Mental health among mothers and fathers who borrow to pay for their child's college education

Katrina M. Walsemann
University of South Carolina

Jennifer A. Ailshire
University of Southern California

Caroline Hartnett
University of South Carolina

Abstract

More parents are borrowing to help their children pay for college. These loans may be a source of financial stress and worry, which could, in turn, impact parents' mental health. Our study investigates if child-related educational debt is associated with poorer mental health among parents and if fathers are more sensitive to this debt than mothers, given potential gender differences in who oversees the household finances and who is responsible for maintaining relationships with adult children. Data come from the National Longitudinal Survey of Youth 1979, a nationally representative sample of persons born between 1957 and 1964. We restricted our sample to parents whose biological child(ren) attended college and were interviewed at age 50, when mental health was assessed (n=3,545). Acquiring any child-related educational debt was associated with better mental health among fathers, but as the amount borrowed increased, fathers reported worse mental health. No relationship was found among mothers.

Introduction

The inflation-adjusted cost of higher education in the United States has soared by over 250% since the 1970s (Baum and Ma 2013). At the same time, wages for the average family have stagnated or declined (Grafova 2007) while the federal government has reduced financial aid for college. In response to these economic trends, Americans have acquired an astounding $1.5 trillion in educational debt to finance college (Federal Reserve Board, 2018), making educational debt the largest source of loans second only to home mortgages. Although the media and policymakers have focused significant attention on the student debt "crisis" among young adults, they have paid less attention to parents, even though parents often help their children pay for college, sometimes taking on loans to do so (Jeszeck 2014).

Consider the federal Parent PLUS loans program; the annual number of parent borrowers has almost doubled since the early 2000's, a trend that appears likely to continue (Baum et al. 2017). Moreover, in a recent study of mid-life parents, Walsemann & Ailshire found that 13% held child-related educational debt (i.e., student loans acquired in the parent's name to pay for a child's college education), and among debtors, the average debt amount was over $21,000 (Walsemann and Ailshire 2017). This amount was only 30% less than the average borrowed by college graduates in the same year (Baum and Payea 2013). A report by the Federal Reserve Bank of New York also found that an increasing number of borrowers are older adults; in 2016, 46.6% of borrowers were aged 50 or older (Chakrabarti et al. 2017).

These recent studies have shifted some of the media and policy discussion around student debt to parents and highlighted the potential financial burden parents are experiencing as part of the student debt "crisis". Given growing interest in parents' experiences with student debt and the possible financial stress that may arise from this debt, our study investigates whether child-related educational debt is associated with poorer mental health among mid-life parents. We focus on parents' mental health during midlife since this is a key period in the life course for thinking about finances and acquiring child-related educational debt (Jeszeck 2014).

Child-related educational debt, stress, and mental health

According to the stress process framework, socially derived stressors can contribute to poor health (Pearlin et al. 2005, Pearlin et al. 1981). Such stressors include acute life events (e.g., becoming unemployed) as well as chronic strains (e.g., financial hardship). Child-related educational debt may serve as a significant source of financial stress if it impedes parents' ability

to adequately save for retirement or build wealth or if it increases worry about their financial future or ability to retire when desired, the latter of which may occur if parents experience difficulty repaying their loans. Such a scenario is quite likely. For example, borrowers of all ages report increasing difficulty repaying their student debt; about 33% of student borrowers are delinquent on their payments – the highest delinquency rate of any consumer debt (Brown et al. 2014).

Moreover, student debt cannot be discharged in most bankruptcy proceedings. Thus, it may carry a greater psychological burden than other forms of debt because borrowers may not be able to avoid paying on this debt, even if under considerable financial strain. Financial strain and the psychosocial stress that results from it may increase risk for poor mental health (Ferraro and Su 1999, Hall et al. 2008, Kahn and Pearlin 2006, Lallukka et al. 2012, Selenko and Batinic 2011, Shippee, Wilkinson and Ferraro 2012). For example, among young adults, prior research shows that student debt is associated with poorer mental health and sleep problems, even after controls for socio-economic status and parental wealth (Walsemann, Ailshire and Gee 2016, Walsemann, Gee and Gentile 2015). By extension, parents who borrow to pay for their children's educational expenses may also be at risk for poor mental health.

Alternatively, child-related educational debt may be positively associated with parents' mental health, particularly if they interpret the debt as an investment in their child's future, see themselves as altruistic actors by taking on this debt, or are financially stable making the debt less disruptive to their daily lives. Indeed, parents are more likely now than in the past to provide emotional and financial support to their young adult children and some research suggests that this provision of support is related to parents' well-being (Fingerman 2017, Grundy 2005, Swartz 2009, Thomas, Liu and Umberson 2017). For example, Thomas (2010) found that parents who provided emotional support to their adult children reported greater well-being than parents who did not provide this support.

There may also be a gendered experience in the meaning and consequences of child-related educational debt. For example, research has found that among married couples, men are more likely to be in charge of the household finances and retirement planning than are women, and this disparity widens as household wealth increases (Hanna and Lindamood 2016). As a result, men often have more intimate knowledge about the financial health of the family and the family's financial expenditures than do women. If the family is under financial strain from child-

related educational debt, fathers may be more aware of the strain and be more responsive to it than mothers. For example, research finds that men are more likely to engage in heavy drinking as a response to financial strain than are women (Sacco, Bucholz and Harrington 2014, Shaw, Agahi and Krause 2011).

Fathers' and mothers' relationships with their adult children often differ. Adult children are more likely to feel closer to their mothers than their fathers (Swartz 2009) and some research suggests that mothers may be more affected by these relationships than fathers (Thomas, Liu and Umberson 2017). Thus, mothers who provide financial support to their adult children may experience enhanced mental health and well-being, even if it creates some financial strain to the family. Fathers' relationships with their adult children, however, are much more varied in terms of quality than mother-child relationships. If fathers more narrowly assess the quality of these relationships based on their ability to provide financial support to their adult children (Clark and Kenney 2010, Palkovitz 1997), they may also be more responsive to child-related educational debt than mothers. To our knowledge, however, no one has investigated how acquiring child-related educational debt is related to parents' mid-life mental health or if this relationship varies by parent's gender.

We ask three questions. First, is acquiring child-related educational debt related to parents' mental health at mid-life? Second, among borrowers, is greater debt associated with poorer mental health? Finally, do these relationships vary for mothers and fathers?

Methods

Data come from the National Longitudinal Survey of Youth 1979 cohort (NLSY79), a nationally representative sample of individuals born between 1957 and 1964. Respondents were interviewed annually from 1979 through 1994, and biennially thereafter. We use data from 2004 to 2014. As of 2014, there remains a 71% retention rate.

The NLSY79 is ideal for examining mental health among parent borrowers as it includes 1) questions about child-related educational debt; 2) information on biological children's college status and 3) two different mental health assessments at age 50. Furthermore, questions about child-related educational debt were asked of parents during mid-life, a period in the life course that is ideal for understanding the relationship between child-related educational debt and parental mental health, as this is when income and assets typically reach their lifetime peak (Lee, Lee, & Mason, 2008) and when children are most likely to be college-age.

We restrict our sample to respondents who (a) had at least one biological child aged ≥ 17 who attended college and (b) provided data on their health at or around age 50 (n=3,545). We imputed values on covariates with missing data (details below).

Measures

Dependent Variables. At or around age 50, respondents were administered a series of health questions. The first NLSY79 respondents were asked these questions in 2008; the last in 2014. We used the 7-item Center for Epidemiological Studies Depression Scale (CES-D) as our first measure of mental health, which has shown high reliability and validity in prior studies (Radloff 1977). The seven items included: 1) poor appetite, 2) trouble keeping mind on tasks, 3) feeling depressed, 4) everything taking extra effort, 5) restless sleep, 6) feeling sad, and 7) not able to get going. The items were summed ($\propto$=0.81), with higher values reflecting greater *depressive symptomology* (range: 0 to 27). We also use the *short form 12 (SF-12) mental health component* (MHC) – which provides a brief inventory of mental health derived from 12 of the 36 questions included in the SF-36. The SF-12 has been validated in prior studies as a measure of general mental health (Ware Jr, Kosinski and Keller 1996). In our sample, scores on the SF-12 MHC ranged from 8 to 70, with values above 50 representing better mental health than the average person and values below 50 representing worse mental health than the average person.

Independent Variable. To assess *child-related educational debt*, parents were asked "Are you or your spouse/partner responsible for making payments on any student loans for your child/ren? Please only include loans that have been made in your or your spouse/partner's name for your child/ren's education." Those who answered yes were asked how much they owed. Child-related educational debt was measured in 2004, 2008, 2010, 2012, and 2014. We used information on child-related educational debt from the year corresponding to when respondents were administered the health at age 50 module. We included a variable indicating if the respondent reported any child-related educational debt (yes/no) and a variable indicating how much the respondent owed in child-related educational debt. We adjusted child-related educational debt for inflation (2014 dollars), which we top-coded at the 99th percentile.

Socio-economic covariates. We included a comprehensive set of socio-economic controls that have been found to significantly predict the risk for having child-related educational debt among mid-life parents (Walsemann & Ailshire, 2017) and mental health, all measured concurrently with health at age 50, including: education (no degree, GED, high school diploma,

Associate's degree, and Bachelor's degree or higher), household poverty status (≥ 100% federal poverty versus < 100% federal poverty), and employment status (employed all year, out of the labor force but not unemployed, or unemployed part or all year).

NLSY79 respondents answered an extensive series of questions about their assets and debts every four years. The NLSY79 used this information to calculate *household net worth*, defined as the amount of debt subtracted from assets. For respondents interviewed at age 50 in 2008 and 2012, we used concurrent information on household net worth. For respondents interviewed at age 50 in 2010 and 2014, we used 2-year lagged net worth measures. We excluded child-related educational debt from household net worth as appropriate and adjusted net worth for inflation (2014 dollars). Descriptive plots revealed a non-linear relationship between household net worth and mental health. To capture this non-linearity, we categorized net worth into quartiles.

Major interpersonal or economic shocks may increase the likelihood that parents acquire child-related educational debt. We included three indicators that measure whether the respondent experienced each of the three following shocks: marital dissolution, bankruptcy (regardless of chapter), or unemployment in the 4 years prior to their interview at age 50

Demographic and health covariates. We included gender (male, female) and race/ethnicity (non-Hispanic White, non-Hispanic Black, Latino) as well as marital status (married, divorced/separated, widowed, never married), number of biological children aged ≥ 17, and region (south, northeast, north central, west, and abroad), all measured at the age 50 interview. To account for prior health, we controlled for depressive symptoms (7-item CES-D scale) and self-rated health, both measured during the health interview administered around age 40.

Analytic Approach

To address issues of item non-response, we imputed data using the *mi impute* command with chained equations specification in Stata v14. Imputation models included all analytic variables as well as variables that were likely to be theoretically related to item non-response. This produced 25 data sets. Analyses were replicated across the 25 datasets and combined using *mi estimate.*

We estimated two models for each of the dependent variables: depressive symptoms and mental health. Model 1 estimated the relationship between child-related educational debt and the dependent variable, adjusting for demographic and socio-economic characteristics, as well as health at age 40. Model 2 included interactions between child-related educational debt (any debt and amount of debt) and gender to examine if the relationship between child-related educational

debt and our dependent variables differed for mothers versus fathers. All analyses were weighted using the sampling weights provided by NLSY79.

Results

Sample Characteristics

Table 1 presents sample characteristics for fathers and mothers who had and did not have child-related educational debt. About 9% of fathers had borrowed to pay for their biological child(ren)'s college, compared to 11% of mothers. Of fathers who borrowed, their average debt was $20,000 compared to $16,000 among mothers who borrowed. Fathers (M=2.2, SE=0.13) and mothers (M=3.4, SE=.28) with child-related educational debt reported fewer depressive symptoms and better mental health (as measured by the SF-12 MCS) than their peers with no child-related educational debt.

Among fathers, those with child-related educational debt were more likely to be White (82.5% vs. 78%), married (92.6% vs. 73.2%), and college educated (33.8% vs. 28.4%) than fathers without child-related educational debt. They were also less likely to be poor (0.9% vs. 6.3%) or to have experienced a divorce or unemployment in the 4 years prior to their health assessment. Though these patterns generally held for mothers, there were a few notable differences. For example, similarly to fathers, mothers with child-related educational debt were more likely to be married than mothers without debt (82.3% vs 67.2%), but they were also more likely than fathers with child-related educational debt to be divorced, separated, or widowed (13.9% mothers vs 5.6% fathers). And while fathers with child-related educational debt were much more likely to have 2 biological college-aged children, mothers with child-related educational debt were more likely than fathers with this debt to have just one biological college-aged child (20.2% vs. 13.7%).

Weighted Linear Regression Models

Table 2 presents estimates from weighted linear regression models predicting depressive symptoms and mental health (SF-12 MCS), respectively. For depressive symptoms, Model 1 showed no relationship between any child-related educational debt or the amount of child-related educational debt and depressive symptoms. Model 2 indicated that significant gender differences existed in the relationship between child-related educational debt and depressive symptoms. These interactions are displayed in Figure 1. Among fathers, acquiring any child-related educational debt was inversely associated with depressive symptoms. This pattern was not found

for mothers. As the amount of child-related educational debt increased, however, fathers reported more depressive symptoms. At $10,000 of debt, fathers reported a predicted value of 1.7 on the CES-D scale. At $40,000 of debt, this predicated value was 3.6 – a value that was 2x greater than that experienced by fathers with $10,000 of debt. The relationship between amount of debt and depressive symptoms was flat for mothers.

For mental health, as measured by the SF-12 MCS where higher values indicate better mental health, the pattern was similar. There was no main effect of child-related educational debt on mental health (Model 1), but there was a significant gender interaction (Model 2) such that fathers who acquired any child-related educational debt reported better mental health than fathers who did not acquire child-related educational debt (Figure 2). Though there appeared to be an inverse association between any child-related educational and mental health for mothers, in post-estimation tests, the slope was not significantly different from zero. As the amount of debt increased, predicted mental health decreased among fathers. At $10,000 of debt, fathers reported a predicted value of 56.5 on the SF-12 MCS. At $40,000 of debt, this predicted value was 53.3. The relationship between amount of debt and mental health was flat for mothers.

Table 1: Sample characteristics of NLSY79 parents with a child > 17 who attended college, weighted estimates

	Fathers		Mothers	
	No Debt Mean (SE) or % n=1,444	W/ Debt Mean (SE) or % n=150	No Debt Mean (SE) or % n=1,740	W/ Debt Mean (SE) or % n=211
Depressive symptoms [a]	2.8 (0.12)	2.2 (0.29)	4.2 (0.13)	3.4 (0.28)
SF-12 mental component score [b]	54.8 (0.22)	55.2 (0.62)	52.2 (0.26)	52.9 (0.69)
Child-related educational debt ($10k)		2.0 (0.13)		1.6 (0.11)
Demographics				
Race/ethnicity, %				
non-Hispanic White	78.0	82.5	78.6	80.1
non-Hispanic Black	15.0	10.1	13.8	12.5
Hispanic	7.0	7.4	7.6	7.4
Marital status, %				
Married	73.2	92.6	67.2	82.3
Never married	3.7	1.8	3.4	3.8
Divorced/separated/widowed	23.2	5.6	29.4	13.9
# of children 17 or older, %				
1	30.7	13.7	23.7	20.2
2	43.7	63.6	47.4	44.3
3 or more	25.6	22.7	28.9	35.4
Interview year (at age 50), %				
2008	26.1	29.1	25.4	25.8
2010	25.1	29.4	25.6	21.5
2012	25.6	19.7	24.5	28.0
2014	23.2	21.9	24.5	24.7
Socio-economic status				
Educational attainment, %				
No degree or GED	15.1	5.7	13.8	4.3
High school diploma	49.5	52.3	45.7	51.2
Associate's degree	7.0	8.2	11.8	13.2
Bachelor's degree or higher	28.4	33.8	28.7	31.3
Household wealth, %				
< $0	7.0	5.4	9.1	6.7
$0 to $42,199	17.9	8.3	17.9	10.2
$42,200 to $187,999	24.6	27.2	23.7	32.3
$188,000 to $472,999	24.2	31.4	25.3	37.6
$473,000 or higher	26.4	27.8	24.1	13.2
Employment status (past yr), %				
Employed all year	80.2	83.7	68.0	78.3
Out of the labor force	12.2	7.5	23.4	13.8
Unemployed	7.6	8.8	8.6	7.9
Household poverty, %	6.3	0.9	9.6	2.4
Interpersonal/Economic shocks				
Divorced in prior 4 years, %	5.2	3.1	5.6	5.1
Declared bankruptcy in prior 4 years, %	2.7	3.4	3.9	2.5
Unemployment in prior 4 years, %	13.8	6.7	14.5	5.6
Health at age 40				
Depressive symptoms	2.4 (0.11)	2.0 (0.26)	3.5 (0.11)	2.6 (0.26)
Self-rated health	2.2 (0.03)	2.1 (0.08)	2.2 (0.03)	2.2 (0.08)

Notes: [a] higher values represent more depressive symptoms; [b] higher values represent better mental health
All measures assessed at age 50 interview, except for interpersonal/economic shocks and health at age 40

Table 2: Weighted linear regression estimates predicting depressive symptoms and mental health by child-related educational debt, NLSY79 parents with a child aged 17 or older who attended college, n=3,545

	Depressive Symptoms		**SF-12 Mental Health**	
	Model 1 b (se)	Model 2 b (se)	Model 1 b (se)	Model 2 b (se)
Any child-related educational debt	-0.4 (0.3)	-1.4 (0.4)*	0.0 (0.8)	2.0 (1.0)*
Amount of child-related educational debt ($)	0.1 (0.2)	0.6 (0.2)*	-0.2 (0.4)	-1.1 (0.5)*
Mothers	0.9 (0.1)*	0.9 (0.2)*	-1.6 (0.3)*	-1.6 (0.3)*
Any child-related educational debt x Mothers		1.6 (0.6)*		-3.3 (1.5)*
Amount of child-related educational debt x Mothers		-0.9 (0.3)*		1.6 (0.7)*
Race/ethnicity (reference: NH White)				
non-Hispanic Black	-0.6 (0.2)*	-0.6 (0.2)*	1.6 (0.4)*	1.6 (0.4)*
Hispanic	-0.7 (0.2)*	-0.7 (0.2)*	1.3 (0.4)*	1.3 (0.4)*
Marital status (reference: married)				
Never married	0.3 (0.5)	0.4 (0.5)	-0.4 (0.9)	-0.4 (0.9)
Divorced/separated/widowed	0.2 (0.2)	0.2 (0.2)	-0.7 (0.5)	-0.7 (0.5)
# of children 17 or older (reference: 2)				
1	0.1 (0.2)	0.1 (0.2)	-0.1 (0.4)	-0.1 (0.4)
3+	-0.1 (0.2)	-0.1 (0.2)	0.4 (0.4)	0.5 (0.4)
Interview year at age 50 (reference: 2010)				
2008	0.5 (0.2)*	0.5 (0.2)*	-1.1 (0.4)*	-1.1 (0.4)*
2012	-0.1 (0.2)	-0.1 (0.2)	-0.3 (0.4)	-0.3 (0.4)
2014	-0.1 (0.2)	-0.1 (0.2)	0.2 (0.4)	0.2 (0.4)
Educational attainment (reference: H.S. diploma)				
No degree or GED	0.8 (0.3)*	0.8 (0.3)*	-1.0 (0.6)	-1.0 (0.6)
Associate's degree	0.4 (0.3)	0.4 (0.2)	-1.2 (0.5)*	-1.2 (0.5)*
Bachelor's degree or higher	-0.1 (0.2)	-0.1 (0.2)	-0.9 (0.3)*	-0.9 (0.3)*
Household wealth (reference: $42,200 - $187,999)				
< $0	1.0 (0.3)*	1.0 (0.3)*	-1.0 (0.7)	-1.0 (0.7)
$0 to $42,199	0.5 (0.3)	0.5 (0.3)	-0.3 (0.6)	-0.3 (0.6)
$188,000 to $472,999	-0.2 (0.2)	-0.2 (0.2)	0.2 (0.4)	0.2 (0.4)
$473,000 or higher	-0.0 (0.2)	-0.0 (0.2)	0.5 (0.5)	0.5 (0.4)
Employment status (reference: employed all year)				
Out of the labor force	1.2 (0.2)*	1.2 (0.2)*	-1.9 (0.5)*	-1.9 (0.5)*
Unemployed	0.7 (0.3)*	0.7 (0.3)*	-1.3 (0.7)	-1.3 (0.7)
Household poverty	1.0 (0.4)*	1.0 (0.4)*	-2.7 (0.8)*	-2.7 (0.8)*
Divorced in prior 4 years	0.6 (0.4)	0.6 (0.4)	-1.0 (0.9)	-1.0 (0.9)
Declared bankruptcy in prior 4 years	0.1 (0.4)	0.1 (0.4)	-0.4 (0.9)	-0.4 (0.9)
Unemployment in prior 4 years	0.0 (0.3)	0.0 (0.3)	-0.3 (0.5)	-0.3 (0.5)
Health at age 40				
Depressive symptoms	0.3 (0.0)*	0.3 (0.0)*	-0.5 (0.1)*	-0.5 (0.1)*
Self-rated health	0.5 (0.1)*	0.5 (0.1)*	-1.0 (0.2)*	-1.0 (0.2)*
Intercept	2.4 (0.2)*	2.4 (0.3)*	55.6 (0.5)*	55.6 (0.5)*

Figure 1: Predicted depressive symptoms for fathers and mothers by child-related educational debt and, among borrowers, amount of child-related educational debt, n=3,545

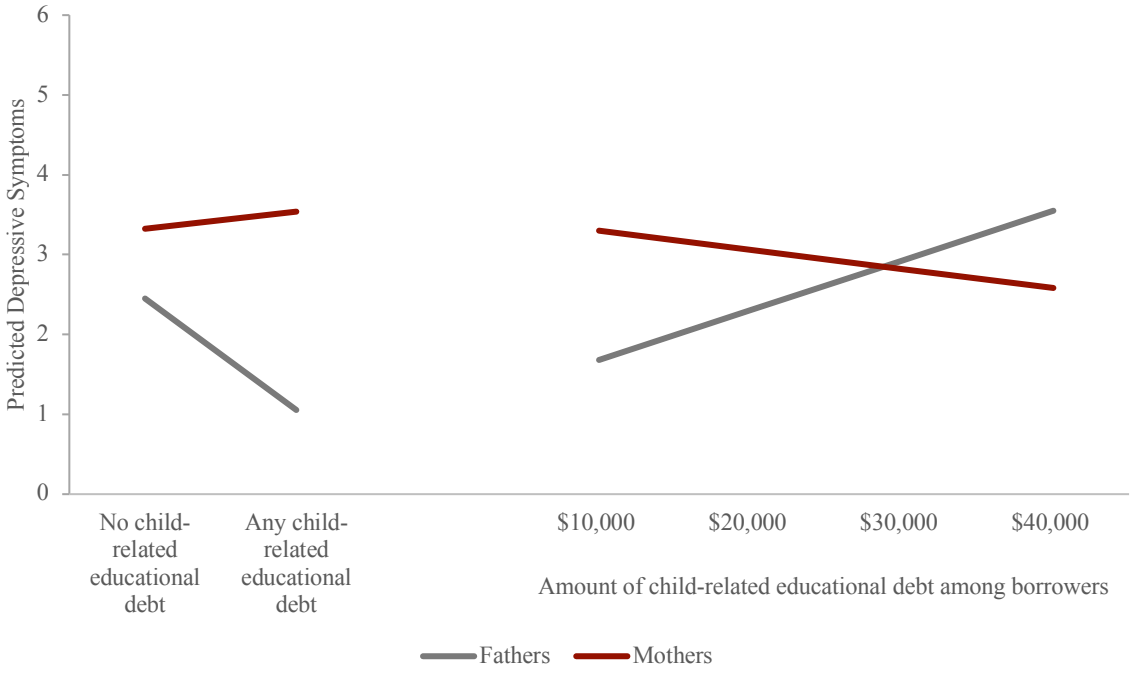
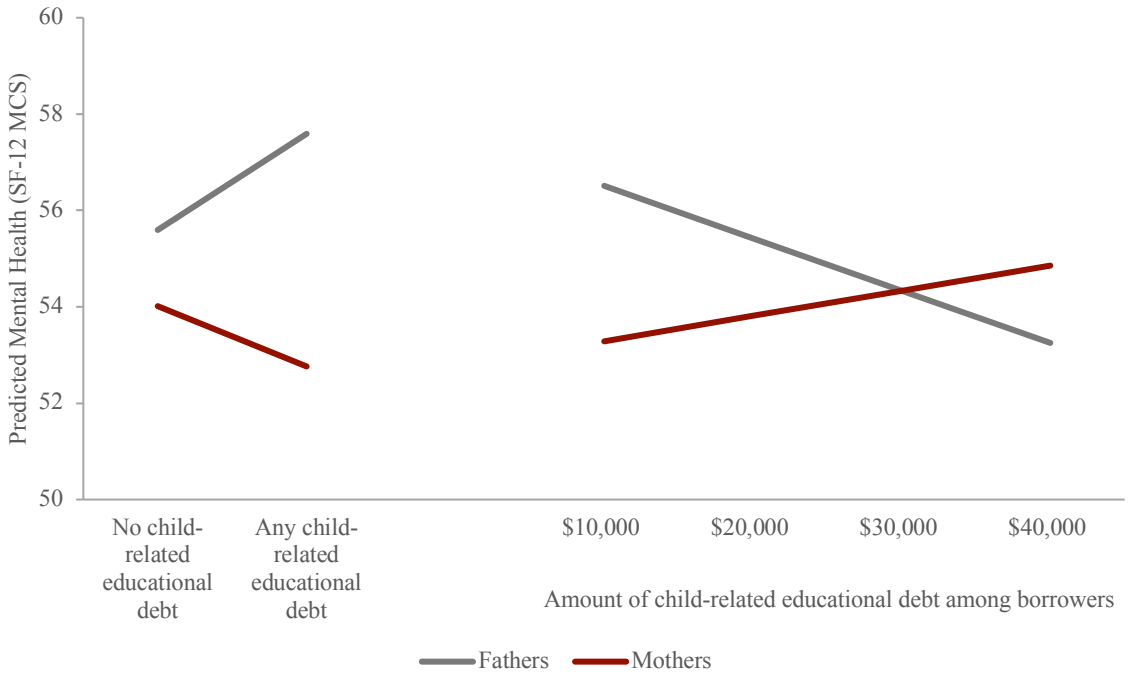


Figure 2: Predicted mental health (SF-12 MCS) for fathers and mothers by child-related educational debt and, among borrowers, amount of child-related educational debt, n=3,545



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