Psychiatric Nurse Practitioner Students' and Alumni Attitudes toward Individuals with Opioid Use Disorder

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Abstract
Background: Medications for opioid use disorder (MOUD) are underutilized, partly due to provider-based stigma. In this cross-sectional study, we evaluated the attitudes of psychiatric mental health nurse practitioner students' and alumni associated with opioid use disorder (OUD) and MOUD. **Methods:** The Perception of Opioid Use Survey and five questions from a subscale of the SUD-C Harm Reduction Training Pre-Training Survey were administered to psychiatric mental health nurse practitioner students and alumni from a large public university.
Results: In 52 surveys (55.9% response rate), among students, greater stigma was found with the Social Attitudes subscale (p = .063, Cohen's d = 0.65) and the SUD-C Harm Reduction Training Pre-Training Survey (p = .054, Cohen's d = 0.59). Individuals with a personal experience of OUD or with a family member or friend with OUD had higher scores on the Community Impact subscale (r = .26, p = .065).
Conclusions: Further research is needed to address stigma associated with OUD and MOUD and to increase access to evidence-based treatment.
***Keywords**:* opioid use disorder, psychiatric mental health nurse practitioner students, stigma, social attitudes

Background

Opioid use disorder (OUD) and opioid-related deaths present a public health crisis. In the U.S in 2022, 6.1 million individuals aged 12 and over (2.2% of the U.S. population) were estimated to have had OUD in the past year (Substance Abuse and Mental Health Services Administration [SAMHSA], 2023a), a sharp increase from the 5.6 million with OUD in 2021 (SAMHSA, 2022). Deaths from OUD are also increasing each year, worsened by adulterants such as fentanyl and xylazine (Alexander et al., 2022; Neville & Bonfim, 2023); during the 12 months ending in March 2023, overdose-related deaths increased by more than 46% to nearly 110,000 (National Vital Health Statistics System, 2023). OUD is a chronic, relapsing, potentially deadly disease, and evidence-based treatment such as medications for OUD (MOUD) should be a priority for recovery and for prevention of overdose mortality. Fortunately, the Food and Drug Administration (FDA) has approved three safe and effective MOUD that reduce mortality and improve psychosocial functioning (Ling et al., 2020; Ma et al., 2019): methadone, naltrexone, and buprenorphine. Although all three are effective, buprenorphine has the best safety profile (Jones, 2004), and it is available in long-acting forms that may promote adherence (Lofwall & Fanucchi, 2021). Nevertheless, MOUD are highly underutilized. In 2022, according to SAMHSA (2023a), only 18.3% of individuals in the U.S. with OUD received MOUD, and this low rate represents a decline from 22.1% in 2021 (SAMHSA, 2022).

Recent efforts have therefore been made to expand access to MOUD treatment. The Consolidated Appropriations Act of 2023 eliminated the Drug Addiction Treatment Act of 2000 DATA waiver for the prescription of buprenorphine, and it reduced the training for advanced practice registered nurses (APRNs) and physician associates (PAs) to prescribe buprenorphine from 24 to 8 hours (SAMHSA, 2023b, 2024a, 2024b). All providers registered by the Drug Enforcement Agency are now required to meet the 8-hour training requirement by their next registration, which increases the number of potential buprenorphine prescribers from 130,000 to 1.8 million (Muoio, 2023). However, social stigma associated both with individuals who have OUD and with the use of MOUD remains a significant barrier to treatment (Hooker et al., 2023; McCollum et al., 2023; Phoenix et al., 2023; Speight et al., 2023; Spetz et al., 2021; Sulzer et al., 2022). This stigma manifests as part of individuals' attitudes toward people, ideas, or activities to become a complex social phenomenon that includes labeling, bias, and negative stereotypes. It informs health care providers' view of OUD and MOUD, limits patients' access to OUD treatment, and leads to poorer health outcomes (Allen et al. 2019; Hooker et al., 2023). Among providers, the stigmatization of individuals with OUD is referred to as provider-based stigma (Pescosolido & Martin, 2015), and it includes several major themes. One is the common misunderstanding or belief that OUD is a moral failing rather than a chronic, relapsing disease (Phoenix et al., 2023; Woo et al., 2017). Another major stigmatizing belief is that MOUD do not treat a chronic illness, reduce mortality, or improve psychosocial functioning, and that they simply replace one drug for another (Speight et al., 2023; Woo et al., 2017). Often this belief is accompanied by the assumption that patients who seek MOUD are simply trying to achieve a "high" (Speight et al. 2023; Spetz et al., 2021). Such stigma is perpetuated by resistance or lack of support from providers' colleagues, especially in rural as opposed to urban areas (24.5% vs. 15.6%, respectively; Andrilla et al., 2020). Indeed, some providers have suggested that the

provision of MOUD will attract other patients who are seeking opioids (Phoenix et al., 2023). Ultimately, provider-based stigma is driven by misunderstanding or lack of knowledge about OUD, the efficacy of MOUD, and about communities' need for OUD treatment (Sulzer et al., 2022). Fortunately, research does suggest that education can reduce stigma toward individuals with OUD. A literature review of medical school and APRN programs that provide OUD education has demonstrated that OUD education reduces stigma and improves providers' knowledge, confidence, and intentions to work with individuals with OUD (Meadows et al., 2024).

Along with stigma, lack of self-efficacy for managing buprenorphine is a commonly reported barrier to OUD treatment, particularly among those who have never prescribed buprenorphine. Andrilla et al. (2020) found that 38.2% of providers who had never prescribed buprenorphine reported lack of confidence as a barrier, compared to only 13.8% of providers who had prescribed buprenorphine. In addition to stigma improving with education and exposure to individuals with OUD, research shows that confidence may also improve with OUD education and experience working with this population. McCollum et al. (2023) found that 97% providers reported improved confidence in buprenorphine treatment overtime, 67% of which reported experience was the main factor for this increase in confidence.

Researchers have examined barriers and facilitators related to the use of MOUD as well as stigma related to OUD, but most research has focused on the combined attitudes about OUD among physicians, APRNs, and PAs. Little research focuses specifically on APRNs, which is important since APRNs are well equipped and necessary to combating the opioid epidemic and may have a more profound impact in rural areas where access to MOUD is limited (Andrilla & Patterson, 2022). Previous research shows that when the DATA waiver was still required to prescribe buprenorphine, APRNs were both obtaining the waiver and prescribing buprenorphine at higher rates than physicians (Andrilla et al., 2018; Andrilla & Patterson, 2022). There is also little research on the attitudes of psychiatric-mental health nurse practitioner (PMHNP) students and recent graduate PMHNPs. In this study, we focus specifically on PMHNPs specifically since they are more likely to manage substance use disorders than are other APRNs (Kameg et al., 2020). In this cross-sectional study, we present the results of a cross-sectional survey of PMHNP students and alumni designed to ascertain their attitudes with respect to individuals with OUD and the use of MOUD.

Our hypotheses for this research were as follows: (a) stigma toward individuals with OUD can be reduced by education on OUD treatment; (b) increased self-efficacy for managing OUD is inversely related to negative social attitudes toward individuals with OUD; and (c) having a close family member, friend, or personal experience with OUD is related to stigma toward individuals with OUD.

Methods

Prior to all data collection, human subjects approval was obtained from the University of Texas at Austin's Internal Review Board (Study Number 00004718). To be eligible, individuals had to be currently enrolled in the School of Nursing's PMHNP program or members of the

graduating classes of 2018–2023, because the Medication Access and Training Expansion Act of 2021 (MATE) allows all APRNs who have graduated within 5 years from 2023 to prescribe buprenorphine without further training or additional licensing requirements (SAMHSA, 2024a). We separated students and alumni into groups because students had not completed OUD education while the alumni groups had. Alumni were dichotomized into two groups, those who graduated in 2018–2020 and in 2021–2023, so that we could evaluate whether more clinical experience influenced outcomes. Other inclusion criteria were the abilities to provide consent and to read and write in English. In total, 11 current students, 38 students in the graduating classes of 2021–2023, and 44 students in the graduating classes of 2018–2020 were invited to participate in the survey. Table 1 summarizes the participants' demographic characteristics.

Sociodemographic Characteristics Table

Table 1

Demographic Characteristics	Full sample $N = 52$	
	n	%
Gender		
Female	32	73.1
Male	11	21.2
Genderqueer/ Gender non-conforming	1	1.9
Prefer not to answer	2	3.8
Race		
Asian	3	5.8
Black	4	7.7
White	40	76.9
More than one race	2	3.8
Prefer not to answer	3	5.8
Ethnicity		
Hispanic	5	9.6
Non-Hispanic	45	86.5
Prefer not to answer	2	3.8
Family member, friend, or personal experience with OUD		
Yes	24	46.2
No	28	53.8

Note. This table represents the sociodemographic characteristics of our sample

On the survey platform Qualtrics, the Perception of Opioid Use Survey (POUS; Burton et al., 2021) and a subscale with five questions from the SUD-C Harm Reduction Training Pre-

Training Survey (SUD-C; Sulzer et al., 2022) were distributed to current PMHNP students as an extra credit opportunity during one of their in-person lectures at the school of nursing. PMHNP alumni were identified through the School of Nursing's alumni email list serve and invited to complete the survey via email. Missing data and incomplete surveys were excluded in the analyses.

Instruments

The following instruments were used to measure attitudes and stigma regarding individuals with OUD and the utilization of MOUD treatment.

The Perception of Opioid Use Survey. The POUS, designed to measure nursing knowledge, attitudes, and perceptions related to OUD, includes four subscales: Self-Efficacy, Social Attitudes, Community Impact, and Causative Factors (Burton et al., 2021), with higher scores indicating greater confidence related to caring for individuals with OUD (8 to 56), lower social bias (7 to 49), greater understanding of the local impact of OUD (3 to 21), and more knowledge about the events that caused the opioid epidemic (4 to 28), respectively. The POUS consists of 7-point Likert scale questions and total POUS scores range from 22 to 154, with higher scores indicating lower stigmatizing beliefs. Burton et al. (2021) have reported internal consistency with Cronbach's alpha = .550 overall: for Self-efficacy, Cronbach's alpha = .796; for Social Attitudes, .774; for Community Impact, .806; and for Causative Factors, .763.

The SUD-C Harm Reduction Training Pre-Training Survey. We used five questions from the SUD-C Survey (Sulzer et al., 2022) to measure attitudes specific to MOUD as a harm reduction intervention. Items are scored on a 4-point Likert scale, and scores range from 5 to 15, with higher scores indicating greater stigma and disagreement with harm reduction interventions. (Sulzer et al. (2022) found that the survey demonstrated high internal consistency (Cronbach's alpha = .83).

Personal Experience with OUD. Because previous research identified that attitudes toward individuals with OUD may be influenced either positively or negatively after experience with a loved one with OUD (Phoenix et al., 2023), we added the following question in order to examine whether the attitudes of PMHNP students and alumni were influenced by having a personal experience of OUD or a family member or friend with OUD: "Do you have a family member, friend, or personal experience with OUD?"

Statistical Analysis

To provide estimates of power, we employed an Independent Samples *t* test and Pearson correlations using GPower. This study has been powered to test study Hypotheses 1 and 2 and rely on data from Burton et al. (2021). The Burton et al. (2021) study participants were 306 adult nurses (18 or older) working at an acute care community hospital. A primary outcome measure for Hypothesis 1 is the 8-item Self-Efficacy subscale. The mean score for Self-Efficacy was 43.75 $\pm$ 7.49. For the proposed study, sample sizes for the current class and for each of the two graduated groups will be approximately 10 and 40, respectively (total $N = 90$). A *t* test comparing current students to one of the graduated groups demonstrated power =.80 with effect size $d = 1.01$ at alpha =

.05 (two-tailed) to detect a group difference of 7.30 points. For Hypothesis 2, for a *t* test to detect a difference from $r = 0$ at alpha = .05 (two-tailed), power = .80 with $N = 90$ for study r of at least .30; for $N = 80$, power = .80 for study r of at least .35.

Frequency distributions, means, and standard deviations were computed for all study measures. Distributions of the POUS total score and subscale scores as well as the total score on the five-item SUD-C Survey were examined for outliers and for significant deviations from normality. Statistical significance was set at alpha <.05 (two-tailed). If Kolmogorov-Smirnoff tests indicated significant deviations from normality, bootstrap simulations were used to assess underlying distributions for normality. Kolmogorov-Smirnoff tests of simulated data indicated significant non-normality for the POUS Social Attitudes subscale and for the SUD-C Survey. For these scales, Kruskal-Wallis Tests were used to test group differences between current students, 2021–2023 graduates, and 2018–2020 graduates, and Spearman's rho (r_s)was used for correlations. For all other scales, analysis of variance was used to test group mean differences, and Pearson product–moment coefficients (r) were used for correlations. Pairwise a priori contrasts were used to compare scores of the current class with scores for 2021–2023 graduates and for 2018–2020 graduates. Cohen's *d* is reported for trend-level mean differences ($.05 > p \leq .10$). Analyses were conducted using SPSS version 29 (IBM Corp, Armonk, NY).

Results

A total of 52 PMHNP students and alumni (55.9% response rate) completed the survey: 10 current students, 23 alumni from classes 2021–2023, and 19 alumni from classes 2018–2020. Participants were predominantly female (73.1%) and White (76.9%), and 46.2% of participants had a family member, friend, or personal experience with OUD. Internal reliability for the current study was assessed with Cronbach' alpha: POUS Total score, .70; POUS subscales Self-Efficacy, .70; Social Attitudes, .60; Community Impact, .75; and Causative Factors, .68. For the combined four SUD-C items, alpha = .37. Based on published results for the POUS Self-Efficacy subscale, a *t* test comparing current students ($n = 10$) to one of the graduated groups ($n = 40$) demonstrated power =.80 with effect size $d = 1.01$ at alpha = .05 (two-tailed) to detect a group difference of 7.30 points.

For our first hypothesis, that stigma toward individuals with OUD would be reduced by education on OUD treatment, we present means, standard deviations, and *p* values of test results in Table 2. For POUS Social Attitudes, there was a non-significant trend toward less social bias ($p = .063$) in the 2021–2023 classes (median = 48.00) than in the current class (median = 45.50), with a medium effect size (Cohen's $d = 0.65$). For the SUD-C Survey, there was a non-significant trend toward less stigmatizing beliefs related to MOUD ($p = .054$) in the 2018–2020 classes (median = 5.00) than in the current class (median = 6.00), with a medium effect size (Cohen's $d = 0.59$). When we compared total POUS scores for current students ($M = 129.30$, $SD = 6.43$) and alumni, there were no statistically significant ($p = .417$) relationships. Similarly, there were no statistically significant relationships when we compared the Self-Efficacy, Community Impact, or Causative Factor subscale scores for current student and alumni. See Table 2 for details.

Table 2. Comparison of POUS and SUD-C Survey Responses Among Groups

	Class									
Measure	**Current (*n* = 10)**		**2021-2023 (*n* = 23)**		**2018-2020 (*n* = 19)**		**Subscale Score Ranges**	**Overall**	**Current v. 2021-2023**	**Current v. 2018-2020**
	M	***SD***	***M***	***SD***	***M***	***SD***		***p***	***p***	***p***
POUS										
Self-Efficacy	47.70	4.52	49.04	4.81	48.79	7.23	8-56	.825	.542	.631
Social Attitudes	45.50	2.76	46.43	3.48	47.26	2.64	7-49	.178	.063	.217
Community Impact	15.10	1.97	15.61	4.08	15.32	2.65	3-21	.910	.684	.867
Causative Factors	21.00	4.11	22.00	3.29	22.74	3.86	4-28	.480	.475	.231
Total	129.30	6.43	133.09	10.22	134.11	9.54	22-154	.417	.292	.196
SUD-C	6.30	1.89	5.48	0.85	5.47	1.07	5-15	.144	.107	.054

Note. POUS: Perception of Opioid Use Survey, higher scores indicate lower stigma; SUD-C: SUD-C Harm Reduction Training Pre-Training Survey: subscale of 5 questions, higher scores indicate greater stigma.
ANOVA and *a priori* contrasts were used for POUS Self-Efficacy, Community Impact, Causative Factors, and Total; Kruskal-Wallis Test and *a priori* contrasts were used for POUS Social Attitudes and SUD-C.

For our second hypothesis, that increased self-efficacy for managing OUD would be inversely related to negative social attitudes toward individuals with OUD, we found that Social Attitudes toward people with OUD and Self-Efficacy to treat OUD were not correlated (r_s = .04, p = .795).

For our third hypothesis, that having a close family member, friend, or personal experience with OUD would be related to stigma toward individuals with OUD, correlations between the dichotomous variable "Do you have a family, friend, or personal experience with OUD" and study measures are presented in Table 3. There was a non-significant trend (p = .065) for OUD experience to be associated with more understanding of the local impact of OUD on the Community Impact subscale, r = .26. Correlations ranging from .10 to .29 are considered small effects and those from .30 to .49 as medium effects (Cohen, 1988). No other findings related to experience with OUD were associated with scores on the SUD-C Survey or any POUS

subscales: Self-Efficacy, r = .17, p = .236; Social Attitudes, r_s = .22, p = .222; Causative Factors, r = -.11, p = .458; total POUS, r = .21, p = .143; SUD-C Survey, r_s = -.08, p = .593.

Table 3. Influence of Personal Experience with OUD on Instrument Subscales

	r	***r_s***	***p***
POUS			
Self-Efficacy	.17		.236
Social Attitudes		.22	.222
Community Impact	.26		.065
Causative Factors	-.11		.458
Total	.21		.143
SUD-C		-.08	.593

Note. POUS: Perception of Opioid Use Survey; SUD-C: SUD-C Harm Reduction Training Pre-Training Survey; *r*: Pearson correlation coefficient; r_s: Spearman correlation coefficient.

POUS item "Do you have a family member, friend, or personal experience with OUS?" was coded 0 = No, 1 = Yes.

Exploratory Analyses

Correlations among POUS subscales revealed that higher scores on Community Impact were associated with higher scores on Causative Factors, r = .35, p = .012. Correlations between the SUD-C Survey and POUS scales indicated that lower SUD-C Survey scores were associated with higher scores on POUS total, r = -.49, p < .001; Community Impact, r = -.29, p = .039; and Causative Factors, r = -.42, p = .002.

Discussion

To our knowledge, this is the first study to use the POUS and SUD-C Survey and to examine whether personal experience with OUD or having a friend or family member with OUD influences attitudes about OUD in PMHNP students and alumni. For our first hypothesis, that stigma toward individuals with OUD could be reduced by education on OUD treatment, there was a nonsignificant trend for higher stigma scores in current students than in alumni on the Social Attitudes subscale and the SUD-C Survey. Even though we detected some class differences with medium effect sizes, we were underpowered to demonstrate statistical significance. Possible explanations for differences in stigma scores might be that current students have not completed their OUD education or that clinical practice may reduce stigma. The survey was offered to current students during the first week of their fall 2023 semester, who had two semesters remaining that included most of the OUD curriculum. The study's PMHNP program has extensive OUD curricula, with a total of 7 didactic hours, 9 hours of simulation activities, and 20 clinical hours dedicated to patients with addiction. This is far greater than the average amount of substance use disorder (SUD) curricula in APRN programs of 7.3 hours (Savage et al., 2018), as well as the minimum amount of SUD content needed to meet the new Medication Access and Training Expansion Act of 2021 (MATE) Training requirements. Compared with participants in

Burton et al.'s (2021) POUS validation study, our sample showed much lower stigma on the Social Attitudes subscale, indicating less social bias related to OUD. Burton et al.'s sample (2021) included 306 adult nursing staff in an acute care community hospital in Northern Virginia. On the Social Attitudes subscale, current students in our study scored $M = 47.70$, $SD = 4.52$, whereas the validation study's nurses scored $M = 21.54$, $SD = 7.57$; scores on the other subscales did not notably differ. Although the difference in these scores does not represent a direct comparison, it demonstrates that both samples indicate similar beliefs about events that have led to the opioid epidemic, how their community has been affected by it, and their confidence in managing medications and caring for patients with OUD. However, underlying biases may differ between these two groups.

For our second hypothesis, we expected that greater self-efficacy would be related to less social bias toward individuals with OUD, and thus lower stigma, but our results did not support this hypothesis. Previous research shows that lack of confidence is a major barrier to using MOUD, but that this can be improved with education and exposure to individuals with OUD (Andrilla et al., 2020; McCollum et al., 2023). Myles et al. (2023) found that increased provider confidence in managing buprenorphine treatment was a strong predictor of higher buprenorphine prescribing. However, in the present study, we did not compare self-efficacy and practices for prescribing buprenorphine, which may better illustrate the relationship between self-efficacy and social bias.

For our third hypothesis, that having a close family member, friend, or personal experience with OUD would be related to stigma toward individuals with OUD, results indicated a nonsignificant trend in which those with OUD experience (personal, family, or friend) had higher scores on the Community Impact scale, indicating a greater understanding of the community impact of OUD. We expected that having some experience with OUD would generate more awareness of the impact of OUD in the community. Although there was no significant difference on any other subscale between people with experience with OUD and those with no experience with OUD, previous research has shown that attitudes toward individuals with OUD can be influenced either positively or negatively through direct experience with OUD (Phoenix et al., 2023). Our results did not demonstrate a difference in attitudes or bias toward individuals with OUD or MOUD.

Stigma toward individuals with OUD is harmful because it can hinder access to life-saving interventions; it can delay initial treatment seeking or lead patients to discontinue treatment and distrust healthcare (Woo et al., 2017). Carl et al. (2023) has found that individuals reported more opioid-related consequences when they met with negative comments about MOUD from SUD treatment providers. Stigma may also have a greater impact in certain geographic regions. Davis et al. (2023) found that rural populations experience more stigma toward OUD and harm reduction interventions such as MOUD than do those in urban areas. To achieve substantial increases in MOUD treatment initiation and adherence, providers must offer compassionate care and patient education to demystify OUD treatment myths.

Previous research shows that OUD education may help lower stigmatizing beliefs toward individuals with OUD. Sulzer et al. (2022) found that after an 8-hour educational intervention,

providers showed improvements in stigma toward individuals with OUD. Similarly, Elliott et al. (2021) found that DNP students' stigma scores improved after 16 hours of clinicals at a medication-assisted treatment center. Phoenix et al. (2023) also found that APRNs' attitudes changed when participants were exposed to individuals with OUD, particularly via clinical exposure. They also found that simulation activities improved attitudes, with more students reporting intentions to provide MOUD after simulations. Salvador et al. (2023) found that having students (pre-licensure physicians, physician assistants and psychiatric nurse practitioners) shadow an expert in OUD treatment improved students' confidence, knowledge, and interest in working with patients with OUD. However, some literature has found that exposure to personal stories of individuals with OUD may not be robust enough to facilitate improvements in stigma. Hooker et al. (2023) compared stigma levels between providers who completed an OUD education module and providers who completed the same OUD education plus exposure to personal narratives of experience living with OUD. They found no significant differences in stigma scores between the two groups, and they recommended that future studies use a more overt approach to emphasize the impact of stigma on individuals with OUD. OUD education must therefore address stigma by exposing students to individuals with OUD through direct clinical contact, simulations, and shadowing opportunities, because didactic education and personal narratives alone may not improve attitudes enough to yield increases in buprenorphine prescribing.

Limitations

This study has several limitations. Participants were PMHNP students and alumni at one university, resulting in a small, relatively homogenous, convenience sample. In addition, students might be attracted to the PMHNP program at this university because of its strong OUD framework, with faculty who are addiction experts. Another limitation is social desirability response bias. The survey's questions might not have prevented participants from detecting the purpose or motivation of the study. Hooker et al. (2023) has also reported challenges in measuring stigma because of social desirability bias. Individuals who responded to the survey might be more motivated by our topic and be less likely to hold stigmatizing beliefs about individuals with OUD. From the total population of current students and alumni since 2018, responses were missing from 1 current student, 15 alumni from classes of 2021–2023, and 25 alumni from classes of 2018–2020. Total stigma would be better illustrated if the results had included attitudes of those who did not respond to the survey. Although we used validated measures to assess attitudes about treating individuals with OUD and MOUD, we did not examine whether lower stigma might be correlated with increased prescribing of MOUD. Also, students were offered extra credit for participation in the study, which could have created an implicit response bias from the currently enrolled student participants. The surveys that we selected may detect explicit bias, but we did not explore implicit bias or prescribing practices of buprenorphine. Due to a clerical error, one item ("Substance use disorder treatment should only be given to opioid users who intend to give up opioids for good") from the POUS was not included in the online survey. Despite these limitations, this research contributes to the literature by providing previously unknown information related to PMHNP students' and practicing PMHNPs' attitudes and stigma toward people with OUD and MOUD, which is important since PMHNPs are likely to care for individuals with OUD. Our findings show that having personal

experience with OUD or a loved one with OUD is associated with more awareness of OUD in the community.

Public Policy Recommendations

It is important for APRNs to maintain a thorough understanding of OUD and its treatment, especially since APRNs often care for underserved populations, such as those living in rural communities where access to MOUD is scarce. APRNs should also be aware of emerging policy related to SUD, such as the recent removal of the DATA waiver and modified training requirements. Currently, there are no legally binding standards for OUD education. In the 2022 National Drug Control Strategy, The Office of National Drug Control Policy (2022) recommended that all medical schools, PA schools, and APRN schools establish SUD curricula. In response, SAMHSA released recommended core curricular elements for SUD training. These include screening and diagnosing SUD, the FDA-approved medications for SUDs, effective treatment planning, pain management, and substance misuse (SAMHSA, 2023b). This is an important framework for medical school, PA school, and APRN program directors to follow when they add further SUD training. However, this training is not yet required. Because the MATE Act allows all providers who have graduated from one of these programs within the past 5 years to prescribe buprenorphine without any further training, future regulations should require all medical school, PA, and APRN programs to have at least 8 hours of SUD curricula. This will prepare all providers to manage SUD, including OUD, using evidence-based practices.

Areas for Future Research

Since previous research shows that providers with greater stigma toward individuals with OUD also report lower willingness to provide buprenorphine treatment (Hooker et al., 2023), future studies should continue to explore whether lower PMHNP stigma is correlated with increased utilization of buprenorphine. Future research is also needed to explore the relationship between self-efficacy and prescribing practices of buprenorphine. Qualitative studies examining the experiences of PMHNPs in providing MOUD treatment in various settings are needed. Future research should further explore the impact of having a family member, friend, or personal experience with OUD and how it influences attitudes about individuals with OUD and the prescribing of buprenorphine. Stigma should also be examined and compared across other graduate nursing specialties. Like OUD, SUDs are common across different patient populations, and so it is crucial to examine providers' attitudes across specialties in order to expand access to buprenorphine treatment. Finally, future research should explore other ways to increase access to buprenorphine and address barriers to prescribing buprenorphine now that the DATA waiver is no longer required.

Conclusions

In this study, we have compared attitudes of PMHNP students and alumni from classes 2018 to 2023 at the University of Texas at Austin. Our data show nonsignificant trends toward higher stigma scores in current students than in the alumni classes from 2021–2023 on the Social Attitudes subscale and higher stigma scores in the current students than in the alumni classes of

2018–2020 on the SUD-C Survey. There was also a nonsignificant trend among individuals with a family member, friend, or personal experience with OUD having higher scores on the Community Impact subscale. The opioid overdose crisis is urgent, and provider-based stigma is a major barrier for individuals seeking OUD treatment. Therefore, OUD education is important for PMHNPs and other APRN specialties and must also include targeted strategies to improve attitudes toward individuals with OUD and prescribing MOUD; this includes offering OUD simulation activities, clinical opportunities with individuals with OUD, and structuring curricula based on the SAMHSA (2023b) recommended core curricular elements for SUD training. Improving OUD education and stigma is an important step to increasing access to evidence-based treatment for individuals with OUD.

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