



**California State Board of Pharmacy**

2720 Gateway Oaks Drive, Ste 100

Sacramento, CA 95833

Phone: (916) 518-3100 Fax: (916) 574-8618

www.pharmacy.ca.gov

Business, Consumer Services and Housing Agency

Department of Consumer Affairs

Gavin Newsom, Governor



To: Board Members

Subject: Agenda Item XIV. Presentation, Discussion and Consideration of Published Research, "Examining Students' Attitudes toward Academic Dishonesty in California Pharmacy Schools"

---

In the Winter 2020 issue of the Journal of Contemporary Pharmacy Practice, original research was published, "Examining Students' Attitudes Toward Academic Dishonesty in California Pharmacy Schools." During the meeting, members will receive a presentation on the research from several of the authors, including:

- Dr. Paul Gavaza, lead author on the article and associate professor of pharmaceutical and administrative sciences.
- Dr. Farnoosh Zough, associate professor of pharmacy practice, director of our IPPE program, and co-adviser for CAPSLead.
- Dr. Lawrence Chui, graduate of the class of 2020 and CAPSLead team who carried out the research.
- Dr. Nancy Kawahara, assistant dean for co-curriculum and mentorship, associate professor of pharmacy practice, and co-adviser of CAPSLead.

The Journal of Contemporary Pharmacy Practice is a peer-reviewed publication of the California Pharmacists Association.

Attached is a copy of the research.

# Examining Students' Attitudes toward Academic Dishonesty in California Pharmacy Schools

Paul Gavaza, PhD; Sophia Dinh; Simon Situ; Maria Santiago; Lawrence Chui; Justin Thurber; Jennifer Nguyen; You Kim; Steven Vu; Farnoosh Zough, PharmD; Nancy Kawahara, PharmD, MS Ed

## Abstract

### Objective

To explore California student-pharmacists' opinions of academic dishonesty.

### Methods

An electronic survey was distributed to all currently enrolled students at each of the 13 California pharmacy schools. The survey evaluated students' definition of cheating, their motives, views, and perceived long-term consequences of academic dishonesty. Demographic data (e.g., age, gender) were also collected.

### Results

A total of 251 usable responses were collected from 13 California pharmacy schools. Most student-respondents did not have an accurate understanding of what constitutes cheating. Most student-respondents believed that copying a homework assignment from a friend (61.2%) and allowing a friend to copy their homework assignment (61.8%) did not constitute academic dishonesty. Many student-respondents indicated that they had heard of or witnessed cheating in pharmacy school (66.1%); student-respondents also admitted to being tempted to cheat in certain classes (45.4%) and indicated that they would cheat if it meant passing a class (78.3%). Only 18.8% of student-respondents agreed that cheating in pharmacy school would negatively affect their judgment as pharmacists in the future. There were no significant differences in attitudes of student respondents about academic dishonesty by gender on 28 of the 30 items investigated. Moreover, there were no significant gender-based differences in the student-respondents who reported academically dishonesty behaviors.

### Conclusions

Academic dishonesty is prevalent in the California pharmacy academic setting. Most student-respondents had heard about or witnessed their classmates cheating. This is highly concerning, as dishonest behavior may translate into the workplace once students graduate. Students, pharmacy school administrators and faculty should work together to discourage and prevent cheating.

### Key words

Academic Dishonesty, Cheating, Pharmacy, Students, Student-Pharmacists, California

## Introduction

Academic dishonesty is broadly defined as cheating on examinations, receiving or disclosing content of examinations, falsifying or fabricating information, accepting help on individual assignments, and plagiarism.<sup>(1)</sup> In general, academic dishonesty is reported to be common in higher education, with about 75% of university students admitting to cheating and about 50% of students reporting a peer's involvement in cheating.<sup>(2,3)</sup> Surprisingly, higher rates of academic dishonesty have been more prevalent in healthcare academia than nonhealthcare academia.<sup>(3)</sup> One study found that 16.3% of student-pharmacist respondents reported cheating, and about 74% of students admitted to working on an individual assignment with a friend.<sup>(4)</sup> Ninety-one percent of pharmacy and medical students in New Zealand reported copying, 60% reported collusion, and 34% reported admitting to cheating behaviors.<sup>(5)</sup> A recent study conducted in California found that 11.8% of student-pharmacist respondents reported cheating.<sup>(6)</sup> Furthermore, student-pharmacist respondents were also found to be more tolerant of cheating than medical-student respondents.<sup>(7)</sup>

Academically dishonest behavior among pharmacy students is particularly concerning as this could potentially lead to negative patient health outcomes in the future. Academic dishonesty has been found to be associated with unethical professional practice.<sup>(8-10)</sup> In fact, academically dishonest medical students are reported to be more likely to engage in unethical medical practices.<sup>(10)</sup>

There are several reasons students may resort to cheating. Some students succumb to the pressure of a rigorous pharmacy curriculum, and their desire to excel<sup>(11, 12)</sup> and attain stellar grades overcomes their moral reasoning to avoid cheating. Thus, stress and fear of failure may be motivating factors for cheating.<sup>(13)</sup> Other motivations for cheating include procrastination, poor time management skills, a willingness to help peers, and a lack of understanding of what constitutes cheating behaviors, such as unauthorized collaboration and plagiarism.<sup>(12)</sup> Cheating has also been associated with poor moral development and ethical reasoning,<sup>(7)</sup> as seen by Henning and colleagues,<sup>(5)</sup> who found that copying and collusion may be related to pharmacy and medical students' poor reasoning when making ethical decisions.

Studies exploring demographic characteristics of student-pharmacist respondents who reported academic dishonesty have found that younger student-pharmacists were more likely to cheat than older students, as they may tend to have narrower definitions of cheating.

<sup>(14)</sup> Rabi and colleagues found that student-pharmacist respondents who previously cheated in high school or in their pre-pharmacy curriculum were also more likely to cheat in pharmacy school.<sup>(4)</sup> The evidence on gender-based differences in cheating is inconsistent. However, one study found that males were more likely to cheat than females and were more tolerant of academically dishonest behaviors.<sup>(14)</sup> In general, men are more likely to be extrinsically motivated by their performance, whereas women are more intrinsically motivated.<sup>(14)</sup> Consistent with the previous study, male student-pharmacist respondents were found to be more tolerant of and lenient toward cheating behavior than female students, and women were more likely to report cheating than men.<sup>(1,5)</sup> Nevertheless, a more recent study found no significant differences in academically dishonest behavior between male and female student-pharmacist respondents.<sup>(1)</sup>

Few studies have examined student-pharmacists' attitudes and perceptions regarding academic dishonesty. This study aims to explore the prevalence of academically dishonest behavior in California pharmacy schools and student-pharmacists' attitudes, perceptions and motivations behind academically dishonest behavior.

## Methods

This cross-sectional study was spearheaded by the Loma Linda University School of Pharmacy CAPSLEAD (California Pharmacist Student Leadership) 2017-2018 team. Ethical approval of the study was granted by the Loma Linda University's Institutional Review Board. The target population for this study was all student-pharmacists enrolled in the Doctor of Pharmacy programs at all 13 accredited pharmacy schools in California.

Data were collected through an online survey using Qualtrics® between June and September 2017. An e-mail describing the purpose of the study, including a link to the online survey, was sent to an administrative officer from each of the 13 California pharmacy schools. We obtained the e-mail list of these officers from CAPSLEAD and the California Pharmacist Association (CPhA). Each of these pharmacy school administrators was asked to forward the e-mail along with the imbedded survey link to all student pharmacists enrolled in their respective pharmacy school programs. A reminder e-mail with a cover letter and a link to the online survey was sent to all student-pharmacists by the administrators after two to three weeks, encouraging them to complete the survey if they had not done so already. Additionally, the Qualtrics® survey link was posted on various Facebook pages (e.g., Loma Linda University School of Pharmacy's Facebook page). The anonymous survey did not collect any personally identifiable information about the respondents. The survey took five to 10 minutes to complete.

## Survey Instrument

The study used a 59-item survey instrument designed specifically for this study. Most of the survey items were developed based on the existing literature on academic dishonesty.<sup>(1,4,6,14)</sup> The survey items assessed student-pharmacists' attitudes, perceptions, and experiences with academic dishonesty, as well as the motivations behind academically dishonest behavior. Twenty-eight survey items measured students' attitudes and perceptions toward academic dishonesty using a five-point bipolar Likert scale ranging from strongly disagree to strongly agree.<sup>(1,5)</sup> The students' definitions of cheating and their experiences with cheating were measured using 21 true

or false items. For example, student-pharmacists were asked to respond to the following true or false statements or questions: "Have you ever claimed credit for work that was not your own in the past?" and "I have witnessed or heard about people cheating in pharmacy school." Ten closed-ended items were used to obtain the respondents' demographic information, such as gender (male/female/other), age (<24, 25-30, 31-40, 41+), year currently enrolled in pharmacy school (P1, P2, P3, P4) and current GPA (<2.5, 2.5-2.99, 3.0-3.49, 3.5-4.0).

Prior to distribution, a draft of the online survey was circulated to three pharmacy faculty members and practitioners to assess its face and content validity. Minor changes were made to the phrasing of some of the items based on feedback obtained from them. At the end of the survey, the respondents were given the option to enter their pharmacy-school-affiliated e-mail address if they wanted to be entered into a raffle drawing to win one of eight gift cards worth \$25.00 each.

## Data Analysis

The respondents' e-mail addresses were separated from their responses before the data were analyzed. The e-mail addresses were used for the raffle drawing only. Descriptive statistics (e.g., frequencies, means and standard deviations) were computed for all items. The independent t-test and ANOVA were computed to determine and compare the mean differences in the respondents' attitudes or opinions by gender, marital status, age, and academic year (P1 to P4). Chi-square tests were used to describe the association between categorical variables. All analyses were performed using PASW Statistics 21 (SPSS Inc., Chicago, IL). A p-value of  $\leq 0.05$  was considered to be statistically significant.

## Results

A total of 251 student-pharmacists responded to the survey. Most of the respondents were female (N=158, 63.5%), under 25 years of age (N=132, 53.0%), had a bachelor's degree (N=228, 93.4%), were single (N=33, 53.4%) and were first-year students (N=41, 56.6%) (Table 1).

## Student-Pharmacists' Attitudes toward Cheating

Most student-pharmacist respondents believed that copying a homework assignment from a friend (N=153, 61.2%) and allowing a friend to copy their homework assignment (N=155, 61.8%) did not constitute academic dishonesty (Table 2). Furthermore, most student-pharmacist respondents (N=136, 54.4%) believed that collaborating with a peer on an assignment that was explicitly indicated for individual work did not constitute academic dishonesty (Table 2). Most respondents indicated that they "would cheat if it meant passing a class" (N=195, 78.3%) and would cheat if everyone else was cheating (N=186, 74.4%; Table 2).

Most students disagreed or strongly disagreed with the statement, "It is not easy for me or others to cheat in pharmacy school" (N=159, 63.6%). Many students agreed or strongly agreed with the statement, "I feel more tempted to cheat in difficult classes than in easier ones" (N=113, 45.4%; Table 3).

Furthermore, most students disagreed or strongly disagreed with the statement, "Faculty and staff at my school take appropriate measures to prevent cheating" (N=215, 86.0%; Table 3).

Most student-pharmacist respondents witnessed or heard about people cheating in pharmacy school (N=166, 66.1%; Table 4). However, only 41 student-pharmacist respondents (16.4%) indicated that they had cheated at least once in pharmacy school (Table 4).

## Demographic Factors and Student-Pharmacists' Perceptions of and Experiences With Cheating

There were no significant differences in the student-pharmacists' attitudes about academic dishonesty by gender on 28 of the 30 Likert-type items investigated. However, males had a significantly higher mean than females on two items: "The academic dishonesty policy at my university is strictly enforced by all of faculty and is appropriate" (2.01±1.3 vs. 1.69±1.3; p=0.046); "A licensed pharmacist is held to an ethically higher standard than a student/intern and therefore will not act unethically" (3.10±1.3 vs. 2.59±1.5; p=0.007). There were no significant differences in the student-pharmacists' reported academic dishonesty behaviors by gender.

There were no significant differences in the student-pharmacists' attitudes and perceptions toward academic dishonesty on 29 of the 30 Likert-type items investigated and also on most of the reported academically dishonest behaviors by age category (p>0.05). There was a significant difference in attitudes by age category on one item: "I feel more tempted to cheat in difficult classes than in easier ones" (F [2, 244]=6.884, p=0.001). Post-hoc tests showed that the student-pharmacist respondents who were less than 25 years old had the smallest mean (mean=3.12±1.2), which was significantly less than those of the 25- to 30-year-old students (mean=3.58±1.4) and those over 31 years old (mean=4.00±1.3). Student-pharmacist respondents who were less than 25 years old were more likely to agree with the statement "Have you ever shared information about a class you have taken to an underclassman?" (N=115, 87.1%) than those who were 25 to 30 years old (N=69, 74.2%) and over 31 years of age (N=12, 50.0%) (chi-square=18.513, df=2, p<0.001). There were no other significant differences in the student-pharmacist respondents' academically dishonest behaviors by age category.

There were significant differences in student-pharmacist respondents' academically dishonest behaviors by academic level on six of the nine items investigated (Table 5). For example, second-year pharmacy (P2) students were more likely to agree with the statement, "Have you ever claimed credit for work that wasn't your own in the past?" (Yes=25.0%) than the other classes (Table 5).

## Discussion

Most student-pharmacist respondents believed that copying a homework assignment from a friend (61.2%) and allowing a friend to copy their homework assignment (61.8%) did not constitute academic dishonesty. A similar proportion of student-pharmacist respondents (70%) believed that working in groups on coursework when individual work is expected was not dishonest.<sup>(15)</sup> Our findings are consistent with another study which found that 74% of third-year Professional Doctor of Pharmacy students "admitted that they or their classmates had worked on an individual assignment with a friend."<sup>(4)</sup> Many student-pharmacist respondents do not seem to have an accurate understanding of what constitutes academic dishonesty, nor comprehension of the seriousness of cheating. It is likely that some student-pharmacists may be inadvertently cheating without knowing that their behavior is academically dishonest.

Table 1. Demographic Characteristics of the Respondents

<b>Characteristic (n=249)</b>	<b>Frequency (%)</b>
<b>Gender</b>	
Male	90 (36.1)
Female	158 (63.5)
Other	1 (0.4)
<b>Age (years)</b>	
<25	132 (53.0)
25 to 30	93 (37.3)
31 to 40	21 (8.4)
41+	3 (1.2)
<b>Highest level of education achieved (n=244)</b>	
Bachelor's degree	228 (93.4)
Master's degree	11 (4.5)
Doctorate degree	5 (2.0)
<b>What is your current GPA?</b>	
3.5 to 4.0	124 (51.7)
3.0 to 3.49	94 (39.2)
2.5 to 2.99	20 (8.3)
<2.5	2 (0.8)
<b>Current relationship status</b>	
Single	133 (53.4)
In a relationship	77 (30.9)
Married	34 (13.7)
Prefer not to answer	5 (2.0)
<b>Academic year in pharmacy school</b>	
First year	141 (56.6)
Second year	52 (20.9)
Third year	35 (14.1)
Fourth year	21 (8.4)
<b>Do you work?</b>	
Part-time	116 (46.6)
Full-time	2 (0.8)
None	131 (52.6)
<b>Are you involved in extracurricular activities?</b>	
Yes	170 (68.3)
No	79 (31.7)

Table 2. Student-Pharmacists' Attitudes toward Academic Dishonesty

*Please rate the degree to which you would consider the following situations as academic dishonesty (n=251)*

	Mean (SD)	Strongly Disagree (N, %)	Disagree (N, %)	Neutral (N, %)	Agree (N, %)	Strongly Agree (N, %)
a. You copy a homework assignment from a friend. (n=250)	2.54 (1.5)	81 (32.4)	72 (28.8)	22 (8.8)	32 (12.8)	43 (17.2)
b. You allow a friend to copy your homework assignment.	2.48 (1.4)	71 (28.3)	84 (33.5)	32 (12.7)	32 (12.7)	32 (12.7)
c. You do not participate in a group project but receive equal credit.	2.67 (1.6)	91 (36.3)	55 (21.9)	20 (8.0)	15 (6.0)	70 (27.9)
d. You accidentally look at a classmate's answers during an exam and see that he/she chose a different answer on a question. This causes you to either keep or change your answer. (n=250)	2.66 (1.5)	80 (32.0)	58 (23.2)	32 (12.8)	26 (10.4)	54 (21.6)
e. You pass on completed material to another student. (n=247)	2.64 (1.4)	64 (25.9)	70 (28.3)	39 (15.8)	40 (16.2)	34 (13.8)
f. You notice a classmate cheating during an exam but do not report it. (n=248)	2.65 (1.4)	68 (27.4)	58 (23.4)	56 (22.6)	24 (9.7)	42 (16.7)
g. You knowingly make your exam more viewable to help a classmate cheat.	2.33 (1.7)	132 (52.6)	35 (13.9)	14 (5.6)	8 (3.2)	62 (24.7)
h. You collaborate with a peer on an assignment that was explicitly indicated for individual work only. (n=250)	2.57 (1.4)	77 (30.8)	59 (23.6)	43 (17.2)	36 (14.4)	35 (14.0)

Table 3. Student-Pharmacists' Perceptions about Academic Dishonesty

Please rate your level of agreement with the following statements: (n=250)

	Mean (SD)	Strongly Disagree (N, %)	Disagree (N, %)	Neutral (N, %)	Agree (N, %)	Strongly Agree (N, %)
a. It's not cheating if I don't get caught. (n=249)	4.61 (0.8)	4 (1.6)	4 (1.6)	16 (6.4)	36 (14.5)	189 (75.9)
b. I would cheat if it meant passing a class. (n=251)	4.27 (1.2)	7 (2.8)	27 (10.8)	22 (8.8)	29 (11.6)	166 (66.1)
c. Once a cheater, always a cheater.	3.20 (1.3)	34 (13.6)	54 (21.6)	40 (16.0)	73 (29.2)	49 (19.6)
d. Most of my classmates in pharmacy cheat in one way or another.	3.26 (1.3)	24 (9.6)	53 (21.2)	65 (26.0)	51 (20.4)	57 (22.8)
e. I would cheat if everyone is cheating.	4.11 (1.1)	5 (2.0)	26 (10.4)	33 (13.2)	58 (23.2)	128 (51.2)
f. Giving a classmate information on an exam that they have not taken yet is considered cheating.	2.18 (1.3)	104 (41.6)	65 (26.0)	33 (13.2)	28 (11.2)	20 (8.0)
g. I am often stressed by schoolwork. (n=251)	1.93 (1.1)	110 (43.8)	86 (34.3)	28 (11.2)	17 (6.8)	10 (4.0)
h. My grades are more important than learning the material. (n=249)	2.57 (1.4)	77 (30.8)	59 (23.6)	43 (17.2)	36 (14.4)	35 (14.0)
i. My school/ professors make it easy for me to succeed, thus I do not feel compelled to cheat. (n=249)	2.57 (1.4)	77 (30.8)	59 (23.6)	43 (17.2)	36 (14.4)	35 (14.0)
j. The academic dishonesty policy at my university is strictly enforced by all of faculty and is appropriate.	2.57 (1.4)	77 (30.8)	59 (23.6)	43 (17.2)	36 (14.4)	35 (14.0)
k. It is not easy for me or others to cheat in pharmacy school.	2.32 (1.3)	87 (34.8)	72 (28.8)	36 (14.4)	34 (13.6)	21 (8.4)

Table 3 (continued). Student-Pharmacists' Perceptions about Academic Dishonesty

*Please rate your level of agreement with the following statements: (n=250)*

	Mean (SD)	Strongly Disagree (N, %)	Disagree (N, %)	Neutral (N, %)	Agree (N, %)	Strongly Agree (N, %)
l. A licensed pharmacist is held to an ethically higher standard than a student/intern and therefore will not act unethically. (n=249)	2.77 (1.4)	67 (26.9)	50 (20.1)	45 (18.1)	47 (18.9)	40 (16.1)
m. Pharmacy students who cheat will make unethical pharmacists. (n=249)	3.20 (1.3)	34 (13.6)	54 (21.6)	40 (16.0)	73 (29.2)	49 (19.6)
n. If I cheat in pharmacy school, it will negatively affect my judgment as a pharmacist. (n=251)	2.12 (1.3)	108 (43.0)	67 (26.7)	29 (11.6)	31 (12.4)	16 (6.4)
o. A student who cheats in school is likely to cut corners as a pharmacist.	2.03 (1.2)	100 (40.0)	88 (35.2)	31 (12.4)	16 (6.4)	15 (6.0)
p. I feel more tempted to cheat in difficult classes than in easier ones. (n=249)	3.38 (1.3)	16 (6.4)	58 (23.3)	62 (24.9)	42 (16.9)	71 (28.5)
q. I would report cheating even if I only have a suspicion.	3.39 (1.3)	26 (10.4)	37 (14.8)	56 (22.4)	76 (30.4)	55 (22.0)
r. The consequences of cheating outweigh the potential benefits of cheating. (n=249)	1.82 (1.1)	141 (56.6)	48 (19.3)	36 (14.5)	12 (4.8)	12 (4.8)
s. Expulsion, and the associated stigmas, from cheating are not worth it in the long run.	1.43 (0.9)	185 (74.0)	36 (14.4)	22 (8.8)	1 (0.4)	6 (2.4)
t. Faculty and staff at my school take appropriate measures to prevent cheating.	1.67 (1.1)	149 (59.6)	66 (26.4)	14 (5.6)	10 (4.0)	11 (4.4)

**Table 4. Student-Pharmacists' Reported Academically Dishonest Behaviors**

	<b>Yes (N, %)</b>	<b>No (N, %)</b>
a. I have cheated on an exam in pharmacy school.	14 (5.6)	236 (94.4)
b. I have cheated on a homework assignment in pharmacy school.	50 (20.0)	200 (80.0)
c. I have cheated at least once in pharmacy school.	41 (16.4)	209 (83.6)
d. I have witnessed or heard about people cheating in pharmacy school.	166 (66.1)	85 (33.9)
e. Have you ever shared your answers on a homework assignment?	221 (88.0)	30 (12.0)
f. Have you ever shared information about a class you have taken to an underclassman?	198 (78.9)	53 (21.1)
g. Have you ever received information regarding questions on an exam before taking it?	112 (44.8)	138 (55.2)
h. Have you ever copied someone else's work for an assignment?	94 (37.5)	157 (62.5)
i. Have you ever claimed credit for work that wasn't your own in the past?	28 (11.2)	223 (88.8)

A majority of the student-pharmacist respondents (50.8%) disagreed or strongly disagreed that if they noticed a classmate cheating during an exam and did not report the incident, it amounted to academic dishonesty. This suggests that most student-pharmacists do not appreciate their important role in reporting the academic dishonesty that may be going on among their peers or they do not want to endure the hassles and consequences of reporting academic dishonesty. A previous study also found that most student-pharmacist respondents (88.4%) did not report incidents of cheating.<sup>(15)</sup> This scenario makes it difficult for authorities to catch those who cheat, thus promoting academic dishonesty and failing to curb cheating in pharmacy education. More needs to be done to encourage students to report dishonest behavior by setting up and encouraging anonymous reporting platforms, among other things.

In our study, 41 student-pharmacists (16.4%) admitted that they had cheated at least once in pharmacy school. This is lower than 53% of student-pharmacist respondents who indicated that they had participated in dishonest behaviors in a previous study.<sup>(15)</sup> The difference in the findings can be explained by the fact that our student-pharmacist respondents had a narrower understanding of what constitutes dishonest behaviors. Furthermore, most of the student-pharmacist respondents (66.1%) indicated that they had witnessed or heard about people cheating in pharmacy school. Similarly, a previous study found that 11.8% of student-pharmacist respondents admitted to some form of

academic dishonesty, and 56.8% of the student-pharmacist respondents were aware that cheating was occurring.<sup>(6)</sup> These results indicate that academic dishonesty is a problem among California student-pharmacists. The occurrence of academically dishonest behavior in pharmacy education is worrisome and a cause for concern for various reasons. First, student-pharmacists who cheat are more likely to have professional misconduct issues in the workplace after they graduate and to have compromised integrity as pharmacists.<sup>(16)</sup> Cheating can become a habit that can and will follow these students into their professional lives and beyond. The recent cheating scandal involving pharmacy graduates taking the California Practice Standards and Jurisprudence Examination for Pharmacists (CPJE) lends support to this view. Second, cheating eliminates the need for student-pharmacists to work hard in their school-work, thus denying them opportunities to learn. Third, the occurrence of academically dishonest behaviors may also frustrate those student-pharmacists who do not cheat by contributing "to an environment in which otherwise honest students learn to view education as merely the temporary acquisition of facts."<sup>(17)</sup> In the end, cheating undervalues the pharmacy degree and the quality of pharmacy education for all student-pharmacists.

Most student-pharmacist respondents reported being stressed out about schoolwork, and many admitted that they were tempted to cheat in more difficult classes, indicating that they would cheat if it meant passing a class. This suggests that the academic environment is conducive to cheating.



Table 5. Academically Dishonest Behaviors by Academic Level

	<i>P1, Yes (N, %<sup>a</sup>)</i>	<i>P2, Yes (N, %<sup>a</sup>)</i>	<i>P3, Yes (N, %<sup>a</sup>)</i>	<i>P4, Yes (N, %<sup>a</sup>)</i>	<i>p-value</i>
a. I have cheated on an exam in pharmacy school.	1 (0.7)	7 (13.7)	1 (2.9)	5 (23.8)	<0.001
b. I have cheated on a homework assignment in pharmacy school.	18 (12.8)	19 (37.3)	7 (20.0)	6 (28.6)	0.002
c. I have cheated at least once in pharmacy school.	13 (9.2)	16 (31.4)	6 (17.1)	6 (28.6)	0.002
d. I have witnessed or heard about people cheating in pharmacy school.	74 (52.5)	45 (86.5)	27 (77.1)	18 (85.7)	<0.001
e. Have you ever shared your answers on a homework assignment?	123 (87.2)	46 (88.5)	31 (88.6)	19 (90.5)	0.989
f. Have you ever shared information about a class you have taken to an underclassman?	108 (76.6)	43 (82.7)	27 (77.1)	18 (85.7)	0.685
g. Have you ever received information regarding questions on an exam before taking it?	61 (43.6)	24 (46.2)	15 (42.9)	11 (52.4)	0.884
h. Have you ever copied someone else's work for an assignment?	42 (29.8)	27 (51.9)	15 (42.9)	9 (42.9)	0.030
i. Have you ever claimed credit for work that wasn't your own in the past?	11 (7.8)	13 (25.0)	3 (8.6)	1 (4.8)	0.006

Pharmacy school is difficult, and there is a lot at stake for student-pharmacists to perform well, thus increasing the temptation to cheat. A small number of student-pharmacist respondents reported that they would cheat if their classmates were cheating (11.8%), which they are. More should be done to discourage academically dishonest behavior.

Many student-pharmacist respondents disagreed or strongly disagreed with the following two statements pertaining to their pharmacy schools and professors: "It is not easy for me or others to cheat in pharmacy school" (63.6%) and "My school/professors make it easy for me to succeed, thus I do not feel compelled to cheat" (48.4%). This indicates that students believed that pharmacy schools and professors were not doing enough to address or mitigate academic dishonesty in pharmacy education. Furthermore, student-

pharmacist respondents believed that the academic dishonesty policies at their universities were not strictly enforced by all of the faculty (79.2%). These student-pharmacist respondents' perceptions, accurate or not, make it easier for them to engage in academically dishonest behaviors. California pharmacy schools and professors should do more to curtail academically dishonesty behavior.

We found that there were no significant differences in the student-pharmacist respondents' attitudes about academic dishonesty by gender on 28 of the 30 Likert-type items investigated. Furthermore, there were no significant gender-based differences in the student-pharmacist respondents' reported academically dishonesty behaviors, which is in line with several previous studies, yet contrary to Henning and colleagues.<sup>(1,4,5,18,19)</sup> However, more males than females

believed that the academic dishonesty policy at their university was strictly enforced by all of the faculty and that a licensed pharmacist was held to an ethically higher standard than a student-pharmacist or intern and therefore would not act unethically ( $p < 0.007$ ). Gender does not seem to play a major role in the occurrence and perpetuation of academically dishonest behaviors among student-pharmacists. Furthermore, the student-pharmacist respondents' age did not significantly affect their attitude and experience with academic dishonesty.

Future research should consider the following: First, using a theoretical framework to better understand the students' attitudes, opinions, and academic dishonesty behaviors. Second, exploring the relationship between academic dishonesty and professional unethical behavior. Third, investigating how the pharmacy schools in California are managing academic and professional misconduct.

## Limitations of the Study

The study has several limitations. First, this data may not be representative of the entire California student-pharmacist population. We did not receive any response from one of the pharmacy schools in California, and not all student-pharmacists in the existing California pharmacy schools responded. Second, given that academic dishonesty is a highly controversial and sensitive topic, respondents may have provided socially acceptable or positive answers instead of answering all questions truthfully. However, the likelihood of this bias was minimized given that the survey was anonymous. Third, no causality among variables can be inferred given that this study was cross-sectional. That is, this study explored the academic dishonesty topic at one point in time. Fourth, it was impossible to validate the student-pharmacists' responses with their actual behavior with respect to cheating (e.g., during exams and assignments) given the anonymity of the study.

## Conclusion

Most California student-pharmacists have different ideas about the behaviors and actions that amount to academic dishonesty. Academic dishonesty is prevalent in the California pharmacy academic setting. Most students heard about or witnessed their classmates cheating. This is highly concerning, as dishonest behavior may translate into the workplace once these students graduate. Students, pharmacy school administrators, and faculty should work together to prevent cheating. All students should be encouraged to report their peers' academically dishonest behavior.

## Acknowledgements

The authors wish to thank all the participating student-pharmacists for their involvement in this study. We would like to acknowledge Rite Aid for their major support of the CAPSLEAD program as well as the Indian Pharmacists Association, CPhA, and CSHP.

## Funding

This study did not receive any external funding.

## About the Authors

Paul Gavaza, PhD, is an Associate Professor at Loma Linda University School of Pharmacy. Dr. Gavaza has been a lead researcher in social and administrative pharmacy since 2010. Dr. Gavaza has no bias to report.

Sophia Dinh is a 2020 PharmD candidate at Loma Linda University School of Pharmacy and a member of California Pharmacy Student Leadership (CAPSLEAD) 2017-2018. Ms Dinh has no bias to report.

Simon Situ is a 2020 PharmD candidate at Loma Linda University School of Pharmacy and a member of California Pharmacy Student Leadership (CAPSLEAD) 2017-2018. Mr Situ has no bias to report.

Maria Santiago is a 2020 PharmD candidate at Loma Linda University School of Pharmacy and a member of California Pharmacy Student Leadership (CAPSLEAD) 2017-2018. Ms Santiago has no bias to report.

Lawrence Chui is a 2020 PharmD candidate at Loma Linda University School of Pharmacy. She is a member of California Pharmacy Student Leadership (CAPSLEAD) 2017-2018. Mr Chui has no bias to report.

Justin Thurber is a 2020 PharmD candidate at Loma Linda University School of Pharmacy and a member of California Pharmacy Student Leadership (CAPSLEAD) 2017-2018. Mr Thurber has no bias to report.

Jennifer Nguyen is a 2020 PharmD candidate at Loma Linda University School of Pharmacy and a member of California Pharmacy Student Leadership (CAPSLEAD) 2017-2018. Ms Nguyen has no bias to report.

You Kim is a 2020 PharmD candidate at Loma Linda University School of Pharmacy and a member of California Pharmacy Student Leadership (CAPSLEAD) 2017-2018. Ms Kim has no bias to report.

Steven Vu is a 2020 PharmD candidate at Loma Linda University School of Pharmacy and a member of California Pharmacy Student Leadership (CAPSLEAD) 2017-2018. Mr Vu has no bias to report.

Farnoosh Zough, PharmD, BCPS, is Director of Introductory Pharmacy Practice Experiences (IPPE) in the Department of Experiential and Continuing Education at Loma Linda University School of Pharmacy. Dr. Zough has no bias to report.

Nancy Kawahara, PharmD, MS Ed, is an Associate Dean for Professional Development at Loma Linda University School of Pharmacy. Dr. Kawahara has no bias to report.

## References

1. Ip EJ, Pal J, Doroudgar S, Bidwal MK, Shah-Manek B. Gender-based differences among pharmacy students involved in academically dishonest behavior. *Am J Pharm Educ* 2018;82(4):6274.
2. McCabe DL. Classroom cheating among natural science and engineering majors. *Sci Eng Ethics* 1997;3(4):433-45.
3. Tiong JJJ, Kho HL, Mai CW, Lau HL, Hasan SS. Academic dishonesty among academics in Malaysia: a comparison between healthcare and non-healthcare academics. *BMC Med Educ* 2018;18(1):168.
4. Rabi SM, Patton LR, Fjortoft N, Zgarrick DP. Characteristics, prevalence, attitudes, and perceptions of academic dishonesty among pharmacy students. *Am J Pharm Educ* 2006;70(4):73.
5. Henning MA, Ram S, Malpas P, et al. Academic dishonesty and ethical reasoning: pharmacy and medical school students in New Zealand. *Med Teach* 2013;35(6):e1211-7.
6. Ip EJ, Nguyen K, Shah BM, Doroudgar S, Bidwal MK. Motivations and predictors of cheating in pharmacy school. *Am J Pharm Educ* 2016;80(8):133.
7. Harding TS, Carpenter DD, Finelli CJ, Passow HJ. Does academic dishonesty relate to unethical behavior in professional practice? An exploratory study. *Sci Eng Ethics* 2004;10(2):311-24.
8. Sims RL. The relationship between academic dishonesty and unethical business practices. *J Educ Bus* 1993;68(4):207-11.

9. Ryan G, Bonanno H, Krass I, Scouller K, Smith L. Undergraduate and postgraduate pharmacy students' perceptions of plagiarism and academic honesty. *Am J Pharm Educ* 2009;73(6):105.
10. Sierles F, Hendrickx I, Circle S. Cheating in medical school. *J Med Ethics* 1980;55(2):124-25.
11. Simkin MG, McLeod A. Why do college students cheat? *Journal of Business Ethics* 2010;94(3):441-53.
12. Henning MA, Ram S, Malpas P, et al. Reasons for academic honesty and dishonesty with solutions: a study of pharmacy and medical students in New Zealand. *J Med Ethics* 2014;40(10):702-9.
13. DiVall MV, Schlesselman LS. Academic dishonesty: Whose fault is it anyway? *Am J Pharm Educ* 2016;80(3):35.
14. Hardigan PC. First-and third-year pharmacy students' attitudes toward cheating behaviors. *Am J Pharm Educ* 2004;68(5):110.
15. Krueger L. Academic dishonesty among nursing students. *J Nurs Educ* 2014;53(2):77-87.
16. Turrens J, Staik I, Gilbert D, Small W, Burling J. Undergraduate academic cheating as a risk factor for future professional misconduct. Paper presented at: Investigating Research Integrity; Proceedings of the First ORI Research Conference on Research Integrity 2001; Washington, DC.
17. Bishop M. What's wrong with cheating? Available from: <https://www.csusm.edu/dos/studres/wwwc.html>
18. Forinash AB, Smith WT, Gaebelein CJ, Garavaglia J. Differences in self-reported academically dishonest and nondishonest pharmacy students when rating professional dishonesty scenarios. *Curr Pharm Teach Learn* 2010;2(2):100-07.
19. Emmerton L, Jiang H, McKauge L. Pharmacy students' interpretation of academic integrity. *Am J Pharm Educ* 2014;78(6):119.

## Selling Your Pharmacy?

Maximize  
Your Value



Minimize  
Your Worry

**H A Y S L I P & Z O S T**

Pharmacy Sales Experts Ready to Help You!

[www.RxBrokerage.com](http://www.RxBrokerage.com)

**Tony Hayslip, ABR/AREP**

713-829-7570

Tony@RxBrokerage.com

**Ernie Zost, RHP**

727-415-3659

Ernie@RxBrokerage.com

Call Hayslip & Zost Pharmacy Brokers LLC for a free consultation. We have helped hundreds of independent pharmacy owners nationwide get the maximum value for their pharmacies. For more information about us, please visit our website.

**ARL**  
BIO PHARMA

**IS YOUR  
PRODUCT  
READY FOR  
RELEASE?**

Stop or Go?  
Product testing  
can help you  
cross that road.

ARL partners with  
pharmacies and  
outsourcing facilities  
bringing excellence  
to the compounding  
industry.

Website: [www.arlok.com](http://www.arlok.com)  
Toll Free: (800) 393-1595



- Potency Determination
- Sterility and Endotoxin
- Stability (BUD) Studies
- Raw Material Testing
- Particulate Matter
- Preservative Effectiveness
- USP <800> Surface Wipe Sample Testing

**CPhA members receive  
a 10% discount on ARL services.**

**Call and Save Today!**

## FALSE CLAIMS ACT LAWYER

For Pharmacies and Health Care Providers

*Representing Clients  
throughout all of California.*



**LAW OFFICES OF  
AARON F. GARCIA**

- False Claims Act • Compliance
- Improper Dispensing • Illegal Drug Compounding
- Government Agency Audits and Investigations

**MAIN OFFICE: 760.346.3788**

760-861-8180 CELL

[www.FCALAWYER.com](http://www.FCALAWYER.com)