Peer Health Educators on Campus: Teaching Safe Medication Practices

Baylee Q. Bryan  
*Purdue University*, bryan9@purdue.edu

Olga O. Vlashyn  
*Purdue University*, ovlashyn@purdue.edu

Stephanie A. Deremiah  
*Purdue University*, sderemi@purdue.edu

Murphy K. O'Toole  
*Purdue University*, otoole0@purdue.edu

Katherine M. Joseph  
*Purdue University*, joseph39@purdue.edu

Follow this and additional works at: [https://docs.lib.purdue.edu/pjsl](https://docs.lib.purdue.edu/pjsl)

Part of the Other Nursing Commons, Other Pharmacy and Pharmaceutical Sciences Commons, and the Other Public Health Commons

Recommended Citation

DOI: 10.5703/1288284316835  
Available at: [https://docs.lib.purdue.edu/pjsl/vol5/iss1/15](https://docs.lib.purdue.edu/pjsl/vol5/iss1/15)

This document has been made available through Purdue e-Pubs, a service of the Purdue University Libraries. Please contact epubs@purdue.edu for additional information.

This is an Open Access journal. This means that it uses a funding model that does not charge readers or their institutions for access. Readers may freely read, download, copy, distribute, print, search, or link to the full texts of articles. This journal is covered under the [CC BY-NC-ND license](https://creativecommons.org/licenses/by-nc-nd/).
Peer Health Educators on Campus: Teaching Safe Medication Practices

Authors
Baylee Q. Bryan, Olga O. Vlashyn, Stephanie A. Deremiah, Murphy K. O'Toole, Katherine M. Joseph, and Jane E. Krause

This research with reflection is available in Purdue Journal of Service-Learning and International Engagement: https://docs.lib.purdue.edu/pjsl/vol5/iss1/15
PEER HEALTH EDUCATORS ON CAMPUS:
Teaching Safe Medication Practices

Baylee Q. Bryan, Olga O. Vlashyn, Stephanie A. Deremiah, and Murphy K. O’Toole, College of Pharmacy, Katherine M. Joseph, School of Nursing, and Jane E. Krause, College of Pharmacy

STUDENT AUTHOR BIO SKETCHES

Baylee Q. Bryan, Olga O. Vlashyn, Stephanie A. Deremiah, and Murphy K. O’Toole are advanced professional students in the Doctor of Pharmacy program at Purdue University, graduating in May 2019. Katherine M. Joseph is a senior in the School of Nursing, graduating in December 2018. Jane E. Krause (Clinical Associate Professor of Pharmacy Practice, Purdue College of Pharmacy) served as a faculty mentor for this project. In this article, the authors describe their service-learning project intended to increase awareness on campus regarding prescription drug abuse and misuse.

INTRODUCTION AND BACKGROUND

Prescription drug abuse refers to the intentional use of a prescription medication to “get high” (i.e., to obtain a euphoric response), while prescription drug misuse refers to the intentional or unintentional use of a prescription medication in a manner other than directed by the prescriber (U.S. FDA, 2010). Examples of prescription drug misuse include taking a medication more frequently or in higher quantities than stated in the directions. Although these terms are often used interchangeably, the distinction between them is based on the intention or motivation of the user (U.S. FDA, 2010). Regardless of the term used, both prescription drug abuse and misuse can lead to addiction (substance use disorder) and other dangerous consequences, including death. It is essential to understand that abusing prescription drugs is just as dangerous as abusing illicit drugs (NIDA, 2018). According to the Centers for Disease Control and Prevention (CDC), prescription drug abuse and misuse is the fastest-growing drug problem in the United States (Paulozzi et al., 2012).

The Substance Abuse and Mental Health Services Administration (SAMHSA) conducts a yearly survey called the National Survey on Drug Use and Health (NSDUH). The results of this survey serve as the primary source of information regarding prevalence and trends in substance use within the United States civilian, noninstitutionalized population, ages 12 and older (Ahrnsbrak, Bose, Hedden, Lipari, & Park-Lee, 2017). According to the 2016 NSDUH (the most recent results available), 10.6% of the U.S. population (age 12 or older) used illicit drugs in the last month. In this survey, illicit drugs included marijuana, cocaine, heroin, hallucinogens, inhalants, prescription pain relievers, tranquilizers, stimulants, and sedatives. In addition, it is reported that 25.7% of individuals who used an illicit drug for the first time in the past year did so by abusing a prescription drug (Lipari, Ahrnsbrak, Pemberton, & Porter, 2017).

It is important to note that the highest rate of illicit drug use occurs in the age range of 18 to 25. Of this population, 23.2% used illicit drugs in the past month (Ahrnsbrak et al., 2017). Interestingly, it has been shown that full-time college students are twice as likely to abuse Adderall (a prescription stimulant medication commonly prescribed...
for Attention Deficit Hyperactivity Disorder, or ADHD) as compared to their non–full-time counterparts (6.4% versus 3.0%) (SAMHSA, 2009). In addition, the National College Health Assessment found that 11.7% of college students used prescription drugs that were not prescribed to them in the past year (ACHA, 2017).

The 2017 Indiana College Substance Use Survey (a survey of 31 Indiana colleges) concluded that 8.1% of the 4,814 students who participated in the study reported taking a prescription drug (e.g., stimulants, painkillers, and sedatives) not prescribed to them in the past month (King & Jun, 2017). Among Purdue students who participated in the study, 4.2% indicated taking a prescription drug not prescribed to them in the past month.

Abuse or misuse of prescription drugs also poses a significant financial burden to society. The National Institute on Drug Abuse (NIDA) estimates the cost to society of prescription opioid use alone to be $78.5 billion (NIDA, n.d.). This is attributed to costs associated with lost work productivity, crime, and health care.

The College Prescription Drug Study (CPDS), the largest comprehensive study of prescription drug misuse on college campuses to date, shows a need for better intervention and education programs on college campuses (ProjectKnow, n.d.). This study surveyed college students in 2015 and concluded that 24.8% of undergraduate students reported ever using a prescription drug for nonmedical reasons (McDaniel, 2016). Of these, 10.2% had used a prescription pain medication (e.g., hydrocodone, oxycodone, or other opioid analgesics), and 18.6% had used a prescription stimulant (e.g., Adderall and Ritalin).

In the CPDS, the perceived consequences of prescription drug misuse reported by college students included depression, emotional issues, withdrawal symptoms, memory loss, and doing things they wished they would not have (McDaniel, 2016). Nonmedical use of prescription drugs during college is also associated with poor academic performance and higher rates of skipping class (Arria, Caldeira, Bugbee, Vincent, & O’Grady, 2013).

Kevin Kruger, President of Student Affairs Administrators in Higher Education (NASPA), refers to prescription drug misuse as an overlooked factor in the discussion of persistence and completion of higher education. Raising awareness seems to be a step toward discovering long-term solutions and getting college students.
support or treatment when needed. For the last three years, there has been a prescription drug abuse and misuse presentation and discussion available on Purdue’s campus through a student organization called Purdue Student Health Advocates (PSHA). PSHA is associated with Purdue’s wellness office and the presentation and discussion can be requested online through their website. It is through PSHA that two of the peer educators, who are officers of this student organization, became involved with this outreach initiative. All peer educators volunteered to be involved with this project as each has a passion for increasing prescription drug abuse and misuse awareness on campus. The peer educators want other students to understand that safe medication practices are for life and impact everyone in the community. As students in the health care profession, it is important to educate all ages on the importance of using available resources and seeking support when needed.

PROJECT OBJECTIVES

With this background information in mind, the objectives for this service-learning project were to:

1. Develop and deliver an interactive prescription drug abuse and misuse peer education program (“Safe Medication Practices”) to student groups on campus.
2. Assess the impact of the program on knowledge of Purdue University student attendees.
3. Obtain and evaluate feedback about the program for future refinement.

METHODOLOGY

A team of five pharmacy and nursing students at Purdue served as peer educators for this initiative. The peer educators collaborated during the 2017 fall semester to develop a 30-minute educational and interactive discussion designed for Purdue’s campus. The learning objectives for the program are presented in Table 1. Resources utilized for the development of the program included an existing prescription drug abuse peer education program (“Prescription Drug Abuse: The Growing Epidemic”) previously developed by members of Purdue Student Health Advocates (PSHA), with the help of the faculty mentor for this project. In addition, resources available from the Generation Rx website were utilized in the development of the Safe Medication Practices program used with this project (Generation Rx, n.d.).

During the 2018 spring semester, the peer educators offered the program to student groups on Purdue’s campus. Marketing of the program was a collaboration among Purdue University Wellness Programs; Purdue University Fraternity, Sorority, and Cooperative Life; the peer educators; and the project faculty mentor. Students attending the program completed an assessment prior to and immediately following the program. The assessment was developed by the authors based on the learning objectives of the program and included ten multiple-choice items to assess the students’ knowledge of prescription drug abuse and misuse. The post-assessment included two additional Likert scale items (i.e., five point, from strongly agree to strongly disagree) that gathered feedback on the presentation and discussion. Data analysis was conducted utilizing Statistical Package for the Social Sciences (SPSS) version 24. The paired t-test was used to compare changes in pre- and post-assessment knowledge items and scores. Feedback on the program was summarized. The level of statistical significance was set at 0.05 ($p < 0.05$). The Purdue University Institutional Review Board (IRB) granted this study exempt status.

IMPACTS

During the 2018 spring semester, the peer educators delivered the Safe Medication Practices program

Table 1. Safe medication practices: Learning objectives.

<table>
<thead>
<tr>
<th>Learning Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discuss examples of depressant and stimulant drugs (study drugs) that are abused</td>
</tr>
<tr>
<td>Describe examples of harmful side effects and consequences of abused medications</td>
</tr>
<tr>
<td>Explain safe medication practices, including proper storage and disposal</td>
</tr>
<tr>
<td>Discuss resources available on- and off-campus</td>
</tr>
</tbody>
</table>
(utilizing PowerPoint) to thirteen groups of Purdue students, including five social sororities, two social fraternities, one cooperative house, the Purdue National Pan-Hellenic Council, two student organizations, and two groups of University Residence Hall assistants (RAs). A total of 494 students completed both the pre- and post-assessment and were analyzed. Results from the pre- and post-assessments (knowledge items) indicate a statistically significant increase in eight of the ten items and a mean total score increase of 19.13% ($p \leq 0.000$) (Table 2). Feedback from the attendees is summarized in Table 3. Student attendees received items (e.g., button, pen, mirror cling, magnet) that reinforced the information shared (Figure 1 and Figure 3). The peer educators reflected on the experience, which they found rewarding, and they enjoyed collaborating on this interprofessional outreach initiative (Table 4).

**CONCLUSIONS AND SUGGESTIONS FOR FUTURE OPPORTUNITIES**

Results from this project support the notion that peer education is an effective way to raise awareness about prescription drug abuse and misuse on college campuses. In a recently published analysis of 17 studies where peer education was implemented to individuals aged 11 to 21, effectiveness of peer-led interventions was found (MacArthur, Harrison, Caldwell, Hickman & Campbell, 2016). The study concluded that peer education can be effective in preventing the use of tobacco, alcohol, and possibly cannabis among this age group.

Collaboration was essential to the success of this service-learning initiative. An interdisciplinary collaborative approach involving Purdue students from the College of Pharmacy and the School of Nursing was a strength of this project. In addition, collaboration with our campus partners—Purdue Wellness Programs and the Purdue University Fraternity, Sorority, and Cooperative Life staff—was essential. Continued collaboration is vital to future success of this initiative.

Moving forward, we believe reciprocity could be enhanced by asking groups in the community to prepare questions before we presented to them. It would be beneficial to have the audience voice their questions or concerns in advance, allowing the peer educators to know what the audience is expecting and the knowledge they have upfront.

In the presentation, we highlighted the steps that should be taken in an overdose situation and discussed what safe medication disposal looks like. It is our hope

**Table 2.** Results for knowledge items on pre- and post-assessments at 13 presentations ($n = 494$).

<table>
<thead>
<tr>
<th>Time Period</th>
<th>Mean Percent Correct ± SD*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-assessment</td>
<td>73.38% ± 13.86%</td>
</tr>
<tr>
<td>Post-assessment</td>
<td>92.51% ± 9.41%</td>
</tr>
</tbody>
</table>

Note: There were 10 knowledge items on the pre- and post-assessments.

*SD = Standard Deviation

Statistically significant increase in tested knowledge ($p \leq 0.000$)

**Table 3.** Feedback from attendees following 13 presentations ($n = 494$).

<table>
<thead>
<tr>
<th>Items on Post-Assessment</th>
<th>Strongly Agree or Agree (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The information was presented in an effective manner.</td>
<td>471 (95.34%)</td>
</tr>
<tr>
<td>I am more knowledgeable about the dangers of misusing prescription drugs.</td>
<td>447 (90.49%)</td>
</tr>
</tbody>
</table>

**Figure 5.** Feedback from attendees following 13 presentations ($n = 494$).
**How did this service-learning experience impact you?**

When I first heard about the opportunity to get involved with the peer education project, I was excited about the impact that the peer educators could make within the community. This project has allowed me to see that pharmacy students and pharmacists can play a huge role in providing intentional education about safe medication practices. I learned that it is important to engage the audience because it allows them to really connect with the presentation. By asking questions throughout the presentation and allowing attendees to break off into pairs to voice their thoughts, the peer educators were able to better connect with the audience. Reaching out to fraternities and sororities allowed us to educate a unique audience of students on the most up-to-date information about safe medications practices, and we enjoyed hearing their perspective on some hot topics such as the opioid epidemic. In addition to engaging the students during the presentation, we challenged those attending our presentations to share at least one new idea that they learned from the presentation with a friend or a family member. —Olga Vlashyn (Pharmacy Student)

I had been wanting to be involved in educating others about safe medication practices and prescription drug abuse ever since coming to college, and I am so fortunate to have had the opportunity to present on these topics with other students who have a similar passion. As students in rigorous health-related curriculums, we are often busy with school work, internships, and other clubs and organizations. Our time management skills are crucial for us to accomplish everything we do at the high standards we expect of ourselves. But because this is a topic I am very passionate about and want to educate others about, I make sure that I am available and do not have any other conflicts that would prevent me from educating others. Everyone has been great in working together to ensure that at least two people are available to deliver each presentation. This experience has helped me develop my presentation skills, along with my time management and teamwork skills, while allowing me to educate others on a topic that is prevalent to these students. —Murphy O'Toole (Pharmacy Student)

Interprofessional collaboration and teamwork is an essential learning outcome that the Purdue University College of Pharmacy has gradually integrated into our curriculum. This peer education project has reinforced and perfected my capabilities of working with college students studying other health care professions. Collaborating with students from a variety of health care majors has allowed me to better understand the roles of other health care professionals and to broaden my level of thinking. It also has given me more opportunities to build relationships and further develop my professional communication skills. These skills will translate into my professional career after graduation as there is an increasing need for coordinated care of patients by a collective team of health care providers. A comprehensive approach by interprofessional health care teams is the future of health care and will lead to positive effects on patients’ overall health and safety. —Stephanie Deremiah (Pharmacy Student)

This Generation Rx project was designed for college students, with presentations targeting those who are in fraternity, sorority, and cooperative life. Being a current member of a sorority and a nursing student helped me get involved with this project. I was able to learn about prescription drug abuse and safe medication practices throughout this experience and was excited to share what I had learned with groups on campus, including Greek life. One barrier we faced was scheduling presentations. We found many times that we were not receiving emails back from those we would reach out to. We learned that sometimes we would have to reach out to different members of the organization, and speaking to them in person aided us in getting presentations scheduled. We were able to overcome these barriers and were able to schedule many presentations for not only Greek life organizations, but also for other groups in the Purdue community. I think we can all say we gained skills in patience and communication throughout the experience. —Katherine Joseph (Nursing Student)

This peer education project has given me the opportunity to develop skills to give more effective presentations and be a more effective leader. It was my first experience with educating college students from other majors. I was amazed by the diversity and I learned from each of the groups I presented to. It was a great opportunity to gauge opinions students with no health care training had about drug abuse and safe medications practices. I am grateful for the opportunity to have worked with Professor Krause, who has served as a mentor to me throughout pharmacy school, and the other peer educators who have helped me to see different perspectives in patient care. This experience will be useful in my future career and I can use skills gained throughout this project when educating future patients or students. The project has helped me to solidify academia as a future career aspiration after postgraduate training. —Baylee Bryan (Pharmacy Student)
that individuals know how to properly dispose of prescription drugs, which will help reduce the amount of abuse and misuse that we are currently seeing throughout the United States.

Prescription drug abuse and misuse are important issues to public health. We anticipate this project to continue through the PSHA prescription drug abuse committee. We would like readers on Purdue’s campus to know that this project exists, and we hope this article encourages additional groups to request this presentation. Finally, as health care professionals of tomorrow, we look forward to increasing awareness regarding prescription drug abuse and misuse within our own communities in the future.

ACKNOWLEDGMENTS

The authors wish to recognize and thank the following contributors to this project:

- Generation Rx University Implementation Grant
- Tammy Loew (Senior Assistant Director, Purdue Wellness Programs)
- Fraternity, Sorority, and Cooperative Life at Purdue University
- Anthony Anastasia (PharmD)

REFERENCES


ProjectKnow. (n.d.). College students say stimulants, other drugs are easy to find. Retrieved March 2018 from https://www.projectknow.com/college-students-say-stimulants-other-drugs-are-easy-to-find

