

Changing student attitudes and perceptions toward opioid use disorder

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Abstract

Introduction: With the opioid epidemic creating a group of patients with unique health care needs, pharmacists have an opportunity to be a good resource for patients recovering from opioid use disorder (OUD). To accomplish this, it is essential that pharmacists are knowledgeable and unbiased toward this patient population.

Methods: Because the curriculum in place to obtain a PharmD at Drake University does not include in-depth information on substance use disorders, study investigators offered students an opportunity to receive more intensive education. Faculty members at Drake University provided didactic and panel discussion presentations on topics such as opioid pharmacology, OUD, and treatment options. The students were assessed for their perception of knowledge and stigma before and after the summit by using a 5-point Likert scale to measure their attitudes toward 10 statements.

Results: Total knowledge scores showed a significant change of 3.1, indicating an increase in perceived understanding of materials presented ($P < .0001$). Total stigma scores also changed by 1.4, illustrating a statistically significant decrease in negative perceptions ($P = .0198$).

Discussion: By providing more in-depth education, the summit showed that increasing pharmacy student knowledge about OUD and its treatment may decrease associated stigma.

Keywords: student education, opioid use disorder, stigma, pharmacy students

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Introduction

The prescription and illicit use of opioids has greatly increased over the past 2 decades leading to what is currently recognized as the opioid epidemic.¹ Opioid abuse induces the majority of all fatal overdoses with 1

statistic reporting that 6 out of every 10 deaths resulting from a drug overdose involved an opioid.² Since 1999, the number of deaths due to prescription and illicit opioids has quadrupled to an estimated half a million people dying from opioid overdoses between 2000 and 2015.³ In addition to the increase in prescription and recreational use of opioid medications, the number of individuals using heroin is also notably increasing.⁴ Among new heroin users, approximately 3 out of every 4 people reported abusing prescription opioids prior to using heroin.⁵

A patient population with unique care needs has grown substantially over the past few decades as a direct result of this increased use, abuse, and misuse of opioids. However, patients needing intense treatment for opioid

use disorder (OUD) are hindered by social stigma and a lack of public recognition of OUD as a medical condition. Due to their accessibility, pharmacists are in a favorable position to assist with this population's treatment in comparison to other health care professionals. This necessitates that pharmacists have a quality, well-rounded education about OUD to help prevent the negative attitudes that are commonly held toward these patients. In this study, an intensive student summit covering the intricacies of OUD was conducted at Drake University in the fall of 2016. The purpose of this summit was to provide more detailed education on OUD and its patient population beyond what is available in the curriculum and assess the impact of this intervention.

Methods

Study Design

This study incorporated a quasi-experimental, pre-post single group design to introduce knowledge regarding OUD to pharmacy and health sciences students at Drake University. Students were recruited to attend the on-campus summit on a voluntary basis through public posters, classroom announcements, and social media advertisement and were provided lunch for attending. Participant perceived knowledge and stigma regarding OUD were assessed with a voluntary survey immediately prior to attending and again after all students participated in the intervention. Private areas were arranged for students to complete surveys outside of the auditorium, and completed forms were submitted into a box to preserve anonymity. The primary end point was change in perceptions from baseline assessment as measured by total knowledge and stigma scores. This study was given exempt status through the university's institutional review board.

Intervention

The 3-hour opioid education summit consisted of presentations by university faculty members and guest speakers from a local county hospital. The university's neuropharmacology professor presented background information on the pharmacology of opioids, signs and symptoms of an opioid overdose, naloxone administration, and treatment options for OUD. This information is available later in the pharmacy curriculum and was provided to ensure all levels of students had the same base of knowledge. He then expanded on the anatomy of pain transmission; the development of opioid tolerance, dependence, and withdrawal; and the differences between prescription and illicit opioids, such as heroin. A pharmacy practice professor addressed the current state of the opioid epidemic by covering trends in opioid

prescribing, the pathway from legitimate pain treatment to illicit opioid use, statistics of illicit opioid use and overdose deaths, and harm reduction strategies. Finally, an interdisciplinary panel consisting of a psychiatrist, psychiatric pharmacist, and a therapist presented case studies to show how they would collaborate to treat patients with OUD.

Survey Instrument and Data Analysis

The questionnaire used to assess knowledge and stigma was a 10-item survey that used a 5-point Likert scale to gauge participants' disposition on provided statements (see Table 1).⁶ Statements were developed using the Opening Minds Scale for Health Care Providers (OMS-HC) created by the Mental Health Commission of Canada and adapted for the purpose of this summit.⁷ This scale was designed to assess negative perceptions in health care providers and has successfully detected change in these perceptions during other antistigma interventions.^{7,8} The survey included 3 knowledge-based statements built from summit educational contents and 4 stigma-based statements derived from the OMS-HC that were used to measure negative perceptions of OUD. In addition, there were 3 control statements (opinion-based and unrelated to summit contents) to confirm the intervention only impacted knowledge and stigma. Each survey also inquired about the students' primary field of study, but other demographics were omitted to preserve anonymity.

Each response on the 5-point Likert scale was assigned a value of 1 to 5 (see Table 1). Due to the sensitive nature of this topic, participants may tend to answer more favorably to the stigma items due to social desirability. Therefore, select items were reverse scored to encourage honesty and achieve more accurate self-reported attitudes. Total knowledge score was computed by summing responses to the 3 knowledge items. A total score of 3 indicates high knowledge, and 15 indicates low knowledge. A total stigma score was also calculated by summing responses to the 4 stigma items with a total score of 4 indicating low stigma and 20 indicating high stigma. Because this study utilized a pre-post analysis with related samples and a nonnormally distributed dependent variable, a Wilcoxon signed rank test was conducted on total summed knowledge and total summed stigma scores before and after the educational summit. Control statements were not summed due to their arbitrary nature. Statistical significance was defined as $P < .05$.

Results

A total of 58 presurveys and 59 postsurveys were collected with 1 student arriving to the summit after presurveys were collected. Due to the anonymous nature of the

TABLE 1: Survey statements and assigned numerical response value

| Survey Statements | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|--|----------------|-------|---------|----------|-------------------|
| Knowledge based | | | | | |
| 1. I know what naloxone is and how to administer it. | 1 | 2 | 3 | 4 | 5 |
| 2. I can recognize the symptoms of opioid intoxication and/or withdrawal. | 1 | 2 | 3 | 4 | 5 |
| 3. I know what my future role will be as part of a health care team treating someone with opioid use disorder. | 1 | 2 | 3 | 4 | 5 |
| Stigma based | | | | | |
| 1. Moral strength plays a large part in the cause of an opioid use disorder. | 5 | 4 | 3 | 2 | 1 |
| 2. Most people with substance use disorders are uneducated and of lower economic status. | 5 | 4 | 3 | 2 | 1 |
| 3. I wouldn't be comfortable knowing someone with history of a substance use disorder was going to be one of my health care providers. | 5 | 4 | 3 | 2 | 1 |
| 4. I think that people with substance use disorders have unstable childhoods. | 5 | 4 | 3 | 2 | 1 |
| Control statements | | | | | |
| 1. I feel people with diabetes are at fault for their disease. | 5 | 4 | 3 | 2 | 1 |
| 2. I know several people who have been diagnosed with an opioid use disorder. | 1 | 2 | 3 | 4 | 5 |
| 3. I would feel comfortable using an EpiPen for someone having an allergic reaction. | 1 | 2 | 3 | 4 | 5 |

survey, identification of this participant post hoc was not possible. Participants included pharmacy students ($n = 44$), other students ($n = 5$; 3 biochemistry, cell, and molecular biology majors; 1 doctor of osteopathic medicine student; and 1 neuroscience and psychology double major), and other students who did not disclose their primary field of study ($n = 10$).

As shown in Table 2, the total knowledge scores showed a significant increase in perceived understanding after the summit ($Z = 5.7, P < .0001$). Total stigma scores also showed a significant change toward less negative perceptions ($Z = 2.3, P = .0198$). No significant difference was found for items intended as control statements.

Discussion

In this study, Drake University hosted an educational summit on OUD. As expected, the educational content statements demonstrated that students felt more knowledgeable after the summit. This study was also able to show that student perceptions of OUD became more favorable due to the information provided about the disorder. This summit was advertised across campus to encourage students of multiple disciplines to attend. Although not all students disclosed their primary field of study, those present were potentially representative of future health care providers on an interdisciplinary team.

The strengths of this study included the wide variety of speakers across multiple disciplines and specialties. The

summit had a panel consisting of a psychiatrist, a psychiatric pharmacist, and a therapist who illustrated interprofessional collaborative efforts to optimize patient care. The survey used also strengthened study results as the original instrument has been validated for its effectiveness in this application.^{7,8} Additionally, the presurvey and postsurvey completion rate was substantial, and all surveys were completed in full. This suggests that students felt the 3-hour summit duration and the 10-item survey were manageable.

Study limitations consisted of the voluntary nature of this event and the small sample size. It is also possible that students self-selected to participate based on personal interest, therefore introducing a potential for bias. A school-mandated activity could encompass a larger group with potentially different outcomes. This voluntary aspect might also explain the discrepancy in the number of surveys completed because participants weren't required to be present at the time presurveys were available. Because this study was conducted at a small liberal arts college in the Midwest, findings should be cautiously generalized to other types of learning institutions.

The American Academy of Colleges of Pharmacy (AACP) recommends that schools of pharmacy direct teaching and research activities toward reducing the public health threat from OUD.⁹ The AACP suggests preparing every student to provide, administer, and educate on the appropriate use of life-saving interventions to patients, including individuals who may encounter patients at risk for an opioid overdose. The AACP also endorses engaging

TABLE 2: Comparison of presummit and postsummit perceived knowledge and stigma using the Wilcoxon signed rank test

| Total Summed Scores | Presummit Mean (SD) | Postsummit Mean (SD) | Mean Difference (SD) | Wilcoxon Test (Z) |
|---|------------------------|-------------------------|----------------------|--------------------------------------|
| Knowledge-based statements ^a | 7.6 (2.9) | 4.5 (1.3) | -2.9 (3.3) | 5.7 ^c (<i>P</i> < .0001) |
| Stigma-based statements ^b | 9.1 (3.1) | 7.7 (2.7) | -1.1 (4.5) | 2.3 ^c (<i>P</i> = .0198) |

^aPossible score ranges from 3 (highest perceived knowledge) to 15 (lowest perceived knowledge).

^bPossible score ranges from 4 (lowest perceived stigma) to 20 (highest perceived stigma).

^cBased on negative ranks.

in educational outreach with other health care providers.⁹ In an effort to satisfy these recommendations, this study went outside the classroom to educate pharmacy and health sciences students about OUD and decrease negative attitudes toward these patients.

There is little guidance to support how schools of pharmacy should introduce topics suggested by the AACP. Contact-based education with mental health patients has been explored previously as a means to reduce pharmacy student stigma.⁸ Although successful, implementing a similar approach may require a logistically challenging and time-consuming addition to the curriculum that may not be feasible. Because colleges of pharmacy may already have difficulty fitting all therapeutic topics into the curriculum, an educational summit provided by each school may be another way to teach this particular topic.

Future Direction

For groups looking to replicate this educational summit, it is recommended to examine the specific needs of each individual campus. It is imperative to ensure that many different focal points of OUD are examined in greater detail. Students in attendance may be at different points of their professional education, making it important to provide proper background information. Including aspects such as etiology, pathophysiology, and common comorbidities associated with OUD may help to provide more context to all attendees.

Next, the scope of the problem needs to be addressed. Acknowledging how the increase in the use, misuse, and abuse of opioids has occurred can help to illustrate how essential it is to take action in the opioid crisis. This is an area in which appropriate statistics and other related epidemiology information could help to emphasize the gravity of the current opioid crisis. Additionally, including harm-reduction strategies may be beneficial. These may include offering naloxone to patients with a higher risk of overdose, reviewing the state prescription drug monitoring program and encouraging the health care team to stay up to date on entries, and utilizing urine drug testing when appropriate.

As well as examining the background and pertinence of OUD, students should be educated on how to identify and assist in an acute overdose scenario should they ever find themselves in a position to help. Information regarding the signs and symptoms of an acute opioid overdose should be included as well as what should be done immediately following. If naloxone training kits are available, their use should accompany instruction on how to administer the different naloxone formulations to allow further applicability of the information introduced. Additionally, including information on how to obtain naloxone preparations from local pharmacies at which state legislation allows behind-the-counter dispensing would be helpful.

Last, individual patient cases should be presented to help introduce opinions of other health care professionals and show what role students would play on a care team in the treatment of this population. It is vital to include the different perspectives so that, in a real-life situation, the students know how to provide the patient the best treatment possible.

In addition to recommendations provided for conducting a student summit, changes have been suggested for the survey tool to reflect accurate measurement of perceived stigma and knowledge for future use (see Table 3). Control questions were removed because this study illustrated only how knowledge and stigma regarding OUD were affected by the summit. Items were also clarified based on feedback a few of which could have been interpreted differently. Continuing to measure the impact of future educational summits is important.

Conclusion

The results of this study demonstrate how an educational opportunity can positively impact a student population in a university setting. It is important to continue such programs among all future health care professionals to reduce the stigma that may limit the quality of care patients with OUD would receive. Increasing the availability of these unique educational opportunities may help

TABLE 3: Suggested survey statements

| Knowledge Based |
|--|
| 1. I know what naloxone is. |
| 2. I can recognize the symptoms of opioid intoxication and/or withdrawal. |
| 3. I know what my future role will be as part of a health care team treating someone with opioid use disorder. |

| Stigma Based |
|--|
| 4. Moral strength plays a large part in the cause of an opioid use disorder. |
| 5. I think that people with substance use disorders have unstable childhoods. |
| 6. Most people with substance use disorders are uneducated and of lower economic status. |
| 7. I wouldn't be comfortable knowing someone with history of a substance use disorder was going to be one of my health care providers. |
| 8. I know someone who has been diagnosed with an opioid use disorder. |
| 9. I would feel comfortable using naloxone for someone overdosing on opioids. |
| 10. I feel people with opioid use disorders are at fault for their disease. |

future health care professionals to be better prepared to take direct action in combatting the opioid epidemic.

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