

Health-related characteristics and incurring credit card debt as problem behaviors among college students

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Citation

C Berg, J Sanem, K Lust, J Ahluwalia, M Kirch, L An. *Health-related characteristics and incurring credit card debt as problem behaviors among college students*. The Internet Journal of Mental Health. 2009 Volume 6 Number 2.

Abstract

Objective: Given that engaging in risky health behaviors and incurring credit card debt are associated with similar psychological constructs, we examined the relationship of smoking, drinking, exercise, and mental health to having credit card debt among college students. **Methods:** An online survey was administered to students at 14 Midwestern colleges in 2007. **Results:** Among 9,931 respondents (41.6% response rate), one-third had credit card debt. Smoking, drinking, high-risk drinking, less exercise, and poorer mental health were related to having debt, after controlling for age, gender, and type of school attended. **Conclusions:** Identification of common factors underlying these behaviors may inform the development of comprehensive interventions.

INTRODUCTION

Young adulthood is a critical transition period in the life course, with several physical, mental, and financial implications for both the short- and long-term. Credit card debt is a major societal concern in the U. S. Credit card debt commonly begins to accrue during young adulthood.^(1,2) About 84% of undergraduates have at least one credit card, according to research conducted by Sallie Mae in 2008.⁽³⁾ Moreover, since 2004, the proportion of students who arrived on campus as freshman with a credit card grew from 23% to 39% in 2009.⁽³⁾ Furthermore, only 15% of freshman had a zero balance, which has dramatically decreased from 69% in 2004,⁽³⁾ and roughly 80% of college students fail to pay off their debts monthly.⁽³⁾ In addition, the average outstanding credit card balance among undergraduates was \$3,173, with credit card debt doubling from freshman year to senior year.⁽³⁾ A survey by the American College Health Association⁽⁴⁾ found that although 71% of college students reported no credit card debt, 10% reported more than \$1,000 in credit card debt. Thus, the college years are a critical time to intervene to deter the accrual of credit card debt.

Although the specific reasons for high rates of credit card debt are difficult to ascertain, research has attempted to address this topic. There are mixed results for gender. Some report no gender differences related to having credit card debt,^(2,5) while others indicate higher rates among both

men⁽⁶⁾ and women.⁽⁷⁾ In addition, credit card debt increases with each year in college.⁽⁸⁾ Certain personality characteristics are related to incurring credit card debt among college students. Lower self-esteem is associated with high levels of credit card debt.⁽⁹⁾ Those with low levels of self-control are less likely to save money and more likely to spend more money^(10,11) and engage in impulsive spending.⁽¹²⁾ High levels of debt are also related to a decreased sense of ability to manage one's money,⁽⁹⁾ decreased sense of financial well-being,⁽²⁾ and having poorer money management skills.⁽¹³⁾

In addition to incurring credit card debt, young adulthood is also a sensitive time period for experiencing increased stress^(14,15) and engaging in many health compromising behaviors, including smoking,^(16,17) drinking,^(18,19) and low physical activity.⁽²⁰⁾ For example, according to the American College Health Association,⁽⁴⁾ 86% of college students reported consuming alcohol in the past month, and 82% reported using cigarettes in the past month. Only 43% reported engaging in exercise on three of the past seven days.⁽⁴⁾ Thus, detrimental health behaviors are common among college students.

A number of personality characteristics have been associated with both the accumulation of credit card debt and these high-risk health characteristics. Some common factors related to short-term thinking and dismissing long-term

consequences that have been found to be correlated with health risk behaviors and credit card debt include inability to delay gratification,⁽²¹⁻²⁴⁾ less self-control,^(21, 22, 25) higher impulsivity,⁽²⁶⁾ and minimizing personal risk.⁽²⁷⁻³¹⁾ Other personality characteristics related to high-risk health behavior and credit card debt include low self-esteem^(9, 32) and low self-efficacy.⁽³³⁾ Considering these common characteristics, it is possible that incurring debt and engaging in health-compromising behaviors may be connected. Thus, interventions aimed at enhancing coping during the college years might most efficiently and effectively address multiple behaviors if they target some of these underlying personality and cognitive factors.

To our knowledge, only two previous studies have examined the relationship between credit card debt and health-related characteristics among college students.^(34, 35) Adams and colleagues⁽³⁴⁾ documented that high-risk credit behavior is associated with driving after drinking, recent use of amphetamines or marijuana, recent symptoms of depression, higher body mass index, lower grade point average, and high-risk sexual behavior.⁽³⁴⁾ Nelson and colleagues⁽³⁵⁾ found that high levels of credit card debt (>\$1,000) was associated with being overweight or obese, insufficient physical activity, excess television viewing, infrequent breakfast consumption, fast food consumption, binge drinking, substance use, violence, and perceived stress.

The association between credit card debt and other health-risk characteristics deserves further research to confirm these findings. In particular, this prior research did not examine less significant levels of credit card debt, which is important given that some college students do not have any credit card debt. Furthermore, examining any alcohol consumption may be important among this population given that a large proportion of college students do not meet the legal drinking age. Last, including other factors may highlight the importance of protective behaviors, such that being abstinent from alcohol and tobacco, engaging in high levels of physical activity, and achieving mental well-being may be associated with financial well-being. Overall, continued examination of this relationship will foster future research into the underlying psychological constructs that might be related to these behaviors and how these behaviors may be synergistic. Doing so will provide a basis for developing comprehensive life skills interventions targeting these problem behaviors collectively and focusing on developing healthy behaviors that may be protective in these various

domains.

This study aimed to identify health-risk characteristics associated with credit card debt. Specifically, we hypothesized that (1) those with credit card debt would be more likely to report smoking, drinking, high-risk drinking (i.e., binge drinking), less exercise, and more poor mental health days; and that (2) these health-related characteristics would also be related to having high credit card debt (<\$1,000 vs. >\$1,000), even after controlling for important demographic variables (e.g., age, sex, type of school attended).

METHODS

RECRUITMENT AND PARTICIPANTS

The current study was a secondary data analysis of the 2007 College Student Health Survey, developed by Boynton Health Service at the University of Minnesota and administered to students at 14 colleges and universities in Minnesota (six public two-year schools, seven public four-year schools, and one private four-year school). The College Student Health Survey was designed to serve as a surveillance tool to monitor the health of college students in a number of areas, such as health insurance, health care utilization, mental health, tobacco use, alcohol and other drug use, financial well-being, personal safety, nutrition, physical activity, and sexual health. Based on each school's enrollment, either all students or a random sample of students aged 18 years or older were invited to complete the survey. In February and March 2007, selected students were contacted using multiple mailings. They first received a postcard notifying them of their eligibility to participate in the survey. Then students at 11 schools were e-mailed a link to an on-line version of the survey. Three schools did not assign reliable student e-mail addresses and were thus sent a paper survey via U.S. Mail. All students received a minimum of two invitations to participate in the survey.

Each student invited to complete the survey received a cover letter that explained the survey's purpose and that participation was anonymous and voluntary. The mailed survey packet instructed students to complete and return the survey in the addressed and postage-paid envelope included in the packet. They were also asked to return a separate postcard indicating that they either had completed the survey or did not wish to participate in order to keep responses anonymous yet identify non-responders. Students invited to complete the on-line version of the survey received an e-

mail containing a link to the survey and a link that allowed them to opt out of the survey process. Students who chose to participate in the survey by clicking on the survey link were directed to a survey consent page. As incentive to participate, survey respondents received a \$5 gift card and entry into a drawing for gift certificates valued at \$3,000 (one), \$1,000 (one), and \$500 (two) at a variety of stores.

A total of 24,018 students received an invitation to complete the survey, with 149 surveys being undeliverable due to incorrect e-mail or postal addresses. Of the 23,869 students who were approached, 9,931 (2,790 two-year college students and 7,141 four-year college students) completed the survey (41.6% response rate). Individual school response rates ranged from 28.7% to 57.3%. The response rate among the three paper survey schools was lower than the response rate among the 11 on-line survey schools (34.8% vs. 43.1%, $p < 0.001$). In addition, the response rate among two-year schools was lower than the response rate among four-year schools (33.6% vs. 45.8%, $p < 0.001$).

The University of Minnesota Institutional Review Board approved this study, IRB# 0712E22463.

MEASURES

Demographic variables (e.g., age, sex, year in school, type of school) were assessed. Credit card debt, smoking, alcohol use, level of exercise, and poor mental health were also assessed.

Credit Card Debt. To assess credit card debt, participants were asked, "Last month, how much total credit card debt did you carry? That is, what was the total unpaid balance on all your credit cards?" Response options included "Not applicable; I do not have a credit card," "None; I pay the full amount each month," and categories ranging from \$1-\$99 to \$5,000 or more. Credit card debt was dichotomized as having any credit card debt vs. having no credit card debt. We also created categories for high credit card debt (<\$1,000 vs. >\$1,000). This cut-off point was determined by examining the distribution of debt reported by those participants reporting any debt and using a rough median point based on the categorical responses (i.e., 42.1% reported <\$1,000 and 57.9% reported >\$1,000).

Smoking. To assess smoking behaviors, participants were asked, "During the past 30 days, on how many days did you use smoking tobacco?" Response options included: 0 days, 1-2 days, 3-5 days, 6-9 days, 10-19 days, 20-29 days, and all

30 days. These questions have been used to assess tobacco use in the American College Health Association (ACHA) surveys, National College Health Risk Behavior Survey (NCHRBS), and Youth Risk Behavior Survey (YRBS), and their reliability and validity have been documented by previous research.^(4,36) Students who reported smoking on at least one day in the past 30 days were considered current smokers. This is in line with how ACHA, Substance Abuse and Mental Health Association (SAMSHA) and others have defined "current smokers."^(37,38)

Alcohol Use. To assess alcohol consumption, participants were asked, "During the past 30 days, on how many days did you use alcohol?" Response options included: 0 days, 1-2 days, 3-5 days, 6-9 days, 10-19 days, 20-29 days, and all 30 days. Current drinking was defined as drinking on at least one day in the past 30 days. To assess high-risk drinking, participants were asked, "Think back over the last two weeks. How many times have you had five or more drinks at a sitting?" Possible responses included: "I do not drink alcohol," "None," "Once," "Twice," "3-5 times," "6-9 times," or "10 or more times." High-risk drinking was defined as drinking five or more drinks at a sitting at least once in the past two weeks. These questions were adopted from ACHA surveys, NCHRBS, and YRBS, and their reliability and validity have been documented by previous research.^(4,36)

Exercise. Participants were asked, "In the past 7 days, how many hours did you spend doing the following activities: Strenuous exercise (heart beats rapidly; examples: biking fast, aerobics, dancing, running, basketball, swimming laps, rollerblading, tennis, soccer)? Moderate exercise (not exhausting; examples: walking quickly, baseball, easy biking, volleyball, skateboarding, snowboarding)?" For each category of exercise, response options included: None, Less than ½ hour per week, ½-2 hours per week, 2 ½-4 hours per week, 4 ½-6 hours per week, and 6+ hours per week. A high level of exercise was considered to be engagement in strenuous exercise more than 4 hours per week or engagement in moderate exercise more than 6 hours per week. A low level of exercise was defined as engagement in less than ½ hour of strenuous exercise per week and 2 hours or less of moderate exercise per week. All other exercise was considered to be a moderate level of exercise. These categories were based on the Centers for Disease Control and Prevention (CDC) recommendations regarding physical activity for adults.⁽³⁹⁾ The CDC⁽³⁹⁾ recommends that adults

engage in (1) moderate-intensity physical activity for at least 30 minutes on five or more days per week or (2) vigorous-intensity physical activity for at least 20 minutes on three or more days per week.

Mental Health. Number of poor mental health days was assessed by asking, “Thinking about your mental health, which includes stress, depression, and problems with emotions, for how many days during the past 30 days was your mental health not good?” Response options ranged from 0 days to 30 days. This variable was analyzed as a continuous variable. This question was adapted from items used by ACHA and SAMSHA.^(37, 38)

STATISTICAL ANALYSIS

Statistical analyses were conducted using Stata 9. The primary outcome measure was any credit card debt (yes vs. no). The secondary outcome variable was high credit card debt (<\$1,000 vs. >\$1,000). The main factors of interest were smoking, drinking, and self-reported poor mental health in the past 30 days, high-risk drinking in the past two weeks, and exercise level in the past seven days. Theoretically, we were interested in determining whether abstinence from smoking, drinking, and high-risk drinking were protective behaviors associated with not having credit card debt or low levels of debt; thus, we were interested in these variables as dichotomous variables (per the categories defined above). Additionally, analyses were run investigating these variables as continuous variables, and these relationships were also significant. For ease of interpretation and given our research questions, we chose to dichotomize these variables. In terms of managing missing data, participants missing credit card debt data were excluded from this study. Given the large sample size, no data was imputed. Thus, only those participants with complete data were included in the multivariate analyses. In the bivariate analyses, ANOVA and chi-squared tests were used to compare those with credit card debt to those without credit card debt. A binary logistic regression model for credit card debt was then conducted. Demographic variables (e.g., age, sex, type of school attended) were entered first and then the aforementioned health variables were entered. A similar approach was used in the binary logistic regression with the outcome of high credit card debt (<\$1,000 vs. >\$1,000). We then conducted a model validation using the bootstrap method (40).

RESULTS

PARTICIPANT CHARACTERISTICS

Analyses are based on a subsample of 9,910 students with complete data. Table 1 provides demographic and health-related characteristics of the study sample. The majority was female (62.2%) and attended 4-year colleges or universities (72.0%). With regard to health behaviors, 22.9% of students smoked in the past 30 days, 70.6% consumed alcohol in the past 30 days, 37.2% engaged in high-risk drinking in the past two weeks, and 23.0% engaged in a low level of exercise. In addition, respondents reported an average of 5.43 (SD=0.07) poor mental health days in the past 30 days.

Figure 1

Table 1: Bivariate analyses of participant characteristics among college students by credit card debt

Variables	All n (%) or M (SE)	Credit Card Debt		OR	95% CI	p
		Yes n (%) or M (SE)	No n (%) or M (SE)			
Demographic variables						
Age (SE)	23.71 (0.07)	26.29 (0.14)	22.41 (0.07)	1.08	1.08, 1.09	<0.001
Sex (%)						
(Male)	3,735 (37.7)	1,089 (29.2)	2,646 (70.8)			
Female	6,151 (62.2)	2,210 (35.9)	3,941 (64.1)	1.36	1.25, 1.49	<0.001
Type of school (%)						
(2-year)	2,774 (28.0)	1,282 (46.2)	1,492 (53.8)			
4-year	7,136 (72.0)	2,031 (28.5)	5,105 (71.5)	0.46	0.42, 0.51	<0.001
Health-related variables						
Smoking in past 30 days (%)						
(No)	7,630 (77.2)	2,340 (30.7)	5,290 (69.3)			
Yes	2,260 (22.9)	960 (42.4)	1,300 (57.6)	1.67	1.52, 1.84	<0.001
Drinking in past 30 days (%)						
(No)	2,908 (29.4)	772 (26.6)	2,136 (73.5)			
Yes	6,974 (70.6)	2,526 (36.2)	4,448 (63.8)	1.57	1.43, 1.73	<0.001
High risk drinking in past 2 weeks (%)						
(No)	6,208 (62.8)	2,012 (32.4)	4,196 (67.6)			
Yes	3,671 (37.2)	1,287 (35.1)	2,384 (66.6)	1.13	1.03, 1.23	0.007
Exercise in past 7 days (%)						
(Low or none)	2,275 (23.0)	913 (40.1)	1,362 (59.9)			
Moderate	5,564 (56.2)	1,817 (32.7)	3,747 (67.3)	0.71	0.65, 0.79	
Heavy	2,063 (20.8)	579 (28.1)	1,484 (71.9)	0.60	0.53, 0.68	<0.001
Poor mental health days in past 30 days (SE)	5.43 (0.07)	5.87 (0.13)	5.22 (0.08)	2.27	2.00, 2.56	<0.001

Of 9,910 respondents, 66.6% (n=6,597) of students reported no credit card debt and 33.4% reported having credit card debt. Among all respondents, 1.9% (n=184) reported less than \$100 in credit card debt, 7.0% (n=696) reported \$100-

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\$499 in credit card debt, 5.2% (n=516) reported \$500-\$999 in credit card debt, 12.6% (n=1,250) reported \$1,000-\$4,999 in credit card debt, and 6.3% (n=667) reported more than \$5,000 in credit card debt.

BIVARIATE ANALYSES

Those who were older were more likely to have credit card debt (Debt: M=26.29 vs. No debt: M=22.41, $p<0.001$).

Regarding gender, 35.9% of women versus 29.2% of men had credit card debt ($p<0.001$). Also, those who attended 2-year versus 4-year colleges were more likely to have credit card debt (46.2% vs. 28.5%, $p<0.001$).

Table 1 presents our findings from the bivariate analysis investigating the relationships of health-related characteristics to credit card debt. Having credit card debt was related to smoking in the past 30 days, drinking in the past 30 days, high-risk drinking in the past two weeks, and lower levels of exercise. Those reporting more poor mental health days were also more likely to have credit card debt (Debt: M=5.87 vs. No debt: M=5.22, $p<0.001$).

MULTIVARIATE ANALYSES

In the multivariate analysis for the outcome of credit card debt (no vs. yes) among college students (Table 2) increasing age, female sex, and four-year type of school attended were all associated with having credit card debt. Also, having credit card debt was positively associated with smoking in the past 30 days, drinking in the past 30 days, high-risk drinking in the past two weeks, number of self-reported poor mental health days, and negatively associated with engaging in both moderate and heavy exercise, after controlling for age, sex, and type of school attended. In conducting the model validation, we found that the bootstrap estimation produced comparable results, indicating that the model may be generalizable to a broader college population. Additional analyses stratifying for those below 21 years of age and for those 21 and older demonstrated similar patterns regardless of age (data not shown).

Figure 2

Table 2: Logistic regression predicting credit card debt among college students

Variables	OR	95%CI	p
Demographic variables			
Age	1.08	1.07, 1.09	<0.001
Sex			
(Male)			
Female	1.29	1.17, 1.42	<0.001
Type of school			
(2-year)			
4-year	0.57	0.51, 0.63	<0.001
Health-related variables			
Smoking in the past 30 days	1.41	1.26, 1.57	<0.001
Drinking in the past 30 days	1.59	1.41, 1.79	<0.001
High risk drinking in the past 2 weeks	1.14	1.02, 1.27	0.020
Exercise level in past 7 days			
(Low or none)			
Moderate	0.82	0.74, 0.91	<0.001
Heavy	0.73	0.64, 0.83	<0.001
Number of poor mental health days in past 30 days	1.01	1.00, 1.02	0.001

In the multivariate analysis for the outcome of high credit card debt (>\$1,000) among college students, increasing age, female sex, and four-year type of school attended were all associated with high credit card debt. Also, high credit card debt was positively associated with smoking in the past 30 days, drinking in the past 30 days, number of poor mental health days, and negatively associated with engaging in both moderate and heavy exercise, after controlling for age, sex, and type of school attended. There was no association for high-risk drinking. Once again, the bootstrap estimation produced comparable results. Additional analyses stratifying for those below 21 years of age and for those 21 and older demonstrated similar patterns regardless of age (data not shown).

Figure 3

Table 3: Logistic regression predicting high credit card debt among college students

Variables	OR	95%CI	p
Demographic variables			
Age	1.09	1.08, 1.10	<0.001
Sex			
(Male)			
Female	1.28	1.13, 1.43	<0.001
Type of school			
(2-year)			
4-year	0.58	0.52, 0.66	<0.001
Health-related variables			
Smoking in the past 30 days	1.29	1.13, 1.47	<0.001
Drinking in the past 30 days	1.65	1.43, 1.90	<0.001
High risk drinking in the past 2 weeks	1.02	0.89, 1.16	0.82
Exercise level in past 7 days			
(Low or none)			
Moderate	0.77	0.69, 0.87	<0.001
Heavy	0.69	0.59, 0.81	<0.001
Number of poor mental health days in past 30 days	1.01	1.00, 1.02	0.002

DISCUSSION

The present study found that having credit card debt was associated with smoking, drinking, high-risk drinking, and a low level of exercise, as well as a greater number of self-reported poor mental health days, which is consistent with our stated hypotheses. Engaging in these behaviors may have negative implications for quality of life, although the extent to which this is detrimental may be more complex for some behaviors (such as alcohol consumption) than for others (such as smoking, high-risk drinking, and lack of exercise). These findings confirmed previous research^(34, 35) among college students and provide additional information about less significant levels of credit card debt and lower levels of alcohol consumption (i.e., rather than binge-drinking alone). Further research should identify specific common factors linking these high-risk behaviors and toward developing appropriate interventions.

Understanding the common factors associated with credit card debt and risky health behaviors might broaden our perspective regarding how to address a broad range of maladaptive behaviors that place college students at risk for psychological, financial, and health problems in the future. For example, self-control,^(21, 22, 25) impulsivity,⁽²⁶⁾ minimizing personal risk,⁽²⁷⁻³¹⁾ self-esteem,^(9, 32) self-efficacy,⁽³³⁾ and

overall stress,⁽⁴¹⁾ all of which have been associated with at least one of these behaviors, may be potential underlying factors and thus important targets for interventions aimed at enhancing coping during the college years.

It is difficult to ascertain the clinical significance of these findings, especially for those relationships that were statistically significant but seemingly small, such as the relationship between number of days of poor mental health and credit card debt. However, given these relationships as well as some of the common underlying factors previously documented, these findings may inform potential interventions. Research has found that knowledge and education impact these health behaviors^(42, 43) as well as credit card debt.^(2, 44) Thus, providing education about these factors is important in preventing high-risk behavior. Moreover, interventions addressing factors such as psychological distress⁽⁴⁵⁾ and self-efficacy⁽⁴⁶⁾ have been found to impact health behaviors. These intervention approaches may also be effective in attenuating a broad range of risky behaviors, including incurring credit card debt and engaging in health-risk behaviors.

Our data also corroborated previous findings regarding the association of demographic characteristics and credit card debt. For example, we found that women and older students are more likely to have credit card debt, which has been documented by prior work.^(6, 7) However, other work has also found no gender differences^(2, 5) or, in contradiction to our findings, that men are more likely to have credit card debt.⁽⁶⁾ Thus, findings regarding gender differences in relation to credit card debt continue to be equivocal. In addition, debt increases with each year in college.⁽⁸⁾ Thus, our findings supported this previous research, add richer information regarding characteristics of high-risk college students, and highlight the importance of attending to at-risk populations.

There are several implications of these findings. Future research should investigate specific personality and cognitive characteristics (e.g., self-esteem, impulsivity, self-control) that might influence problem behaviors. Identifying the specific characteristics that contribute to these behaviors will provide greater insight on how to design interventions targeting these constructs in order to most efficiently impact a broad range of dysfunctional behaviors. Once these target constructs have been identified, interventions aimed at enhancing coping and emphasizing engaging in adaptive behaviors should be developed and tested to determine if such treatments may effectively reduce multiple problem

behaviors. For healthcare providers, particularly those on college campuses interacting with the student population, it is important to understand the multiple sources of stress among college students and how incurring credit card debt may be part of an important risk profile that may perpetuate feelings of stress, negative health behaviors, and continued debt. Thus, healthcare providers may be better able to intervene on multiple issues impacting the physical and mental health of college students, both immediately and in the long term.

LIMITATIONS

This study has some limitations. First, this study was conducted in a sample of students at 14 colleges and universities in the Midwest, a majority of which were female and Caucasian. While the sample characteristics reflect the characteristics of the school populations, these findings may not generalize to other university populations. Second, the low response rate to the Internet screening survey was also an issue and might suggest responder bias. In this regard, it is somewhat reassuring that our prior work has demonstrated that, despite lower response rates, Internet surveys yield similar statistics regarding health behaviors as compared to mail and phone surveys.⁽⁴⁷⁾ In addition, previous online research has yielded much lower response rates (29-32%) among the general population⁽⁴⁸⁾ and a wide range of response rates (17-52%) among college students.⁽⁴⁹⁾ Third, these analyses were based on self-report data and, thus, some students may have been influenced to give socially desirable answers (i.e., minimize credit card debt, smoking, and other risky health behaviors). In addition, because this is a cross-sectional sample, it is difficult to ascertain the nature and development of the relationship between risky health behavior and credit card debt. Furthermore, for ease of interpretation and to examine the potentially protective nature of abstinence from alcohol and tobacco (and perhaps lack of credit card debt), we chose our cut-off points for these variables (e.g., any alcohol consumption versus none in the past 30 days). However, future research may want to examine some variations on these variables. Finally, because this was a secondary data analysis, we did not have data on other risk behaviors that may also be related; nonetheless, these variables are important and potentially relevant for the majority of college students.

CONCLUSIONS

Among college students, high-risk health behaviors including smoking, drinking, and a low level of exercise as

well as greater number of poor mental health days were associated with having credit card debt. Moreover, these factors were associated with having high levels of credit card debt (i.e., \$1,000 or more). Further investigation is warranted to determine psychosocial factors that best predict high-risk behaviors among college students. In addition, developing interventions for addressing these behaviors may promote more adaptive functioning and improve the quality of life of college students in the long term.

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