RESEARCH

Pharmacy Students' Attitudes Toward Debt

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Objective. To examine pharmacy students' attitudes toward debt.

Methods. Two hundred thirteen pharmacy students at the University of Minnesota were surveyed using items designed to assess attitudes toward debt. Factor analysis was performed to identify common themes. Subgroup analysis was performed to examine whether students' debt-tolerant attitudes varied according to their demographic characteristics, past loan experience, monthly income, and workload.

Results. Principal component extraction with varimax rotation identified 3 factor themes accounting for 49.0% of the total variance: tolerant attitudes toward debt (23.5%); contemplation and knowledge about loans (14.3%); and fear of debt (11.2%). Tolerant attitudes toward debt were higher if students were white or if they had had past loan experience.

Conclusion. These 3 themes in students' attitudes toward debt were consistent with those identified in previous research. Pharmacy schools should consider providing a structured financial education to improve student management of debt.

Keywords: pharmacy students, attitude, debt, factor analysis

INTRODUCTION

The cost of attending pharmacy school in the United States is steadily rising. To meet these costs, the majority of pharmacy students take out student loans, resulting in an increasing level of indebtedness among pharmacy school graduates. In a 2013 national survey, 91% of graduating pharmacy students reported taking out student loans. The median amount borrowed was reported to be about \$110 000 and \$150 000 for public and private pharmacy schools graduates, respectively.¹

The rising costs and increasing debt burden for pharmacy education may influence both the initial decision of potential applicants to apply to pharmacy school and the career choice of pharmacy school graduates. Apprehension about debt may deter potential applicants to pharmacy school from applying, thus limiting the size and quality of the applicant pool. Not considering pharmacy education because of its substantial costs may disproportionately impact those of low socioeconomic background. This has implications for disparity in access to pharmacy education. In addition, the level of student loan debt is associated with the choice of practice setting among newly licensed pharmacists.²

Recently, there has been a debate among stakeholders in academic pharmacy about the expected supply-demand balance in future pharmacy job markets.³⁻⁶ Some students perceive a dwindling return-on-investment to pharmacy education as the supply and demand for pharmacists appear to be in balance in many geographic areas.^{7,8} Among practicing pharmacists, the level of debt may impact workforce contribution and work-life balance. Pharmacists with higher debt, for example, are expected to choose more remunerative employment and work more hours. Given its potential influence on the pharmacy workforce, there is a need for increased understanding of pharmacy students' attitudes toward debt.

The main objective of this study was to develop a scale to measure the attitudes of pharmacy school students toward debt. Previous studies examining students' attitudes toward debt revealed prodebt and antidebt themes. Using the 14-item Attitudes to Debt Scale (ADS), Scott and Lewis demonstrated that 4 items loaded on the prodebt themes, 4 items loaded on antidebt themes, and 3 items loaded on both themes.⁹ Van Dyke and Little identified 3 themes of students' attitudes toward debt: liberal (4 items), moralistic/debt-averse (3 items), and fearful about debt (4 items).¹⁰ The liberal characteristic was associated with prodebt themes whereas the moral/debt-averse and fearful-about-debt characteristics were related to the antidebt themes. In Haultain et al's study,

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the prodebt theme was represented by the debt-utility dimension and the antidebt theme was characterized by the fear-of-debt dimension.¹¹ Anticipating our scale would also include these themes in its factor structure, we proposed examining the correlation between students' debt-tolerant attitudes and demographic and other background variables.

METHODS

The study sample consisted of second-year and third-year PharmD students at the University of Minnesota (N=280). In March 2011, the students were asked to participate in the study. Questionnaires were distributed and collected during class under the supervision of teaching faculty members and then returned to the investigators. Two hundred thirteen (96 second-year and 117 third-year) pharmacy students consented and participated in the study, providing an overall response rate of about 76%. In addition to the questionnaire items, students were asked to provide demographic information, current monthly income, workload, past loan experience, and past experience with finance classes.

The survey instrument consisted of 11 items derived from instruments previously reported in the literature.^{11,12} We included additional items to measure student attitude toward debt, resulting in 18 items in our initial item pool. All items adopted from existing instruments were reworded to make them suitable to pharmacy students. All items were scored on a 5-point Likert-type scale (1=strongly disagree; 2=disagree; 3=neutral; 4=agree; 5=strongly agree). The study received exemption status from the University of Minnesota Institutional Review Board.

After reverse-scoring several items to yield a unidirectional scale score, inter-item correlations were examined to assess homogeneity of the scale. Items with a correlation coefficient ($r < 0.3$) were considered evidence that they did not measure the same construct as other items; items with high correlation (ie, $r > 0.7$) represented redundancy.^{13,14} We eliminated items with $r < 0.3$ or $r > 0.7$. Items having few observations in 1 or 2 response categories were also considered for exclusion because these items are generally acknowledged as problematic when evaluating their psychometric properties.¹⁵ Thus, we had 11 remaining items. We performed factor analysis (principal component extraction with varimax rotation) to investigate the underlying structure of these 11 items. We then used one-way analysis of variance (ANOVA) to examine the correlation between demographic and background variables and students' debt-tolerant attitudes. Demographic and background variables included age, gender, race, past loan experience, monthly

income, workload, and past experience with finance classes. All analyses were conducted using SPSS v17.0 (SPSS Inc., Chicago, IL).

RESULTS

Two hundred ten students responded to the gender question, 66.7% of whom were female. Ages of respondents ranged from 19 to 50 years, with a mean age of 27.3 years (SD=5.0 years). About 58% of the respondents had past loan experience. Only 29% had attended a finance class in their undergraduate education. After examining inter-item correlations, we removed 5 items that showed correlation coefficients ($r < 0.3$ or $r > 0.7$; eg, "I should stay home rather than borrow money for an evening out" and "I borrow more than I need to pay my tuition"). In addition, 2 items were eliminated because they showed strong skewed distributions in their response categories (ie, "If I have a debt, I want to eliminate it as quickly as possible" and "I save before making a major purchase"), resulting in 11 items included in the exploratory factor analysis.

Table 1 shows the mean scores and standard deviations of the included items. The item mean scores ranged from 1.8 (0.8) (for the reverse-scored item "Once a person is in debt, it can be very difficult to get out") to 3.8 (1.2) (for the item "A student loan is the only type of loan that I take out").

Prior to factor extraction, data adequacy was examined using the Kaiser-Meyer-Olkin (KMO) measure of sample adequacy and the Bartlett's test for sphericity. The KMO measure determines the extent to which items belong together by comparing the magnitudes of the calculated correlation coefficients to the magnitude of the partial correlation coefficients. A value of the KMO below 0.5 is unacceptable for factor analysis.¹⁶ The Bartlett's test statistic tests the null hypothesis of no joint correlation across the items. Rejecting the null hypothesis suggests appropriate correlations among items. Our results from the KMO measure (0.68) and the Bartlett's test ($\chi^2 = 310.26$, $df = 55$, $p < 0.00$) indicated that the data were appropriate for factor analysis.

Table 2 presents the items and their factor loadings. Principal component extraction with orthogonal varimax rotation generated 3 factors with eigenvalues greater than 1. Examination of the scree plot also suggested a 3-factor solution. Factor 1 (accounting for 23.5% of the variance) included 4 items, each with factor loadings greater than 0.40. This factor was labeled with a theme related to "tolerant attitudes toward debt." Factor 2 (accounting for 14.3% of the variance) included 4 items and was labeled as "contemplation and knowledge about loans." One item included in factor 2 ("A student loan is the only type of

Table 1. Aggregated Students' Evaluation of Their Attitudes Toward Debt

Items	Mean (SD)
Using a credit card is a good thing because it allows you to enjoy life as a pharmacy student. ^a	2.29 (0.92)
It is better to have something now and pay for it later. ^a	2.32 (0.93)
Even if I am earning money now, I can take out a loan for a better life. ^b	2.68 (1.06)
Using student loan money to pay for everyday expenses is okay. ^a	3.49 (1.23)
Before taking out a student loan, I always think of how to pay it off first.	2.62 (1.16)
Before taking out a loan, I discuss it with my friends or family.	2.58 (1.15)
I know the terms of my student loans (eg, interest rate, approximate monthly payments, deadlines).	2.80 (1.16)
A student loan is the only type of loan that I can take out.	3.81 (1.19)
Student loan debt puts people off going to pharmacy school.* ^b	2.31 (1.01)
I am seriously worried about the debts I am building up while at pharmacy school.* ^b	2.19 (1.19)
Once a person is in debt, it can be very difficult to get out.* ^a	1.83 (0.79)

*Reverse-scored items

^aItems from Davies and Lea's study¹²

^bItems from Haultain et al's study¹¹

loan that I take out") had a factor loading of 0.34. Despite its relatively weak factor loading, we included this item in factor 2 because more variance was explained by its inclusion. Finally, the last factor (accounting for 11.2% of the variance) labeled as "fear of debt" included 3 items with factor loadings greater than 0.40. Taken together, these 3 factors explained 49.0% of the total variance in our data set. Cronbach's alpha, a measure of reliability, was 0.64.

As expected, factor analysis revealed a "debt-tolerant attitude" as one of factor theme. We obtained the total score for this factor ("total debt-tolerance score") by summing the scores of the 4 items loaded on this theme. We then examined the distribution of the total debt-tolerance scores across demographic and background variables. As shown in Table 3, white students had more tolerant attitudes toward debt than nonwhites ($p=0.001$). Moreover, if students had past loan experience, they were more likely to be tolerant toward debt ($p=0.01$). Although the

total debt-tolerance score for men (11.0) was slightly higher than that for women (10.6), the difference was not significant ($t_{(208)}=0.87$, $p=0.34$). The total debt-tolerance score did not differ by monthly income or working hours per week.

DISCUSSION

This study developed a scale of 11 items to examine the structure of pharmacy students' attitudes toward debt. Structural elucidation of this scale revealed 3 uni-dimensional factors identified as tolerant attitudes, contemplation and knowledge about loans, and fear of debt. Most previous scales designed to measure student loan and debt attitudes have reported prodebt and antidebt as major themes in their factor structure. As noted previously, Scott and Lewis found that 11 of the 14 items of the Attitudes to Debt Scale (ADS) loaded on 2 factors: antidebt attitude and prodebt attitude.⁹ Similarly, Van Dyke and Little reported 3 factor themes about attitudes toward debt:

Table 2. Rotated Factor Matrices of 3-factor Solutions^a

Items	Factors		
	1	2	3
Using a credit card is a good thing because it allows you to enjoy life as a pharmacy student.	0.76	-	-
It is better to have something now and pay for it later.	0.72	-	-
Even if I am earning money now, I can take out a loan for a better life.	0.68	-	-
Using student loan money to pay for everyday expenses is okay.	0.51	-	-
Before taking out a student loan, I always think of how to pay it off first.	-	0.75	-
Before taking out a loan, I discuss it with my friends or family.	-	0.69	-
I know the terms of my student loans (eg, interest rate, approximate monthly payments, deadlines).	-	0.68	-
A student loan is the only type of loan that I can take out. ^b	-	0.34	-
Student loan debt puts people off going to pharmacy school.	-	-	0.80
I am seriously worried about the debts I am building up while at pharmacy school.	-	-	0.68
Once a person is in debt, it can be very difficult to get out.	-	-	0.68

^aItems with significant factor loadings (≥ 0.4) are presented

^bIn spite of a relatively weak factor loading, this item is included because of reason mentioned in text

Table 3. Group Differences in Tolerant Attitudes Toward Debt

Groups	n (%)	Tolerance scores ^a (SD)	p value
Gender			
Male	70 (33.3)	10.97 (3.13)	$p = 0.39$
Female	140 (66.7)	10.61 (2.73)	
Race			
White	163 (78.0)	11.09 (2.77)	$p < 0.01$
Non-white	46 (22.0)	9.50 (2.89)	
Past loan experience			
Yes	123 (59.4)	11.11 (2.71)	$p = 0.01$
No	84 (40.6)	10.06 (2.91)	
Monthly income			
\$0 ≤ monthly income ≤ \$100	42 (20.4)	10.55 (2.84)	$p = 0.80$
\$100 < monthly income ≤ \$500	94 (45.6)	10.87 (2.84)	
\$500 < monthly income	70 (34.0)	10.66 (2.91)	
Workload			
0 hour	32 (15.3)	10.38 (2.52)	$p = 0.74$
0 < working hour < 15 hours a week	134 (64.1)	10.81 (2.80)	
15 hours a week ≤ working hour	43 (20.6)	10.79 (3.31)	

^a Tolerance scores were obtained by summing scores of the 4 items loaded on the “debt-tolerant attitude” theme

liberal, moralistic/debt averse, and fearful about debt.¹⁰ Haultain et al reported 2 factors conceptualized as fear of debt and debt utility in their study.¹¹ We also found a pro-debt theme (labelled as tolerant attitudes) and an antidebt theme (fear of debt) similar to those reported in the earlier studies. In addition, our study uniquely identified a “contemplation and knowledge about loans” theme among pharmacy students.

Our findings suggest that white students have more tolerant attitudes toward debt compared to nonwhite students. We also found a positive relationship between tolerant attitudes toward debt and past loan experience, an unsurprising relationship seen in other contexts. As Etzioni noted, “Taking out the first loan, for people who feel being in debt is a moral evil, is different from extending it or taking out a second one.”¹⁷ Once people take out loans, they are likely to become more tolerant of doing so again. However, student debt-tolerance scores were not significantly associated with student gender, income, or workforce participation. Men have more tolerant attitudes toward debt than women because men’s lifetime earnings are expected to be higher in general.^{18,19} Gender differences did not seem to significantly affect their tolerance attitudes because most of our study subjects had similar economic status regardless of gender. If we use samples of the general public whose lifetime expected earnings differ by gender, differences between attitudes of men and women may be seen. In addition, low earnings and low levels of work participation may be associated with more debt-tolerant attitudes because low-income people are relatively more likely to take out loans. However, because

respondents in this study were students representing a homogeneous group, their earnings and levels of work participation seem to have had little or no impact on their debt-tolerant attitudes. Variation in student income and working time were not high enough to result in attitudinal differences toward debt. For example, 93.4% of students in our sample earned no more than \$1,500 per month; 79.4% of respondents worked less than 15 hours per week.

Our study has several limitations. We used a convenient sample that was easily accessible. Our study sample was restricted to second-year and third-year pharmacy students, whose attitudes might differ from those of first-year and fourth-year students. This issue may limit generalizability of our findings. Moreover, this study did not show any causal relationship between students’ prodebt attitudes and their levels of debt. Whether students with more tolerant attitudes toward debt actually have higher levels of debt remains an open question. A tolerant attitude toward debt does not necessarily imply that it causes students to go into debt because other personal factors such as an individual’s expenditure patterns, budgeting styles, and finance management skills can also be relevant when taking out loans. Also, debt may be associated with a range of other psychological, social, and economic factors including an individual’s career ambitions, parental perspective, and the level of debt already incurred. The variables associated with students’ attitudes toward loan debt and their strength of association can be examined in future studies. Further research using larger sample sizes among representative samples of pharmacy schools is warranted.

CONCLUSION

This study identified 3 themes concerning pharmacy students' attitudes toward debt ranging from being debt-tolerant to having fear of debt. Nearly three quarters of our sample reported no past experience in taking finance classes, pharmacy schools should consider offering finance courses or strengthening existing relevant courses to improve students' management of their financial situations. Taking a finance course could help them make informed financial decisions and better manage debt throughout their careers.

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