

Original Research

First Year Student Pharmacists' Views on the Opioid Epidemic

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Article information

Received: January 11th, 2022; Accepted: January 25th, 2022; Published: January 27th, 2022

Cite this article

Hailemeskel B, Terefe T, Sun K. First year student pharmacists' views on the opioid epidemic. *Diabetes Res Open J.* 2022; 8(1): 1-5. doi: [10.17140/DROJ-8-152](https://doi.org/10.17140/DROJ-8-152)

ABSTRACT

Objective

To determine first-year student pharmacists' views on the opioid epidemic.

Methods

First-year pharmacy students were asked to complete an online survey to assess their views and opinions on the current opioid crisis using Likert-scale type questions.

Results

Forty-four pharmacy students were surveyed, and all participants completed survey questions, 100% response rate. Majority of participants were female (N=34, 77.3%), with more than half of participants falling in the age range of 18-24 (N=25, 56.8%). Geographically, most of the participants home residences are in other states out of the DC, Maryland, Virginia (N=25, 56.9%). In addition, majority of participants worked before starting pharmacy school (N=42, 95.5%) and a majority had a pharmacy and health-related occupations before pharmacy school (N=36; 81.9%). Most study participants reported an annual income of less than \$10,000 (N=17, 38.6%) and obtained a bachelor's degree (N=26, 59.1%). Majority of participants strongly agree that the opioid epidemic is becoming a severe crisis for society (N=42; 95.5%) and that opioid should be readily available when it is medically necessary to people (N=27; 61.4%). When asked if they know anyone personally who suffers from the opioid crisis, over three-quarter (N=34; 77.3%) said no. However, over two-third (N=29; 65.9%) of participants said that they have taken opioids in the past themselves to relieve pain. Although, almost all of them strongly agree that prescription opioids are addictive (N=42; 95.5%); about eighty percent (N=35; 79.5%) agree that taking opioids is an effective way to alleviate severe pain.

Conclusion

Our results indicate that pharmacy students perceive the opioid epidemic as a crisis and despite their views that opioids are addictive and knowing someone who suffers from opioid use disorder, they believe opioids are a clinically effective way to alleviate pain.

Keywords

Survey; Opioids; Epidemic; Students; Pharmacy.

INTRODUCTION

The opioid use and overdose rates have climbed tremendously in the United States (U.S.). According to the Centers for Disease Control and Prevention (CDC), the opioid epidemic is a multilayered crisis that has escalated over the years.¹ In the 1990's there was a marked increase in prescription opioid overdose deaths due to a false perception that painkillers were not addictive, in 2010 there was an increase in heroin-related overdose deaths, and in 2013 there was a rise in synthetic opioid overdose deaths.¹ The leading drive of opioid addiction has been known to be prescription medications, primarily prescribed to patients for chronic pain.²

However, data from 2018 to 2019 has shown that prescription opioid involved death rates decreased by nearly 7%, and synthetic opioid involved death rates have increased by 15%.³ More than 36,000 people died from overdoses involving synthetic opioids in 2019.⁴

Currently, pharmacists play a vital role in mitigating the opioid crisis, they are the most accessible healthcare providers. Pharmacists can directly impact opioid misuse by educating patients on the risks associated with opioids, being vigilant of signs of opioid misuse by patients, utilizing available prescription drug monitoring programs (PDMPs), serving as advocates for patients, and increasing naloxone access.⁵ Previous studies have shown that

pharmacists perceive the opioid pandemic as a crisis that has grown over the past decade despite increased regulation of prescription opioids to combat misuse and/or overuse.⁶ Pharmacists along with other healthcare providers play a dynamic role in combating the opioid crisis, therefore it is important to understand their views in order to implement change and interventions. Student pharmacists have numerous opportunities throughout their schooling to participate in community outreach and programs contributing to the prevention of opioid use disorder. Most previous studies explore pharmacists' and physicians' perceptions of the opioid crisis, but very few studies include students. The purpose of this study was to explore incoming first-year student pharmacists' views on the opioid epidemic.

METHODS

This study enrolled 44 incoming first professional year students from Howard University College of Pharmacy. Of the 44 students enrolled in this study, all students submitted responses, 100% response rate. The survey was optional, it was distributed to students during a drug information course. All questions, demographics, and responses were analyzed using Qualtrics. Survey questions consisted of 8 demographic questions and 7 questions using the Likert scale (Strongly agree to strongly disagree). Demographic data, including age, gender, state you live in, work experience, annual income, and education was collected through the survey. All results were analyzed using IBM Statistical Package for the Social Sciences (SPSS) and statistical analysis was completed using cross-tab and Chi-square Pearson analysis, with a *p*-value of less than 0.05 considered significant.

RESULTS

Forty-four pharmacy students from Howard University Pharmacy School were surveyed and all participants answered the survey questions to completeness (100% response rate). The demographic data of participants are shown in Tables 1 and 2. The demographics of participants were as follows: majority of participants were female (N=34, 77.3%), with more than half of participants falling in the age range of 18-24 (N=25, 56.8%). Most of the participant's home residences are other states out of the DC, Maryland, Virginia (DMV) area (N=25, 56.9%). In addition, majority of participants worked before starting pharmacy school at Howard University (N=42, 95.5%) and majority had pharmacy and health-related occupations before pharmacy school (N=36; 81.9%). Most study participants reported an annual income of less than \$10,000 (N=17, 38.6%) and obtained a bachelor's degree (N=26, 59.1%).

Table 1. Demographics of Participants (N=44)

		N (%)
Gender	Male	10 (22.7)
	Female	34 (77.3)
Age	18-24	25 (56.8)
	25-34	18 (40.9)
Home state before Howard	DC	4 (9.1)
	MD	12 (27.3)
	VA	9 (20.5)
	Others	19 (43.2)

Table 2. Demographics of Participants (N=44)

		N (%)
Have you worked before Howard	Yes	42 (95.5)
	No	2 (4.5)
Annual Income	<\$10K	17 (38.6)
	\$10-19K	7 (15.9)
	\$20-29K	3 (6.8)
	\$30-39K	8 (18.2)
	\$40-49K	3 (6.8)
	>\$49K	5 (11.4)
Type of Work	Pharmacy Related	27 (61.4)
	Non-Pharmacy Related	9 (20.5)
	Non-Pharmacy or Healthcare Related	7 (15.9)
How many years have you worked before Howard?	0	1 (2.3)
	<1 Year	7 (15.9)
	1-3 Years	14 (31.8)
	4-5 Years	11 (25.0)
	>5 Years	11 (25.0)
Highest level of Education	Prerequisite	12 (27.3)
	Associate	2 (4.5)
	BA/BSc	26 (59.1)
	MS or higher	4 (9.1)

Table 3. Frequency of Survey Responses (N=44)

	Strongly Agree and Agree	Disagree and Strongly Disagree	p values
I am aware that the opioid epidemic is becoming a severe crisis for the society.	42 (95.5)	2 (4.5)	<0.001
I believe that opioids should be/are readily available when it is medically necessary to people who want to take them.	27 (61.4)	17 (38.6)	<0.001
I personally know someone (family member, a relative, a friend, etc.) who suffers from opioid crisis.	10 (22.7)	34 (77.3)	<0.001
I have taken opioids in the past for myself to relieve pain.	15 (34.1)	29 (65.9)	<0.001
I believe taking opioid is an effective way to alleviate severe pain.	35 (79.5)	9 (20.5)	<0.001
I would let my family or children use/take opioids for chronic pain.	19 (43.2)	25 (56.8)	<0.001
I am aware that prescription opioids are addictive.	42 (95.5)	2 (4.5)	<0.001

Survey responses were presented based on frequencies and *p*-values are displayed in Table 3. Majority of participants strongly agree that the opioid epidemic is becoming a severe crisis for society (95.5%) and that opioids should be readily available when it is medically necessary to people (61.4%). Most students do not personally know someone who suffers from the opioid crisis (77.3%) and (65.9%) of participants have taken opioids in the past to relieve pain. Most strongly agree that taking opioids is an effective way to alleviate severe pain (79.5%) and many strongly agree that prescription opioids are addictive (95.5%). All survey responses were significant based on the *p*-values <0.001.

In Table 4 a Chi-square (χ^2) analysis was used to determine the significance of the association between demographics and students' opinions, defined as *p*-value<0.05.

Table 4. Demographic Variables in Association with Survey Responses

	p values
Age vs. strongly agree that opioids should be/are readily available when it is medically necessary to people who want to take them.	0.018
Age vs. strongly agree that taking opioid is an effective way to alleviate severe pain.	0.035
Years worked vs. strongly disagree that I have taken opioids in the past for myself to relieve pain.	0.026
Education vs. strongly agree that I am aware that the opioid epidemic is becoming a severe crisis for the society.	0.018

A total of 44 entry-level pharmacy students were surveyed. The demographics of participants were as follows: majority of participants were female (N=34, 77.3%), with more than half of participants falling in the age range of 18-24 (N=25, 56.8%). Most of the participants home residences are other states out of the DMV area (N=25, 56.9%).

Most participants worked before starting pharmacy school at Howard University (N=42, 95.5%) and majority had pharmacy and health-related occupations before pharmacy school (N=36; 81.9%). Most study participants reported an annual income of less than \$10,000 (N=17, 38.6%) and obtained a bachelor's degree (N=26, 59.1%).

Majority of participants strongly agree that the opioid epidemic is becoming a severe crisis for society (N=42; 95.5%) and that opioid should be readily available when it is medically necessary

to people (N= 27; 61.4%). Most students do not personally know someone who suffers from the opioid crisis (N=34; 77.3%) and (N=29; 65.9%) of participants have taken opioids in the past to relieve pain. Most strongly agree that taking opioids is an effective way to alleviate severe pain (N=35; 79.5%) and many strongly agree that prescription opioids are addictive (N=42; 95.5%). All survey responses were significant based on the *p*-values <0.001.

This table shows that when investigating whether age influenced whether participants believed opioids should be/are readily available when it is medically necessary to people who want to take them, majority of participants in the older age group (25-34) strongly agreed (N=15; *p*-value 0.018). Most of the study participants amongst both age groups (18-24, 25-34) strongly agree that taking opioids is an effective way to alleviate severe pain (N=34; *p*-value 0.035). The number of years worked influenced whether participants have taken opioids in the past to relieve pain; those who had 3 or fewer years of work experience strongly disagree compared to those who have over 3-years of work experience (0-3 years N=18 *vs.* >3-years N=11; *p*-value=0.026). Education level showed a significant association with majority of students in each subgroup strongly agreeing that the opioid epidemic is becoming a severe crisis for the society (BA/BSc or higher N=32 *vs.* prerequisite/associate N=10; *p*-value=0.018).

DISCUSSION

The opioid epidemic is a major widespread public health crisis that continues to rise at an alarming rate. Pharmacists play a vital role in the opioid crisis because of their accessibility, education, and their unique relationship with patients. Pharmacists have served to mitigate the opioid crisis through appropriate consultation of medications, educating patients on opioid risks, dispensing naloxone, and utilizing the prescription drug monitoring program. Nearly 1.6 million people had an opioid use disorder in the past year and 70, 630 people have died from a drug overdose in 2019.⁷

Overall, this study aimed to explore the opinions and views of student pharmacists on the opioid epidemic. In this study, we noticed that majority of participants strongly agree that the opioid epidemic has become a severe crisis for society (N=42, 95.5%), similar to opinions seen in research conducted by Skrabal et al.⁸ Their study investigated pharmacy students' perspectives regarding opioid use, the opioid crisis, and pharmacy education related to both topics. In the Skrabal et al⁸ study, 99% (N=147) of students

ranging from P1 to P4 agreed that there is an opioid crisis. The findings of this study confirm that despite demographics, study participants agree that the opioid epidemic is an issue that is affecting society.

Studies have been conducted reviewing the impact of the opioid crisis on the community. Numerous variables have fueled the increase of opioid abuse and overdose across communities in the U.S., variables including poverty, unemployment, over-prescription of drugs, and easier access to treatment facilities.⁹ Opioid addiction and overdose have been studied for decades now, especially exploring opioid use trends and risk factors associated with demographics.

In our study, over one-third (N=17; 38.6%) of participants disagree that opioids should be readily available when it is medically necessary to people. All study participants are first-year pharmacy students who have yet to study the effects and benefits of opioids so this finding may be due to a lack of knowledge about opioids' place in therapy. This is reflective with the findings in Table 4 when exploring whether age influenced participants belief on opioids being readily available when it is medically necessary to people, it was noted that majority of participants in the older age group (25-34) strongly agreed (N=15; *p*-value 0.018).

Over three-quarter of the students said that they do not personally know someone who suffers from the opioid crisis (N=34; 77.3%). This outcome is contradictory to current data that shows nearly a third of Americans say they know someone who has suffered from an opioid addiction.¹⁰ The findings of this study may not be an accurate depiction of this due to the limited sample size the young age range of the participants which can increase variability in results.

About two-third (N=29; 65.9%) of participants have not taken opioids in the past to relieve pain. Considering the limited sample size, these findings is much higher comparing to data for overall U.S. adult population which is about 5% who have taken opioids or some sort of prescription painkillers.¹⁰ Although opioid therapy is an effective way to alleviate chronic and acute pain, some individuals are hesitant to initiate therapy due to the highly addictive nature of opioids. This is indicated in this study with majority strongly agreeing that prescription opioids are addictive (N=42; 95.5%).

In this study, we also found that most participants strongly agree that taking opioids is an effective way to alleviate severe pain (N=35; 79.5%). Further analysis comparing demographics with survey responses also showed that most of the study participants amongst both age groups (18-24, 25-34) strongly agree that taking opioids is an effective way to alleviate severe pain (N=34; *p*-value 0.035). However, when investigating whether years worked influenced whether participants have taken opioids in the past for themselves to relieve pain, those who had 3 or fewer years of work experience have not taken opioids as much to relieve pain compared to those who have over 3-years of work experience (0-3-years N=18 *vs.* >3-years N=11; *p*-value=0.026).

Education level also showed a significant association with

majority of students in each subgroup strongly agreeing that the opioid epidemic is becoming a severe crisis for the society (BA/BSc or higher N=32 *vs.* prerequisite/associate N=10; *p*-value=0.018). Advance education is believed to allow individuals to have more exposure to information and controversial issues in society. It is not alarming that more individuals with advanced degrees strongly agree that opioid misuse has become an issue comparing to their counterparts.

It should be noted that some of the results of this study showed no statistical significant association in the state where a student resided before joining Howard and the kind of occupation a student had, whether pharmacy related, non-pharmacy related, or non-pharmacy/non-health related.

There were various limitations in this study. One of the most vital limitations is that the sample size was relatively small (N=44) and the study participants were from one pharmacy school. Future studies conducted should have a larger sample size to increase generalizability and appropriately evaluate the views of professional students on the opioid crisis. In addition, all participants were entry-level first-year pharmacy students, and they may have limited knowledge of opioids. In the future, it will be beneficial to extend the study to all level pharmacy students to precisely depict the opinions based on knowledge and background of opioid use disorder.

CONCLUSION

Despite key health care providers working together to combat the opioid epidemic, the crisis is still growing with increases in opioid misuse and related overdoses. In this study, a survey was conducted to analyze the views of first-year pharmacy students on the current opioid epidemic. Majority of participants agreed that the opioid epidemic has become a severe crisis to society. Despite majority agreeing that opioids are addictive, they believe taking opioids is an effective way to alleviate severe pain.

Indicated by the findings of this study, participants believe that opioids are addictive but are an effective way to alleviate severe pain. Student pharmacists are in favor of allowing opioids to be readily available when it is medically necessary to people. Remarkably and unlike the data from the U.S., majority of participants said that they do not know someone who suffers from the opioid crisis.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

ETHICAL CONSIDERATIONS

This study has been approved by the Howard University (HU) Institutional Review Board (IRB)

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