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Research Note

Contact based intervention reduces stigma among pharmacy students

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ARTICLE INFO

Keywords:

Stigma, opioid use disorder
Pharmacy
Contact-based education
Interprofessional education

ABSTRACT

Introduction: Interventions to reduce the stigma of substance use disorders by health professionals often include didactic instruction combined with an interactive component that includes a guest speaker in recovery. Few interactive studies have focused on pharmacy students. Community pharmacists are moving to the front lines to battle the opioid epidemic; therefore, pharmacy students should be included in interventions aimed at reducing stigma by health professionals.

Methods: This study examined the effects of a contact-based interactive intervention delivered by a peer recovery support specialist on perceived stigma of opioid use disorder among third-year pharmacy students ($N = 115$) enrolled in an integrative psychiatry course. Stigma was measured using the Brief Opioid Stigma Scale.

Results: Our study found significant differences in students' perceived stigma, both with their personal beliefs and their beliefs regarding the public, supporting the use of interactive presentations by peer recovery support specialists to decrease perceived stigma of opioid use disorder by health professionals.

Conclusions: This type of intervention for pharmacy students shows promise in reducing substance use disorder stigma and should be further explored.

Introduction

Despite demonstrated effectiveness of medications for the treatment and management of opioid use disorder (OUD), the opioid epidemic remains one of the most pressing public health challenges in the United States (US). The total number of drug overdose deaths in the US has quadrupled since 1999 and the vast majority involve opioids.¹ An estimated 2.7 million Americans experienced OUD in 2020, yet only 1.4% reported they received any treatment within the past year.^{2,3} In the last decade overdose deaths rates have been trending upward, and May 2020 saw the highest number of overdose deaths recorded in a 12-month period, coinciding with the COVID-19 pandemic, suggesting the pandemic has hit those with substance use disorder particularly hard.⁴ Although there is effective treatment for OUD, the majority of drug overdoses still involve opioids.⁵ When combined with behavioral health treatment, medication for OUD (MOUD) has been shown to increase abstinence and treatment retention compared to non-MOUD interventions.⁶ MOUD ranges from opioid agonists and partial agonists, such as methadone and buprenorphine, to antagonists, such as naltrexone.

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<https://doi.org/10.1016/j.cptl.2022.10.002>

Available online 16 November 2022

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People receiving methadone maintenance treatment, compared to no pharmacological treatment, showed greater retention in treatment and reduced opioid use, and buprenorphine-naloxone was found to be more effective than placebo in treatment retention and abstinence.⁷ Despite evidence supporting the effectiveness of MOUD for treating OUD, it is too often difficult to access.

Recent public health efforts have addressed some of the barriers to accessing MOUD. The Comprehensive Addiction and Recovery Act of 2016 expanded the ability to prescribe MOUD to include nurse practitioners and physician assistants,⁸ and recently in response to the coronavirus pandemic, the US Department of Health and Human Services expanded the use of telehealth to include prescribing buprenorphine.⁹ Although these measures led to increased access for some, mortality related to opioid overdose continues to increase and reached an all-time high in 2020, with nearly 92,000 cases in the previous 12-months.¹⁰ A recent geospatial analysis revealed an average of 3.84 OUD treatment programs per 100,000 individuals in the US and nearly a third of counties without a single OUD treatment program.¹¹ Unsurprisingly, the analysis also revealed higher overdose deaths in those counties with few to no treatment facilities. The disparity between OUD and evidence-based treatment is rooted in the healthcare system and the deep stigmatization of OUD.¹²

Stigmatization of OUD constitutes a significant barrier for early detection and treatment. Social stigma is the disapproval or discrimination against an individual based on perceived characteristics and may refer to the experience of the individual with a stigmatized condition (internal or anticipated stigma), the discriminatory behavior they encounter (enacted stigma), as well as the systems that reinforce stigmatization through punitive policies.^{13,14} Greater perceived stigma is associated with diminished physical and mental well-being in individuals with OUD, delayed or incomplete treatment, and higher rates of relapse.^{15–18} Policies focusing on punitive action rather than prevention and treatment reinforce negative stereotypes of people with OUD, including healthcare workers.^{19–23} While evidence is forthcoming on the relationship between the stigma experienced by individuals with OUD and their quality of care, stigmatization is associated with reduced quality of care in other domains, such as HIV and obesity.^{24,25} Stigma also varies by discipline, and healthcare workers who frequently interact with patients in treatment with OUD exhibit the least stigma.²³

As efforts increase to combat the opioid epidemic, recent literature has focused on community pharmacists and their role in education and patient care. Community pharmacists are in a favorable position for expanding access and facilitating successful initiation into treatment.^{26–30} Interventions involving pharmacists have been effective in expanding access to naloxone and have shown the feasibility of both pharmacist-initiated screening and physician-pharmacist collaboration in treating OUD.^{31–33} One study found that naloxone prescriptions filled by standing orders were 3.5 times more likely to be picked up by patients than naloxone prescriptions ordered by physicians.³⁴ Even so, dispensing rates remain low, suggesting this method is drastically underutilized.³⁵ While some research has reported overall favorable attitudes of pharmacists toward dispensing MOUD, other research has shown pharmacists were likely to express negative attitudes and a reluctance to provide MOUD.^{20,36–38} These findings underscore the need for specialized training to dispel the stigmatization surrounding OUD and increase evidence-based treatment.

Interventions reducing stigma against drug use frequently target undergraduate and graduate students enrolled in healthcare programs. These interventions frequently focus on other constructs such as a biological basis for addiction and as such, do not address stigma. Additionally, existing research on educational interventions often employ qualitative measures or fail to use standardized measures of stigma, which limits generalizability.^{39,40} Other studies have examined a combined didactic and clinical curriculum among nursing and medical students and found decreases in stigmatizing attitudes following the intervention.^{41–43} Of these studies, only one used a validated scale to measure stigma and only a few interactive educational interventions focused on pharmacy students supporting the need for such interventions.^{43–45} Having contact with someone with lived experience of mental illness and/or substance use disorder has been shown to be effective at reducing stigma and training programs that include such contact-based interventions have been shown to be more effective at reducing stigma than training alone.¹³ In this study, we evaluated the effectiveness of an interprofessional and interactive educational contact-based intervention focused on reducing stigma in a large group of pharmacy students and evaluated their perceptions before and after the intervention.

Methods

Format and participants

This study used a one-group pretest-posttest design to measure the effects of a contact-based, interactive intervention on the perceived stigma of OUD on a sample of pharmacy students ($N = 115$) who were enrolled in an integrative psychiatry course. Students were enrolled in a professional pharmacy program that culminated in a doctoral-level degree (doctor of pharmacy). This degree program requires a minimum of 218 semester hours, of which 146 hours are in the specific discipline of pharmacy. All students were in their third (final) year of their pharmacy program with no experience as a professional or licensed pharmacist. The three-day course included a comprehensive section on substance use disorders and pharmacological treatment. The contact-based intervention consisted of a single, one-hour long interactive lecture delivered by a peer recovery support specialist (PRSS) in long-term recovery, and covered: (1) how individuals begin using licit and illicit substances; (2) the barriers to accessing healthcare and substance use treatment; (3) facing stigma on a personal, societal, and structural basis; and (4) overcoming challenges and barriers in long term recovery.

PRSS are individuals who have greater than one-year of sobriety from illicit substances, have successfully matriculated through 40-hours of education on trauma-informed care, substance use disorders, effective communication, motivational interviewing techniques, and have completed a program of supervised practice. PRSS are required to pass a certification course administered by designated organizations in each state where they are employed, and they are required to participate in continuing education to maintain their relevant skills and knowledge base in the field.

Survey

Students completed a confidential online pre-and post-survey that included demographic measures. The Brief Opioid Stigma Scale is a 5-point Likert scale that measures perceptions of the general public's and one's own stigmatizing attitudes toward individuals OUD. For this study, the scale was modified to include gender-neutral language (i.e. "they" was substituted for "his" and "a person" replacing "a man").⁴⁶ The survey contained seven questions, each asking about respondents' perceptions of other peoples' beliefs and their own beliefs about someone who is "addicted to opioids" (e.g., "Most people believe a person addicted to opioids cannot be trusted," "I believe a person addicted to opioids cannot be trusted"). Responses were assigned unique identifications and anonymized to pair pre-and post-surveys, which were collected using Qualtrics XM (Qualtrics) online software. This study was approved by the university's institutional review board for the protection of human subjects, and informed consent was electronically obtained prior to the intervention and data collection.

Statistical analyses

We reported frequencies, proportions, and conducted analyses for the paired proportion of nominal variables. For the first set of questions about public perceptions of opioid addiction, we conducted an exact test of tail symmetry (Stuart-Maxwell test) because each survey item had three possible responses (agree, disagree, and unsure). The second set of questions asking respondents about their personal perceptions was analyzed using the McNemar exact test. For this test, we reported the odds ratio (OR) (95% CI) of the discordant pairs of the two-by-two table. In both analyses, we chose the exact test because the cells in both sets (public and personal perceptions) had <5 expected counts. We considered a *P* value of <0.05 as significant, and Stata IC, version 15 (StataCorp) was used to conduct the analyses.

Results

Of 115 students enrolled in the course, 91 (79%) completed the pre- and post-surveys. Seven declined the consent and 24 students did not complete the full survey (e.g., only completed demographic questions, only completed one survey). Participant demographics are depicted in Table 1.

Prior to the intervention, a majority of students indicated they perceive that most people believe a person "addicted to opioids" is not trustworthy (89%), is dangerous (76.9%), and is to blame for their problems (78%). Just over half (58.2%) perceived that "most people believe a person with OUD is lazy." When asked about their personal beliefs, a minority of students believed a person "addicted to opioids" is not trustworthy (37.4%), is dangerous (28.6%), is to blame for their problems (13.2%), is and lazy (5.5%). After the intervention, we saw a significant change in the students' personal perceptions. Following the intervention, we saw significant differences in how the students' perceived most peoples' beliefs in two of the four categories ("is dangerous" *P* = .002; "is lazy" *P* = .01). There were significant differences in three of the four categories regarding the students' own perceptions ("cannot be trusted" *P* < .001; "is dangerous" *P* < .001; and "is to blame for their problems" *P* = .004). It was expected that there would be an increase in scores due to the intervention as students were more aware of stigma (Table 2).

When we analyzed pre- vs. post-intervention matched pairs, we also examined subgroups and compared gender differences in personal perception. However, because only 26 participants (28.6%) identified as male, the sample size was too small to achieve adequate power to detect differences between baseline and follow-up responses. There was, however, a significant change in the personal perceptions of female students in the pre- and post-intervention survey (Table 3). A significant linear trend for the log of relative risk (*P* < .001) was found when conducting the exact test of tail symmetry (Stuart-Maxwell test) for the question "Most people believe a person who is addicted to opioids is dangerous." No linear trend was observed for the question "Most people believe a person who is addicted to opioids is lazy." The effect sizes measured as OR (95% CI) for the personal perceptions of the questions "I believe a person who is addicted to opioids cannot be trusted" and "I believe a person who is addicted to opioids is dangerous" were OR 11.50 (2.84–100.63) and OR 19.0 (3.02–789.46), respectively. Because cells had zeros in the two-by-two tables, the OR (95% CI) were not calculated for the questions "a person addicted to opioids is to blame for problems" and "is lazy."

Table 1
Demographic characteristics of participants (*n* = 91).

| Characteristic | n (%) |
|------------------------------|-----------|
| Gender (female) | 65 (71.4) |
| Race/Ethnicity | |
| Asian | 41 (45.1) |
| Caucasian/White | 18 (19.8) |
| Middle Eastern/North African | 11 (12.1) |
| Black/African American | 11 (12.1) |
| Native American | 1 (1.1) |
| Other | 8 (8.8) |
| No response | 1 (1.1) |

Table 2
Public and personal perceptions of a person with opioid use disorder (n = 91.)

| Question | Agree pre-intervention | Agree post-intervention | P value |
|--|------------------------|-------------------------|---------|
| | n (%) | n (%) | |
| Most people believe a person who is addicted to opioids: | | | |
| Cannot be trusted | 81 (89) | 77 (84.6) | .23 |
| Is dangerous | 70 (76.9) | 69 (75.8) | .002 |
| Is to blame for problems | 71 (78) | 75 (82.4) | .68 |
| Is lazy | 53 (58.2) | 67 (73.6) | .01 |
| I believe a person who is addicted to opioids: | | | |
| Cannot be trusted | 34 (37.4) | 13 (14.3) | < .001 |
| Is dangerous | 26 (28.6) | 8 (8.8) | < .001 |
| Is to blame for problems | 12 (13.2) | 3 (3.3) | .004 |
| Is lazy | 5 (5.5) | 1 (1.1) | .12 |

Table 3
Personal beliefs by gender (n = 91).

| Question | Agree pre-intervention | Agree post-intervention | P value |
|---|------------------------|-------------------------|---------|
| | n (%) | n (%) | |
| Men (n = 26); I believe a person addicted to opioids: | | | |
| Cannot be trusted | 10 (38.5) | 6 (23.1) | .22 |
| Is dangerous | 8 (30.8) | 5 (19.2) | .37 |
| Is to blame for problems | 6 (23.1) | 3 (11.5) | .25 |
| Is lazy | 3 (11.5) | 1 (3.9) | .50 |
| Women (n = 65); I believe a person addicted to opioids: | | | |
| Cannot be trusted | 24 (36.9) | 7 (10.8) | < .001 |
| Is dangerous | 18 (27.7) | 3 (13.9) | < .001 |
| Is to blame for problems | 6 (9.2) | 0 (0) | .03 |
| Is lazy | 2 (3.1) | 0 (0) | .50 |

Discussion

This study examined an interactive, contact-based intervention conducted by a PRSS with lived history of substance use and professional experience working with people in all stages of recovery. Educational programs focusing on substance use disorder (SUD) for pharmacy students are usually lecture-based and may occasionally include a presentation from a person in recovery; this study offered the dual perspective of a patient and a lay professional PRSS. This study demonstrated that the intervention had a favorable influence on students' personal perceptions and on their beliefs of other peoples' perceptions toward a person who uses or has used illicit opioids, which supports the existing research on SUD educational interventions for pharmacy students and may extend to students in healthcare disciplines.

Educational programs for health professionals frequently focus on screening, brief intervention, and referral to treatment (SBIRT) training. SBIRT is a clinical strategy endorsed by the Substance Abuse and Mental Health Administration to expeditiously assess the presence and severity of SUD in an array of healthcare settings, to help the patient become more aware of their dependence and motivate them toward treatment, and lastly to connect the patient to treatment resources.⁴⁷ SBIRT is cost-effective and is associated with decreases in illicit drug use, including opioids.⁴⁸ The American Association of Colleges of Pharmacy's Curricular Guidelines for Pharmacy names 10 educational goals specifically related to SUD that all pharmacy students should achieve before graduation, including SBIRT training; however, few pharmacy internships and residencies focus on broad SUD or SBIRT training, and there are few to no professional continuing education requirements for SUD-related credits, which vary by state.^{50,51} Some cross-sectional research suggests that students who experience contact with patients with SUD exhibit less stigma and feel more comfortable counseling and referring patients at risk for OUD to appropriate resources.^{52,53} On balance, positive attitudes toward patients with SUD do not necessarily extend into practice. One study found that senior psychiatry residents held more aversive stigma toward individuals with SUD than did junior residents and speculated that more contact may increase negative attitudes.⁵⁴ However, no information was collected on contact with SUD patients, leaving open the possibility that factors other than frequency of contact may explain the correlation.

The present study also found significant changes in perceptions of OUD in female pharmacy students. Although few studies have investigated the mediating effects of demographic characteristics, such as gender, on perceived stigma, some studies have found men held more stigmatizing views when compared to women toward people with mental health disorders and alcohol use.^{55–58} A recent study, however, which used vignettes of individuals described as either having "opioid use disorder" or as "addicts" found males held less stigmatizing beliefs (i.e. perceptions of dangerousness) and had less sympathy and concern when compared with females who evaluated the same vignettes.⁵⁹ Without additional research on the effects of gender on perceived stigma, these findings should be interpreted with caution. Although our sample lacked the necessary power to compare genders, future research should be conducted to examine the possible moderating effect of gender on perceived stigma. There is abundant room for further research determining how

gender may influence perceived stigma toward SUD and OUD. In conclusion, the evidence from this study further supports the inclusion of interactive presentations by persons in recovery in SUD educational programs for healthcare students. This creates a dynamic and interprofessional learning environment. To our knowledge, this is the first study to use a PRSS, who is particularly well-positioned to provide a dual perspective of a person who has struggled and succeeded in recovery, and a lay professional who helps others in their recovery.

There are several limitations to note in this study. First, the extent to which the study results can be generalized to other localities and geographical regions is limited, as this intervention was conducted with one class in a single university setting in an academic medical center. Second, this study was not a randomized sample with a control-group comparison which can threaten internal validity. Finally, the sample contained an unequal balance of female to male identifying participants and was unequal in racial/ethnic representation. Future research will focus on the possible mediating effects of age, ethnicity, and gender on stigma toward individuals with SUD and how this may affect the individual's treatment and subsequent recovery.

Conclusions

Our study demonstrated that a contact-based interactive education program facilitated by a PRSS improved perceived stigma among third-year pharmacy students and increased their awareness of stigmatizing beliefs held by the general population. Although our study lacked adequate power to compare gender, our results support other research that demonstrates gender moderates perceived stigma. The use of a PRSS provides the perspective of someone who has been through recovery coupled with the perspective of an individual who works with others in recovery.

Disclosure(s)

None.

CRedit authorship contribution statement

Christine R. Bakos-Block: Conceptualization, Writing – original draft. **Tamara Al Rawwad:** Data curation, Writing – original draft. **Marylou Cardenas-Turanzas:** Methodology, Visualization, Data curation, Validation. **Tiffany Champagne-Langabeer:** Writing – review & editing, Supervision.

Declaration of Competing Interest

None.

Acknowledgments

The authors would like to thank the pharmacy students who participated in this study and the peer recovery support specialist who facilitated the intervention.

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