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# Age, Debt and Anxiety\*

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*What is the association between debt and anxiety? Is the relationship between age and anxiety in part due to financial debt? Recently there has been a renewed interest for the reconceptualization and measurement of socioeconomic status that moves beyond the standard education, occupation, and income. This paper uses credit card debt and stress regarding debt to examine the relationship among age, debt, and anxiety. Using data from a 1997 representative sample of more than 1,000 adults in Ohio, results show that anxiety does increase with the ratio of credit card debt to income, and with being in default; but credit card debt accounts for little of the age-anxiety association. Stress regarding overall debt does explain some of the age effect. In addition, stress also explains some of the effect of the credit card debt to income ratio, and all of the effect of default on anxiety.*

What is the association between debt and anxiety? Is the relationship between age and anxiety in part due to financial debt? Social scientists have consistently found that socioeconomic status is strongly associated with mental health (Dohrenwend et al. 1992; Kessler 1982; Link, Lennon, and Dohrenwend 1993; Mirowsky and Ross 1986; Williams, Takeuchi, and Adair 1992) as well as health and mortality (Elo and Preston 1996; Feinstein 1993; Kitagawa and Hauser 1973; Lantz et al. 1998; Ross and Wu 1995; Smith, Bartley, and Blane 1990; Townsend, Davidson, and Whitehead 1988; Williams and Collins 1995; Williams 1990).

The stress process model explains that sources of stress arise from structural aspects of one's location within society, and that those sources are contingent upon one's stage in the

life course (Pearlin et al. 1981; Pearlin 1989; Pearlin and Skaff 1996). In addition, sources of stress originate from the historical location of a cohort (Pearlin and Skaff 1996). Younger cohorts in this study have come of age during unprecedented growth in materialism and consumer culture. Modern U.S. society has been described as a time in which we are active consumers, motivated by self-expression rather than basic survival (Coontz 1992; Inglehart and Baker 2000; Schor 1998). The stage of young adulthood in the life course coupled with the historical context of our society may explain why those who are younger have higher levels of anxiety.

Anxiety is more common among younger adults, in part due to economic hardship experienced in young adulthood (Mirowsky and Ross 1999a). The early adult years of the life cycle are a challenging time in which most men and women have many job and family responsibilities and transitions (Hochschild 1989; Pearlin and Skaff 1996; Rindfuss 1991). Young adults typically have not reached their earning potential, but frequently are supporting children as they establish households and families (Belsky and Kelly 1994; Mirowsky and Ross 1999a). Therefore, one reason for higher levels of anxiety in young adulthood may be due to the amount of debt they incur.

Recently, there has been renewed interest for the conceptualization and measurement of

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socioeconomic status that moves beyond the standard measures of income, education, and occupation (Adler et al. 1994; Anderson and Armstead 1995; Conley 1999; Hummer 1996; Oliver and Shapiro 1995; Williams and Collins 1995; Williams 1990). Researchers argue that they underestimate differences in wealth and financial well-being among subgroups of the population (Adler et al. 1994; Anderson and Armstead 1995; Conley 1999; Hummer 1996; Oliver and Shapiro 1995; Williams and Collins 1995). Understanding more about one's financial status and wealth may aid in understanding the impact of socioeconomic status on well-being. One understudied area of financial status is credit cards; credit card debt is growing rapidly in the United States (Edelberg 1997; Ritzer 1995) and deserves consideration. The percentage of families who have a credit card has increased from 55.8 to 66.4 percent from 1989 to 1995 (U.S. Bureau of the Census 1999). In addition, credit card spending has increased more than three-fold from \$243 billion in 1990 to a projected \$891 billion in the year 2000 (U.S. Bureau of the Census 1999). I will examine the salience of credit card debt as a measure of financial status, financial strain, and socioeconomic status in this paper. This research tests whether credit card debt, as another aspect of socioeconomic status and financial well-being, is associated with well-being. Specifically, it examines the age patterns of credit card debt and stress regarding overall debt. It then assesses the extent to which the age differences in anxiety are explained by differences in credit card debt and stress regarding debt.

#### SOCIOECONOMIC STATUS, OTHER INDICATORS OF FINANCIAL WELL-BEING, AND WELL-BEING

Despite a strong tradition in the literature examining socioeconomic status and well-being, we know little about other measures that tap into well-being such as economic hardship, debt, assets, and wealth (but see Anderson and Armstead 1995; Mirowsky and Ross 1999a; Ross and Huber 1985). To my knowledge, no other researchers have studied the association of credit card debt and well-being. In our previous work, we have found that credit card debt, and the stress regarding debt are both associated with worse physical health (Drenea

and Lavrakas 2000). Debt acquired for either student loans, a home, or a car may also be a chronic strain on an individual's financial well-being, and ultimately emotional well-being, even though they are considered necessary to most Americans. The lack of research in the area is partially due to a lack of data on individual credit card debt and other financial well-being measures, but it is also due to the traditional conceptualization of socioeconomic status as education, income, and occupation.

#### CREDIT CARD DEBT IN THE UNITED STATES

Credit card debt is growing in the United States (Edelberg 1997; Yoo 1997) as well as in other developed nations (Edelberg 1997; Ritzer 1995, 1999; Wallace 1998; Yoo 1997). Younger cohorts are more susceptible to credit card debt for three reasons (1) Credit card companies have begun to concentrate much of their marketing to high school and college students (Ritzer 1995). Increased marketing to young persons insures that they begin their adult life with credit cards. Consumers are therefore taught early on to use and rely on credit cards. (2) As mentioned before, early adulthood is the stage in life in which there is great material acquisition as individuals build their lives. Housing and transportation costs become necessary as they leave their parents' homes. Frequently young people accumulate consumer goods, although they typically do not have enough earnings so early in life. Many begin families as well, and therefore must pay for the added expenses of the growing family. (3) The increased usage and spending of credit cards are related to increased consumption in the last half-century in modern society (Coontz 1992). Younger adults may disproportionately be involved in consumption practices—especially as compared to those born in a less economically expansive era such as the Great Depression (Elder 1974). The phenomenon, called "the new consumerism" by Juliet Schor, shows Americans are aspiring to have more, although they have not been earning proportionally more. Therefore, while in the past Americans used to match their lifestyle with others in their local reference group, such as their neighbors, they now choose reference groups of people whose incomes are much higher than their own

salaries. Schor (1998) argues that this "relentless ratcheting up of standards" has caused many to incur massive debt and stress.

Using credit card debt as another measure of socioeconomic status is another way of tapping into one's financial well-being because at times people use credit cards as a way of purchasing goods and services they could otherwise not afford (Schor 1998). In addition, it may be a more sensitive barometer of financial well-being than income because it may tap into more long-term deprivation. Families often use credit during difficult financial times, so that while income is measured at one time point, credit card debt has likely accumulated over time (Williams and Collins 1995).

Credit card debt is especially stressful and may impact well-being for several reasons. (1) Credit card debt can be associated with both short-term and long-term financial difficulties. Having a lot of credit card debt may be indicative of a financial crisis, such as one who experiences job loss and has no income or savings. In such cases, families may charge basic necessities (from food, medicine, clothing, and shelter to school tuition) on their credit cards. Since credit card debt accumulates over time, and interest is generally high, it is also indicative of extended financial hardship (Cocheo 1997; Williams and Collins 1995). (2) High credit card debt may lead individuals to spend their income on lesser-quality goods and services associated with their own health. If individuals are having trouble paying for their needs, they may cut corners in terms of health care. For instance, one may buy inexpensive mass-produced magnifying glasses or walking canes rather than prescription reading glasses and custom-fitted canes. They may choose to engage in self care, rather than going to a doctor: They may also simply avoid medical or dental treatment. (3) Additionally, the stress of owing money may lead to increased anxiety. Not having enough cash on hand to pay for goods and services, paying high interest rates, and paying monthly bills adds to an individual's everyday stress. (4) Almost all credit card debt is unsecured, meaning that there is no collateral secured against the debt. As a result, aggressive tactics are used by collection agencies. The agencies are hired by credit card companies to call the debtor when one skips payments (i.e., in default). The purpose of the collection agencies is to recover the debt. They use tactics including threatening letters, and

calling at home or work. While consumer interest groups as well as the Fair Debt Collection Practices Act in the United States have tried to limit harassment by collection agencies, the illegal tactics to collect from those in default do still occur. In addition, unfair collection tactics are more likely to happen among disadvantaged groups who are less likely to know and exercise their rights (Gray 1997; Dietz and Langer 1996). (5) Credit card debt can be viewed as non-normative, as compared to "normative debt" for home or education. While debt incurred from a home and car are deemed necessities in U.S. society, credit card debt is frequently seen as excessive, taken on by those with prodigal habits; many believe that those in credit card debt simply don't have discipline and self control. In reality, those in severe credit card debt are often those who have experienced a recent job loss and/or health problems (Cocheo 1997). Alternatively, normative debt, such as purchasing a home or student loans for higher education, is associated with stability and responsibility in a community. (6) Credit card debt is also associated with an increase in bankruptcy cases in the United States (Cocheo 1997; Schor 1998). All of these reasons may cause additional stress.

#### AGE, WELL-BEING, AND ANXIETY

Social scientists who study psychological well-being find social patterns in which subgroups of the population are most likely to be distressed (Mirowsky and Ross 1986). Moreover, their psychological state is attributed to social factors rather than personality characteristics. In the last 10 years, one trend in this literature is that sociologists have specifically been examining whether age is linked to various psychological outcomes.

Most existing research regarding the relationship between age and psychological outcomes is associated more with life-cycle events associated with age (such as widowhood, family structure, health problems, disabilities, and economic well-being) than with age itself (Mirowsky and Ross 1992, 1999b; Roberts et al. 1997; Ross and Van Willigen 1996). Over the last few years, a number of articles have examined the association of age and the sense of control, depression, and anger. The sense of control is higher among young adults and decreases with old age (Mirowsky

1995; Schieman and Turner 1998; Wolinsky and Stump 1996). In addition, depression is more likely among the elderly and is lowest around age 45 (Mirowsky and Ross 1992). However, anger decreases with age (Schieman 1999; Mirowsky and Ross 1999b; Ross and Van Willigen 1996). Studies also generally show that older people report less anxiety, (Blazer et al. 1991; Mirowsky and Ross 1989, 1995, 1999b), however less is known about the mediating role of financial circumstances (i.e., credit card debt) in the age-anxiety association. This study proposes to explain part of age's negative association with anxiety via age patterns in credit card debt.

Anxiety is a state of psychological discomfort characterized by feeling tense, worried, anxious, and restless. The official diagnosis according to the DSM-IV, in order to be diagnosed with generalized anxiety disorder, is as follows: one must have experienced anxiety about a number of events or activities, more days than not, for a period of 6 months (American Psychiatric Association 1994:432). Social scientists have found that anxiety is more common among the young, minorities, and females (Barnett and Baruch 1987; Blazer et al. 1991; Mirowsky and Ross 1989, 1995). Regarding other background characteristics and socioeconomic status, it is more common among the unmarried, those with low income, and those in the service sector (Blazer et al. 1991). Lower levels of educational attainment among adolescents were associated with more anxiety (Miech et al. 1999). Anxiety is associated with worse health on average, and those with anxiety are also more likely to seek treatment from a mental health service (Blazer et al. 1991). In sum, building on existing literature explaining the importance of socioeconomic indicators of well-being (Anderson and Armstead 1995; Mirowsky and Ross 1989; Ross and Huber 1985; Williams 1990), this paper examines whether one reason that those who are younger have more anxiety is due to their increased levels of credit card debt and debt stress.

In this study, I test the following hypotheses:

*H<sub>1</sub>: Younger age is associated with greater anxiety.*

*H<sub>2</sub>: Younger age is associated with more credit card debt and stress regarding debt.*

*H<sub>3</sub>: Credit card debt and stress regarding debt will be associated with greater anxiety.*

*H<sub>4</sub>: Credit card debt may have a stronger effect on anxiety than income.*

*H<sub>5</sub>: Credit card debt and stress regarding debt contribute to younger people's higher anxiety.*

*H<sub>6</sub>: Family status may explain part of the relationship between age and anxiety.*

## DATA AND METHODS

This study is based on two random-digit dialing, telephone surveys of Ohioans conducted in June 1997; one survey was statewide and the other sampled zipcodes within the state with a high concentration of black residents. One English-speaking resident, age 18 or over of the household was randomly designated as the "eligible respondent" using a variation of the "last birthday" within-household respondent selection technique (Lavrakas 1993: 111-113).

The statewide survey interviewed 861 Ohioans. For this survey, 2,991 telephone numbers were processed, of which 1,554 were known to reach a household with an eligible adult. From these households, interviews were completed in 55 percent of the cases. Among those households in which interviewers actually spoke with the eligible adult, interviews were completed in 84 percent of the cases. The second random sampling which concentrated in the Ohio cities of Cincinnati and Cleveland included 176 Ohioans. For this survey, 770 telephone numbers were processed, of which 414 were known to reach a household with an eligible adult. From these households, interviews were completed in 42 percent of the cases. Among those households in which interviewers actually spoke with the eligible adult, interviews were completed in 76 percent of the cases. For the purposes of the present study, respondents were combined from both samples ( $n = 1,037$ ).

## MEASURES

### *Dependent Variable*

*Anxiety* is how many of the past seven days

the respondent: (1) worried a lot about little things, (2) felt tense or anxious, or (3) felt restless. Responses were summed and then divided by three to create the average level of anxiety ( $\alpha = .753$ ). This symptom scale approach is common in community surveys.

### *Independent Variables*

Credit card debt is measured using five separate indicators. For all questions, if the individual had no credit cards ( $n = 232$ ), they were represented as having no (i.e., zero) credit card debt in the following measures. All measures were coded so that a higher number indicates more credit card debt. The items were not combined into an index in order to assess how different aspects of credit card debt are associated with anxiety.

*Debt/income ratio.* This ratio measures the amount of credit card debt owed to one's total family income. Respondents were asked "Right now, approximately what is the total amount you (and your spouse/partner) owe on all your credit cards after your most recent payments?" Since the impact of credit card debt is relative to one's income, credit card debt was divided by income to get the proportion of credit card debt to income. For example, \$5,000 of credit card debt is different for those earning \$15,000 a year than for those earning \$60,000 a year. The ratio should more accurately reflect economic hardship than credit card debt alone.

*Carrying an unpaid balance.* This variable indicates whether respondents paid off their most recent credit card bill in entirety or not. If respondents carried over an unpaid balance on their credit cards they were coded 1. If they paid their credit card debt in full, they were coded 0.

*Amount of credit line used.* This variable is the ratio of the total amount owed to the household's total line of credit from all cards.

*Charging on more than two cards.* This measure is computed so that those who charged on three or more cards were coded 1, and those who charged on two or fewer cards were coded 0.

*Default.* This computed variable is the number of months one missed paying the minimum required payment on at least one card in the last six months. Default ranges from zero

months (indicating not being in default) to all six months.

Nationally, the percentage of families holding credit card debt in 1995 was 47 percent. This sample comes very close to the national average (U.S. Bureau of the Census 1999): overall, about 46 percent ( $n = 475$ ) of the sample indicated they had some credit card debt, whereas 43 percent ( $n = 450$ ) had no credit card debt. Finally, an additional 11 percent refused to answer the credit card debt questions. In the regression analysis, mean substitution was used for missing values and then I included an initial control for missing on the credit card debt measures (Cohen and Cohen 1975).

*Debt stress index.* This index was based on stress about overall debt, including any that is on credit cards, store credit, a mortgage or home equity loan, a car loan, or any other outstanding loan the respondent (or his/her spouse/partner) may have. Respondents were asked the following: (1) "Overall, how often do you worry about the total amount you (and your spouse/partner) owe in overall debt? Would you say you worry . . . 0 not at all, 1 hardly ever, 2 some of the time, 3 most of the time, or 4 all of the time?" (2) "How much stress does the total debt you are carrying cause to you (and your spouse/partner)? It is . . . 0 no stress at all, 1 not very much, 2 somewhat, 3 quite a bit, or 4 a great deal of stress?" and (3) "How concerned are you that you (and your spouse/partner) never will be able to pay off these debts? Are you . . . 0 not at all concerned, 1 not very concerned, 2 somewhat concerned, 3 quite concerned, or 4 very concerned?" An index was computed by adding these 3 questions together and multiplying them by 8.3 to obtain a scale of 0-100 points where a high number indicates more stress ( $\alpha = .861$ ). Respondents who answered they had no debt to worry about (question 1) were assigned zero on these three questions.

### *Control Variables*

Socioeconomic background control variables include race, sex, and age. *Minority* is coded 1 for those who have minority status and 0 for those who are nonminorities. *Female* is coded 1 for female and 0 for male. I transformed *age* by centering the variable, allowing for the intercept in regression to be intuitively

meaningful (Aiken and West 1991). Age was centered on 45, since that is the age in which individuals experience high levels of well-being (Mirowsky and Ross 1992). I measure the traditional indicators of socioeconomic status using *education*, the number of years of schooling, *income*, total household income from all sources before taxes for 1996, and having a *job*, coded 1 if the respondent is employed and 0 if he or she is not. In addition, I control for *family status* since both marriage and the presence of children in the home are associated with stage in the life course, financial strain and well-being as well. *Family status* is coded into four categories: *single with no children*, *single with children*, *married with no children* and *married with children*. In these measures, married consists of including both the married and the cohabiting ( $n = 12$ ), and single constitutes living alone, therefore including the divorced, widowed, separated, and the never married. Having children only includes those who are in the home who are 17 or younger. Missing values on control variables were coded to the mean.

### Analytic Strategy

I test hypotheses using a combination of descriptive statistics, graphs, and progressive adjustment in regression analysis to assess the relationships among age, credit card debt, and anxiety. First, I assess the association between age and anxiety, controlling for sociodemographic background characteristics and family status. I then test if the age-correlated credit card debt measures and stress regarding debt measures reduce the age coefficient. Anxiety and the debt stress index were correlated at  $r = .396$ , indicating that while the two are related, they are not so correlated as to suggest problems with multicollinearity.

## RESULTS

Table 1 reports means and standard deviations of the variables in the analysis. We see that respondents report feeling anxious an average of about two days per week, with a standard deviation of about two days. Respondents owed an average of \$1,449 on their credit cards, with a rather large standard deviation of \$3,840 (median = \$60).<sup>1</sup> Overall,

**TABLE 1. Means and Standard Deviations (N = 1037)**

	Mean	S.D.
Anxiety	2.19	2.03
Percent female	60.95	—
Percent minority	16.97	—
Age	45.34	17.08
Percent married	53.62	—
Number of children	.83	1.19
Education in years	12.95	2.14
Percent with job	61.74	—
Family income (in 1996 dollars)	43,100.00	41,537.00
Credit card debt (in 1996 dollars)	1,449.00	3,840.00
Debt/income ratio	03.93	.11
Percent who carry balance forward	19.43	—
Amount of credit used	.14	.26
Percent with 3 or more cards	6.71	—
Default	.23	.85
Overall debt stress index	28.43	26.84
Percent married with children	27.10	—
Percent married with no children	25.36	—
Percent single with children	15.72	—
Percent single with no children	31.82	—

Note: Standard deviations not reported for dichotomous variables.

respondents scored an average of 28 on a scale to 100 on the debt stress index.

Table 2 compares those with credit card debt to those without. There is no difference in anxiety levels between those who have credit card debt and those who do not. Among the significant differences, those who have credit card debt are younger, more likely to be married, and more likely to have a job. In addition, they have lower education, but higher incomes. Not surprisingly, those who have credit card debt are more stressed about overall debt. Finally, those who are married with children are more likely to be in credit card debt than not; and those who are single and don't have children are less likely to have credit card debt.

Before turning to the multivariate analysis, the relationships between age and anxiety and age and credit card debt indicators were graphed to get a visual understanding of the relationships. These graphs show anxiety (Figure 1) and credit card debt measures (Figures 2–7) by age groups using standard error plots with means and 95 percent confidence intervals.<sup>2</sup> This series of graphs gives a visual interpretation of the variation both within each age category and across the life course, and it allows for speculation both for a life course and cohort interpretation of each relationship. Respondents were grouped by 10-year age groups across the life course. Figure 1 shows that, as expected, anxiety decreases with

**TABLE 2. Variables of Interest and Credit Card Debt**

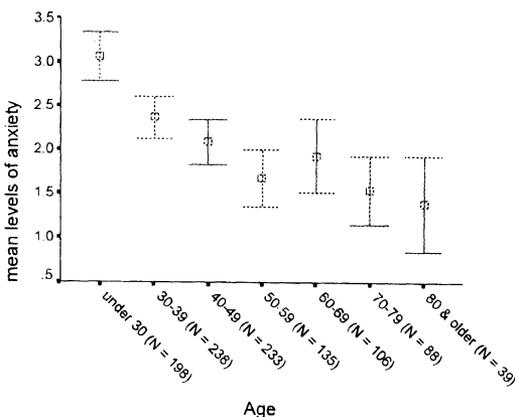
	Credit Card Debt	
	Has Debt	Has No Debt
Anxiety	2.25	2.25
Percent female	62.11	60.00
Percent minority	17.47	17.33
Age	42.29*	47.93
Percent married	58.53*	46.22
Number of children	.92	.78
Education in years	12.51*	13.35
Percent with job	71.79*	49.22
Family income (in 1996 dollars)	46,314.00*	39,593.00
Credit card debt (in 1996 dollars)	2,820.00*	0
Debt/income ratio	.08*	.00
Percent who carry balance forward	32.70*	.00
Amount of credit used	.30*	.00
Percent with 3 or more cards	8.65*	4.44
Default	.45*	.00
Overall debt stress index	34.11*	21.87
Percent married with children	33.89*	20.22
Percent married with no children	23.79	24.66
Percent single with children	14.32	18.22
Percent single with no children	28.00*	36.88
N	475	450

\**p* < .05 (two-tailed tests)

age. Figures 2 through 7 show credit card indicators with strong patterns as they vary by age. Each indicator follows a different pattern by age: For instance, the credit card debt to income ratio rises and falls, with the highest among those age 40–49 (Figure 2). While those age 80 and over have the second highest credit card debt to income ratio, note that this is a very wide confidence interval, with a small number of respondents. As a result, as in all these figures, the oldest age group results should be interpreted with caution and are only suggestive. These graphs likely reflect a cohort effect in which the elderly, as a group, are

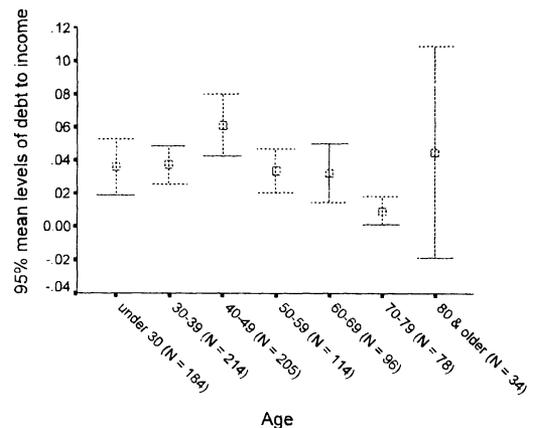
unlikely to use credit cards. However, they also likely reflect a life-course effect in which economic hardship decreases for most over time (cf. Mirowsky and Ross 1999a). Interestingly, the credit card debt to income ratio, amount owed, amount of credit used (of that which is available), and carrying over an unpaid balance peaks in the middle years of 40–49 (see Figures 2, 3, 4, and 6). However, Figures 5 and 7 show that the younger ages have a more stressful relationship with credit card debt: That is, those in their 30s and below experience a greater likelihood of being in default and score higher on the debt stress index. Note

**FIGURE 1. Anxiety by Age**



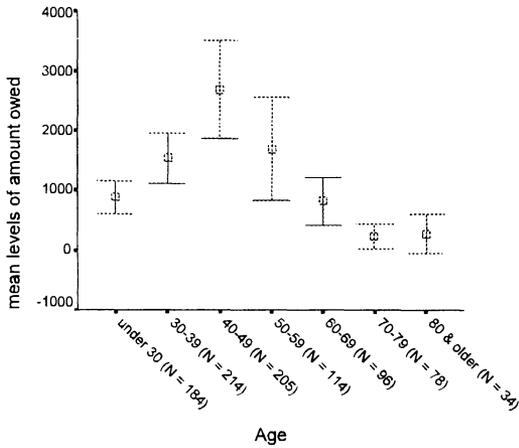
Note: symbols indicate mean and 95% confidence interval

**FIGURE 2. Debt to Income Ratio by Age**

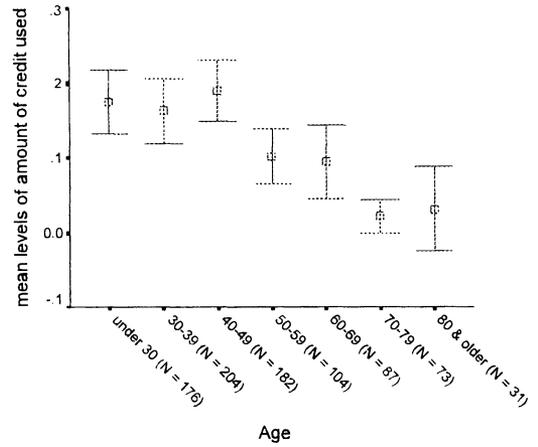


Note: symbols indicate mean and 95% confidence interval

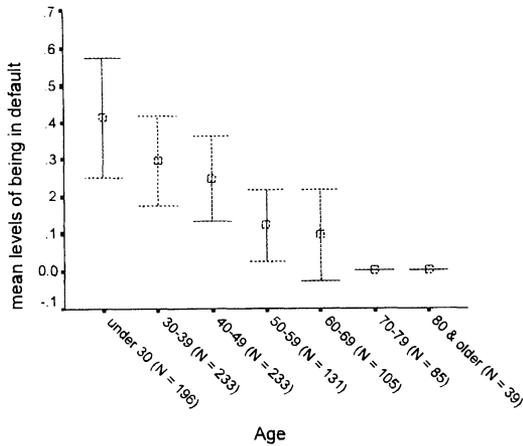
**FIGURE 3. Amount Owed by Age**



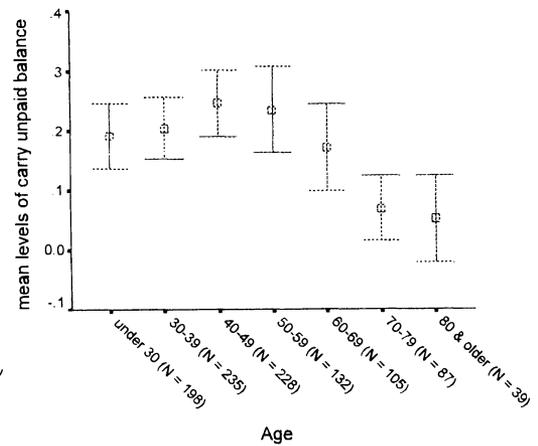
**FIGURE 4. Amount of Credit Used by Age**



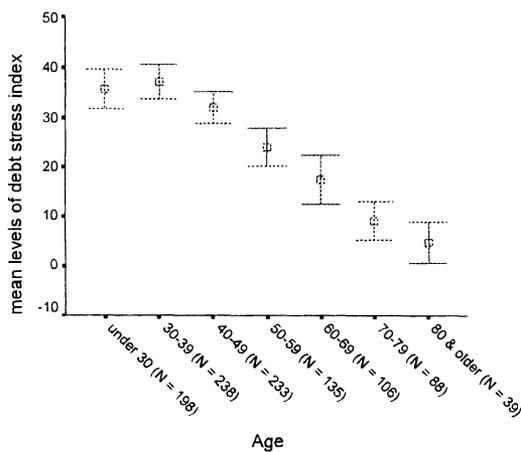
**FIGURE 5. Being in Default by Age**



**FIGURE 6. Carry Over Unpaid Balance by Age**



**FIGURE 7. Debt Stress Index by Age**



that the elderly have little to no credit card debt and debt stress; it is truly a phenomenon experienced by younger individuals: This suggests cohort differences in credit card debt as well, in which credit card debt is not a part of life among those born earlier in the century.

Table 3 reports anxiety regressed on age, sociodemographic characteristics, family status, credit card debt, and stress regarding debt. In equation one, sociodemographic characteristics were regressed on anxiety. As expected, minorities and females experience higher levels of anxiety. There is a linear and negative association between age and anxiety, indicating that younger people have higher levels of anxiety. In the next equation I added socioeconomic status variables, all of which are associated with lower anxiety. Socioeconomic status explained most of the relationship between minority status and anxiety. Put differently, it is not race but lower socioeconomic status typically experienced by minorities that leads to higher anxiety. In the third equation, I added family status. Being married with children is associated with less anxiety than being single with children. This is hardly a surprising result. Family status only explains a small part of the association between age and anxiety. In equation four, I added the credit card debt measures. A higher credit card debt to income ratio is associated with greater anxiety ( $b = 1.339$ ). Also, skipping a minimum payment or being in default are also associated with higher anxiety ( $b = .201$ ). These measures of credit card debt explain only a small percentage of why the youngest experience higher levels of anxiety: the percent change in the age slope between equations 4 and 3 was only 3 percent  $[(-.032 + .031) / -.032] = .031$  or 3 percent. The credit card debt variables do, however, explain in large part why females report higher levels of anxiety. Finally, equation five includes the debt stress index, which indicates the degree to which the respondent worries about overall debt. The stress one experiences surrounding debt completely explains why women have higher levels of anxiety ( $b = .046$ ,  $p = n.s.$ ), indicating that it is not just credit card debt, but the stress women experience regarding their debt that leads to higher levels of anxiety. The debt stress index also explained to a greater degree why the younger have more anxiety.<sup>3</sup> Taking into account debt stress diminishes the negative effect of age on anxiety by 39 percent  $[(-.031 + .019) / -.031] = .387$  or 39 percent.

The percent change in the linear age slope when considering both the credit card debt variables and the debt stress index is 41 percent  $[(-.032 + .019) / -.032] = .406$  or 41 percent. Thus, the amount of debt stress clearly explains more of the age and anxiety correlation, than does credit card debt.<sup>4</sup>

Debt stress also explains part of the association between the credit card debt to income ratio, and it completely explains the effect of skipping the minimum payment ( $b = .096$ ,  $n.s.$ ). Thus, much of the reason the credit card debt to income ratio and being in default are associated with anxiety is through the stress they create. Debt stress also explained part of the effect of education and family income (traditional socioeconomic status variables) on anxiety. Surprisingly, once stress surrounding debt is controlled or accounted for, carrying a balance forward is associated with less anxiety, net of all controls—perhaps because it distributes the credit card debt evenly over time.<sup>5</sup>

## DISCUSSION AND CONCLUSION

The stress process model predicts that sources of stress originate in one's stage in the life course and that stress is situated in their structural and historical locations (Pearlin 1989; Pearlin and Skaff 1996). Financial strain is a potential daily stressor, which falls more heavily upon the younger, as opposed to those in middle and later adulthood (Mirowsky and Ross 1999a, 1999b). The changes in life surrounding jobs, marriage, divorce, and children, tend to correspond with and be compressed within early adulthood, and this has financial implications that lead to stress (Belsky and Kelly 1994; Mirowsky and Ross 1999a, 1999b; Pearlin and Skaff 1996; Rindfuss 1991).

This paper tested a number of different ways to operationalize credit card debt including a credit card debt/income ratio, carrying a balance forward, the amount of the credit line used, using three or more cards, and being in default. Results show that anxiety does increase with both the ratio of credit card debt to income and being in default; but credit card debt accounts for little of the age-anxiety association. The spending habits of the younger adults do not appear to account for their higher anxiety. However, worrying about one's overall debt (which includes all debt, such as for education, a house, a car, and credit cards)

**TABLE 3. Anxiety Regressed on Age, Sociodemographic Background Characteristics, Debt, and Debt Stress (N = 1,037).**

	Equation 1		Equation 2		Equation 3		Equation 4		Equation 5	
	b	β	b	β	b	β	b	β	b	β
<i>Sociodemographics</i>										
Minority	.347* (.163)	.064	.239+ (.163)	.044	.170 (.168)	.031	.104 (.168)	.019	.046 (.159)	.009
Female	.325** (.126)	.077	.244* (.127)	.059	.243* (.127)	.059	.207+ (.127)	.050	.046 (.121)	.011
Age <sup>a</sup>										
Age	-.027** (.004)	-.229	-.033** (.004)	-.280	-.032** (.004)	-.273	-.031** (.004)	-.260	-.019** (.004)	-.162
Education			-.080** (.030)	-.084	-.078* (.030)	-.082	-.082** (.029)	-.087	-.063* (.029)	-.067
Have Job			-.296* (.142)	-.071	-.280* (.143)	-.067	-.316* (.143)	-.076	-.333* (.135)	-.080
Family Income			-4.668E-6** (.000)	-.096	-4.151E-6** (.000)	-.085	-3.723E-6** (.000)	-.076	-2.393E-6+ (.000)	-.049
<i>Family Status<sup>b</sup></i>										
Married With Children					-.346* (.200)	-.076	-.391* (.200)	-.086	-.420* (.189)	-.092
Married No Children					-.274 (.218)	-.059	-.307+ (.218)	-.066	-.147 (.207)	-.032
Single No Children					-.126 (.200)	-.029	-.128 (.200)	-.029	-.012 (.189)	.003
<i>Debt</i>										
Debt/Income					1.339* (.693)	.066	1.339* (.693)	.066	.871+ (.656)	.043
Carry Balance					-.132 (.164)	-.026	-.132 (.164)	-.026	-.334* (.156)	-.065
Amount of Credit Used					.189 (.298)	.022	.189 (.298)	.022	-.177 (.283)	-.021
3 or More Cards					.111 (.247)	.014	.111 (.247)	.014	.161 (.233)	.020
Default					.201** (.074)	.083	.201** (.074)	.083	.096 (.071)	.040
Debt Stress Index									.027** (.002)	.358
Constant	1.992		3.473		3.631		3.634		2.735	
Adjusted R <sup>2</sup>	.065		.089		.101		.198		.198	
F Statistic	19.004		15.411		11.172		8.732		16.960	

+p < .10 \*p < .05 \*\*p < .01 (one-tailed tests)  
 Note: Numbers in parentheses are standard errors.  
<sup>a</sup> Age is centered at 45.  
<sup>b</sup> Single with children as comparison category.

does explain some of the age effect. While these types of debt are to some extent a necessity in our society, perhaps they do elevate anxiety levels for those starting out.

Overall, there is moderate support for the hypotheses. Only being in default decreased with age and increased anxiety; and only the credit card debt to income ratio and being in default predicted higher anxiety. In addition, the debt stress index was high in early adulthood, and it increased anxiety. It explained most of the effect of the credit card debt to income ratio, all of the effect of being in default, and a great deal of the age effect on anxiety. Hypothesis 1 stated that anxiety will be highest among the younger age groups, and it was supported. Hypothesis 2 stated that the younger would have higher levels of credit card debt and debt stress, and it was supported. Hypothesis 3 was partially supported. The results show that the credit card debt to income ratio, skipping the minimum payment, and stress regarding debt were associated with anxiety. However, carrying a balance forward was associated with less anxiety—which is in the opposite direction than expected. Hypothesis 4 predicted that credit card debt may get more at cumulative financial strain and thus would have a stronger effect on anxiety than income. Once again, this was partially supported; skipping a minimum payment has a stronger effect than income on anxiety ( $\beta = .083$ ,  $\beta = -.076$  respectively, equation 4). Hypothesis 5 was partly supported. Stress regarding debt explained part of the association between age and anxiety, but credit card debt only had a slight impact on the association between age and anxiety. Finally, hypothesis 6 predicted family status would explain part of the association between age and anxiety. Family status did explain a very small amount of the age and anxiety association. Hypothesis 6 was therefore partly supported.

This study advances the literature in understanding more about the relationship between credit card debt, age, and anxiety. Understanding credit card debt and stress surrounding debt is one way of understanding socioeconomic status as it changes over the life course. These results provide some evidence that a more detailed conceptualization of socioeconomic status that includes indicators of debt is useful for understanding mental health.

I now turn to limitations to this research. First, it would be beneficial to have more mea-

asures of all types of debt, instead of only credit card debt. In addition, ideally I would also have examined multiple psychosocial disorders such as depression or the sense of control (see Aneshensel, Rutter, and Lachenbruch 1991); however, multiple measures are not available in these data. It is possible that the effect of credit card debt is disorder-specific; it may have a stronger effect on anxiety and the sense of control, for instance, but may not affect depression rates as strongly.

The debt stress index remains somewhat ambiguous. It is interpreted so that a high score indicates a lot of debt to worry about. Alternatively, though, a high score could indicate a lot of worry, with some of it regarding debt. However, the moderate correlation between anxiety and the debt stress index, combined with the fact that the stress index explains why those in default have higher anxiety suggests that it is measuring worry surrounding debt.

Another limitation is that this is a cross-sectional study. It is plausible that anxiety contributes to credit card debt problems. This “drift hypothesis” would then suggest that those who are anxious would have increased stress regarding debt and more credit card debt. Most evidence, however, shows overwhelmingly that social class and one’s socioeconomic status affect well-being, and not the other way around (see Williams 1990 for a review). Research on anxiety supports a social causation argument (Miech et al. 1999), though some have found support for social selection as well (Kessler 1995).

Finally, it was expected that carrying a balance forward would lead to more anxiety, not less. We know little about why carrying a balance would lead to less anxiety. Perhaps once the negative aspect of debt (i.e., debt stress in equation 5) is partialled out, then the positive aspect of carrying over a balance remains. Many individuals likely use credit card debt in a responsible manner, which therefore does not impact their emotional well-being negatively. Those who carry a balance forward month to month may carefully plan their finances and have a greater sense of control of their finances. It may also be that carrying the balance puts off the stress of trying to pay off one’s bills. In any event, this nonintuitive finding should be examined in the future. Both consumption and credit card debt are increasing in U.S. society. The suggestion that credit

card debt causes higher anxiety levels, which disproportionately affects young individuals, should be further studied in the future using many indicators of debt.

## NOTES

1. While the amount owed is skewed, I, in effect, control for the skewness by using the credit card debt to income ratio. This ratio takes into account one's personal credit card debt—relative to their own individual income.
2. The number of cases on each debt indicator varies because of item nonresponse.
3. Collinearity diagnostic techniques were used to examine whether there were problems with multicollinearity among variables in each equation. When condition indices are over 30 and at least two variance proportions are high (greater than .50) in a row with a high condition index, we know multicollinearity has degraded estimates of coefficients. In no case were both of these conditions met, thus I am not concerned about problems with multicollinearity (see Belsley, Kuh, and Welsch 1980 for more information regarding this technique).
4. In a separate regression analysis (not shown) marital status was entered last to test whether family status explained the relationships among age, credit card debt and anxiety. Family status did not explain the effect of age or credit card debt on anxiety. It is used in table 3 as a control.
5. Table 3 was retested using robust regression methods, in case there were a few over-age-80 cases that exerted a high amount of leverage on the regression results (note the large confidence interval in Figure 2). I estimated the OLS model using the Huber-White variance-covariance matrix. The standard errors for the *age 45* coefficient were virtually unchanged (OLS s.e. = .0042412 and OLS with robust s.e. = .0042429), therefore I present OLS regression with the conventional variance matrix.

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