; McLanahan and Adams 1987; Ross and Van Willigen 1996; Simon 2008; Woo and Raley 2005).

Most early studies compared nonparents to parents of minor children—the period when the time, energy, and financial demands of parenthood are particularly onerous. Still, despite the assumption that the rewards of parenthood are greatest when children are grown (e.g., Rossi 1968; Umberson et al. 2010), a growing body of research finds that parents of adult offspring also report more depressive symptoms than nonparents (Bures, Koropecykj-Cox, and Loree 2009; Evenson and Simon 2005; Koropecykj-Cox 2002; Koropecykj-Cox, Pienta, and Brown 2007; Milkie, Bierman, and Schieman 2008; Zhang and Hayward 2001). While the strength of the parenthood-depression association varies across studies depending on whether nonparents are compared to parents of minor or adult children, it appears

among mothers and fathers as well as married, cohabiting, and single parents. One notable exception comes from Nomaguchi and Milkie's (2003) longitudinal study, which indicates that individuals who became parents did not differ from those who remained childless with respect to depression. Taken as a whole, these findings not only belie the cultural belief that parenthood increases adults' happiness and health but is also an anomaly in research documenting the advantages of social roles and relationships for mental health; both marriage and employment are associated with significantly fewer depressive symptoms among adults in the United States (House, Landis, and Umberson, 1988; Tausig 2013; Thoits 1986; Umberson, Thomeer, and Williams, 2013).

To interpret these paradoxical and anomalous findings, sociologists have drawn on insights from the stress process perspective (Pearlin 1989). Several scholars argue that parenthood is stressful and that the costs associated with having children cancel out or exceed the benefits for adults' mental health (Evenson and Simon 2005; Nomaguchi and Milkie 2003; Umberson and Gove 1989; Woo and Raley 2005). Researchers have elucidated several stressors to which American parents are exposed that undermine their emotional well-being.

The Stress Associated with Parenthood in the United States

Studies find that a major stressor for contemporary parents of minor children is the high and steadily increasing cost of raising children to adulthood (Glass, Simon, and Andersson 2016; Meadows, McLanahan, and Brooks-Gunn 2008; Simon 1998). While the mean income of households with dependent children was \$50,161 in 1995 (U.S. Census Bureau 2016), the U.S. Department of Agriculture (Lino 1996) estimated that middle-class families spent between \$7,610 to \$8,710 per child that year, which is close to one-third of total income for a household that includes two minor children. Indeed, the rising cost of raising children is a social factor that propelled mothers into the labor force in the third quarter of the twentieth century (Kreider and Ellis 2011). However, studies find that employed parents of minor children, particularly mothers and single parents, often experience role conflict and overload as well as a lack of leisure time from combining

work and family responsibilities (Avison, Ali, and Walters 2007; Glass and Fujimoto 1994; Hochschild 1989; Lennon and Rosenfield 1994; Offer and Schneider 2011; Simon 1998). Securing affordable, high-quality child and afterschool care is another source of stress contributing to parents' higher level of depression compared to nonparents (Crouter and Booth 2004; Ross and Mirowsky 1988). Employed parents also report stress from not having enough time with their children (Milkie et al. 2004; Nomaguchi, Milkie, and Bianchi 2005; Simon 1995).

While these studies show that exposure to parental stress mediates the parenthood-depression association, other studies document variations in the quality of parent-child relationships and depressive symptoms among parents of minor children. Not surprisingly, parents who enjoy satisfying relationships with their children report fewer depressive symptoms than parents who have lower quality and less satisfying relationships (Nomaguchi 2012; Umberson 1989). Nomaguchi's (2012) study, which focuses on variations in depression among parents by children's age, also finds that parents whose children are 4 years old and younger enjoy more satisfying relationships with their children and experience less depression than parents whose oldest child is 5 to 11 years and an adolescent (i.e., 12–17 years).

In contrast to research on the stress experienced by parents of minor children, which tends to focus on role-related stressors, much of the research on parents of adult children focuses on the quality of parents' relationships with their children in mid- and later life (Umberson et al. 2010). Studies find that strained relationships with and negative treatment by children are stressful and increase parental depression (Knoester 2003; Koropecj-Cox 2002; Milkie et al. 2008; Nomaguchi 2012). At the same time, these studies show that parents who have a close and supportive relationship with adult children report less depression than parents whose relationship is less close and supportive. It also appears that parents' emotional well-being is influenced by their adult children's own mental health and stressful life events such as divorce and job loss, which highlight the "linked lives" of parents and adult offspring (Greenfield and Marks 2006; Knoester 2003; Milkie et al. 2008). Although these studies examine variation in depression among parents of adult children, they point to a variety of stressors that may contribute to why parents whose offspring

are adults experience more depressive symptoms than their childless peers.

However, while sociologists have identified several stressors to which parents are uniquely exposed, there are two important limitations of this research. First, because they focus on depression differences between nonparents and parents of either minor or adult children, these studies do not shed light on parental status disparities in depression and other indicators of emotional distress such as anxiety and alcohol abuse across parenting stages. We noted earlier that parents of minor children include those at the stage when their youngest child is under 13 years as well as the stage when their youngest child is an adolescent (i.e., between 13 and 17 years). Moreover, parents of adults include those at the stage when their youngest child is a young adult (i.e., between 18 and 29 years) as well as the stage when their youngest child is 30 years and older. By focusing on depression differences between nonparents and parents of either minor *or* adult children, this research conceals potential variation in the costs of parenthood for mental health across these four distinct parenting stages. Second, because this research tends to focus on depression, it also provides little insight into parental status disparities in positive dimensions of mental health, such as positive emotions and life satisfaction, as well as physical health—which may capture the fulfillment and gratification of parenthood. The few studies of these dimensions of well-being also focus on parents of either minor or adult children or all parents—obscuring the possibility that the benefits of parenthood for well-being vary across parenting stages.

For example, although research finds that parents experience less happiness and life satisfaction than nonparents (Hansen 2012), we do not know whether parents at the stages when they have young, adolescent, young adult, and adult children 30 years and older differ from nonparents with respect to these positive dimensions of mental health. Moreover, research on the social determinants of alcohol abuse indicates that parents of minor children report fewer alcohol problems than nonparents (Umberson 1987; Wolfe 2009), but it is unclear whether this parenthood advantage is evident among parents across these four parenting stages. In contrast to these studies, which focus on differences in mental health between nonparents and parents, the limited research on parenthood and physical health tends to focus on

sociodemographic variations *among* parents of adult offspring. While studies find gender, marital status, and age differences in physical health among parents in mid- to later life (Henretta 2007; Mirowsky and Ross 2002; Spence 2008; Wickrama et al. 2001), they also do not shed light on whether there are disparities in physical health between nonparents and parents across parenting stages.

In their extensive review of research on childlessness, parenthood, and well-being, Umberson and colleagues (2010) encourage researchers to examine a range of measures to capture not only the costs but also the benefits of having children over the adult life course as parents age. They also point to the importance of examining variations in parental well-being by children's age. We concur with their argument. Indeed, the life course perspective acknowledges that social roles and relationships are shaped by their social context and change over the life course as adults age. It also directs our attention to potential variations in both the stressful and rewarding nature of parenting as children age. While recent studies have integrated the stress process and life course perspectives for understanding the impact of children on adults (e.g., Milkie et al. 2008), there have been no studies investigating the parenthood–well-being associations across qualitatively different parenting stages. It is particularly important to consider a range of dimensions of mental and physical health in studies assessing the costs and benefits of having children by parenting stage because certain dimensions of well-being may be more relevant at some stages than others. Sociological insight into the changing nature of the parental role provides clues about the ways in which both the disadvantages and advantages of parenthood for mental and physical health may vary over the adult life course as children age.

The Different Stages of the Parental Role: Implications for Mental and Physical Health

A half-century ago, Rossi (1968) provided the first structural analysis of the parental role, which she argues differs from other major adult roles such as marriage and employment. According to Rossi, the parental role is comprised of four distinct stages beginning at conception when soon-to-be parents imagine what type of parents they will

be. Upon the birth of their child, parents transition from the “anticipatory” to the “honeymoon” stage when they are engrossed in their newborn. The short-lived honeymoon stage is followed by the protracted “plateau stage” when parents are raising children. Because minor children have nonnegotiable everyday needs, Rossi characterizes this stage as being in the “trenches” of parenthood, which is stressful and both emotionally and physically exhausting. As children age and become adults, parents enter the “disengagement stage” when they begin to reap the emotional rewards of parenthood. During this stage, parents’ relationship with children undergoes a transformation that resembles friendship based on mutual support, which is gratifying and life-affirming. Although Rossi does not differentiate between the stages when parents have young and teenage children or the stages when they have young adult children and offspring 30 years and older, her typology of the changing nature of the parental role provides a starting point for thinking about the ways in which the costs and benefits of parenthood for mental and physical health might vary across parenting stages. Other family scholars have discussed similar ways in which adults’ stage in the life course and family life cycle shape their experiences and relationships with children (Duvall 1988; Milkie et al. 2008; Nomaguchi 2012; Umberson 1992; Umberson and Gove 1989).

Drawing on Rossi’s (1968) insights about the changing nature of the parental role, research on parental stress, and the life course perspective, it is reasonable to expect that disparities in mental and physical health between nonparents and parents vary across parenting stages. We also expect that certain dimensions of well-being are more relevant during certain parenting stages than others. Due to the stress associated with parenting young children when they are fully entrenched in the parental role, parents whose youngest child is under 13 years may experience not only more depression but also more anxiety, fewer positive feelings, and less life satisfaction than nonparents. At the same time, since young children have nonnegotiable daily needs, it is likely that parents at this stage are less likely to abuse alcohol but more likely to have physical health problems than their childless counterparts due to time constraints preventing them from attending to their physical health (Allen and Armstrong 2006; Nomaguchi and Bianchi 2004).

Moreover, because relationships with adolescents can be both stressful and unsatisfying (Nomaguchi 2012), we expect that parents whose youngest child is between 13 and 17 years also experience more depression and anxiety, fewer positive emotions, less life satisfaction, poorer physical health, as well as more alcohol problems than nonparents.

Additionally, although parents of adults are relieved of the stress of raising minor children, two studies indicate that parenting young adult children is also stressful as they navigate the increasingly protracted and uncertain transition to adulthood (Aquilino 1997; Knoester 2003), which sometimes involves parental co-residence (Furstenberg et al. 2004)—a social change that occurred years after Rossi (1968) developed her typology. Given the unique stressors to which they are exposed, parents whose youngest child is between 18 and 29 years may also experience poorer mental and physical health than their childless peers.

In contrast to parents at these three stages, we expect that parents whose children are 30 years and older experience less parental stress and more of the rewards of parenthood; since children who are settled into adulthood can be an important source of friendship and social support, we expect that parents at this stage enjoy greater mental and physical health—including fewer symptoms of depression, anxiety, and alcohol abuse, more positive feelings and greater life satisfaction, and fewer physical health problems than their childless peers. In short, because the stressful and rewarding aspects of the parental role change over time as children age, it is likely that both the costs and benefits of parenthood for mental and physical health vary across these major and qualitatively different parenting stages.

In addition to changes in the parental role as children age, the associations between adults’ age and their mental and physical health may differ for nonparents and parents across these parenting stages. Life course health researchers document that adults’ social roles and relationships influence the effects of age on mental and physical health (Ferraro 2011; Ferraro and Wilkinson 2013), but it is unclear whether parenthood influences the age-health association. Because parenting young, adolescent, and young adult children is stressful, the positive association between age and mental health may be weaker for parents at these three parenting stages than it is for nonparents. Similarly, the negative association between

age and physical health may be stronger for parents at these three stages than for childless adults. However, since offspring 30 years and older can be a source of friendship and support for older parents, this stage of parenthood may increase the positive association between age and mental health while reducing the negative association between age and physical health compared to childless adults. In other words, depending on their stage of parenthood, having children may exacerbate or buffer the associations between adults' age and their mental and physical health.

While the previous predictions focus on disparities in mental and physical health between nonparents and parents by parenting stage, we also expect variations in well-being among parents. Although we recognize that parents at the four parenting stages may be members of different birth cohorts—who were exposed to different parenting expectations and norms—we nevertheless expect that those whose children are 30 years and older experience parenthood as less stressful and more rewarding. Parents at this stage may therefore experience fewer symptoms of depression, anxiety, and alcohol abuse, more positive emotions and greater life satisfaction, as well as better physical health than parents at the other three parenting stages.

In sum, to understand the myriad ways in which parenthood influences adults' mental and physical health as children and parents age, it is imperative to consider a wider range of measures of well-being and stages of parenthood than has been the focus of research; the almost exclusive focus on depression differences between nonparents and parents of either minor or adult children has resulted in a lack of knowledge regarding the extent to which the costs and benefits of parenthood for mental and physical health vary over the adult life course.

Research Goals and Hypotheses

In the following analyses, we first examine disparities in eight measures of mental and physical health between nonparents and parents at four qualitatively different stages of parenthood. In these analyses, we also consider whether the associations between adults' age and their mental and physical health differ for nonparents and parents across these four parenting stages. We then investigate variations in mental and physical health

among parents. In these analyses, we compare parents at the stage when their youngest child is 30 years and older to parents at the other three parenting stages. Based on theoretical insights about stress, the life course, and the changing nature of the parental role, we hypothesize that associations between parenthood and mental and physical health vary across parenting stages. We also hypothesize that parents whose offspring are 30 years and older enjoy better mental and physical health than parents at the other three parenting stages. By considering a wide range of measures of mental and physical health across four distinct parenting stages, our analyses provide the first systematic investigation of not only the costs but also the benefits associated with parenthood over the life course as children and parents age.

DATA AND METHODS

Data

To test our hypotheses, we utilize data from the National Survey of Midlife Development in the United States (MIDUS), which was designed to assess social relationships and health among adults in midlife (for details, see Brim et al. 2007). A representative sample of 3,487 eligible adults was identified through random digit dialing. A total of 3,032 individuals between the ages of 25 and 74 completed a mailed questionnaire in 1994–1995, yielding a response rate of 87 percent. Ten years later, 1,748 of these respondents completed a second questionnaire, resulting in a response rate of 57 percent for the panel (Radler and Ryff 2010). Because the purpose of this paper is to examine the associations between parenthood and mental and physical health across four stages at a single point in time rather than the impact of transitions into these parenting stages on mental and physical health over time, we use the first wave of MIDUS. While these cross-sectional data limit our ability to draw causal interpretations about the parenthood–well-being associations, data on the ages of respondents' children are only available in MIDUS-I.

Due to the restricted age range of the sampling design at Time 1, the sample does not include the youngest and oldest adults in the population, which may affect our results in two ways. First, since younger parents (i.e., parents 18–24 years) tend to have fewer emotional and financial resources that reduce the stress of raising children than

their older peers (Mirowsky and Ross 2002), our results may underestimate the costs of having young and adolescent children for mental and physical health. Second, because the benefits of having children 30 years and older for mental and physical health may be greatest for the oldest parents in the population (i.e., 75 years and older), our findings may underestimate the advantages of this parenting stage for well-being.

Measures

We noted earlier that because certain dimensions of well-being may be more relevant during some parenting stages than others, it is important to examine a wide range of measures of mental and physical health to capture both the costs and rewards associated with parenthood across different stages. Items included in the eight measures we focus on are shown in the Appendix.

Depressive symptoms are measured with a nine-item count of symptoms from the short form of the Composite International Diagnostic Interview (CIDI; Kessler et al. 1998), which is a valid and reliable measure of depression based on criteria from the *DSM-II-R*. Respondents who reported a period of sadness for two or more weeks in the past year (yes = 1) were asked if they experienced eight other depressive symptoms (yes = 1). Scores range from 0 to 8 (alpha = .93).

Symptoms of anxiety are measured with an 11-item scale based on criteria for anxiety disorder from the *DSM-II-R* (Kessler et al. 1998). Respondents who reported that they worried about more than one thing every day or most days (yes = 1) were asked how often they experienced 10 symptoms (0 = never, 3 = most days). Scores range from 0 to 30 (alpha = .96).

Symptoms of alcohol abuse/dependence are measured with a five-item count of problems respondents experienced in the past year due to their drinking. Note that this measure, which is based on the Michigan Alcohol Screening Test (Selzer 1971), assesses serious problems caused by excessive drinking rather than alcohol use. Scores range from 0 to 5 (alpha = .96).

Positive affect is a summary scale of responses to questions about how often in the past month respondents felt six positive emotions, including happiness (0 = none of the time, 4 = all of the time). Items came from Bradburn's (1969) Affect Balance Scale, which is a widely used measure of

persons' affective state. Scores range from 0 to 24 (alpha = .96).

Life satisfaction is assessed with a question used in many studies that asked respondents to rate how satisfied they are with their life overall on a scale from 0 = not satisfied to 10 = very satisfied (Pollmann-Schult 2014; Prenda and Lachman 2001). Scores range from 0 to 10.

Chronic conditions are measured with a count of the number of chronic physical health conditions respondents either experienced and/or were treated for in the past year from a list of 29 conditions adapted from the Medical Outcomes Study (Brazier et al. 1992). The number of reported chronic conditions range from 0 to 27.

Physical limitations is a summary scale based on respondents' answers to questions asking how much their current health limited their performance on nine activities of daily living (0 = not at all, 3 = a lot). This measure has also been widely used in research (e.g., Caputo and Simon 2013; Katz et al. 1963; Nagi 1976). Scores range from 0 to 27 (alpha = .93).

Self-rated health, our final measure of well-being, is based on a question asking respondents to rate their health on a scale of 1 = poor, 2 = fair, 3 = good, and 4 = very good. While this is a subjective measure, it is highly correlated with more objective indicators of physical health in general population surveys (Idler and Benyamini 1997). Scores range from 0 to 4.

Parenting stages are measured with five mutually exclusive dummy variables based on the age of respondents' youngest biological, adopted, and/or stepchild, which is in line with other research (e.g., Umberson 1989). Parents whose youngest child is under 13 years comprise the *youngest child less than 13* stage. Those whose youngest child is between 13 and 17 years are included in the *youngest child 13–17* stage. Parents whose youngest child is between 18 and 29 years are included in the *youngest children 18–29* stage, and those whose youngest child is 30 years and older comprise the *youngest child 30 years and older* stage. *Nonparents* have no children.

Our analyses include controls for respondents' sociodemographic characteristics, including their *gender* (female = 1), *race* (nonwhite = 1), *age* (in years), *education* (12 categories), *household income* (in thousands of dollars), and both *marital* and *employment status* (1 = married, 1 = employed).¹ Respondents' age is a particularly

important control variable due to the close associations between age and some measures of physical health (e.g., chronic conditions and physical limitations) and between age and parenting stages (including not being a parent). Finally, we created five interaction terms for respondents' age and parenting stage to test whether the associations between age and mental and physical health differ for parents and nonparents.

Analytic Sample and Methods

Missing data for all predictor and control variables is imputed using pooled estimates from 10 data sets that were created using the multiple imputation by chained equations method. The analytic sample includes 2,730 (over 90 percent) of MIDUS-I respondents. We conduct ordinary least squares (OLS) regression analyses to: (1) assess disparities in mental and physical health between nonparents and parents at each parenting stage and (2) elucidate differences in mental and physical health between parents whose youngest child is 30 years and older and parents at the other three parenting stages. Details about the variables included in each model for our two sets of analyses are discussed before we present the results.

The sociodemographic characteristics of the analytic sample by parental status are shown in Table 1. Compared to nonparents, who represent slightly less than one-fifth of the sample ($N = 502$), parents are more likely to be female and white and have less education but higher household incomes; parents are also more likely to be married and less likely to be employed. While nonparents are on average younger than parents, they range in age from 25 to 74 years (not shown). Of the 2,228 parents, 782 are at the stage when their youngest child is under 13 years, 285 are at the stage when their youngest child is between 13 and 17 years, 657 are at the stage when their youngest child is between 18 and 29 years, and 504 are at the stage when their youngest child is 30 years and older. Reflecting their different stages of parenthood, there are sociodemographic differences among parents. Parents whose youngest child is under 13 years are more likely to be married than parents at the other three parenting stages. Reflecting possible cohort differences in education as well as changes in employment status over the adult life course, parents whose youngest child is 30 years older are not only older but have

less education, lower household incomes, and are less likely to be employed than parents at the other three parenting stages.

Additional analyses (not shown) indicate that about half (51 percent) of the nonparents in our sample became parents by Wave 2 of MIDUS, while the other half were still childless. The average age of our nonparents was 35 and 43 years, respectively—suggesting that these two groups of nonparents are at different life stages. For this reason, we investigate whether respondents who were nonparents at both waves differ from parents at the four parenting stages with respect to mental and physical health in supplementary analyses.

RESULTS

Parental Status Disparities in Mental and Physical Health

Tables 2 and 3 present the results of analyses examining parental status disparities in the eight measures of mental and physical health. The first model for each measure includes respondents' sociodemographic characteristics as well as the four dummy variables for each parenting stage. These analyses show whether nonparents differ from parents at all four parenting stages with respect to mental and physical health. The second model for each measure adds interaction terms for respondents' age and each parenting stage. These analyses indicate whether the associations between respondents' age and mental and physical health differ for nonparents and parents across the four parenting stages. Nonparents are the reference group in these analyses.

Model 1 of Table 2 shows no significant differences in depression between nonparents and parents across all four parenting stages. Parents whose youngest child is under 13 years, 13 to 17 years, 18 to 29 years, and 30 years and older do not report more symptoms than childless adults. Model 2 indicates that the negative association between age and depression is significantly weaker for parents whose youngest child is between 18 and 29 years than nonparents. We do, however, find a significant difference in symptoms of anxiety between nonparents and parents whose youngest child is an adolescent—who report more anxiety than nonparents (Model 3). Additionally, the negative association between

Table 1. Means of Sociodemographic Variables by Parental Status.

	Total (N = 2,730)	Nonparents (N = 502)	All Parents (N = 2,228)	Youngest Child <13 (N = 782)	Youngest Child 13 to 17 (N = 285)	Youngest Child 18 to 29 (N = 657)	Youngest Child 30+ (N = 504)
Percentage female	50.44	42.23	52.29*	48.21*	49.82*	53.58*	57.93*
Percentage nonwhite	11.62	16.02	10.63*	14.88	13.16	8.31*	5.62*
Age (25–74)	46.59	38.16	48.49*	36.74*	44.48*	52.31*	63.98*
Education (1–12)	6.79	7.63	6.60*	6.74*	6.63*	6.74*	6.19*
Household income (thousands of \$)	65.17	57.21	66.96*	70.68*	76.96*	72.34*	48.53*
Marital status (percentages)							
Married	64.58	32.67	71.77*	78.90*	68.07*	67.27*	68.65*
Separated or divorced	18.20	12.35	19.52*	15.86	28.07*	26.33*	11.51
Widowed	5.27	1.20	6.19*	.26	1.75	5.48*	18.85*
Never married	11.94	53.78	2.51*	4.99*	2.11*	.91*	.99*
Percentage employed	74.44	83.23	72.46*	81.78	88.98*	79.19	39.88*
Number of children	—	—	2.78	2.44	2.77	2.99	3.04
Average age of children	—	—	22.21	8.93	18.46	26.84	38.92
Percentage that has stepchild(ren)	—	—	12.83	10.74	17.61	15.77	9.54
Depressive symptoms (0–8)	.95	1.12	.91	1.06	1.09	.96	.52*
Symptoms of anxiety (0–30)	3.88	4.17	3.82	4.96	4.81*	3.62	1.75*
Symptoms of alcohol abuse (0–5)	.24	.45	.19*	.25*	.25*	.17*	.09*
Positive affect (0–24)	14.21	13.89	14.28	13.97	13.78	14.34	14.95*
Life satisfaction (0–10)	7.66	7.37	7.73*	7.50	7.48	7.78*	8.14*
Chronic conditions (0–27)	2.46	2.16	2.53*	2.11	2.26	2.73*	3.10*
Physical limitations (0–27)	4.46	3.09	4.76*	3.23	4.14*	5.33*	6.76*
Self-rated health (0–4)	2.48	2.60	2.46*	2.57	2.54	2.39*	2.34*

*Significantly different from nonparents at $p < .05$, based on separate logistic regressions for each parent category.

Table 2. Ordinary Least Squares Regression of Depressive Symptoms, Symptoms of Anxiety, Symptoms of Alcohol Abuse, and Positive Affect on Parental Status (N = 2,730).

	Depressive Symptoms		Symptoms of Anxiety		Symptoms of Alcohol Abuse		Positive Affect	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Female	.42*** (.08)	.41*** (.08)	1.49*** (.27)	1.46*** (.27)	-.20*** (.03)	-.19*** (.03)	-.43* (.17)	-.42* (.17)
Nonwhite	-.14 (.13)	-.15 (.13)	-.92* (.42)	-.98* (.42)	-.10* (.04)	-.10* (.04)	.92** (.27)	.97*** (.27)
Age	-.02*** (.01)	-.01 (.01)	-.08*** (.02)	-.06* (.03)	-.01*** (.00)	-.02*** (.00)	.03** (.01)	.03 (.02)
Education	-.03 (.02)	-.03 (.02)	-.12* (.06)	-.11 (.06)	.00 (.01)	.00 (.01)	.05 (.04)	.05 (.04)
Income	-.00 (.00)	-.00 (.00)	-.00 (.00)	-.00 (.00)	-.00 (.00)	-.00 (.00)	.00 (.00)	.00 (.00)
Married	-.52*** (.10)	-.51*** (.10)	-.62* (.31)	-.58 (.31)	-.17*** (.03)	-.17*** (.03)	.57** (.20)	.56** (.20)
Employed	-.41*** (.11)	-.46*** (.11)	-.83* (.34)	-.95** (.35)	-.00 (.03)	-.00 (.03)	.65** (.22)	.84*** (.22)
Youngest child <13 ^a	.11 (.13)	-.33 (.52)	.79 (.42)	-1.27 (1.68)	-.13** (.04)	-.48** (.16)	-.09 (.27)	2.68* (1.08)
Youngest child 13–17 ^a	.26 (.17)	.90 (.98)	1.20* (.53)	3.59 (3.13)	-.05 (.05)	-.42 (.30)	-.49 (.34)	1.08 (2.01)
Youngest child 18–29 ^a	.22 (.15)	1.97** (.73)	.40 (.49)	5.78* (3.13)	-.04 (.05)	-.42 (.23)	-.03 (.31)	-3.35* (1.50)
Youngest child 30+ ^a	-.19 (.20)	1.03 (1.03)	-1.16 (.63)	.03 (3.29)	.03 (.06)	-.65* (.32)	.61 (.40)	-4.01 (2.11)
Youngest child <13 × age		.01 (.01)		-.06 (.04)		.01* (.00)		-.08** (.03)
Youngest child 13–17 × age		-.01 (.02)		-.05 (.07)		.01 (.01)		.04 (.05)
Youngest child 18–29 × age		-.04* (.01)		-.11* (.05)		.01 (.00)		.06* (.03)
Youngest child 30+ × age		-.02 (.02)		-.02 (.05)		.01* (.01)		.07* (.04)
Constant	2.52***	2.33***	8.57***	8.30***	1.04***	1.27***	11.54***	11.21***

^aReference group is nonparents.

* $p < .05$. ** $p < .01$. *** $p < .001$.

age and anxiety is significantly weaker for parents at this stage than their childless peers (Model 4). There is also a significant difference in symptoms of alcohol abuse between nonparents and parents whose youngest child is under 13 years (Model 5); persons at this parenting stage report fewer alcohol-related problems than childless adults. However, the negative association between age and alcohol-related problems is significantly weaker for these parents as well as parents whose youngest child is 30 years and older than nonparents (Model 6). Model 7 indicates that there are no significant parental status differences in positive

affect; parents at all stages do not differ from nonparents with respect to the frequency of positive emotions. Model 8 shows that while the positive association between age and positive affect is weaker for parents whose youngest child is under 13 years than nonparents, it is stronger for parents at the two stages when their youngest child is an adult than it is for their childless counterparts (Model 8).

Turning to Table 3, there is a significant difference in life satisfaction between nonparents and parents whose youngest child is 30 years and older (Model 1); parents at this stage report greater life

Table 3. Ordinary Least Squares Regression of Life Satisfaction, Chronic Conditions, Physical Limitations, and Self-rated Health on Parental Status (N = 2,730).

	Life Satisfaction		Chronic Conditions		Physical Limitations		Self-Rated Health	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Female	.04 (.06)	.05 (.06)	.52*** (.10)	.51*** (.10)	.83*** (.23)	.86*** (.23)	.02 (.04)	.02 (.04)
Nonwhite	.19* (.10)	.21* (.10)	-.06 (.16)	-.09 (.16)	1.01** (.36)	.96** (.36)	-.12* (.06)	-.12* (.06)
Age	.01** (.00)	.01 (.01)	.02** (.01)	.02* (.01)	.07*** (.01)	.03 (.02)	-.01* (.00)	-.00 (.00)
Education	.02 (.01)	.02 (.01)	-.10*** (.02)	-.10*** (.02)	-.36*** (.05)	-.37*** (.05)	.08*** (.01)	.08*** (.01)
Income	.00*** (.00)	.00*** (.01)	-.00 (.00)	-.00* (.00)	-.01* (.00)	-.01** (.00)	.00*** (.00)	.00*** (.00)
Married	.56*** (.07)	.55*** (.07)	-.25* (.12)	-.25* (.11)	-1.04*** (.27)	-1.03*** (.27)	.07 (.04)	.07 (.04)
Employed	.19* (.08)	.25** (.08)	-.58*** (.13)	-.69*** (.13)	-3.26*** (.29)	-3.36*** (.30)	.34*** (.05)	.35*** (.05)
Youngest child <13 ^a	-.13 (.10)	.68 (.39)	-.00 (.16)	-1.35* (.63)	.39 (.36)	-4.03** (1.44)	-.02 (.06)	.30 (.23)
Youngest child 13–17 ^a	-.22 (.12)	-.74 (.73)	-.01 (.20)	-.84 (1.16)	.91* (.46)	-1.97 (2.68)	-.02 (.07)	-.10 (.43)
Youngest child 18–29 ^a	.02 (.11)	-1.20* (.54)	.20 (.18)	1.10 (.87)	1.27** (.42)	.54 (2.00)	-.11 (.07)	-.35 (.32)
Youngest child 30+ ^a	.38** (.15)	-1.60* (.76)	-.04 (.23)	3.83** (1.22)	.30 (.54)	-1.90 (2.82)	.12 (.09)	-.17 (.45)
Youngest child <13 × age		-.02 (.01)		.04* (.02)		.11** (.04)		-.01 (.01)
Youngest child 13–17 × age		.01 (.02)		.02 (.03)		-.02 (.06)		.00 (.01)
Youngest child 18–29 × age		.02* (.01)		-.02 (.03)		.02 (.04)		.00 (.01)
Youngest child 30+ × age		.03* (.01)		-.06*** (.02)		.05 (.05)		.00 (.01)
Constant	6.20***	6.23***	2.52***	2.68***	6.15***	7.70***	1.83***	1.78***

^aReference group is nonparents.

* $p < .05$. ** $p < .01$. *** $p < .001$.

satisfaction than childless adults. Moreover, the positive association between age and life satisfaction is significantly stronger for both groups of parents whose youngest child is an adult (i.e., 18–29 years and 30 years and over) than their nonparent peers (Model 2). Model 3 indicates that there are no significant differences in chronic physical health conditions between nonparents and parents at any parenting stage. However, while the positive association between age and chronic health problems is significantly stronger for parents whose youngest child is under 13 years than it is for nonparents, it is weaker for parents whose youngest child is 30 years and older than

for childless adults (Model 4). In contrast to chronic health conditions, parents whose youngest child is an adolescent as well as parents whose youngest child is a young adult report significantly more physical limitations than nonparents (Model 5). Additionally, the positive association between age and physical limitations is significantly stronger for parents at the stage when they have young children than for their childless peers (Model 6). Finally, there are no significant differences in self-rated health between nonparents and parents at all four parenting stages (Model 7). The negative association between age and self-rated health also does not significantly differ for

childless adults and parents at any parenting stage (Model 8).

Because one-half of the nonparents in our sample became parents by Wave 2, we conducted supplementary analyses (available) that included a dichotomous control variable for whether they became parents by Wave 2 (0 = remained a nonparent, 1 = became a parent). The inclusion of this control variable in the first models of Tables 2 and 3 did not change the pattern of results with the exception that the significant positive coefficients for anxiety and physical limitations among parents whose youngest child is a teenager became nonsignificant. Also, the nonsignificant negative coefficient for anxiety among parents whose youngest child is 30 years and older became significant. These analyses tell us that compared to persons who were childless at both waves, parents whose youngest child is an adolescent do not report significantly greater anxiety and physical limitations, while parents whose youngest child is 30 years and older report significantly less anxiety. Importantly, these analyses also indicate that the two groups of nonparents in our sample do *not* differ on any measure of mental and physical health when sociodemographic differences between them are held constant. Although our data do not allow us to make causal inferences about the parenthood–well-being associations across parenting stages, the latter findings suggest that the nonparents in our sample who became parents by Wave 2 did *not* select into parenthood based on their mental and physical health at Wave 1.

Research is equivocal about whether stepchildren are associated with greater depression than biological and adopted children (see Evenson and Simon 2005; Umberson et al. 2010). For this reason, we also examined whether parents who have a stepchild report poorer mental and physical health than parents of only biological and/or adopted children by adding a dichotomous variable for stepchildren in the first model for each measure of well-being (0 = does not have stepchildren, 1 = has stepchildren). These supplementary analyses (available) reveal that parents of stepchildren report significantly more depression and anxiety, less frequent positive emotions, and more chronic conditions and physical limitations than parents who do not have stepchildren. However, the inclusion of this variable does not change the pattern of results shown in Tables 2 and 3, with the one exception that the difference in physical limitations between nonparents and parents whose

youngest child is an adolescent becomes nonsignificant. Parents at this stage are also more likely to have a stepchild than parents at the other stages.

In sum, these results support our first hypothesis; the associations between parenthood and mental and physical health vary across parenting stages. However, except for the lower level of alcohol abuse among parents whose youngest child is under 13 years and greater life satisfaction among parents whose children are 30 years and over compared to nonparents, our analyses reveal few advantages of parenthood for mental and physical health. These results are in marked contrast to the results for marriage and employment, which show robust advantages of these social role involvements across most measures of mental and physical health. It thus appears that the benefits of parenthood are more limited than our cultural beliefs suggest.

The two groups of parents who report poorer mental and physical health than nonparents are those at the stage when their youngest child is 13 to 17 years and the stage when their youngest child is between 18 and 29 years; parents of adolescents report more anxiety and physical limitations than nonparents, while parents of young adults experience more physical limitations than their childless peers. We suggested that disparities in mental and physical health between nonparents and parents at these two stages may be greater than parents at other stages because of the stress associated with parenting adolescent and young adult children. However, in contrast to our expectation that parents of young children, parents of adolescents, and parents of young adults experience more symptoms of depression than nonparents, we find no significant differences between childless adults and parents at any parenting stage for this measure of mental health.

Though the findings are complex and depend on the measure and stage of parenthood, our analyses also reveal that the associations between *respondents'* age and mental and physical health differ for parents and nonparents. The negative association between age and both depression and anxiety is weaker for parents whose youngest child is 18 to 29 years than nonparents. In contrast, the positive association between age and both positive affect and life satisfaction is stronger for parents at the two stages when their youngest child is an adult than it is for their childless peers. With respect to physical health, the positive association between age and chronic conditions is stronger for

Table 4. Ordinary Least Squares Regressions of All Outcomes within All Parents (N = 2,228).

	Depression Symptoms	Anxiety	Alcohol Abuse	Positive Affect	Life Satisfaction	Chronic Conditions	Physical Limits	Self-rated Health
Youngest child <13 ^a	.15 (.22)	1.70* (.72)	-.04 (.06)	-.71 (.46)	-.43** (.17)	.03 (.28)	.83 (.63)	-.15 (.10)
Youngest child 13–17 ^a	.36 (.20)	2.21** (.67)	-.00 (.06)	-1.11* (.43)	-.54** (.16)	.01 (.26)	1.18* (.59)	-.15 (.09)
Youngest child 18–29 ^a	.36* (.15)	1.48** (.49)	-.02 (.04)	-.65* (.31)	-.32** (.11)	.23 (.19)	1.35** (.43)	-.24** (.07)

Note. All models include controls for gender, race, age, education, income, marital status, and employment status.

^aThe comparison category is parents whose youngest child is 30 or older.

* $p < .05$. ** $p < .01$. *** $p < .001$.

parents whose youngest child is under 13 years than nonparents but weaker for parents whose youngest child is 30 years and older than childless adults. These findings suggest that age-related changes in mental and physical health that occur over the life course may differ for nonparents and parents across parenting stages.

Variations in Mental and Physical Health among Parents

Table 4 presents the results of analyses that investigate variations in the eight measures of mental and physical health among the 2,228 parents in our sample by parenting stage. In these analyses, we compare parents whose youngest child is 30 years and older to parents whose youngest child is under 13, 13 to 17, and 18 to 29 years to assess the extent to which they enjoy better mental and physical health than parents at the three other stages. Although not shown, these analyses control for the same sociodemographic variables presented in Tables 2 and 3. Parents whose youngest child is 30 years and older are the reference group in these analyses.

Compared to individuals at this parenting stage, parents whose youngest child is under 13 years report significantly more symptoms of anxiety and less life satisfaction. Parents whose youngest child is an adolescent (i.e., 13–17 years) also report significantly more anxiety and less life satisfaction as well as less frequent positive emotions and more physical limitations than parents whose youngest children is 30 years and older. Table 4 also reveals that parents whose youngest child is a young adult (i.e., 18–29 years) experience

significantly more symptoms of depression and anxiety, less frequent positive emotions, less life satisfaction, as well as more physical limitations than parents whose youngest child is 30 years and over. Parents of young adults also rate their health as significantly poorer than parents of older adult offspring.

In supplementary analyses, we added the dichotomous variable for parents who have a stepchild in Table 4. These analyses (available) indicate that the inclusion of this control variable does not change the pattern of results with the one exception that parents whose youngest child is an adolescent do *not* significantly differ from parents whose youngest child is 30 years and older with respect to physical limitations. Recall that the former group of parents are more likely to have stepchildren than parents at the other three parenting stages, which helps explain why they report more physical limitations than the latter group of parents (and nonparents).

In short, these results provide support for our second hypothesis; parents at the stage when their youngest child is 30 years and older enjoy better mental and physical health than parents at the other three parenting stages. These findings suggest that parenthood is less stressful and more rewarding during the stage when offspring are settled into adulthood than during all other parenting stages. However, it also appears there are greater differences in mental and physical health between parents at the two stages when their youngest child is an adult than between parents whose youngest child is 30 years and older and parents whose youngest child is under 13 years. These findings upend the assumption that the costs of parenthood for happiness and health are greatest for parents of minor

children while the benefits of parenthood are great-est for parents of adults. Finally, although parents whose youngest child is under 13 years report less alcohol abuse than nonparents, there are no significant differences in this measure of mental health between these parents and parents whose youngest child is 30 years and older.

CONCLUSIONS AND DISCUSSION

Although decades of research finds that parents report more depression than nonparents in the United States, we suggested that it is premature to conclude that the costs of having children outweigh the benefits for Americans' happiness and health. Because most studies focus on depression differences between nonparents and parents of either minor or adult children, we simply did not know whether the disadvantages as well as advantages of parenthood for mental and physical health vary across parenting stages. To address these limitations, we examined disparities in eight measures of mental and physical health between nonparents and parents at four qualitatively different parenting stages. We also investigated the extent to which parents whose youngest child is 30 years and older differ from parents at the other three parenting stages with respect to mental and physical health. Based on theoretical insights about stress, the life course, and the changing nature of the parental role, we hypothesized that the associations between parenthood and mental and physical health are contingent on the parenting stage. Because the stress and rewards of the parental role change over time as children age, we also hypothesized that parents whose offspring are 30 years and older enjoy better mental and physical health than parents at the other three parenting stages. Our results provide support for these two hypotheses.

The first set of analyses indicates that parental status disparities in both mental and physical health vary across parenting stages. Parents whose youngest child is an adolescent report more symptoms of anxiety and physical limitations than nonparents; parents whose youngest child is a young adult also report more physical limitations than their childless peers. Although our analyses revealed fewer differences in mental and physical health between nonparents and parents at these two stages than we expected, these results suggest

that parenting adolescent and young adult children is more stressful and less rewarding than other stages.

In contrast to these findings, our analyses indicate that parents whose youngest child is under 13 years report less alcohol abuse than nonparents. Because the demands of parenting young children are ongoing and nonnegotiable, they may inadvertently function as social control agents—a point that has been made in research on the social determinants of alcohol abuse (Umberson 1987; Wolfe 2009). While we expected that parents whose youngest child is 30 years and older enjoy better mental and physical health than nonparents, the only difference we found is their greater life satisfaction than their childless peers. This finding nevertheless suggests that this parenting stage is less stressful and more rewarding than other parenting stages.

We were admittedly surprised that our analyses revealed no depression differences between nonparents and parents as we expected and several other studies have shown. It is possible that the difference between our findings and other studies is due to the restricted age range of our sample; recall that MIDUS does not include the youngest parents in the population who tend to have fewer resources to cope with the stress of raising children than their older peers (Mirowsky and Ross 2002). Similarly, because our sample does not include the oldest parents in the population for whom the rewards of having offspring 30 years and older may be greatest, our findings may underestimate the advantages of this parenting stage relative to being childless.

We also considered whether parenthood exacerbates or buffers the associations between respondents' age and their mental and physical health. These analyses revealed that the inverse associations between age and symptoms of depression and anxiety are significantly weaker for parents whose youngest child is 18 to 29 years than nonparents. In contrast, the positive associations between age and positive affect and life satisfaction are significantly stronger for parents at the two stages when they have adult children than for their childless peers. With respect to physical health, the positive association between age and chronic health conditions is stronger for parents if their youngest child is under 13 years but weaker for parents if their youngest child is 30 years and older than it is for nonparents. It thus appears that the advantages associated with

age for mental health are greater while the disadvantages associated with age for physical health are fewer for parents whose children are settled into adulthood than their childless peers. These results suggest that age-related changes in mental and physical health that occur over the adult life course may differ for nonparents and parents at different parenting stages—an important topic that warrants future longitudinal research.

Our second set of analyses focused on differences in mental and physical health between parents whose youngest child is 30 years and older and parents whose youngest child is under 13, 13 to 17, and 18 to 29 years. Consistent with our expectations, these parents enjoy greater mental and physical health than parents at the other three parenting stages across several dimensions of well-being—including symptoms of depression and anxiety, positive affect and life satisfaction, as well as physical limitations and self-rated health. These results suggest that parenthood is less stressful and more rewarding when parents' youngest child is settled into adulthood than the other three parenting stages. Parents at this stage may also have a sense of closure and fulfillment from having done a "job" well. We were admittedly surprised to find more differences in mental and physical health between these parents and parents whose youngest child is 18 to 29 years than parents at the two stages when their youngest child is under 18 years, when they are entrenched in the parental role. These findings call into question the assumption that the costs of parenthood for happiness and health are greatest for parents of minor children while the benefits of parenthood are greatest for parents of adults. They also implore researchers to focus greater attention on the experiences of parenting adolescent and young adult children.

Taken as a whole, our results highlight the importance of examining parental status disparities in a wide range of measures of mental and physical health across parenting stages to capture not only the costs but also the benefits of parenthood over the adult life course—a point Umberson and colleagues (2010) emphasized in their review of research on childlessness, parenthood, and well-being. It also appears that certain dimensions of well-being are more relevant for parents whose children are under 13 years (i.e., alcohol abuse), whereas other dimensions are more relevant for parents of adolescents and young adults (e.g., physical limitations). Although our results suggest that parenthood offers fewer benefits for happiness

and health than our cultural belief suggests, there appears to be some advantages of having children relative to being childless and that parents whose children are 30 years and older enjoy better mental and physical health relative to parents at the other three parenting stages.

Because the purpose of this paper was to examine the associations between parenthood and mental and physical health across four different parenting stages at a single point in time—rather than the impact of transitions into these parenting stages on mental and physical health over time—we cannot draw causal interpretations about the parenthood–well-being relationships. Recall that the second wave of MIDUS—conducted 10 years after the first administration—did not include information on the age of respondents' children. Although our findings may reflect selection into parenthood based on individuals' prior mental and/or physical health, we think this is unlikely since most Americans have children and parental status disparities in psychological and physical well-being vary considerably across parenting stages. Moreover, our supplementary analyses revealed that respondents who were nonparents at Wave 1 but had become parents by Wave 2 did not differ from respondents who were nonparents at both waves with respect to their mental and physical health at Wave 1. These findings suggest that the nonparents in our sample did not select into parenthood based on their psychological or physical health. While definitive conclusions about the selection-causation issue require longitudinal research, Nomaguchi and Milkie's (2003) prospective study indicates that adults who became parents did not report an increase in depression compared to adults who remained childless. They did, however, find that those who transitioned to parenthood reported an increase in social integration—which speaks to the importance of examining a range of indicators of well-being to understand the influence of parenthood on adults. Despite the limitations of cross-sectional data, our results support our argument about the importance of considering a wide range of indicators of mental and physical health across different parenting stages for understanding not only the costs but also the benefits associated with parenthood over the adult life course as children and parents age. Indeed, we find some advantages associated with parenthood and that parents whose offspring are 30 years and older enjoy better mental and physical health than parents at the other three parenting stages.

APPENDIX

Items Used to Construct Health Measures.

Depressive Symptoms ($\alpha = .93$)

1. Have you felt sad, blue, or depressed for two weeks or more in a row during the past 12 months? If the answer to Question 1 was "yes," respondents were asked if during this period they:

2. Lost interest in most things.
3. Felt more tired out or low on energy than is usual.
4. Lost appetite.
5. Appetite increased.
6. Had more trouble falling asleep than usual every night or nearly every night.
7. Had a lot more trouble concentrating than usual.
8. Felt down on yourself, no good, or worthless.
9. Thought a lot about death.

1 = yes, 0 = no.

Symptoms of Anxiety ($\alpha = .96$)

1. Have you worried about more than one thing every day or most days over the past 12 months? If the answer to Question 1 was "yes," respondents were asked if during this period they:

2. Were restless because of worry.
3. Were keyed up, on edge, or had a lot of nervous energy.
4. Were irritable due to worry.
5. Had trouble falling asleep.
6. Had trouble staying asleep because of worry.
7. Had trouble keeping your mind on what you were doing.
8. Had trouble remembering things because of worry.
9. Were low on energy.
10. Tired easily because of worry.
11. Had sore or aching muscles because of tension

0 = never, 1 = less than half the days, 2 = about half the days, 3 = most days.

Symptoms of Alcohol Abuse/Dependence ($\alpha = .96$)

Respondents were asked if in the past 12 months, they:

1. Were under the effects of alcohol or feeling their after-effects in a situation which increased your chances of getting hurt—like when driving a car or boat or using knives or guns or machinery.
2. Had any emotional or psychological problems from using alcohol—such as feeling depressed, being suspicious of people, or having strange ideas.
3. Had such a strong urge or desire to use alcohol that you could not resist it or could not think of anything else.
4. Had a period of a month or more when you spent a great deal of time using alcohol or getting over any of their effects.
5. Found that you had to use more alcohol than usual to get the same effect or that the same amount had less effect on you than before.

1 = yes, 0 = no.

Positive Affect ($\alpha = .96$)

Respondents were asked how often in the past 30 days they felt:

1. Cheerful.
2. In good spirits.
3. Extremely happy.
4. Calm and peaceful.
5. Satisfied.
6. Full of life

4 = always, 3 = most of the time, 2 = sometimes, 1 = a little of the time, 0 = never.

(continued)

APPENDIX (continued)

Life Satisfaction

Respondents rated their life overall from 0 ("the worst possible life overall") to 10 ("the best possible life overall").

Chronic Conditions

Respondents were asked if in the past 12 months they experienced or were treated for:

1. Asthma, bronchitis, or emphysema
2. Tuberculosis
3. Other lung problems
4. Arthritis, rheumatism, or other bone or joint diseases
5. Sciatica, lumbago, or recurring backache
6. Persistent skin trouble (e.g., eczema)
7. Thyroid disease
8. Hay fever
9. Recurring stomach trouble, indigestion, or diarrhea
10. Urinary or bladder problems
11. Being constipated all or most of the time
12. Gall bladder trouble
13. Persistent foot trouble (e.g., bunions, ingrown toenails)
14. Trouble with varicose veins requiring medical treatment
15. AIDS or HIV infection
16. Lupus or other autoimmune disorders
17. Persistent trouble with your gums or mouth
18. Persistent trouble with your teeth
19. High blood pressure or hypertension
20. Anxiety, depression, or some other emotional disorder
21. Alcohol or drug problems
22. Migraine headaches
23. Chronic sleeping problems
24. Diabetes or high blood sugar
25. Multiple sclerosis, epilepsy, or other neurological disorders
26. Stroke
27. Ulcer
28. Hernia or rupture
29. Piles or hemorrhoids

Physical Limitations ($\alpha = .93$)

Respondents were asked how much their health limited them in the following:

1. Lifting or carrying groceries
2. Bathing or dressing yourself
3. Climbing several flights of stairs
4. Bending, kneeling, or stooping
5. Walking more than a mile
6. Walking several blocks
7. Walking one block
8. Vigorous activity (e.g., running, lifting heavy objects)
9. Moderate activity (e.g., bowling, vacuuming).

3 = a lot, 2 = some, 1 = a little, 0 = not at all.

Self-rated Health

Respondents rated their health as: 5 = excellent, 4 = very good, 3 = good, 2 = fair, 1 = poor.

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NOTE

1. We included three dummy variables for marital status (1 = married, 1 = cohabiting, 1 = single) in earlier analyses but used the dichotomous marital status variable in the final analyses since we found no significant differences in the associations between parenthood and our measures of mental and physical health for persons who are single and in cohabiting relationships.

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