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Sensation-Seeking, Risk-Taking, and Problematic Financial Behaviors of College Students

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Abstract College students are at especially high risk for serious financial problems due to easy availability of credit cards, rising tuition, and a declining economy. Arnett (Am Psychol 55:469–480, 2000) proposed 18–25 year olds may be considered emerging adults and are characterized by less stable financial situations than those who perceive themselves to be adults. A survey was given to 450 students at two Mississippi universities. The results showed student financial behaviors were related to age, gender, public assistance, adult status, sensation-seeking, and potential for problem gambling. This study is unique in that it investigated the relationship of emerging adult/adult status and other individual and socio-demographic variables to financial behaviors among college students, a conceptualization that has not been explored in the past.

Keywords Adult status · College students · Financial behaviors

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Introduction

Unstable financial situations, the rising cost of higher education, a lack of financial support from parents, and the easy availability of credit cards can put college students at risk for serious financial problems. Adolescent research has shown that many 18–25 year olds may be considered emerging adults because they are in between adolescence and adulthood (Arnett 1997, 1998, 2000, 2001, 2002). Emerging adults are characterized by less stable: financial situations, interpersonal relationships, living arrangements, cognitive and emotional development, and religious beliefs than adults. Emerging adults have been found to engage in more risk-taking behaviors (Nelson and Barry 2005; Todesco 2005) which may also be related to poor financial decision making. No research was found that examined the relationship between emerging adulthood and problem financial behaviors of college students. Therefore, this study is unique in its effort to determine how emerging adult/adult status and individual and socio-demographic characteristics are related to financial behaviors of college students. College student financial behaviors have an impact on their families of origin because they may ask for more financial support from parents who may be struggling to meet their own needs and those of their families. Problematic financial behavior by college students may also affect their future financial well-being.

Review of the Literature

The literature review was conducted to determine what individual, and socio-demographic factors have been shown to have, or not have, significant influences on college students' financial situations.

Individual Factors

Adult Status

Arnett (2000) proposed that individuals between approximately 18 and 25 years of age are in a unique period of development distinct from adolescence and adulthood. He referred to this stage as "conceptually, theoretically, and empirically" different from the other two and labeled it "emerging adulthood" (p. 463). When compared to adults, emerging adults are characterized by less stable financial situations, interpersonal relationships, living arrangements, cognitive and emotional development, and religious beliefs. Arnett (2004) described emerging adult status as involving three goals: taking responsibility for oneself, making independent decisions, and becoming financially independent.

Little research has questioned the generally held assumption that all college students between 18 and 25 meet the criteria to be labeled "emerging adults." Blinn-Pike et al. (2008) used four criteria to classify over 400 undergraduates between 18 and 25 years of age and found that 41% (186) were emerging adults, 33% (148) were undecided, and 26% (116) were adults. Adult status was not significantly associated with gender or parenthood. Adults were more likely to be African-American and low income and were less likely to consume alcohol, binge drink, smoke cigarettes, and gamble. In addition, adults had significantly lower disinhibition scores than emerging adults.

Sensation-Seeking/Risky Behaviors

There is growing evidence that emerging adults have preferences for higher sensation-seeking activities than adults. Zuckerman (1979, p. 10) defined sensation-seeking as "the seeking of varied, novel, complex, and intense sensations and experiences, and the willingness to take physical, social, legal, and functional risks for the sake of such experiences." Sensation-seeking has been shown to be linked to the more general trait of impulsivity and has been shown to influence a wide variety of behaviors, including cigarette smoking, drug and alcohol use, and gambling. Zuckerman and Kuhlman (2000) examined the relationship between sensation-seeking and gender, risky behaviors, and gambling among 260 college students. They reported that gambling correlated significantly with drinking and risky sexual experiences for males, but did not correlate with any of the risk scales for females. In addition, males scored higher on gambling risk and sensation-seeking scales.

Recent research has found students who engaged in high-risk health behaviors, such as driving under the influence, taking amphetamines, or not practicing safe sex, were more likely to engage in high-risk credit behaviors (Adams and Moore 2007; Nelson et al. 2008). Newcomb and McGee (1991) found that sensation-seeking scores were highly correlated with legal and illegal substance use among adolescents. They reported that for females, a general sensation-seeking factor predicted alcohol use one year later. The same was not true for males, among whom only disinhibition (a sensation-seeking subscale) predicted alcohol use and only one aspect of alcohol use: quantity. Disinhibition is a sociopathic type of sensation-seeking that is highly related to nonconformity and impulsivity. Disinhibition is described as seeking sensation through social activities such as parties, social drinking, and sex (Zuckerman 1994). Carrol and Zuckerman (1977) found that disinhibition was positively correlated to both stimulant and hallucinogen drug use among 80 males in residential drug treatment programs.

Bradley and Wildman (2002) investigated risk and reckless behaviors in emerging adults. In their sample of 375 emerging adults, "risk" behaviors were found to be reliably predicted by high sensation-seeking scores. Todesco (2005) reported significant developmental differences in risk-taking and sensation-seeking behaviors between emerging adults (18–25 years old) and young adults (26–34 years old). Emerging adults were found to engage in more risk-taking and sensation-seeking behaviors, as well as view risky events as less harmful than young adults, providing additional support for the distinctiveness of emerging adulthood as a unique developmental period.

One particularly risky behavior that has been gaining attention among college students is gambling. Few studies have investigated the relationship between college student financial management behaviors and gambling behaviors. In one of the few, Miller (2001) included gambling in predicting college student financial impulsiveness, financial satisfaction, financial stress, and credit card debt. She reported that gambling was correlated with credit card debt, maternal influence, and gender. Gamblers reported higher levels of credit card debt than non-gamblers. College students who indicated that their mothers had influenced their values concerning money were less likely to gamble. Males reported higher levels of gambling-related spending than females. Delfabbro (2003) determined that adolescents whose parents taught them about budgeting, saving money, and managing their finances were less likely to express interest in future gambling.

Use of Credit

Henry et al. (2001) reported that many college students are vulnerable to financial crisis. Most research on the financial behaviors of college students has dealt with the accumulation of credit card debt even though these students may experience a host of other problematic financial behaviors such as having overdrawn checking accounts, borrowing money from friends to pay bills, and being forced to leave school to work. For example, Lyons (2008) found that being Black or Hispanic, female, a senior, married, renting an apartment, and being a first-generation college student increased a student's probability of holding $1,000 or more in credit card debt. Wang and Xiao (2008) found that students with strong social support systems were less likely to have credit card debt, whereas student with compulsive buying tendencies were more likely to have credit card debt.

The availability of credit cards on college campuses has seen an explosive level of growth in the past decade, with many credit card companies aggressively targeting college students. The proportion of college students who have at least one credit card has risen from 76% in the 2004 to 84% today (Sallie Mae Inc. 2009). According to a survey conducted by the U.S. Public Interest Research Group Education Fund (2008), 55% of college students reported using credit cards to pay for "day-to-day-expenses," 55% used credit cards to pay for textbooks, and 24% used credit cards to pay for tuition.

Socio-Demographic Factors

Family

Parents are the most important source of financial support for many college students (Côté 2002). Higher parental education and family income have been shown to be related to greater likelihood of offspring pursuing higher education and making a successful transition to adulthood (Cao 2008; Cha et al. 2005; Osgood et al. 2005; Sandefur et al. 2005; Schoeni and Ross, 2005). Côté (2002) also reported that students who pay for most of their own college education appear to make a more rapid, although more rocky, transition to adulthood. Individuals growing up in low-income homes face more difficult hurdles in their early transition to adulthood due to lack of social and financial capital (Bergin et al. 2006; Besharov 1999; Cao 2008; Duncan and Brooks-Gunn 2000). These hurdles include higher rates of unemployment and social idleness, earlier childbearing, lower college attendance, fewer total years of education, more involvement in violence and criminality, and exposure to unhealthy neighborhoods and crime. Other researchers have found that the more siblings in a household, the less likely that a child would attend college or receive financial support for college from their parents (Cao 2008; Yilmazer 2008).

Burgess et al. (2006) concluded that a young person's background impacted adult financial outcomes, particularly family characteristics such as parent educational level, number of siblings, and whether the family had one or two parents in the household. Miller (2001) studied the ability of early family experiences to predict college student's financial behavior, including financial impulsiveness, financial satisfaction, financial stress, and credit card debt. Results provided a mixed picture of the relationship of early family influences and later financial traits. Childhood participation in financial matters was related to impulsive spending and financial satisfaction. The age of financial involvement demonstrated a main effect for financial satisfaction. According to Borden et al. (2008), students from divorced families exhibited higher credit card debt and students from higher income families had lower credit card debt, whereas Eldar-Avidan et al. (2008) found that resilient young adults actually had positive benefits from their parents' divorce, such as developmental maturity and ability to take responsibility based on the resources available to them.

Joo et al. (2003) found college students' attitudes and behavior toward money is influenced by previous experience such as parents' credit card use when they were young and by their role models (i.e., parents, peers, and teachers). Another recent study found that college students with higher levels of parental advice, parental approval, and parental approval compliance were more likely to participate in desirable cash management practices (Xiao et al. 2007).

Age

Whether age is related to financial behaviors has shown mixed results in the literature. One recent study found that age was positively related to debt. However, the authors noted this was probably due to older students having had more time to accumulate debt compared to their younger classmates (Norvilitis et al. 2006). According to the study authors, most college students have limited financial knowledge and their lack of financial knowledge is directly related to debt (Norvilitis et al. 2006). A study by Henry et al. (2001) found that college students between 36 and 40 years of age were more likely to follow a budget most of the time, compared to their younger classmates.

Race/Ethnic Background

A persistent gap has been identified between the availability of information and actual understanding of college prices and financial aid among some groups (Perna 2006). Minority high school students and their parents may not understand how to negotiate the college financial aid process, thereby not applying for available sources of aid. In addition, they may underestimate the costs of attending college, thereby placing the student at financial risk once he or she has enrolled and attempts to meet higher than expected financial obligations (Elwood and Kane 2000; Luna De la Rosa 2006; Perna 2006). Grable and Joo (2006) found that African American college students had higher credit card debt and suffered from higher levels of financial stress than their White peers. In an earlier study, Joo et al. (2003) determined that Caucasians believed that credit cards are convenient, safe, and practical to use. Other variables related to positive attitudes toward credit cards in that study included: credit card ownership, lower academic level, and more frequent credit card use by parents. Positive attitudes toward credit cards can make college students vulnerable to financial troubles.

Gender

Consistent gender differences have been documented in financial knowledge but not behaviors. The research has consistently shown that male college students (a) have more financial knowledge (Markovich and DeVaney 1997), (b) know more about insurance and personal loans (Danes and Hira 1987), and (c) are more knowledgeable about investment options (Volpe et al. 1996).

On the other hand, there has been mixed support for gender differences in financial behaviors/practices. Female students have been reported to be more likely to have a written budget, plan their spending, keep bills and receipts, have less overall debt, and save regularly (Hayhoe et al. 2000; Henry et al. 2001). Conversely, they have been found to be risky in how they use credit cards (Lyons 2004).

Some of the gender differences in college students' financial behaviors and attitudes may be due to early familial socialization. Miller (2001) studied the ability of early family experiences to predict college students' financial behaviors. The data indicated that males and females were socialized differently. Paternal influence was found to be a significant predictor of impulsive spending, financial satisfaction, and credit card debt. Maternal communication was significant in predicting financial satisfaction and financial stress. Financial satisfaction was also related to paternal communication. And finally, credit card debt for males alone was related to the level of maternal influence.

In summary, a large portion of the literature in the area of problematic financial behaviors of young adults has focused on use of credit or amount of debt. The existing research has also investigated relationships among various demographic variables including ethnicity, gender, and socio-economic status with use of credit or debt. Although some studies have investigated the relationship between age or college-level classification with financial behaviors, no study has been done that specifically investigates emerging adult status and college students' problematic financial behaviors.

Hypotheses

The purpose of this study was to determine variables related to financial behaviors among college students. As documented in the review of literature, the relationships between individual and socio-demographic characteristics and financial behaviors of this population are mixed. Thus, it is important to assess the relationship between these characteristics and financial behaviors in the current sample, and to control for some of individual and socio-demographic factors when assessing the effects of adult status and sensation-seeking/risk-taking behaviors. Also, most of the existing literature looks at specific financial variables such as credit card use. There is limited research on a broader measure of the financial behaviors of college students and sensation-seeking/risk-taking behaviors of emerging adult versus adult status.

As a result of the limitations in the existing research, it is important to address the following questions. Are demographic and social variables (gender, age, race/ethnicity, and parental receipt of public assistance) associated with financial behaviors of college students? Do college students who: (a) perceive themselves to be emerging adults versus adults, (b) have higher sensation-seeking scores, and (c) participate more frequently in risk-taking behaviors (alcohol consumption, binge drinking, smoking, and gambling) have more problematic financial behaviors?

Based on the existing literature, the following hypotheses were generated.

Hypothesis 1 College students who are female will have less problematic financial behavior.

Hypothesis 2 College students who are older will have less problematic financial behavior.

Hypothesis 3 College students who are non-minority will have less problematic financial behavior.

Hypothesis 4 College students who come from families with adequate financial resources will have less problematic financial behavior.

Hypothesis 5 College students who are classified as being emerging adults will have more problematic financial behavior.

Hypothesis 6 College students who reveal they have high sensation-seeking personalities will have more problematic financial behavior.

Hypothesis 7 College students who report frequent participation in risky behaviors will have more problematic financial behavior.

Methods

Procedure

Survey data were collected from 450 undergraduate students enrolled in introductory psychology classes at two state universities in Mississippi. Data collection took place during spring 2006 and the data from the two colleges were pooled. The universities are approximately 100 miles apart. The students received extra credit points for participating. The survey consisted of 149 short answer questions and took approximately 25 minutes to complete. Only data that related to the identified research problem were included in this analysis: demographic variables, financial behaviors, adult status, sensation-seeking, and risky behaviors.

Participants

The students in the sample ranged in age from 18 to 25 years old and had a mean age of 19.62 years (SD = 1.37). They were from a variety of college majors (i.e., arts and sciences 45%; business 18%; education 10%; applied and life sciences 10%; engineering 6%). Seventy-eight percent were freshmen or sophomores. The sample was 56% female. Ethnicity of the sample was 74% (332) White, 23% (102) African American, and 3% (15) "other." Two percent of the students in the sample were married, and 9% were parents. When asked their primary source of money for college, 55% (246) of the students reported that most of their money for college came from their parents, while 45% (201) cited other sources such as grants, student loans, or jobs.

Measures

Problematic Financial Behaviors

In addition to demographic and social questions, the students were asked a series of nine yes/no questions regarding financial behaviors. The questions were author-developed (see Worthy et al. 2008). Similar to financial behaviors measured by Xiao et al. (2009), these were behaviors related to cash, credit and saving management. The Kuder-Richardson 20 reliability for these nine questions was .67. The questions asked if the student had participated in each of the following behaviors in the previous year: (1) thought about dropping out of school and working; (2) had trouble paying bills; (3) borrowed from friends or family to pay bills; (4) spent student loan(s) or scholarships on non-school items and/or activities; (5) maxed out credit cards; (6) wrote at least one check knowing it was bad; (7) pretended to have more money than he or she actually had; (8) got a job because of financial need; and (9) had an overdrawn checking account. To develop the financial behavior variable, no = 0 and yes = 1, responses were summed (range 0–9). The higher the score, the higher the potential for problematic financial behaviors.

Parental Receipt of Public Assistance

This variable was assessed by asking students if their family received public assistance (food stamps, Medicaid, and/or free/reduced price lunch) while they were growing up (yes/no). Receipt of public assistance indicated that the student grew up in a low-income household.

Adult Status

To determine their adult status, students were asked to respond to four survey items on a five-point scale from strongly disagree (1) to strongly agree (5) (Blinn-Pike et al. 2008). The four items were based on an extensive review of the literature that points to emerging adults as believing the following are markers for adulthood: (a) marriage or settling down; (b) independent decision making; (c) financial independence from parents; and (d) less questioning of parental religious beliefs (Arnett 1997, 1998, 2001, 2002). The items were: (a) I am ready for a serious relationship or marriage; (b) I have things I want to do before settling down (reversed); (c) I consider myself a self-supporting adult; and (d) my parents and I have the same religious beliefs. To create the adult status variable, scores for the four statements were summed (range 4–20). A higher score meant the student was classified as more of an adult and less of an emerging adult.

Sensation Seeking

Sensation seeking was measured with the disinhibition subscale of the Sensation Seeking Scale Form V (SSS-V) (Zuckerman 1994). The students were given ten pairs of items and asked to select the choice in each pair that best described them. One pair asked if the student preferred "wild, uninhibited parties" versus "quiet parties with good conversation." Zuckerman (1994) reported the reliability of the disinhibition subscale (SSS-V) to range from .72 to .78. A Cronbach's α of .79 was computed as an index of internal reliability for the current data. The disinhibition score was computed by adding scores for the ten sets of paired statements.

Risky Behaviors

The risk behaviors addressed in this survey were alcohol consumption, binge drinking, cigarette smoking, and gambling. Alcohol consumption, smoking cigarettes, and binge drinking (five or more drinks in a row) were all assessed by asking how many times they participated in the behavior in the previous 30 days. The range of responses for all three variables was 0–31. The distributions for all three variables were extremely skewed to the right. Smoking ($m = 4.68$, SD = 8.87, Mdn = 1) was the most skewed with 77% of the sample smoking on 2 or fewer days and about 7% smoking virtually every day (i.e., 29–31 days). Number of days drinking alcohol ($m = 7.40$, SD = 7.56, Mdn = 4) and number of days binge drinking ($m = 4.79$, SD = 6.03, Mdn = 2) also had highly skewed distributions, although to a less extreme degree than the smoking variable.

Because gambling was of interest in this study, an additional scale was added to measure pathological gambling. The South Oaks Gambling Screen or SOGS (Lesieur and Blume 1987) is one of the most widely used instruments for measuring pathological gambling (Shaffer et al. 1999). The SOGS is a 16-item dichotomous scale that assesses gambling behavior and gambling-related problems during the past 12 months and has been shown to represent a single dimension of pathological gambling. An example of a question from the SOGS is "Has your betting, in the past 12 months, ever caused any problems for you such as arguments with family and friends, or problems at school or work?" The SOGS is based on the seven criteria for pathological gambling proposed by the American Psychiatric Association (1980). The SOGS has been found to be highly reliable (Cronbach's α .97) and to be capable of uncovering both male and female pathological gambling (Lesieur and Blume 1987). Cronbach's α for the current SOGS data was .81.

Data Analysis

SAS Version 9.1 software was used to conduct statistical analyses. Preliminary analyses were conducted, followed by analysis of the data specifically related to the hypotheses. Preliminary analyses included descriptive statistics, correlation analyses, and subgroup analyses. A Poisson regression model was used to determine how well the set of independent variables explained the dependent variable (financial behavior score). Preliminary analyses indicated that the financial behavior score did not satisfy the normality assumption required for standard linear regression techniques, and could be more appropriately modeled using a binomial distribution or possibly a Poisson distribution. The binomial and Poisson models led to nearly identical inferences for these data, and the Poisson model was selected in order to facilitate easier interpretation of the regression coefficients. Likelihood ratio tests at the .05 level, adjusted for over-dispersion, were used to establish the significance of each independent variable. In addition, several interaction effects were tested based on the results of preliminary subgroup analyses. None of the interaction effects was significant at the .05 level, and they were removed from the final model.

For this study, the independent variables included: (a) individual (adult status, sensation-seeking scores, gambling, smoking, alcohol consumption, and binge drinking); and (b) demographic and social (age, gender, race/ethnicity, and parental receipt of public assistance) variables.

Results

Results of this study are presented as suggestive rather than definitive since the measures of adult status and financial behaviors appear useful but need further testing. However, these results are helpful in guiding researchers and financial counselors in looking at the contributing factors to positive financial behaviors by college students. Table 1 includes information about the descriptive statistics of the sample.

A Poisson regression model was used to look at the influence of demographic and social variables (age, parental receipt of public assistance, gender, and race/ethnicity), the adult status measure, the sensation-seeking scale, and the risk-taking measures (alcohol consumption, smoking, and gambling) on an author-developed comprehensive financial behavior measure. The results of the analyses are presented below. Due to missing values of the variables in the Poisson regression model, results are based on a sample size of 393 students who provided complete

Table 1 Demographic characteristics of emerging adults and adults

	Emerging adult *n* (%)	Adult *n* (%)
Mean age (SD)	19.45 (1.17)	19.96 (1.68)
Gender		
Male	90 (48.7)	44 (37.9)
Female	95 (51.3)	72 (62.1)
Race/ethnicity		
White	156 (83.9)	71 (61.2)
African-American	23 (12.4)	41 (35.3)
Other	7 (3.8)	4 (3.5)
Receive food stamps, Medicaid or free/reduced school lunch when growing up?		
Yes	20 (10.9)	33 (28.4)
No	164 (89.1)	83 (71.6)

Table 2 Summary of Poisson regression analysis for variables associated with problematic financial behaviors ($N = 393$)

Variable	Coefficient *B*	SE *B*	Marginal Mean Change[a] (%)
Social/demographic characteristics			
Age	.072	.029	7.5*
Parental receipt of public assistance (1 = public assistance, 2 = no public assistance)	−.406	.129	−33.4**
Gender (1 = female, 2 = male)	−.349	.098	−29.5***
Race/ethnicity	.101	.258	10.6
(1 = White, 2 = African-American, reference group = other)	.246	.281	27.9
Emerging adult status	.044	.016	4.5**
Sensation-seeking & risk taking			
Sensation-seeking score (SSS-V)	.059	.020	6.1**
Alcohol consumption	.012	.009	1.2
Binge drinking	−.015	.010	−1.5
Smoking	.009	.005	.9
Gambling (SOGS)	.091	.029	9.5**

* $p \le .05$, ** $p \le .01$, *** $p \le .001$

[a] Marginal Mean Change is calculated as $100(e^{\beta} - 1)\%$

responses. The coefficients with standard errors and the likelihood ratio *p*-values are reported in Table 2. Coefficients are on the log scale due to the log link function used in fitting the model, but the sign of each coefficient indicates the direction of the relationship with the number of problem financial behaviors.

Socio-Demographic Variables

Students' financial behavior scores were significantly related to age ($p = .015$), parental receipt of public assistance ($p = .002$), and gender ($p < .001$), but were not significantly related to race/ethnicity ($p = .509$). Specifically, older students tended to have a higher number of problem financial behaviors. The Poisson regression coefficient for age may be interpreted to mean that each additional year of age was associated with a 7.5% increase in the average number of problem financial behaviors on the nine-item scale. Female students tended to have more problematic financial behaviors than male students. The coefficient for gender indicates that male students had approximately 29.5% fewer problem financial behaviors on the nine-item scale compared to female students. Finally, students whose families received public assistance while they were growing up tended to have more problematic financial behaviors than students whose families did not receive public assistance. The coefficient for parental receipt of public assistance indicates that students whose families did not receive public assistance had about 33.4% fewer problem financial behaviors, compared to students whose families received public assistance.

Adult Status

Financial behavior scores were significantly related to adult status ($p = .007$). Students with higher adult status scores tended to have more problematic financial behaviors, with each additional point on the adult status score being associated with a 4.5% increase in the number of problem financial behaviors. The likelihood ratio test measures the significance of each independent variable after accounting for the effects of the other independent variables in the model. Therefore, it should be noted that this test of significance for adult status controls for the effect of age on financial behavior, and that the coefficient for adult status represents an effect of adult status when age is held constant.

Sensation-Seeking and Risky Behaviors

Financial behavior scores were significantly related to sensation-seeking scores ($p = .003$). Students with higher sensation-seeking scores tended to have more problematic financial behaviors, and a one-point increase in the sensation-seeking score was associated with a 6.1% increase in the number of problem financial behaviors. Among the risky behaviors assessed, students' financial behavior scores were significantly related to gambling as measured by the SOGS score ($p = .003$), but were not significantly related to smoking ($p = .075$), alcohol consumption ($p = .178$), or binge drinking ($p = .154$). Students with higher SOGS scores, indicating more potential for or involvement in problem gambling, tended to have more problematic financial behaviors. Specifically, a one-point increase in the SOGS score corresponded to a 9.5% increase in the average number of problem financial behaviors.

Discussion

Demographic Variables

It was hypothesized that college students who were female (*Hypothesis 1*), older (*Hypothesis 2*), non-minority (*Hypothesis 3*), and came from families with adequate financial resources (*Hypothesis 4*) would have fewer problematic financial behaviors. Only the results related to parental receipt of public assistance were supported and they will be discussed first (*Hypothesis 4*). Students from families that received public assistance (food stamps, Medicaid, etc.) tended to have more problem financial behaviors than students whose families did not receive public assistance. *Hypothesis 4* was supported and substantiated by the literature (Bergin et al. 2006; Besharov 1999; Duncan and Brooks-Gunn 2000).

The hypotheses related to gender (*Hypothesis 1*), age (*Hypothesis 2*), and race/ethnicity (*Hypothesis 3*) were not supported. The finding that females had more problematic financial behaviors needs to be examined carefully. Previous research has been mixed regarding gender differences in financial behaviors/practices. Female students have been reported to be more likely to have a written budget, plan their spending, keep bills and receipts, have less overall debt, and save regularly (Hayhoe et al. 2000; Henry et al. 2001). The findings reported here may have been due, in at least in part, to early familial socialization, a factor that was not examined in this study.

Older students in this sample tended to have higher problematic financial behavior scores confirming the rejection of *Hypothesis 2*. This finding supports research by Norvilitis et al. (2006) and may be because older students have had more time to accumulate debt and other adult financial obligations compared to younger students. The students in the sample ranged in age from 18 to 25 years old and had a mean age of 19.62 years. It is difficult to compare these results with other findings that have involved college students in their 30 s and 40 s (i.e., Henry et al. 2001). However, it is noteworthy that measurable differences in financial behaviors were found within the 18–25 year old group.

Financial behaviors were not related to race/ethnicity. In this sample, race/ethnicity and parental receipt of public assistance were strongly related. However, after controlling for parental receipt of public assistance in the regression model, race/ethnicity did not explain a significant amount of additional variation in the financial behavior score. Conversely, as indicated above, parental receipt of public assistance was a significantly related to financial behavior score after controlling for race/ethnicity.

Adult Status and Risk-Taking Variables

It was hypothesized that the following college students would have more problematic financial behaviors: being classified as an emerging adult (*Hypothesis 5*), having high sensation-seeking personalities (*Hypothesis 6*), and reporting frequent participation in risky behaviors (*Hypothesis 7*). The relationships regarding sensation-seeking and gambling were supported and will be discussed first. It was found that higher sensation-seeking and SOGS scores were positively related. However, this is the first study that took this finding one step further and tied these factors to level of problematic financial behaviors. Students with higher sensation-seeking and SOGS scores tended to have more problematic financial behaviors. It is reasonable to assume that maxing out credit cards, overdrawing checking accounts, pretending to have more money than you do, and writing bad checks are activities congruent with greater risk-taking behaviors.

Higher sensation-seeking scores and problem gambling, when added to the stresses of trying to complete college with little or no family financial support and possibly a family of their own to provide for is a situation with a high probability of a negative outcome. Some students may be drawn to gambling to either escape stress or possibly with the hope of winning and getting out of debt. This area needs further research.

Hypothesis 5 regarding developmental status was not supported. The students with higher adult status scores tended to have more problematic financial behaviors. This may reflect the fact that students with higher adult status were more independent and had taken on greater financial responsibilities. Contrary to first glance, this finding may actually support Arnett's (2000) assertion that emerging adults must take responsibility for themselves, make independent decisions, and become financially independent before being considered adults. Such adult behaviors involve greater financial risks (i.e., house, car, medical bills, and investments) than those experienced by emerging adults. Emerging adults with unstable financial situations have lower-level financial risks. Their debt levels may be lower. Such problematic financial behaviors may be able to be dealt with by taking out additional student loans, getting a part-time job to pay bills, and/or borrowing money from friends or family to pay bills.

Conclusion

The idea that college students are a diverse group with respect to their status as adolescents, emerging adults, and adults is an important developmental perspective. This study pursued the idea that this diversity may be related to the extent of problematic financial behaviors and the ways students cope with these problems. Other psychological variables that may contribute to problematic financial behaviors were explored, including sensation seeking and risky behaviors. Gambling has not been considered in the previous literature on college student financial decisions.

As college education becomes more expensive, as parental financial support for college becomes a societal pressure, and as college students are leaving college with large amounts of debt, it becomes essential to understand what variables influence their financial behaviors.

Researchers, college faculty, college administrators, and financial counselors need to consider the developmental status (emerging adult versus adult) of students and their risk-taking behaviors in addition to their individual characteristics such as socio-economic levels and race/ethnic background that can affect financial behaviors. Poor financial behaviors by college students, whether under their control or not, may lead to the need for more financial support from parents who may be struggling to meet the needs of the other members of their families. Poor financial behaviors by college students may also affect their future financial well-being.

This research was unique within the study of college student financial behavior because it (a) included gambling as a significant risk behavior, (b) challenged the general assumption that all college students between 18 and 25 years of age are emerging adults, and (c) used a comprehensive, nine-item measure of financial behavior, as opposed to looking at an individual indicator such as credit card debt. There were inconsistencies between the findings reported here and some of the previously reported research on college student financial management. This may be due to how the studies were conceptualized, the variables that were included, and the underlying assumptions that guided the research.

Given the results of this study, a more critical analysis of the concept of emerging adulthood, its measurement, and the link between adult status and problematic financial behaviors is warranted. Students appear to benefit more from higher parental status (i.e., successful transition to adulthood). Lower parental status may result in a more rapid transition to adulthood but such early development may not result in factors that lead to success in college. This is worthy of further study. It is recommended that future research on college student financial behaviors include gambling as a risky behavior, employ a comprehensive measure of financial behavior, study college students from diverse racial and ethnic backgrounds, and not assume that college students are a homogeneous group.

References

Adams, T., & Moore, M. (2007). High-risk health and credit behavior among 18- to 25-year-old college students. *Journal of American College Health, 56*, 101–108.

American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.) (DSM-III). Washington, DC: APA.

Arnett, J. J. (1997). Young people's conceptions of the transition to adulthood. *Youth & Society, 29*, 1–23.

Arnett, J. J. (1998). Learning to stand alone: The contemporary American transition to adulthood in cultural and historical context. *Human Development, 41*, 295–315.

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist, 55*, 469–480.

Arnett, J. J. (2001). Conceptions of the transition to adulthood: Perspectives from adolescence to midlife. *Journal of Adult Development, 8*, 133–143.

Arnett, J. J. (2002). A congregation of one: Individualized religious beliefs among emerging adults. *Journal of Adolescent Research, 17*, 451–467.

Arnett, J. J. (2004). *Emerging adulthood: The winding road from late teens through the twenties*. New York: Oxford Press.

Bergin, S. C., De Marco, A. C., Shaw, T. V., Unick, G. J., & Hogan, S. R. (2006). The effect of parental work history and public assistance use in the transition to adulthood. *Journal of Sociology and Social Welfare, 33*, 141–162.

Besharov, D. J. (1999). *America's disconnected youth*. Washington, DC: Child Welfare League of America.

Blinn-Pike, L., Worthy, S. L., Jonkman, J. N., & Smith, G. R. (2008). Emerging adult versus adult status among college students: Examination of explanatory variables. *Adolescence, 43*, 577–591.

Borden, L. M., Lee, S. A., Serido, J., & Collins, D. (2008). Changing college student's financial knowledge, attitudes, and behavior through seminar participation. *Journal of Family and Economic Issues, 29*, 23–40.

Bradley, G., & Wildman, K. (2002). Psychosocial predictors of emerging adults' risk and reckless behaviors. *Journal of Youth and Adolescence, 31*, 253–265.

Burgess, S., Propper, C., & Gardiner, K. (2006). School, family and county affects on adolescents' later life choices. *Journal of Family and Economic Issues, 27*, 155–183.

Cao, H. (2008). Credit constraints and human capital investment in college education. *Journal of Family and Economic Issues, 29*, 41–54.

Carrol, E. N., & Zuckerman, M. (1977). Psychopathology and sensation-seeking in "downers", "speeders", and "trippers": A study of the relationship between personality and drug choice. *International Journal of Addictions, 12*, 591–601.

Cha, K. W., Weagley, R. O., & Reynolds, L. (2005). Parental borrowing for dependent children's higher education. *Journal of Family and Economic Issues, 26*, 299–321.

Côté, J. E. (2002). The role of identity capital in the transition to adulthood: The individualization thesis examined. *Journal of Youth Studies, 5*, 117–134.

Danes, S. M., & Hira, T. (1987). Money management knowledge of college students. *Journal of Student Financial Aid, 17*, 4–16.

Delfabbro, P. (2003). Gender differences in Australian gambling: A critical summary of sociological and psychological research. *Australian Journal of Social Issues, 35*, 145–158.

Duncan, G. J., & Brooks-Gunn, J. (2000). Family poverty, welfare reform, and child development. *Child Development, 65*, 296–318.

Eldar-Avidan, D., Haj-Yahia, M. M., & Greenbaum, C. W. (2008). Money matters: Young adults' perception of the economic consequences of their parents' divorce. *Journal of Family and Economic Issues, 29*, 74–85.

Elwood, D. T., & Kane, T. J. (2000). Who is getting into college? Family background, and the growing gaps in enrollment. In S. Danzinger & W. J. Danzinger (Eds.), *Securing the future: Investing in children from birth to college* (pp. 283–324). New York: Russell Sage.

Grable, J. E., & Joo, S. H. (2006). Student racial differences in credit card debt and financial behaviors and stress. *College Student Journal, 40*, 400–408.

Hayhoe, C. R., Leach, L. J., Turner, P. R., Bruin, M. J., & Lawrence, F. C. (2000). Differences in spending habits and credit use of college students. *The Journal of Consumer Affairs, 34*, 113–133.

Henry, R. A., Weber, J. G., & Yarbrough, D. (2001). Money management practices of college students. *College Student Journal, 35*(2), 244–249.

Joo, S. H., Grable, J. E., & Bagwell, D. C. (2003). Credit card attitudes and behaviors of college students. *College Student Journal, 37*, 405–420.

Lesieur, H. R., & Blume, S. B. (1987). The South Oaks Gambling Screen (SOGS): A new instrument for the identification of pathological gamblers. *American Journal of Psychiatry, 144*, 1184–1188.

Luna De La Rosa, M. (2006). Is opportunity knocking? Low-income students' perceptions of college and financial aid. *The American Behavioral Scientist, 49*, 1670–1682.

Lyons, A. C. (2004). A profile of financially at-risk college students. *Journal of Consumer Affairs, 38*, 56–80.

Lyons, A. C. (2008). Risky credit card behavior of college students. In J. J. Xiao (Ed.), *Handbook of consumer finance research* (pp. 208–285). New York: Springer.

Markovich, C. A., & DeVaney, S. A. (1997). College senior's personal finance knowledge and practices. *Journal of Family and Consumer Sciences, 89*, 61–65.

Miller, B. G. (2001). *Early family experiences and the financial behavior of college students: The impact of gender and gambling*. Doctoral Dissertation, Iowa State University.

Nelson, L. J., & Barry, C. M. (2005). Distinguishing features of emerging adulthood: The role of self-classification as an adult. *Journal of Adolescent Research, 20*, 242–262.

Nelson, M. C., Lust, K., Story, M., & Ehlinger, E. (2008). Credit card debt, stress and key health risk behaviors among college students. *American Journal of Health Promotion, 22*, 400–412.

Newcomb, M. D., & McGee, L. (1991). Influence of sensation seeking on general deviance and specific problem behaviors from adolescence to young adulthood. *Journal of Personality and Social Psychology, 61*, 614–628.

Norvilitis, J. M., Osberg, T. M., Young, P., Merwin, M. M., Roehling, P. V., & Kamas, M. M. (2006). Personality factors, money attitudes, financial knowledge, and credit-card debt in college students. *Journal of Applied Social Psychology, 36*, 1395–1413.

Osgood, W., Ruth, G., Eccles, J. S., Jacobs, J. E., & Barber, B. L. (2005). Six paths to adulthood. In R. A. Setterstein, F. F. Furstenberg, & R. G. Rumbaut (Eds.), *On the frontier of adulthood* (pp. 320–355). Chicago: University of Chicago Press.

Perna, L. W. (2006). Understanding the relationship between information about college prices and financial aid. *The American Behavioral Scientist, 49*, 1620–1635.

Sallie Mae, Inc. (2009). Sallie Mae champions for higher education. *How undergraduate students use credit cards: Sallie Mae's national study of usage rates and trends 2009*. Retrieved June 4, 2009, from http://www.salliemae.com/NR/rdonlyres/0BD600F1-9377-46EA-AB1F-6061FC763246/10744/SLMCreditCardUsageStudy41309FINAL2.pdf.

Sandefur, G. D., Eggerling-Boeck, J., & Park, H. (2005). Off to a good start? Postsecondary education and early adult life. In R. A. Setterstein, F. F. Furstenberg, & R. G. Rumbaut (Eds.), *On the frontier of adulthood* (pp. 292–319). Chicago: University of Chicago Press.

Schoeni, R. F., & Ross, K. E. (2005). Material assistance from families during the transition to adulthood. In R. A. Setterstein, F. F. Furstenberg, & R. G. Rumbaut (Eds.), *On the frontier of adulthood* (pp. 396–416). Chicago: University of Chicago Press.

Shaffer, H. J., Hall, M. N., & Bilt, J. V. (1999). Estimating the prevalence of disordered gambling behavior in the United States and Canada: A research synthesis. *American Journal of Public Health, 89*, 1369–1376.

Todesco, P. (2005). *Developmental differences in sensation-seeking, risk-taking and perceptual appraisals*. Unpublished doctoral dissertation, Wayne State University.

U.S. Public Interest Research Group Education Fund. (2008). *The campus credit card trap: A survey of college students and credit card marketing*. Retrieved April 23, 2008, from http://www.truthaboutcredit.org/campus-credit-card-trap.

Volpe, R. P., Chen, H., & Pavlicko, J. J. (1996). Personal investment literacy among college students: A survey. *Financial Practice and Education, 6*, 86–94.

Wang, J., & Xiao, J. J. (2009). Buying behavior, social support and credit card indebtedness of college students. *International Journal of Consumer Studies, 33*, 2–10.

Worthy, S. L., Blinn-Pike, L. B., & Jonkman, J. (2008). Having mom and dad pay for college: Financial advantage or disadvantage? *Consumer Interests Annual, 54*, 185–188. http://www.consumerinterests.org/files/public/66.WorthyBlinnJonkman.pdf.

Xiao, J. J., Shim, S., Barber, B., & Lyons, A. (2007). *Academic success and well-being of college students: Financial behaviors matter*. http://cals.arizona.edu/fcs/tcai/research/pilotreport.pdf.

Xiao, J. J., Tang, C., & Shim, S. (2009). Acting for happiness: Financial behavior and life satisfaction of college students. *Social Indicators Research, 92*, 53–58.

Yilmazer, T. (2008). Saving for children's college education: An empirical analysis of the trade-off between the quality and quantity of children. *Journal of Family and Economic Issues, 29*, 307–324.

Zuckerman, M. (1979). *Sensation-seeking: Beyond the optimal level of arousal*. Hillsdale, NJ: Lawrence Erlbaum.

Zuckerman, M. (1994). *Behavioral expressions and biosocial bases of sensation-seeking*. New York: Cambridge University Press.

Zuckerman, M., & Kuhlman, D. M. (2000). Personality and risk-taking: Common biosocial factors. *Journal of Personality, 68*, 999–1029.

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