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THE ACADEMIC IMPACT OF FINANCIAL STRESS ON COLLEGE STUDENTS

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ABSTRACT

Staying in school and graduating on time is an important factor for students and their families. Greater financial burdens may lead students to reduce coursework or drop out of school for paid work. A Web-based survey ($N = 503$) was conducted in fall 2004 at a large public university to examine the characteristics of students who experienced dropping out or reducing credit hours due to financial reasons. Analyses were conducted to compare these students with those who did not drop out or reduce their coursework. Findings show the relationship between financial stress and academic performance.

INTRODUCTION

College tuition and fees have escalated at a rate faster than inflation and median family income over the past 11 years (College Board, 2006). No one is more aware of this fact than college students. The typical college student today borrows a significant portion of their total educational costs due to increasing tuition rates and decreasing levels of financial aid (Lyons & Hunt, 2003). Staying in school and

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graduating on time, therefore, is becoming an important financial factor for students and their families.

Over the past decade and a half, the time to degree completion has increased (O'Beirne, 2002). Of those students who entered college in 1995-1996, for instance, only 43% completed at their initial institution (Society for College and University Planning, 2004), with fewer students graduating in 4 years or less. A report by the U.S. Department of Education (Horn & Berger, 2005) compared the degree completion of students who started college in 1989-90 versus those starting in 1995-96. Students in the more recent (1995-96) cohort were more likely to be enrolled 5 years after they began their postsecondary studies. As a result, the combined rate of degree completion and 5-year persistence for students who began their undergraduate education in a 4-year institution rose from 76 to 80%. Many factors contribute to an extended stay in college. First, some academic majors require more credit hours. For example, most architectural degrees require at least 5 years, and many engineering majors are expected to stay in college for 5 years. Second, some students experience and focus on major life events first (e.g., getting married, having a baby, etc.) and college studies second. Third, nearly all students work to help fund college and living costs. This balancing of work and school takes time, so it is not surprising that some students take longer to complete their studies. Finally, some students choose to substitute work for school to meet a level of living that they want to enjoy. According to an annual national survey of incoming freshman by the Higher Education Research Institute, more students plan to work while attending college (Pryor et al., 2006). A little over three-fourths of students during 2003-2004 earned a paycheck, and about one-quarter worked on a full-time basis; on the average, employed students spend almost 30 hours working per week while they are enrolled (American Council on Education, 2006). High credit card debt held by college students is another piece of the puzzle that helps explain why it is taking longer for students to graduate than in the past. There is some evidence available to suggest that students' financial problems are linked with credit and debt usage, and that these problems often lead to low levels of academic performance (St. John, 1998). The way in which students deal with financial issues is a growing concern on college campuses (Henry, Weber, & Yarbrough, 2001).

It has been hypothesized that greater financial burdens lead students to drop out from college, or at a minimum, to reduce their course work to devote more time to paid work (Joo, Grable, & Bagwell, 2003). The purpose of this article is to examine this hypothesis in more detail and to provide quantifiable evidence that, indeed, financial stress among college students does lead to higher drop out rates and reduced course loads. Specifically, this study examines the characteristics of college students who experienced dropping out of college or had to reduce their school hours due to financial reasons. Findings from this study provide needed information about at-risk groups of students. This study will provide useful implications for educators, policy makers, students, and parents. For example,

educators can use these findings to develop baseline data on the characteristics of at-risk student groups, and then apply findings to develop customized educational outreach initiatives for targeted students. Policy makers, particularly those at the state level, will find results from this study instructive as well. Policy makers tend to tie university funding to graduation rates (Desjardins, Ahlburg, & McCall, 2002), and any information that can document why certain groups of students do not graduate or delay graduation may be useful in helping policy makers develop better funding decisions. Findings also have potential implications for federal policy makers. Consider the fact that over one million imprisoned individuals are college drop outs (Cassel, 2003). If financial stress is associated with both criminal activity and dropping out of college, at least from some young people, it may be possible to implement policies that will reduce financial stress, college drop out rates, and prison incarceration. Students and parents can also obtain significant information on the factors affecting drop outs and academic performance. If used appropriately, data from this study may be used by parents and students to reduce stress related to financial issues.

LITERATURE REVIEW

The factors related to student academic success have been studied for decades. Prior to the mid-1980s, researcher interest focused primarily on understanding what variables separated students in terms of performance. Beginning in the 1980s, researchers broadened their studies to examine factors related to student dropout rates. This interest happened to coincide with an emphasis among academic administrators to focus on educational opportunities for non-White students (Phi Delta Kappan, 1985). It has already been determined that Hispanic and African-American students drop out of college at higher rates than non-Hispanic Whites (Malaney & Shively, 1995), and that first generation college students (of which a high proportion are Hispanic) are also more likely to drop out of school (Riehl, 1994). Moreover, only about one-half of students who begin college courses progress through college on a timely schedule; 15% of this population drops out of college at some point (Crequer, 2001). Worse, only about one-third of those who drop out of college ever re-enroll (Woosley, 2003).

In addition to racial/ethnic background differences, researchers have suggested that drop out rates are, in part, due to psychosocial barriers, differing expectations, and student/faculty interactions (Castellanos & Fujitsubo, 1997; Johnson, 1997; Pritchard & Wilson, 2003; Sher, Wood, & Gotham, 1996). Stress is another factor that is related to drop out rates. Sher and his associates (1996) reported that monotonic reduction in psychological stress occurs as students mature through college, but for those who do drop out, distress and the lack of coping skills necessary to handle stress are major factors influencing the decision. Sax (1997) reported that, in general, the amount of stress for college students is significantly higher than the stress of similar non-enrolled individuals. Of concern is the effect

that stress (in particular, financial stress) has on student outcomes such as learning and retention. Hudd et al. (2000) found that stressed students were much less satisfied with their life factors that contribute to self-esteem. Financial difficulties have often been reported as stressors for college students (McGavin, 1998; Ross, Niebling, & Heckert, 1999; Woosley, 2003). In 2006, a majority of freshmen who completed the Cooperative Institutional Research Program's Freshman survey indicated that they have financial concerns when it comes to paying for college. Two out of three students reported having some or major concerns about their ability to finance the costs of their college education (Pryor et al., 2006). A report by the Education Trust (Burd, 2004) suggests that factors such as stress cause too many financially needy students to drop out of college. A risk factor that often makes it difficult for students to complete their college education is working full time (Choy, 2003). Other financial factors that lead to stress and higher probabilities of dropping out of school include costs associated with commuting to college and finding employment while taking classes (McGavin, 1998). Financial stress can influence students' emotional health and Pritchard and Wilson (2003) concluded that emotional health was predictive of drop out rates. Financial behaviors and debt management also play a role in predicting drop out rates. Statistics released by Nellie Mae indicate that 69% of African-American students and 43% of non-Hispanic White students who drop out of college do so because of their inability to handle high student loan debt (St. John, 1998). Between 1992 and 2001, young adults aged 18-24 experienced a 104% increase in average credit card debt ($2,985) and this age group spends nearly 30% of their income on debt service. This is double the percentage of average debt service in 1992 (Draut & Silva, 2004). More than half of the respondents (55.5%) in the 2002 National Student Loan Survey (Baum & O'Malley, 2003) reported feeling burdened by their student loan debt, and 54.4% said they would borrow less if they had to do it over again. In the same survey, respondents reported that negative feelings about educational debt increased as the percentage of their gross monthly income spent on loan payments increased. Finally, studies have shown that working more than 20 hours each week increases the likelihood of a student dropping out of college (Farrell, 2005).

As the literature suggests, among the factors that affect students' drop out rates, financial problems and resulting stress appear to have a significant outcome on college students. This research expands upon this conclusion by focusing on financial reasons associated with dropping out of college by examining the characteristics of current or potential drop out students.

METHODOLOGY

Survey

The purpose of this research was to examine the characteristics of students who experienced dropping out of college or reducing credit hours due to financial

reasons. A Web-based survey was conducted during the fall semester of 2004 at one large public university in the southwest United States. The university has nine colleges with 25,000 students. The survey was posted on the Web and the Web address was distributed by faculty teaching *general education* courses offered by the Educational Psychology department throughout the semester. Students who participated in the survey received lab credit for the classes that they were taking. Students from all nine colleges within the university participated in the survey, though some colleges had limited representation. The survey was posted on the Web for approximately 3 weeks. A total of 540 students participated in the Web survey.

Instrument

A survey instrument was developed based on prior research concerning student credit card practices (e.g., Joo et al., 2003; Moore, 2004), student credit card attitudes (Xiao, Noring, & Anderson, 1995), and a peer financial planning program student survey. The instrument included a total of 61 items asking about respondents' demographic characteristics, financial wellness, financial education and information, academic performance, credit card practices, credit card attitudes, and self-esteem. Demographic characteristics, including age, gender, academic rank, ethnic background, marital status, number of dependents, birth order, number of siblings, employment status (part time vs. full time), academic college, and housing situation (on and off campus) were measured. Financial wellness questions about students' overall financial satisfaction, financial stress, and worries about debt were included in the questionnaire. Subjective assessments of personal financial knowledge, sources of financial information, and whether a student took a personal finance course were measured. Credit card practice questions included the number of credit cards each student possessed, age at which the first credit card was obtained, payment practices of students with credit card balances, and parents' credit card practices. Attitude toward credit was measured with nine questions adapted from a study by Awh and Waters (1974). A 10-item self-esteem scale was included in the questionnaire based on Rosenberg's (1965) scale.

Dependent Variable

The dependent variable of this study was measured with the following two questions:

1. Have you ever reduced the course load you were taking so that you could work more hours to pay credit cards, personal loans, vehicle loans, or other loans?
2. Have you ever dropped out for a semester so that you could work more hours to pay credit cards, personal loans, vehicle loans, or other loans?

Student respondents were asked to answer either yes or no to these two questions. Among the 540 participants, 37 students did not specify their answer on the reduced course load question leaving 503 usable cases. Among the usable survey respondents, those who had to reduce their course load due to debt comprised 16% (80 students) of the sample. There were 33 students who did not answer the second question. Those who said they had dropped out for a semester for personal debt comprised 5% (24 students) of the usable sample. The dependent variable was created by combining the two questions. While the impacts of dropping out from the university for a semester or reducing course load on students academic progress are different, the two questions measure academic interruption due to financial matters, both of which are significant concerns for students, parents, and educators. Of the total 503 usable cases, there were 85 (17%) students who experienced either a reduced course load or dropped out from a college for a semester.

Independent Variables

Student demographic, financial, and personal characteristics were used to examine the circumstances of students who either experienced a reduced course load or dropped out of college. Among the demographic characteristics used in this study, age, number of dependents, and number of siblings were measured at a continuous level. Gender, marital status, ethnic background, employment status, academic school or college, and housing situation were coded as dummy variables. Academic level was considered as an ordinal variable. Financial satisfaction, financial stress, subjective evaluation of financial knowledge, and parents' credit use when the student was living at home, and parent's credit related problems were measured with Likert-type scales and were treated as interval variables. The number of credit cards that each student possessed and the age at which a student first obtained a credit card were measured at a continuous level. One question on credit card practices in terms of payment behavior (whether those who have and use credit cards pay their balance each month in full or not) was included in the questionnaire. The question was measured with a Likert-type question with four choices, including always (4) to never (1). More detailed information on the independent variables is shown in Table 1.

Nine Likert-type questions, based on Awh and Water's (1974) scale, were included to measure attitudes toward credit cards. Table 2 describes these questions. Each item was measured with a 4-point Likert-type scale that ranged from strongly agree (4) to strongly disagree (1). A summated index was created for use in the multivariate analyses Those who had higher scores on the attitude toward credit scale were assumed to have a more positive credit attitude. Possible scores ranged from 9 to 36 and the respondent scores ranged from 13 to 36. The mean score for the summated index of respondents was 24.93 and

the standard deviation was 4.80. To assess internal consistency, Cronbach's alpha was examined. The scale produced a Cronbach' s alpha of .82.

Students' self-esteem was measured with 10 questions that were developed by Rosenberg (1965) (see Table 3). The Rosenberg self-esteem scale measures the self-acceptance aspect of self-esteem. This short list of questions offers ease of understanding, which is a main strength of the scale. Each item was measured with a 4-point Likert-type scale that ranged from strongly agree (4) to strongly disagree (1). For the multivariate analyses, a summated scale of self-esteem was created. Those who had higher scores on the self-esteem scale had higher (positive) levels of self-acceptance. Possible scores ranged from 10 to 40. Respondents' scores ranged from 13 to 40 with a mean of 32.59 and standard deviation of 5.24. The Cronbach's alpha of the scale was .89.

Statistical Analyses

Several statistical analyses were conducted in order to examine the characteristics of students who either experienced reduced course loads or dropped out from the university. First, the students who experienced reduced course loads or dropped out were compared with those who did not experience these outcomes. Three methods of comparison were used, including a *t*-test, ANOVA, and chi-square test. Next, a logistic regression analysis was conducted using the demographic, financial, and personal characteristics of the two groups of students to determine the factors associated with dropping out of college or reducing one's school workload.

FINDINGS

Characteristics of the Sample

As shown in Table 1, the sample consisted of 55.3% female students and 44.7% male students. Nearly all of the students (96.1%) were single (i.e., not married), and the majority (78.7%) were non-Hispanic White. Approximately 10% of the sample was Hispanic. The mean age of respondents was 19.4 years, and almost 40% of the students were freshmen. Students, in general, reported having about one or two siblings (mean 1.88) and more than half of the students (60.8%) were not working when the survey was administered. All nine colleges were represented in the sample, with mainly Arts and Sciences students (60.1%) completing the survey. About 40% of respondents were living on campus, with the remainder living off campus.

In terms of students' financial situations, the number of students who indicated being worried about their debt was revealing. Of the sample, 38.1% of students reported that they worry about their debt load. On average, students are somewhat satisfied with their financial situation. Approximately 7% of the students answered that they are not satisfied at all with their financial situation.

Table 1. Independent Variables

Variables	Category and distribution (%)		Level
Demographic Characteristics			
Gender	Male	44.7%	Dummy variable
	Female	55.3%	(Male = 1)
Marital status	Never married	96.1%	Dummy variable
	Living with significant others	2.1%	(Married = 1)
	Married	1.8%	
Ethnic background	Non-Hispanic white	78.7%	Two dummy variables (Non-Hispanic White = 1 Hispanic = 1)
	African American	5.7%	
	Hispanic	10.4%	
	Native American	.8%	
	Asian and Pacific Islander	3.3%	
	Other	1.2%	
Age	Range 17-34	Mean 19.64 (*SD* 1.87)	Continuous
Number of siblings	Range 0-11	Mean 1.88 (*SD* 1.43)	Continuous
Employment status	Working full-time	34.5%	Dummy variable
	Working part-time	4.7%	(Working = 1)
	Not working	60.8%	
Academic level	Freshman	39.3%	Ordinal (interval level) Range 1-5
	Sophomore	32.6%	
	Junior	18.1%	
	Senior	9.6%	
	Graduate student	.4%	
Academic college	Arts and sciences	60.1%	Dummy variables
	Engineering	1.6%	
	Business	9.1%	
	Human sciences	13.9%	
	Agricultural sciences	.4%	
	Education	2.0%	
	Other (Mass Comm, Arts, Architecture)	12.9%	
Housing	Own	4.7%	Dummy variable
	Rent	49.4%	(On campus = 1)
	Living with relative or parents	6.3%	
	Dorm	39.3%	
	Other	.4%	

Table 1. (Cont'd.)

Variables	Category and distribution (%)		Level
Financial Characteristics			
Worry about debt	Yes	38.1%	Dummy variable
	No	24.0%	(Worry about
	No debt	37.9%	debt = 1)
Financial satisfaction	Extremely satisfied	8.2%	Interval
	Satisfied	29.4%	(Extremely
	Somewhat satisfied	32.9%	satisfied = 5 to
	Not very satisfied	22.2%	Not Satisfied
	Not satisfied at all	7.3%	at all = 1)
Financial stress	Extremely stressed	8.2%	Interval
	Stressed	19.4%	(Extremely
	Somewhat stressed	34.3%	Stressed = 5 to
	Not very stressed	30.0%	No Stress at
	No stress at all	8.0%	all = 1)
Subjective financial knowledge	Not knowledgeable	5.1%	Interval (Very
	Moderately knowledgeable	44.6%	Knowledgeable = 4)
	Knowledgeable	39.9%	to Not
	Very knowledgeable	10.4%	Knowledgeable = 1)
Financial issues interfere with school performance	Very often	4.3%	Interval (Very often =
	Often	11.4%	1 to Never = 5
	Sometimes	26.2%	
	Occasionally	30.3%	
	Never	27.8%	
Credit Card Practices			
Parents' credit card use	Never	5.9%	Interval (Never = 1
	Occasionally	26.7%	to Very often = 5)
	Sometimes	32.3%	
	Often	26.5%	
	Very often	8.5%	
Parents' credit related problems	Very often	1.4%	Interval (Very
	Often	5.5%	often = 1 to
	Sometimes	15.8%	Never = 5)
	Occasionally	20.4%	
	Never	56.8%	
Number of credit cards	Range 0-8	Mean 1.19 (*SD* = 1.20)	Continuous
Age first credit card obtained	Range 15-23	Mean 17.85 (*SD* = 1.26)	Continuous
Credit card balance payment in full	Never	25.0%	Interval Never = 1
	Sometimes	17.3%	to Always = 4)
	Usually	17.1%	
	Always	40.5%	

Table 2. Attitude Toward Credit Cards

Item	SA	TA	TD	SD
1. The cost of using a credit card is too high.	23.3	50.4	21.9	4.3
2. It is unwise to use any credit card.	13.0	27.7	43.5	15.8
3. Credit cards make a positive contribution to society.	5.0	44.3	39.5	11.2
4. Credit cards should be used only in case of an emergency.	21.5	41.2	28.8	8.5
5. I dislike all credit cards.	33.1	0.0	37.9	29.0
6. Credit cards provide a needed service.	13.9	64.3	18.7	3.2
7. Credit cards are safe and risk free.	1.2	15.2	46.2	37.5
8. It is too easy to overspend with a credit card.	55.7	35.5	7.8	1.0
9. I fear the consequences of overspending with a credit card.	38.8	39.6	16.4	5.1

Items 1, 2, 4, 5, 8, and 9 were reverse coded.
SA: Strongly Agree, TA: Tend to Agree, TD: Tend to Disagree; SD: Strongly Disagree

In terms of financial stress, 30% of respondents reported that they were, at the time of the survey, not very stressed about their finances, while 8% reported no financial stress at all. However, slightly more than 8% of the respondents reported extreme financial stress and about 54% reported either being financially stressed or somewhat stressed. In terms of subjective evaluation of their financial knowledge, a large number of the students evaluated themselves as knowledgeable (39.9%) and very knowledgeable (10.4%). Students were also asked whether financial issues interfere with their performance in school. In general, respondents' financial issues were not seen as serious problems related to school performance (average between sometimes and occasionally). Almost 30% of respondents answered that their financial issues never interfere with their performance in school while there were about 5% percent of respondents who answered that financial issues very often interfered with their performance in school.

Students' and their parents' credit card usage were measured in the questionnaire. More than one-third of the students reported that their parents or guardians used credit cards very frequently when they were living at home, while about 6% of students reported that their parents' never used credit cards. About 7% of those that responded reported that their parents or guardians had credit related problems very often or often, while 57% of the respondents said their parents or guardians never had credit related problems.

Table 3. Self-Esteem Scale

Item	SA	TA	TD	SD
1. I feel that I'm a person of worth, at least on an equal basis with others.	44.2	48.3	6.3	1.0
2. I feel that I have a number of good qualities.	58.1	37.0	4.6	0.4
3. All in all, I am inclined to feel that I am a failure.	1.6	9.5	32.0	57.0
4. I take a positive attitude toward myself.	41.3	48.9	8.2	1.6
5. At times I think I am no good at all.	3.4	20.3	35.3	41.0
6. I wish I could have more respect for myself.	5.9	29.7	38.6	25.7
7. I feel I do not have much to be proud of.	1.8	11.6	32.0	54.6
8. I certainly feel useless at times.	4.4	27.2	41.9	26.6
9. I am able to do things as well as most other people.	39.5	52.8	7.1	0.6
10. On the whole, I am satisfied with myself.	47.4	43.1	7.7	1.8

Items 3, 5, 6, 7, and 8 were reverse coded.
SA: Strongly Agree, TA: Tend to Agree, TD: Tend to Disagree; SD: Strongly Disagree

The majority of students possessed more than one credit card, while 32.1% of respondents did not possess any credit cards. On average, students obtained their first credit card when they entered college. The average age when the first credit card was obtained was 17.85 years. More than half (55%) of the students obtained their first credit card at age 18. There were 14 students who reported that they obtained their first credit card at age 15 and 44 students at age 16. In terms of credit card usage, students' payment practices were less than desirable. Among those who use credit cards, approximately 40% always pay their credit card balances in full each month, while 25% of the students said they never pay their credit card balances in full. Considering the high interest rates on credit cards, this statistic is one piece of evidence that indicates why many credit card companies target college students with free offers and affinity card solicitations.

Descriptive Statistics of the Two Groups

ANOVA and *t*-tests were conducted to examine the characteristics of students who experienced reduced course loads or dropped out for at least a semester. Those who experienced either reduced course loads or dropping out for a semester were considered by the researchers as a financially strained group. This financially strained group was then compared to non-strained students. The financially strained group represented 17% of the usable sample (503 students). Table 4

Table 4. Characteristics of the Financially Strained (FS) Students

Variable	Group	*N*	Mean (%)	*F*	Sig.
Age	NFS	415	19.30	85.327	.000
	FS	84	21.01		
	Total	499	19.59		
Number of siblings	NFS	411	1.80	10.624	.001
	FS	84	2.36		
	Total	495	1.89		
Hispanic	NFS	417	10.07%	.614	.434
	FS	85	12.94%		
	Total	502	10.56%		
White	NFS	414	79.71%	2.628	.106
	FS	85	71.76%		
	Total	499	78.36%		
Married	NFS	416	1.2%	4.941	.027
	FS	85	4.7%		
	Total	501	1.8%		
Work	NFS	415	33.25%	46.315	.000
	FS	84	71.43%		
	Total	499	39.68%		
Living on campus	NFS	417	42.93%	17.810	.000
	FS	85	18.82%		
	Total	502	38.84%		
Financial satisfaction	NFS	415	3.2434	47.630	.000
	FS	84	2.4048		
	Total	499	3.1022		
Financial knowledge	NFS	416	2.57	.595	.441
	FS	85	2.51		
	Total	501	2.56		
Financial issues interfere with school performance	NFS	416	3.89	127.707	.000
	FS	85	2.53		
	Total	501	3.66		
Worry about debt	NFS	413	30.02%	78.107	.000
	FS	85	77.65%		
	Total	498	38.15%		

Table 4. (Cont'd.)

Variable	Group	*N*	Mean (%)	*F*	Sig.
Financial stress	NFS	415	2.7253	71.496	.000
	FS	85	3.7294		
	Total	500	2.8960		
Credit card balance payment	NFS	354	2.81	6.953	.009
	FS	83	2.42		
	Total	437	2.74		
Age first credit card obtained	NFS	283	17.72	15.624	.000
	FS	75	18.36		
	Total	358	17.86		
Number of credit cards	NFS	412	1.14	7.084	.008
	FS	85	1.52		
	Total	497	1.20		
Parents' credit problems	NFS	413	4.38	34.716	.000
	FS	84	3.69		
	Total	497	4.26		
Parents' credit use	NFS	413	3.07	.981	.323
	FS	85	2.94		
	Total	498	3.04		
Self-esteem	NFS	396	32.7980	3.924	.048
	FS	78	31.5128		
	Total	474	32.5865		
Credit attitudes	NFS	395	24.6253	8.372	.004
	FS	80	26.3125		
	Total	498	24.9095		

shows the differences between the two groups in a bivariate manner. In general, those who were financially strained were older, had more siblings, were more likely to be married, worked either full-time or part-time, and were less likely to live on campus. In terms of personal financial related variables, those who were considered strained were less satisfied with their financial situation. They also worried about debts and had higher levels of financial stress. A striking finding is that those who experienced financial strain reported that their financial issues interfered with their performance in school more often than the other group.

Those who experienced reduced course work and those who dropped out also tended not to pay credit card balances in full each month. They likewise held more credit cards and obtained their first credit card at an older age than the other group. Strained students reported that their parents or guardians used credit cards less frequently when they were living at home; however, in cases where a strained group student's parents or guardians used credit cards, these students reported more credit related problems. From a personal characteristics viewpoint, as a group, those who experienced strain had slightly lower levels of self-esteem (i.e., had lower levels of self-acceptance) than the other group. Ironically, those who were strained had more favorable attitudes toward credit cards. This may explain why they were more likely to carry a balance.

Multivariate Analyses Findings

A multivariate analysis was conducted to further examine the characteristics of the financially strained group. Those who experienced either reduced course loads and those who dropped out of college were assigned 1 for the financial strained group membership, otherwise subjects were assigned 0. The following independent variables were included in the regression: age, gender, ethnic background, number of siblings, employment status, housing, worrying about debt, financial satisfaction, financial stress, subjective financial knowledge, parents' credit card use, parent's credit related problems, number of credit cards, credit card balance payment, self-esteem, and credit attitudes. Marital status, academic level, and academic college were not included in the regression due to possible collinearity and answer distribution problems. Results are shown in Table 5. In general, strained students were older, working, more stressed about their personal finances, and had parents who had credit related problems more often.

DISCUSSION

Understanding who is more or less likely to drop out of college or reduce coursework has significant implications for individuals and society. Lifetime household income is highly correlated with education (Federal Reserve Bank of Cleveland, 2005). Those that do not have a college degree tend to earn less than those that do. According to the U.S. Census Bureau (2005), workers 18 years and over with a bachelor's degree earn an average of $51,206 a year, while those with a high school diploma earn an average of $27,915. To illustrate the impact of such a discrepancy, consider that over the course of a worker's lifetime even a difference in income as small as $5,000, at 3% interest for 40 years, adds up to over $375,000 in excess earnings for college graduates. In an environment where housing prices are increasing and the threat of government financial safety nets are being questioned, allowing someone to drop out of college is to allow someone to enter life in a precarious financial position.

Table 5. Logistic Regression Results

	B	Wald	Sig.	Exp(B)	95.0% C.I. for EXP(B) Lower	Upper
Gender	.213	.342	.559	1.237	.606	2.524
Non-Hispanic white	–.410	.607	.436	.664	.237	1.861
Hispanic	–.435	.408	.523	.647	.170	2.458
Age	.495	16.780	.000	1.640	1.294	2.078
Number of sibling	.194	2.833	.092	1.214	.969	1.522
Working	.911	6.259	.012	2.487	1.218	5.076
On-campus	.073	.026	.871	1.076	.445	2.598
Debt worry	.750	2.998	.083	2.117	.906	4.948
Financial satisfaction	–.202	1.000	.317	.817	.550	1.214
Financial stress	.616	8.093	.004	1.851	1.211	2.828
Subjective financial knowledge	–.113	.241	.624	.893	.569	1.402
Parents' credit use	–.235	1.657	.198	.791	.553	1.130
Parents' credit problem	–.543	11.276	.001	.581	.423	.798
Number of credit cards	–.026	.033	.856	.975	.739	1.285
Credit payments	.102	.452	.501	1.107	.823	1.488
Self-esteem	–.026	.648	.421	.975	.916	1.037
Credit attitudes	–.037	.719	.396	.964	.886	1.049
Constant	–9.416	8.059	.005	.000		

Chi square 135.976

Model Summary

Step	–2 Log likelihood	Cox & Snell R^2	Nagelkerke R^2
1	238.284[a]	.301	.480

[a]Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Classification Table[b]

	Observed		Predicted: Drop reduced .00	Predicted: Drop reduced 1.00	Percentage correct
Step 1	Drop reduced	.00	289	16	94.8
		1.00	31	43	58.1
	Over percentage				87.6

[b]The cut value is .500.

Understanding who drops out and why has policy implications as well. In the past, the answer to who drops out of college and why was addressed primarily from an emotional stress, coping, academic, and interrelationship perspective. Only recently have researchers systematically examined the role financial stress and behaviors have on college drop out rates. The role of drop out rates on income and crime statistics is one area that offers promise for future research. Currently, the American prison population consists of at least one million college drop outs (Cassel, 2003). While not the focus of the current study, the results from this study suggest there may be ways to reduce drop out rates, and thus, decrease the number of incarcerated individuals in the United States. Steps taken to reduce drop out rates may, in effect, save the U.S. billions in incarceration expenses over time.

Those students that were defined as financially strained in this study were older, working, financially stressed, and had parents who experienced credit related problems more often when controlling for all other variables. The findings show the empirical relationship between financial problems (stress) and academic performance. Students who experienced reduced course loads or dropped out were more likely to work full time or part time. The cycle (needing money, working, and academic performance) can spiral into academic interruption.

For students and families of students planning to attend college, understanding the costs associated with higher education is critical. Rising costs associated with higher education are inevitable. Thus, there is a need to equip students and families with information early so that they make informed decisions about funding higher education such as appropriate balance of work hours versus course hours.

Results of this study provide support for targeted programs to help students avoid reducing their course loads or dropping out of school due to financial issues. Examples of such programs are a first year experience course (National Resource Center, 2004) to help students make the transition from home to school and summer bridge programs (Kezar, 2001). Programs targeting students should also create an awareness of campus-based student support services. Examples of services include student life, mentoring programs, and counseling services. Some schools now offer financial counseling and education services for students, in addition to the services traditionally offered by financial aid offices. These programs can teach students skills such as cash management and budgeting, establishing and using credit, and student loan management, thus allowing them to create a plan for managing their finances each semester or a comprehensive plan for their time to degree completion.

As noted earlier, many students in this study indicated that they worried about their finances. Student support services can help a range of students, from those who are anxious or stressed about finances to those who are having difficulty managing class and employment due to financial reasons.

One of the limitations that this research has is that the survey did not include a direct measure of socio-economic status, such as students' personal income or household income. There was one income question in the survey;

however, due to the low level of validity, the question was deleted from the final analyses. For the purposes of this study, other questions were used to proxy for students' socio-economic situation. These proxies include parents' credit related problems, students' financial satisfaction with their current financial situation, financial stress, number of siblings, and their employment status. In some respects, these proxy measures are superior to direct measures of income. Measuring students' household income is a hard task because of the nature of student income sources. Some students do not consider non-working income (such as money from their parents, scholarships, student loans, gifts, etc.) as part of their income. Students also do not generally have a clear understanding of their parents' income. Even so, future research ought to include a specific question about student income.

In summary, this study adds to the growing body of knowledge about the relationships between and among credit usage, financial behaviors, and college student outcomes. The link between financial stress and poor academic performance is noteworthy. Financially stressed students who participated in this study were significantly more likely to drop out of school than others, holding all other relevant factors constant. This was true even though the majority of respondents did not report working. Until a proactive effort is made on the part of policy makers, university administrators, students, and parents to counteract the effects of financial stress, the relationship between stress and drop out rates is likely to continue into the future.

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