

RESEARCH ARTICLES

Factors Influencing Pharmacy Students' Attendance Decisions in Large Lectures

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Objectives. To identify reasons for pharmacy student attendance and absenteeism in large lectures and to determine whether certain student characteristics affect student absenteeism.

Methods. Pharmacy students' reasons to attend and not attend 3 large lecture courses were identified. Using a Web-based survey instrument, second-year pharmacy students were asked to rate to what degree various reasons affected their decision to attend or not attend classes for 3 courses. Bivariate analyses were used to assess the relationships between student characteristics and degree of absenteeism.

Results. Ninety-eight students (75%) completed the survey instrument. The degree of student absenteeism differed among the 3 courses. Most student demographic characteristics examined were not related to the degree of absenteeism. Different reasons to attend and not to attend class were identified for each of the 3 courses, suggesting that attendance decisions were complex.

Conclusions. Respondents wanted to take their own notes and the instructor highlighted what was important to know were the top 2 common reasons for pharmacy students to attend classes. Better understanding of factors influencing student absenteeism may help pharmacy educators design effective interventions to facilitate student attendance.

Keywords: absenteeism, attendance, professionalism

INTRODUCTION

Student absenteeism is a concern in higher education as it results in inadequate learning and poorer academic performance on the part of those missing class.¹⁻¹⁴ Absenteeism also has an impact on those students who consistently are present by disrupting the way classes are conducted (eg, faculty members repeating information, directions, or explanations for the benefit of those who were absent in previous classes).^{3,15} The consequences of absenteeism are more far reaching than students' academic performance and disruptions in the classroom.¹⁶ Students who frequently miss class often do not recognize that the classroom is a community to which they belong and that when they are absent, learning declines, student and teacher morale decreases, and academic standards are compromised.^{17,18}

Health professions educators, including medical, dental, nursing, and pharmacy educators, share concerns regarding student absenteeism, many of which are related to the importance of professional socialization.^{2,15,19-23}

The interaction between students and faculty members, both in the classroom and in one-on-one discussions, is crucial as it is part of the professional socialization process in which students observe faculty members and recognize them as role models.^{15,24} Since this process is important in instilling professional attitudes and values among pharmacy students,^{15,24} missing opportunities for interaction due to excessive absenteeism may hinder the development of professionalism.

Given the negative impact of student absenteeism on academic performance and the development of professionalism among pharmacy students, more research on absenteeism among pharmacy students is warranted. A better understanding of reasons why students attend or do not attend class may help pharmacy educators plan and improve their courses to increase student attendance. A search of the literature identified only 1 study focusing on absenteeism among pharmacy students.¹⁵ That study described first- and second-year pharmacy students' motivations for attending or not attending class; however, qualitative (focus groups) rather than quantitative methods of data gathering were used.¹⁵ The objectives of this research study were to (1) examine how student characteristics affect student absenteeism and (2) describe the

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reasons for student attendance at and absenteeism from large lectures.

METHODS

Setting

This study was conducted at the Harrison School of Pharmacy, Auburn University, which is located in the southeastern United States. Approximately 120 to 130 students are enrolled in each of the first 3 years of the doctor of pharmacy (PharmD) curriculum, which comprises the majority of the nonexperiential learning component of the program. Classes are held during the fall and spring semesters, and a majority of the first- and second-year coursework occurs in large auditoriums. The third year is comprised predominantly of a problem-based learning curriculum in which students work in teams of 7 or 8 students. There is no school-wide policy requiring attendance in these courses; however, individual courses may develop specific attendance requirements.

Study Design and Sample

The procedures and use of data for this study received exempt status from review by the University's Institutional Review Board. This study consisted of 2 phases. The first phase focused on the development of a survey instrument. Midway through the spring semester, the school's Office of Teaching, Learning, and Assessment distributed an electronic invitation to all PharmD students requesting participation in a discussion forum focusing on absenteeism issues. As an incentive to participate, lunch was provided to all attendees. The discussion forum is hereafter referred to as a town hall meeting. Approximately 30 students participated in the town hall meeting, which was led by the Dean of the School of Pharmacy. At the meeting, participating students were first asked to anonymously identify reasons to attend and not attend classes. The reasons listed by students were then compiled, and students were asked to rate the extent to which they agreed or disagreed with each of the reasons by using an audience response system.

After the town hall meeting was completed, a literature review was conducted to identify existing survey instruments and research findings that could be utilized in the study. Two relevant research studies were identified. First, Friedman and colleagues developed an instrument examining reasons for attending and not attending classes among undergraduate students.¹ The second study, by Fjortoft, revealed findings related to pharmacy students' motivations for class attendance.¹⁵ Items from the instrument developed by Friedman et al,¹ findings from Fjortoft,¹⁵ and reasons listed by students who par-

ticipated in the town hall meeting were compared to ensure that a comprehensive list of reasons to attend and not attend classes were included in the survey instrument. Finally, the instrument was refined and pretested with 8 third-year PharmD students.

The second phase of the study involved a cross-sectional survey of 131 second-year pharmacy students administered in April 2008, which was during the last 2 weeks of the semester. An electronic mail invitation, with a link to a Web-based survey instrument, was sent by the Office of Teaching, Learning, and Assessment to all 131 second-year pharmacy students. The invitation assured students' anonymity and explained how the School would utilize their responses to improve teaching and learning activities. An electronic mail reminder was sent to all potential respondents 2 weeks after they received the initial invitation.

Variables

Because student attendance is influenced by subjects taught in class,¹ students were asked to identify the number of times they had been absent from specific courses during the spring 2008 semester. The second-year students were enrolled in 3 large lecture courses: an integrated pharmaceutical sciences course (8 credit hours, 10:00-11:50 AM, Monday, Wednesday, Thursday, and Friday); a management course (3 credit hours, 2:00-3:15 PM Wednesday and Thursday), and a pharmaceuticals course (3 credit hours, 8:00-9:15 AM, Monday and Wednesday). The integrated pharmaceutical sciences course consisted of both basic science education and initial clinical pharmacotherapy coursework. Large lectures at this school of pharmacy are courses that include all students in a single cohort. One hundred twenty-four students were enrolled in both the management and pharmaceuticals courses. Seven additional students were enrolled in the integrated pharmaceutical sciences course as a result of failing the course previously, yielding a total enrollment of 131 students in the integrated pharmaceutical sciences course. None of the 3 courses had established attendance policies in their respective syllabi. For each course, respondents were asked to identify the number of times they had been absent from class since the beginning of the semester; response options included specific numbers from 0 to 10 and a separate category of "11 or greater."

Student characteristics also were identified, including gender; marital status; highest degree obtained prior to entering pharmacy school; work status; and average travel time to campus. The following continuous variables also were included: age; student grade point average (GPA); and combined percentage of education paid by student, spouse, and loans.

For each course, students' reasons to attend and not attend class were examined. In the survey instrument, respondents were given a list of 14 reasons to attend class and asked to rate the importance of each using the following responses: one of the main reasons, a moderately important reason, a minor reason, or not a reason they would attend class. Similarly, 22 reasons not to attend class were included on the survey instrument and respondents were asked to rate the importance of each using the same responses. Respondents who reported being absent from each course were asked to rate the importance of each reason using the following categories: one of the main reasons, a moderately important reason, a minor reason, or not a reason they would be absent from class.

Data Analysis

For each course, respondents were categorized into 3 groups based on the distribution of times they reported being absent from class (Table 1). Descriptive statistics

were used to describe characteristics of respondents. To accomplish objective 1, a series of bivariate analyses was used to explore the relationships between student characteristics and the degree of absenteeism for each course. Specifically, analysis of variance and Pearson chi-square tests were used when student characteristics were measured as continuous and categorical variables, respectively. Next, to identify the most and least likely reasons to attend class, percentages of respondents identifying each reason as major and moderately important were reported. Reasons not to attend class were presented in the same manner.

Nonresponse bias investigation was also conducted. According to the continuum of resistance model, late respondents can be used as a proxy for nonrespondents in estimating nonresponse bias.²⁵ Therefore, in this study, an investigation to identify potential nonresponse bias was conducted by comparing student characteristics between the early respondent group and the late respondent

Table 1. Characteristics of All Respondents (n = 98) and Comparison Between Early and Late Respondents to a Survey Regarding Pharmacy Students' Reasons for Not Attending Class (N= 60)^a

Variable	All Respondents	Early Respondents	Late Respondents	p ^b
Categorical Variables, No. (%)				
Gender				0.59
Male	23 (25.6)	8 (27.6)	6 (21.4)	
Female	67 (74.4)	21 (72.4)	22 (78.6)	
Marital status				0.95
Single	71 (78.9)	24 (82.8)	23 (82.1)	
Married	19 (21.1)	5 (17.2)	5 (17.9)	
Highest degree earned before pharmacy school				0.99
Prepharmacy	42 (47.7)	14 (48.3)	13 (48.1)	
BS/BA/MS	46 (52.3)	15 (51.7)	14 (51.9)	
Work status during Spring 2008				0.27
No	57 (64.0)	19 (67.9)	15 (53.6)	
Yes	32 (36.0)	9 (32.1)	13 (46.4)	
Average travel time to school				0.51
< 10 minutes	60 (66.7)	20 (69.0)	17 (60.7)	
11-60 minutes	30 (33.3)	9 (31.0)	11 (39.3)	
Absences from Integrated Pharmaceutical Sciences course				0.61
0-2 absences	36 (36.7)	12 (40.0)	12 (40.0)	
3-6 absences	35 (35.7)	10 (33.3)	7 (23.3)	
7 or more absences	27 (27.6)	8 (26.7)	11 (36.7)	
Absences from Management course				0.48
0 absences	40 (43.5)	12 (41.4)	9 (31.0)	
1 absence	27 (29.3)	11 (37.9)	10 (34.5)	
2 or more absences	25 (27.2)	6 (20.7)	10 (34.5)	
Absences from Pharmaceutics course				0.10
0-4 absences	28 (30.4)	11 (37.9)	7 (24.1)	
5-10 absences	29 (31.5)	11 (37.9)	7 (24.1)	
11 or more absences	35 (38.0)	7 (24.1)	15 (51.7)	
Continuous Variables, Mean (SD)				
Age	23.9 (1.9)	24.1 (1.8)	24.0 (2.2)	0.86
Cumulative GPA	3.0 (0.5)	3.0 (0.5)	3.1 (0.5)	0.57
Education paid by you/spouse/loan (%)	75.5 (37.0)	83.7 (28.7)	80.4 (35.9)	0.71

^a Totals may vary due to missing data.

^b Comparison of characteristics between early and late responders. Chi-square analyses were conducted for categorical variables and ANOVA for continuous variables.

group. The early and late respondent groups were defined as the first 30 respondents and the last 30 respondents who participated in the study, respectively. All statistical analyses were performed with the Statistical Package for the Social Sciences, version 16.0 (SPSS, Inc., Chicago, IL), and based on a significance level of 0.05.

RESULTS

Response Rate, Demographics, and Nonresponse Bias

Of the 131 second-year pharmacy students enrolled in the curriculum, 98 completed the survey instrument (response rate = 75%). Characteristics of respondents are shown in Table 1. Approximately three-fourths of the respondents were female (74%) and single (79%). A little over half (52%) held at least a bachelor's degree. About one-third of respondents reported working (36%) at the time this study was conducted. The majority of respondents spent less than 10 minutes traveling to campus (67%). Respondents ranged in age from 22 to 30 years, while their average age was 23.9 ± 1.9 years. On average, respondents and their spouses were responsible for about three-fourths of their educational expenses (mean \pm SD = $76\% \pm 37\%$). Other sources that funded students' educational expenses included parents, scholarships, and other unspecified sources. Next, based on the distribution of the number of times they reported being absent from class, respondents were categorized into 3 groups for each course. For example, in the pharmaceuticals course, 30%

belonged to the group with 0-4 absences; 32% to the group with 5-10 absences, and 38% to the group with 11 or more absences. The characteristics of 30 early respondents and 30 late respondents are compared in Table 1. There were no significant differences between early and late respondents in terms of demographic characteristics and the degree of absenteeism for all 3 courses.

Student Characteristics Affecting Absenteeism

Objective 1 addresses the following research question: Do particular types of students attend classes more regularly? To achieve objective 1, the relationships between student characteristics and the degree of absenteeism for each course were explored (Table 2). No significant differences in the degree of absenteeism in all courses were found between male and female respondents; single and married respondents; respondents with pre-pharmacy training/education and those with at least bachelor's degrees; and respondents who worked and those who did not work during the spring semester. Further, our results show that age and cumulative GPA were not related to the degree of absenteeism in these 3 courses. The only 2 variables that were related to the degree of absenteeism in the integrated pharmaceutical sciences course were average travel time to campus and the extent to which respondents and their spouses were responsible for education expenses. Respondents who lived closer to campus reported fewer absences compared to their

Table 2. Pharmacy Student Characteristics Affecting the Degree of Absences (N = 98)^a

Variable	Integrated Pharmaceutical Sciences				Management				Pharmaceuticals			
	Absent 0-2 Times	Absent 3-6 Times	Absent ≥ 7 Times	<i>p</i> ^b	Absent 0 Times	Absent 1 Times	Absent ≥ 2 Times	<i>p</i> ^b	Absent 0-4 Times	Absent 5-10 Times	Absent ≥ 11 Times	<i>p</i> ^b
Categorical Variables, No. (%)												
Gender				0.28				0.62				0.26
Male	8 (34.8)	6 (26.1)	9 (39.1)		8 (36.4)	8 (36.4)	6 (27.3)		5 (22.7)	6 (27.3)	11 (50.0)	
Female	27 (40.3)	25 (37.3)	15 (22.4)		28 (45.2)	16 (25.8)	18 (29.0)		21 (33.9)	22 (35.5)	19 (30.6)	
Marital status				0.70				0.16				0.29
Single	28 (39.4)	23 (32.4)	20 (28.2)		31 (46.3)	20 (29.9)	16 (23.9)		19 (28.4)	25 (37.3)	23 (34.3)	
Married	7 (36.8)	8 (42.1)	4 (21.1)		5 (29.4)	4 (23.5)	8 (47.1)		7 (41.2)	3 (17.6)	7 (41.2)	
Highest degree earned				0.74				1.00				0.62
Prepharmacy	14 (33.3)	16 (38.1)	12 (28.6)		18 (43.9)	11 (26.8)	12 (29.3)		14 (34.1)	13 (31.7)	14 (34.1)	
Bachelor/master degree	19(41.3)	15 (32.6)	12 (26.1)		18 (43.9)	11 (26.8)	12 (29.3)		10 (24.4)	15 (36.6)	16 (39.0)	
Work status				0.92				0.66				0.39
No	23 (40.4)	19 (33.3)	15 (26.3)		23 (42.6)	14 (25.9)	17 (31.5)		16 (29.6)	21 (38.9)	17 (31.5)	
Yes	12 (37.5)	12 (37.5)	8 (25.0)		12 (41.4)	10 (34.5)	7 (24.1)		10 (34.5)	7 (24.1)	12 (41.4)	
Average travel time				0.04 ^c				0.23				0.60
< 10 min	27 (45.0)	22 (36.7)	11 (18.3)		28 (49.1)	14 (24.6)	15 (26.3)		17 (29.8)	21 (36.8)	19 (33.3)	
11-60 min	8 (26.7)	9 (30.0)	13 (43.3)		8 (29.6)	10 (37.0)	9 (33.3)		9 (33.3)	7 (25.9)	11 (40.7)	
Continuous Variables, Mean (SD)												
Age	23.9 (2.1)	23.8 (1.7)	24.1 (1.8)	0.90	24.2 (2.3)	23.7 (1.9)	23.4 (0.9)	0.33	24.4 (2.6)	23.6 (1.5)	23.5 (1.3)	0.20
Cumulative GPA	3.1 (0.5)	3.0 (0.5)	2.9 (0.5)	0.12	3.1 (0.5)	3.0 (0.5)	3.0 (0.5)	0.44	3.2 (0.4)	3.0 (0.5)	3.0 (0.5)	0.06
Education paid by you/ spouse /loan	63.7 (42.8)	85.1 (30.5)	80.4 (31.7)	0.04 ^c	69.0 (37.8)	78.9 (37.4)	84.2 (29.1)	0.26	71.7(38.3)	69.8(40.7)	86.1(27.5)	0.18

^aTotals may vary due to missing data.

^bComparison of student characteristics among 3 groups with different degree of absenteeism. Chi-square analyses were conducted for categorical variables and ANOVA for continuous variables.

^cStatistical significance at $p < 0.05$

counterparts. Respondents who reported a higher combined percentage of their education paid for by themselves, their spouses, and loans had a greater number of absences compared to respondents who reported a lower percentage of their education funded by these sources. These differences were not found in the management and pharmaceuticals courses.

Reasons to Attend and Not Attend Classes

The second study objective was to identify student-reported reasons for attending and not attending classes (Tables 3 and 4). Percentages of respondents identifying each reason as major and moderately important are reported in Table 3. Although there were a wide range of reasons given for attending class, most were course

specific. For each course, the top 5 reasons respondents identified most often as the main reasons and as moderately important reasons for attending class were highlighted. For example, the top 5 reasons that were rated as main reasons to attend the integrated pharmaceutical sciences course included: respondents perceived the course content as being difficult (87%), respondents wanted to take their own notes (75%), the instructor provided material beyond that offered in the readily available resources (72%), respondents were interested in the course content (69%), and the instructor highlighted what was important to know (55%). In the management course, the main reason given to attend class was “we might have an activity or pop quiz that will affect my grade” (98%). Lastly, the 3 main reasons to attend class were somewhat

Table 3. Reasons for Pharmacy Students Attending Class (N = 98)

Statement	Integrated Pharmaceutical Sciences, No. %		Management, No. (%)		Pharmaceutics, No. (%)	
	Main Reason	Moderate Reason	Main Reason	Moderate Reason	Main Reason	Moderate Reason
	I feel obligated to attend. Not going makes me feel guilty.	23 (24.7)	17 (18.3) ^a	21 (24.1) ^a	6 (6.9)	23 (26.4) ^a
I am interested in the course content.	64 (68.8) ^a	22 (23.7) ^a	1 (1.2)	18 (20.9) ^a	7 (8.1)	16 (18.6) ^a
The instructor provides material beyond that offered in the text, PowerPoint slides, or readings.	66 (71.7) ^a	16 (17.4)	9 (10.7)	13 (15.5) ^a	9 (10.7)	16 (19.0) ^a
The course content is difficult.	81 (87.1) ^a	8 (8.6)	1 (1.1)	9 (10.3)	6 (6.9)	23 (26.4) ^a
I want to take my own notes and not rely on anyone else.	70 (75.3) ^a	10 (10.8)	21 (24.1) ^a	7 (8.0)	26 (29.9) ^a	5 (5.7)
I want to ask questions in class.	4 (4.3)	12 (12.9)	2 (2.3)	5 (5.7)	2 (2.3)	6 (6.9)
The instructor highlights what is important to know.	51 (54.8) ^a	22 (23.7) ^a	18 (20.7) ^a	22 (25.3) ^a	12 (13.8) ^a	33 (37.9) ^a
We might have an activity or pop quiz that will affect my grade.	5 (5.4)	1 (1.1)	85 (97.7) ^a	1 (1.1)	6 (6.9)	6 (6.9)
Important information about course procedures and test expectations may be announced.	37 (39.8)	15 (16.1)	15 (17.2)	9 (10.3)	16 (18.4) ^a	11 (12.6)
I like participating in this class.	12 (12.9)	17 (18.3) ^a	4 (4.6)	9 (10.3)	3 (3.4)	4 (4.6)
The instructors are interesting.	39 (42.4)	28 (30.4) ^a	2 (2.4)	13 (15.3) ^a	3 (3.5)	12 (14.1)
The instructors notice and care when I am there.	4 (4.3)	11 (12.0)	9 (10.3)	12 (13.8)	28 (32.2) ^a	24 (27.6) ^a
My classmate(s) expect me to be there.	11 (11.8)	14 (15.1)	7 (8.0)	13 (14.9)	3 (3.4)	6 (6.9)
The in-class activities are useful in helping me learn.	20 (21.5)	7 (7.5)	16 (18.4) ^a	21 (24.1) ^a	3 (3.4)	5 (5.7)

^aIndicates top 5 reasons (for each category) chosen by respondents

Table 4. Reasons for Pharmacy Students Not Attending Class (N= 98)

Statement	Integrated					
	Pharmaceutical Sciences, No. (%)		Management, No (%)		Pharmaceutics, No. (%)	
	Main Reason	Moderate Reason	Main Reason	Moderate Reason	Main Reason	Moderate Reason
I was sick.	36 (45.6) ^a	9 (11.4) ^a	27 (45.0) ^a	4 (6.7)	20 (26.7)	7 (9.3)
Emergency arose-I met an urgent, unexpected need.	19 (26.4)	5 (6.9)	11 (20.4)	4 (7.4)	12 (17.9)	3 (4.5)
The weather was bad.	4 (5.4)	15 (20.3) ^a	4 (7.0)	8 (14.0) ^a	8 (11.3)	14 (19.7) ^a
I felt tired or overslept because I studied the night before.	34 (45.3) ^a	6 (8.0)	11 (19.3)	3 (5.3)	50 (67.6) ^a	8 (10.8)
I worked on an assignment or studied for a test in another course.	26 (34.2) ^a	10 (13.2) ^a	16 (27.6) ^a	7 (12.1)	41 (55.4) ^a	12 (16.2) ^a
I had a campus-related appointment at that time.	1 (1.4)	2 (2.8)	0 (0.0)	1 (1.8)	0 (0.0)	0 (0.0)
I had a personal errand to do at that time.	2 (2.8)	5 (7.0)	0 (0.0)	6 (10.9)	2 (3.0)	7 (10.4)
I had to care for someone else (child or sick person).	7 (10.0)	2 (2.9)	4 (7.5)	2 (3.8)	5 (7.6)	2 (3.0)
I was out of town.	13 (18.3)	6 (8.5)	7 (13.2)	3 (5.7)	8 (12.1)	2 (3.0)
I had a job-related conflict.	0 (0.0)	2 (2.9)	2 (3.7)	0 (0.0)	0 (0.0)	1 (1.5)
I felt tired or overslept because I had fun the night before.	10 (14.3)	2 (2.9)	3 (5.5)	2 (3.6)	10 (14.9)	3 (4.5)
It is my first or last class of the day.	2 (2.9)	2 (2.9)	3 (5.7)	5 (9.4)	17 (26.2)	12 (18.5) ^a
I went home earlier and didn't want to return to campus.	2 (2.9)	1 (1.4)	1 (1.9)	8 (15.1) ^a	1 (1.5)	1 (1.5)
I like the subject matter but the course instructor is boring.	0 (0.0)	6 (8.7) ^a	3 (5.6)	7 (13.0)	13 (19.7)	13 (19.7) ^a
I do not learn much when I attend class.	1 (1.4)	5 (7.2)	16 (29.1) ^a	5 (9.1)	25 (36.8) ^a	11 (16.2)
The course instructors do not notice or care whether I am there.	9 (12.9)	10 (14.3) ^a	1 (1.9)	5 (9.4)	1 (1.5)	3 (4.5)
I dislike the course content.	0 (0.0)	1 (1.4)	8 (15.1)	7 (13.2) ^a	8 (12.1)	9 (13.6)
Attendance is not taken or does not influence my grade.	21 (30.0) ^a	6 (8.6)	4 (7.5)	3 (5.7)	20 (29.9) ^a	10 (14.9)
The course content is available from another source.	23 (33.3) ^a	4 (5.8)	11 (20.8) ^a	6 (11.3)	21 (31.8) ^a	9 (13.6)
The course content is easy. I do not need to attend to understand it.	0 (0.0)	0 (0.0)	15 (28.3) ^a	7 (13.2) ^a	16 (24.2)	6 (9.1)
The course instructor does not provide material beyond that offered in the text, PowerPoint slides, or readings.	2 (2.9)	3 (4.3)	8 (15.1)	10 (18.9) ^a	17 (25.4)	14 (20.9) ^a
My classmates do not attend this class.	0 (0.0)	1(1.4)	0 (0.0)	0 (0.0)	8 (11.8)	9 (13.2)

^a Indicates top 5 reasons (for each category) chosen by respondents.

diverse in the case of the pharmaceuticals course: respondents perceived that the instructors noticed and cared when respondents were there (32%), respondents wanted to take their own notes (30%), and respondents felt obligated to attend (26%). Two reasons were identified as common to all courses: respondents wanted to take their own notes and the instructor highlighted what was important to know.

Similarly, respondents who reported being absent from class were asked to rate the importance of each reason to not attend class on a scale ranging from “one of the main reasons” to “not a reason” to not attend class. For the integrated pharmaceutical sciences course, the top 5 reasons rated as main reasons not to attend class were: respondents were sick (46%), respondents felt tired or overslept because they studied the night before (45%), respondents worked on an assignment or studied for a test in another course (34%), the course content was

available from another source (33%), and attendance was not taken (30%). Three of the top 5 reasons to not attend the management course were similar to reasons to not attend the integrated pharmaceutical sciences course. These reasons were related to: sickness (45%), other courses’ assignment/study (28%), and the availability of course content (21%). The remaining top 2 reasons identified by respondents were: respondents perceived that they did not learn much when they attended management class (29%) and that the course content in the management course was easy so they felt there was no need to attend (28%). As for the pharmaceuticals course, 4 out of the 5 main reasons were similar to reasons respondents gave to not attend the integrated pharmaceutical sciences course. One reason, which was not included in the top 5 reasons in the integrated pharmaceutical sciences course, was that respondents felt they did not learn much when they attended class (37%).

Unlike the other 2 courses, being sick was not a main reason to not attend class. Finally, looking across the 3 courses, 2 of the top 5 reasons identified to not attend class were related to studying for other courses and the availability of the course content.

DISCUSSION

Findings from this study address questions regarding the relationships between student characteristics and frequency of absenteeism. Student demographics were not related to the regularity of their attendance. These non-significant differences were found in all 3 courses, with 2 exceptions. These 2 exceptions, only found in the integrated pharmaceutical sciences course, included the average travel time to campus and the extent to which education was paid by respondents, their spouse, and student loans. Although the finding that respondents who lived closer to campus reported fewer absences compared to their counterparts came as no surprise, the positive relationship between absenteeism and respondents who reported a higher combined percentage of their education paid for by themselves, their spouses, and loans was somewhat unexpected. One possible explanation could be that students who do not rely on parents to pay for their education may have more responsibilities outside of school. However, given that other factors such as work and marital status were not related to number of absences, there appears to be no obvious explanation for such a finding within the present data. Aside from the 2 noted exceptions, the lack of significant relationships between student characteristics and frequency of absenteeism suggests that pharmacy educators should not assume that students with certain characteristics are more likely to skip class. The degree of absenteeism may depend on other factors beyond simple student demographics such as the perceived importance of attendance and the degree of commitment to education.^{3,4}

The degree of student absenteeism varied from one course to another. Across all 3 courses, attendance in the management course was the highest; about 73% of respondents had no or only 1 absence. This higher attendance rate likely can be attributed to unannounced quizzes and in-class activities that impact students' grades. In the other 2 courses in which attendance did not affect student's grades, the degree of absenteeism in the integrated pharmaceutical sciences course was lower. Only 28% of respondents reported being absent 7 or more times from integrated pharmaceutical sciences classes in the spring semester when classes for this course were held 4 times a week. The degree of absenteeism was greater in the pharmaceuticals course, in which 38% had been absent from class at least 11 times when classes were held twice

a week. To understand absenteeism variability among courses, further examination of student-reported reasons to attend class were conducted.

Different reasons to attend and not attend class were identified for each of the 3 courses. A wide variety of reasons were reported and were, to a large extent, specific to the course. This finding suggests that the decisions to attend or not attend class were complex. These decisions may be affected by various factors such as those influenced by students (eg, I feel obligated to attend, I want to take my own notes), those influenced by course content and policy (eg, the course content is difficult, we might have an activity or pop quiz that will affect my grade), and those influenced by the instructor (eg, the instructor notices and cares when I am there, the instructor highlights what is important to know). Two main reasons to attend class commonly identified across all 3 courses were: students wanted to take their own notes and instructors highlighted what was important to know. As all 3 classes provided similar teaching styles utilizing Microsoft PowerPoint presentations, lectures, and handouts, this similarity was not unexpected. Reasons given to not attend class were that students were working on assignments or studying for tests for other courses, and that the course content was available from another source. Our findings and those of Fjortoft are consistent.¹⁵ Both studies emphasized the importance of instructors giving additional information in class beyond what exists in class handouts and highlighting information that is important to know. Further, both studies found that examinations scheduled for other courses had an impact on class attendance.

As previously stated, absenteeism may lower academic performance and hinder the development of professionalism.^{15,19} Pharmacy educators should therefore seek ways to improve student attendance. Based on our findings, to increase student attendance, instructors should engage in pedagogical practices that create a learning community in the classroom where key concepts are highlighted by the instructor in a manner that facilitates students to engage in meaningful note taking. Other pedagogical practices that improve attendance as well as students' learning outcomes, including in-class review processes,¹⁹ in-class writing exercises,²⁶ and interactive in-class exercises and directed discussion²⁷ should also be implemented in the classroom. Engaging in these pedagogical practices in the classroom provide value-added benefits to the course that students can gain only from attending class. If the benefits of attending classes are communicated effectively to incoming pharmacy students, it might help them perceive the value of attending class and better prioritize their time.

Pharmacy educators can use existing literature as guidance in planning effective interventions to increase student attendance. However, differences in characteristics of undergraduate students and characteristics of pharmacy students may limit the generalizability of undergraduate study findings to pharmacy education. Since information on student absenteeism in pharmacy education is limited, immediate attention from researchers and educators in pharmacy education is needed in this area. We recommend that future researchers investigate the impact of pharmacy students' attitudes, values, and interests on absenteeism behaviors. Further, due to the increasing use of technology, future research should investigate the effect of online lecture resources such as streaming and recording of lectures on absenteeism.^{28,29} Because the utilization of technology has increasingly become a standard expectation by students,^{28,30} its impact on student absenteeism needs to be addressed. Future research also should investigate the impact of other contemporary issues, such as increasing class size, as they may influence student attendance decisions. Equally important, future researchers should examine the impact of absenteeism on student academic performance in the course and in their advanced pharmacy practice experiences, as well as their professionalism development. Lastly, we recommend that future researchers continue to search for and evaluate the effectiveness of alternatives to traditional classroom lectures. Better understanding of antecedents, impact of absenteeism, and alternatives to the traditional classroom lectures may help pharmacy educators design effective interventions to facilitate student attendance and increase student learning outcomes.

Limitations

One limitation inherent in this study is the potential for recall errors regarding frequency of absences. In addition, this study investigated the effects of only preselected factors and did not evaluate all factors that may influence the degree of absenteeism. As these data are a result of cross-sectional analysis, results may not reflect the ongoing absenteeism patterns by the population. Also, the relative value that pharmacy students placed on each of these courses may have differed due to each course's credit hours and content. Since the integrated pharmaceutical sciences course was an 8-credit-hour course and addressed clinical pharmacotherapy, many students may have perceived this course to have more value than the other 2 courses. Similarly, the popularity of specific instructors for each course may have played a role in students' attendance to class that was not addressed in this study. Finally, the study may have limited application to other courses and colleges and schools of pharmacy,

especially where differences in pedagogical approaches or course content exist.

CONCLUSIONS

Student absenteeism is a concern in higher education as it can affect not only the absent student and his or her academic performance, but can also affect the instructor, the students who are present, and the classroom-learning environment. The current study found that the degree of student absenteeism differed among the 3 courses examined and that most student demographic characteristics were not related to the degree of absenteeism. Different reasons to attend and not attend class were identified for each of the 3 courses, suggesting that decisions to attend and not attend class were complex. Various reasons related to student factors, course content/policy factors, and instructor factors may influence students' decisions regarding absenteeism. Better understanding of these reasons may assist pharmacy educators in designing effective interventions to facilitate student attendance.

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