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Opioid Overdose Prevention and Naloxone Training Among College Students

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Abstract

Background: Opioid abuse is a serious national crisis affecting both public health and economic welfare across the United States. In Tennessee, more than 1,800 overdose deaths were reported in 2018, with nearly 20% of those deaths occurring in Davidson County alone. The number of overdose deaths in Nashville has steadily risen amidst the COVID-19 pandemic by approximately 32% since 2019 to a total of 619 fatal overdoses in 2020, making it the city's deadliest year on record. ***Review of evidence:*** Research shows that intranasal (IN) naloxone training is an effective approach to combating the opioid overdose crisis and can be employed in a variety of populations. Many college-aged students report personal knowledge of peers who have used opioids recreationally, uniquely positioning university students as potential first responders to overdose emergencies. ***Purpose:*** The goal of this scholarly project was to test the hypothesis that an opioid overdose prevention education and IN naloxone training program targeted towards undergraduate students would increase knowledge and improve confidence and attitudes in participants' ability to recognize and respond to an opioid overdose emergency. ***Project design:*** This cross-sectional, quasi-experimental project utilized an anonymous pretest/posttest design to assess change in knowledge and attitudes before and after a targeted opioid overdose education and IN naloxone training intervention. Data for this scholarly project was collected using an adaptation of the Opioid Overdose Knowledge Scale (OOKS) and Opioid Overdose Attitudes Scale (OOAS). ***Results:*** A total of 39 (n = 39) students participated in this project's pretest, naloxone education and training intervention, and posttest. Students' overall scores improved from pretest to posttest by 13.86% ($p < .001$) on average. ***Conclusion:*** As the number of opioid overdose deaths surges amidst the COVID-19 pandemic, it is imperative that persons who may be likely to witness an overdose event are educated on the opioid crisis and trained in overdose response with IN naloxone. Data gathered in this scholarly research project supports the need for increasing awareness and education in college students about opioid overdose and response. Other universities should consider implementing

similar opioid overdose education and IN naloxone training as it has been shown effective in preparing students to recognize and respond to an opioid overdose emergency and could ultimately help save a life.

***Keywords**:* opioids, naloxone, opioid overdose, overdose prevention, overdose response, attitudes, knowledge, training, students, college, university

Introduction and Background

Since 1999, nearly 450,000 persons in the U.S. died from opioid related overdoses (The Centers for Disease Control and Prevention [CDC], 2020a). Opioid abuse is a serious national crisis affecting both public health and economic welfare. The CDC estimates the total economic burden of prescription opioid misuse alone in the U.S. is $78.5 billion a year (Florence et al., 2016). This includes the costs of healthcare, lost productivity, addiction treatment, and criminal justice involvement. Unfortunately, the disruption to daily life as a consequence of the COVID-19 pandemic has resulted in a surge in U.S. overdose deaths. In fact, more than 81,000 overdose deaths were reported in the 12 months ending in May 2020, making it the highest number of deaths ever recorded in a 12-month period in the U.S. (CDC, 2020b).

The increase in opioid overdose deaths at the start of the COVID-19 pandemic is thought to be caused by several factors. First, the pandemic caused disruptions in treatment and recovery services, along with loss of informal social support, negatively impacting persons with opioid use disorder (Mason et al., 2021; Englander et al., 2020). Second, the pandemic led to changes and disruptions in the illicit drug supply affecting production, trafficking, and consumption of illegal drugs (United Nations Office on Drugs and Crime, 2021). These changes affect drug tolerance and may also force substitution of a person's usual drug with an opioid that is more accessible. This is especially problematic when lower potency drugs are substituted with higher potency drugs such as fentanyl or carfentanil, which are approximately 100 and 10,000 times stronger than morphine, respectively (Mason et al., 2021; Tennessee Bureau of Investigation, n.d.). Finally, stay-at-home orders and physical-distancing policies brought about by the COVID-19 pandemic left persons who use opioids more vulnerable (Mason et al., 2021; Englander et al., 2020). If a person overdoses alone, they are more likely to die because there are no bystanders around to offer life-saving assistance. Altogether, the COVID-19 pandemic created

increased barriers for persons who use opioids, putting them at higher risk of experiencing a fatal overdose.

The negative consequences of the COVID-19 pandemic in relation to the opioid epidemic are apparent when considering the rising numbers of overdoses across the country. In Chicago, IL, the weekly opioid overdose death toll averaged 22.6 deaths per week in the 99-weeks prior to December 15, 2019 (Mason et al., 2021). During the citywide COVID-19 stay-at-home mandate from March 21 through May 30, 2020, the death toll average increased to 43.4 weekly deaths, nearly doubling the average number of deaths per week. In the 18-weeks after the stay-at-home order was lifted, numbers remained high at an average of 31.2 weekly deaths due to opioid overdose (Mason et al., 2021). In Nashville, TN, a similar spike in overdose deaths was reported with monthly overdose deaths increasing to nearly 50 deaths per month from March through June of 2020 from a previous average of 24.6 deaths per month in 2019 (Opioid/Overdose Response & Reduction Program, 2020).

According to the Tennessee Bureau of Investigation (n.d.), approximately 70,000 Tennesseans are addicted to opioids. The opioid overdose crisis significantly affects Tennessee with over 1,500 opioid overdose related deaths reported in 2019 (Tennessee Department of Health [TDH] Office of Informatics and Analytics, 2020). In 2020, Davidson County experienced a 32% increase in drug overdose deaths compared to the previous year and reported a total of 619 overdose fatalities making it the deadliest year on record (Opioid/Overdose Response & Reduction Program, 2020). Approximately 11% of all suspected overdose events occurred in college-aged persons ages 18 to 24 years old, accounting for approximately 640 suspected overdose events in 2020 (Opioid/Overdose Response & Reduction Program, 2020). Davidson County has a saturated population of college-aged persons with a total of 20 colleges and universities in the county (Nashville Area Chamber of Commerce, 2020).

College-aged persons are at risk of overdosing or witnessing an overdose for several reasons. Many college-aged students report personal knowledge of others who have used opioids recreationally,

and it is estimated that as many as 50% of college students are offered a prescription drug for non-medical use by their sophomore year (Panther et al., 2017; Steiker, 2016; Jeffery et al., 2017). One reason opioid misuse may be highly prevalent is because there is a misconception among students that prescription drugs are "safer" than other illicit drugs (Steiker, 2016).

When someone overdoses on opioids, the brain loses regulatory control of breathing, sending them into respiratory depression (Tennessee Department of Mental Health and Substance Abuse Services, 2020). If not reversed, the person will eventually stop breathing altogether, leading to fatal overdose. Naloxone is a medication that has been successfully used for decades to treat known or suspected opioid overdose events (Kerensky & Walley, 2017). Naloxone is an opioid antagonist that works by strongly binding to opioid receptors in the brain, removing opioids from receptors, and blocking their life-threatening effects (Tennessee Department of Mental Health and Substance Abuse Services, 2020). Naloxone specifically targets opioid receptors, so if a person has not taken opioids, the medication has no effect (National Institute on Drug Abuse [NIDA], 2019; Kerensky & Walley, 2017). Because naloxone is not harmful and has no potential for abuse, it is a relatively low-risk, high-reward strategy to combat the opioid overdose epidemic. Available routes of naloxone administration include subcutaneous, intramuscular, and intravenous injection, but the most user-friendly form of administration is through an intranasal (IN) spray designed specifically for layperson use (Kerensky & Walley, 2017; Krieter et al., 2016). IN naloxone allows medically untrained persons to safely and effectively administer the reversal agent to overdose victims without the risk of needlestick injuries (Tennessee Department of Mental Health and Substance Abuse Services, 2020; Kerensky & Walley, 2017; Krieter et al., 2016). IN naloxone makes it possible for friends and family members of opioid users to be prepared to offer a potentially lifesaving treatment in the event of an opioid overdose.

In an effort to address the opioid overdose epidemic, legislators from every state have introduced new laws to make naloxone more available to the public (SAFE Project, 2020). The District of

Columbia along with 47 states have passed laws for standing orders for naloxone allowing pharmacists to dispense naloxone without a prescription. At least 46 states and the District of Columbia have enacted Good Samaritan Laws which allow laypersons to administer naloxone without legal liability (Vestel, 2019). Additionally, 48 states and the District of Columbia have passed legislation allowing third-party prescribing of naloxone (SAFE Project, 2020). Third-party prescribing allows a person to obtain a prescription for naloxone even if they are not the intended user, allowing family and friends to be prepared in the event of an overdose of a loved one (National Alliance for Model State Drug Laws, 2016).

As the legal framework has shifted to promote increased access to naloxone, family members, friends, and acquaintances of persons who use opioids are able to take a proactive approach to overdose prevention with take home naloxone (THN) kits. With an intuitive and safe design that eliminates the risk of needlestick injuries, IN naloxone is perfectly suited for layperson responders (Lewis et al., 2017; Krieter et al., 2016).

Problem Statement

Although college students could be positioned to be first responders to overdose events within the college community, limited evidence suggests their ability or willingness to respond to an overdose event and administer naloxone. Of the limited evidence available, most studies focused on students with healthcare-related majors (Bachyrycz et al., 2019; Franko et al.,2019; Monteiro et al., 2017; Schartel et al., 2018). Because laypersons are easily trained in the use of IN naloxone, all undergraduate students could benefit from naloxone training, not just students with majors in healthcare. More evidence is needed to support IN naloxone training in the general undergraduate student population.

Purpose

This Doctor of Nursing Practice (DNP) scholarly project examined the impact of a targeted opioid overdose prevention education and IN naloxone training program on undergraduate students'

knowledge of and attitudes toward opioid overdose emergency response. The rationale for training students was twofold. First, they are more likely to be present at the scene of a known or suspected overdose event involving a college-aged person and, therefore, have a great potential to benefit from opioid overdose education and naloxone training. Second, recruiting this population to provide this low risk but potentially life-saving IN naloxone intervention could significantly reduce mortality in overdose victims. Moreover, this scholarly project has implications for other college campuses and could be used to develop training programs in similar settings.

Review of Literature

Layperson First Responder Populations

Since 1996, a growing number of community-based programs have been used throughout the U.S. to train laypersons in the use of naloxone in hopes of preventing overdoses (Wheeler et al., 2015). These programs targeted persons who were most likely to witness an overdose, such as persons who use drugs, their friends and family members, and service providers (Lewis et al., 2017; Wheeler et al., 2015). Evidence supports naloxone training and distribution to laypersons as an effective harm reduction strategy to combat opioid overdose. Naloxone training in laypersons has been shown to be both safe and cost-effective and has resulted in reduced overdose deaths (Wheeler et al., 2015; Doyon et al., 2014). In fact, from 1996 to 2014, over 150,000 THN kits were distributed to trained laypersons, resulting in over 26,000 successful opioid reversals (Wheeler et al., 2015).

McDonald and Strang (2016) conducted a systematic review of literature in order to assess the efficacy of THN programs. They aimed to determine the impact of THN on overdose-related mortality as well as evaluate the safety of THN by reviewing adverse events. According to McDonald and Strang (2016), fatal opioid overdoses among program participants, which included persons who use opioids, their family members, and their peers, was significantly reduced with the distribution of THN kits. They also found a low rate of adverse events associated with THN programs.

Available literature supported the implementation of an intervention designed with an opioid overdose education session followed by naloxone training. Both student populations and layperson populations were shown to benefit from these types of models (Franko et al., 2019; Monteiro et al., 2017; Schartel et al., 2018; TDH, 2020).-However, in this review of literature, there existed a gap of information on the general undergraduate student population as potential first responders to opioid overdose events.

Naloxone Training in Students with Healthcare-Related Majors

When addressing opioid overdose prevention in college-aged populations, a variety of approaches were described among students studying healthcare-related majors. One study examined third year nursing students to determine whether a novel naloxone training program was more successful than state regulated trainings in increasing students' ability to effectively manage a live simulated overdose event (Franko et al., 2019). Both trainings included information on signs and symptoms of overdose, use of naloxone, and management of an overdose. However, the novel training also discussed the opioid crisis within the participants' home state and included information on stress management techniques that would be useful in emergencies. The results of this study showed that participants in the novel training outperformed students who received only the state regulated training in a live overdose simulation, completing the simulation 10 seconds faster and scoring 25% higher on the simulation checklist on average.

In another study, pharmacy students showed improved knowledge, skills, and attitudes related to naloxone after receiving an education and training session on naloxone in a pharmaceutical care laboratory course (Bachyrycz et al., 2019). Students completed a pre- and post-training survey, which resulted in stronger confidence scores after receiving the training regarding naloxone use, mechanism of action, patient education delivery, and high-risk patient recognition. According to the data, the

educational intervention improved students' confidence levels toward dispensing naloxone, counseling patients, and understanding the protocol for prescriptive authority.

Similarly, Schartel et al. (2018) created a naloxone training activity aimed at increasing knowledge and confidence in student pharmacists' ability to counsel patients on opioid overdose and naloxone administration. Participants were in their first year of pharmacy school and completed the naloxone training in a laboratory skills course followed by a lecture on opioid overdose response. Students were then offered the opportunity to practice counseling and administering IN naloxone in the laboratory setting. Knowledge assessment was conducted through the use of an Objective Structured Clinical Examination (OSCE). Students averaged an 82% pass rate on the OSCE after the intervention and 93% of participants reported an improvement in their ability to counsel patients on the use of IN naloxone in an opioid overdose event. These results reinforced the idea that hands-on naloxone training increases knowledge.

Another study aimed to increase student knowledge, skills, and attitudes towards opioid misuse through the implementation of an interprofessional workshop (Monteiro et al., 2017). Students represented the fields of medicine, nursing, pharmacy, social work, and physical therapy. The educational workshop included a patient panel, a simulated patient encounter, a case scenario on opioid misuse by a homeless individual, and finally, a naloxone training session. A change in student knowledge was assessed with a pretest before the event and posttest 12 weeks after the workshop. Students who attended the interprofessional workshop demonstrated significant retention of knowledge, attitudes, and skills related to the prevention of opioid overdose. This study showed that a hands-on approach to opioid misuse education and naloxone training can have a great impact on knowledge in a population of healthcare students.

Combating the Opioid Crisis in College-Aged Persons

Steiker (2016) proposed that the opioid problem is most prevalent in highly selective, urban universities, noting that fatal overdoses from prescription opioids have more than tripled since 1991. One study, which examined university students, revealed that 43% of its survey respondents (65 of 150) knew someone who misused prescription drugs to get "high" (Panther et al., 2017). It was estimated that between two and 13% of all college students report non-medical use of prescription drugs, including opioids (Schulenberg et al., 2019; Meshesha et al., 2017; Jeffery et al., 2017; Panther et al., 2017). Because many college-aged students reported personal knowledge of recreational opioid use among peers, students were recognized as a population at risk of witnessing an overdose event (Panther et al., 2017).

To combat the rising rates of overdose in college-aged persons, many studies addressed the lack of awareness about the opioid overdose epidemic in college populations by providing various types of education and training events for college students (Bachyrycz et al., 2019; Franko et al., 2019; Monteiro et al., 2017; Panther et al., 2017; Schartel et al., 2018). However, only one study was identified which targeted the general population of college students, rather than including only students in healthcare-related programs (Panther et al., 2018). This study targeted university students and utilized student pharmacists to facilitate small group practice sessions after a large group IN naloxone training session. Researchers found that this method of large group audiences followed by small group practice sessions was effective in educating and training students to respond in an overdose scenario as evidence by 97% of students agreeing that if faced with an overdose, they could apply the necessary skills to respond to the overdose event. While this study produced positive results, more research is needed to support opioid overdose education and IN naloxone training within the general population of college students.

Theoretical Framework

The Information–Motivation–Behavioral Skills Model of Health Behavior

Developed by Fisher and Fisher in 1992, the Information–Motivation–Behavioral (IMB) Skills Model of Health Behavior asserts that "health-related information, motivation, and behavioral skills are fundamental determinants of performance of health behaviors. To the extent that individuals are well informed, motivated to act, and possess the requisite behavioral skills for effective action, they will be likely to initiate and maintain health-promoting behaviors and to experience positive health outcomes" (Fisher et al., 2003, p. 84). The IMB model was initially developed as a way to address HIV/AIDS risk-reduction strategies and explore the factors that influence whether or not a person chooses to adopt and maintain HIV/AIDS risk-reduction behaviors in their everyday life (Fisher & Fisher, 1992).

The authors identified three fundamental determinants of HIV/AIDS risk-reduction, which included: information about HIV transmission and infection preventions strategies; motivation to change risk behaviors; and behavior skills for performing HIV/AIDS-preventative acts (Fisher & Fisher, 1992). Information is needed first in order for an individual to correctly identify risk-reduction strategies. Once an individual is well-informed, motivation becomes a factor as they now have the choice of whether or not to act on the knowledge they possess regarding HIV/AIDS transmission and prevention. Finally, behavioral skills are the third critical determinant of prevention and affect whether a knowledgeable and motivated person has the capacity to perform the needed behavior change to reduce HIV/AIDS risk. The authors theorized that each of these factors influences the other to either promote or inhibit the initiation and maintenance of certain health behaviors (See Figure 1 under Appendix A; Fisher et, al., 2003). The authors suggested the IMB model's primary use as a method of understanding both social and psychological factors that influence the range of health-related behaviors.

Project Design

This scholarly project was a cross-sectional, quasi-experimental design aimed at improving college students' knowledge of and attitudes towards opioid overdose response with IN naloxone. This

scholarly project utilized an anonymous pretest/posttest design to assess knowledge and attitudes before and after the targeted opioid overdose education and IN naloxone training intervention.

Due to physical distancing restrictions in place because of the COVID-19 pandemic, the education and training session was hosted virtually through Zoom. In order to reach as many students as possible, the presentation was pre-recorded to offer a self-paced learning experience that students could access anytime of the day or night during the data collection period. Students who completed the online learning module were offered WELL Core credit as approved by the university's WELL Core program (Belmont University, n.d.-b). Prior to graduation, all undergraduate students are required to complete 60 hours of WELL Core credit in a variety of categories. This project was approved for presentation under the Interpersonal/Emotional/Physical Well-Being category of the WELL Core program. The DNP scholarly project was verified as exempt by Belmont University's Institutional Review Board (IRB).

Application of the IMB Model

The IMB model was utilized as a framework to guide the present scholarly project (See Figure 2 under Appendix A; Fisher et, al., 2003). Information was addressed by providing opioid overdose education and IN naloxone training to students. To measure a change in knowledge before and after the intervention, a modified version of the Opioid Overdose Knowledge Scale (OOKS) was utilized (See Appendix B; Williams et al., 2013). To address motivation and attitudes, the primary investigator's educational presentation featured a relevant case study about an overdose situation that a college student might experience or relate to, along with information about celebrity overdoses and statistics about opioid overdoses in the Nashville community and in college populations. Change in attitudes before and after the presentation were measured using a modified version of the Opioid Overdose Attitudes Scale (OOAS) (See Appendix C; Williams et al., 2013). Behavior skills were addressed using an IN naloxone training for participants. By targeting all three areas of the IMB model, this project aimed to

promote the health behavior of opioid overdose recognition and appropriate response with IN naloxone.

Setting

This project took place at a private, Christian, urban college campus community located within Davidson County in Nashville, Tennessee. The university is known for their programs in liberal arts and health sciences. Campus security are the campus' first responders for on-campus overdose response. All officers have basic life support (BLS) and IN naloxone training and carry naloxone with them at all times in case of emergency. Naloxone is also available at the campus pharmacy for students to purchase.

Population

This scholarly project's population consisted of undergraduate students enrolled in the university in the Fall of 2020. In 2019, the university had a total undergraduate enrollment of 6,820 students, a 2% increase from the previous year (Belmont University, n.d.-a). Of the total population of students, approximately 65% of students identified as female and 35% of students identified as male. The racial/ethnic student diversity was composed of predominantly Caucasian students (79.7%), followed by Hispanic (6.4%), African American (5%), Bi-Racial (4.2%), Asian (2.1%), Non-Resident Aliens (1%), American Indian or Alaska Native (0.3%), and Native Hawaiian or Pacific Islander students (0.1%) (Belmont University, n.d.-a).

Inclusion criteria for participants included active undergraduate enrollment at the university during the time of data collection, age over 18 years old, completion of the virtual education and training module, and ability and willingness to fill out the pretest and posttest questionnaires on a personal cell phone device or computer. Persons were excluded from the project if they were identified as staff, faculty, graduate students, or any other persons not actively enrolled in the university as an undergraduate student at the time of data collection. Additionally, persons under the age of 18, persons

who were unable to complete the virtual education and training module, or persons unable or unwilling to complete both the pretest and posttest questionnaires were excluded from the scholarly project.

Agreeable participants were asked to complete both the pretest and posttest questionnaires in full. Any participants who neglected to complete one or both of the questionnaires were excluded from the data set as the goal was to detect a change in knowledge and attitudes before and after students completed the education and training module. Participants were informed prior to the start of the questionnaire that completion of the questionnaire indicated informed consent for participation in the scholarly project.

Recruitment

Participants were recruited through the use of convenience sampling, purposive sampling, and snowball sampling strategies. Because all undergraduate students had equal access to the education and training module and could complete it at their own leisure, convenience sampling was utilized based on who accessed and completed the module. Purposive sampling was employed through targeted recruitment strategies to promote the WELL Core module and encourage participation in the scholarly project. One such strategy included reaching out to professors in the undergraduate faculty to request support in promoting the module to their students. An information sheet was prepared for professors to pass along to their students that included a brief introduction to the scholarly project as well as information on how to access the presentation along with contact information for the primary investigator (PI) and faculty advisor. Several class meetings, both virtual and in-person class, were scheduled with a number of undergraduate classes allowing the PI to actively promote the project to potential participants. A promotional video was pre-recorded and sent to professors who were unable to offer class time for an introduction but still wanted to share information about the scholarly project with their students. Additionally, the project was promoted through social media on the university-affiliated Instagram page and through the university's campus announcement webpage. Finally, at the

end of the WELL Core module, participants were encouraged to tell their friends about the WELL Core presentation, utilizing snowball sampling to enhance recruitment through word-of-mouth endorsements.

Participants were notified of incentives for completing the online module through the various recruitment strategies as well as in the presentation itself. First, students were made aware of the potential impact their participation could have on opioid overdose prevention efforts in the college-aged population. Second, students learned that they would be trained to save a life with IN naloxone. Third, students were notified of their eligibility to receive WELL Core credit through Belmont University. Finally, the students were made aware that they would be eligible to enter a drawing for one of three $50 Visa gift cards if they completed both the pretest and posttest questionnaires. Students who wished to enter the drawing input their email at the end of their posttest questionnaire. At the end of the data collection period, three eligible participants were selected at random as winners of the $50 Visa gift cards and were contacted through their provided emails to distribute the reward via email.

Instrumentation

Data for this scholarly project was collected using an adaptation of the OOKS and OOAS. These are publicly available tools that have been proven valid and reliable in measuring knowledge and attitudes as they relate to opioid overdoses (Williams et al., 2013; See Appendices B & C). The adapted version of the OOKS used in this project was a 12-point questionnaire, which measured knowledge through the use of multiple choice, select all that apply, and true/false questions. The OOKS scored on the following four domains: risk factors for an overdose, signs of an overdose, actions to be taken in an overdose, and naloxone effects, administration, and aftercare procedures. The adapted version of the OOAS used in this project included 26 questions presented in a five-point Likert-scale format. The OOAS evaluated attitudes towards managing an opioid overdose. The OOAS questions were grouped into three sub-scales related to overdose management. First, competence questions measured participants'

self-perceived ability to manage an overdose. Second, questions in the concerns category addressed participants' apprehensions on dealing with an overdose. Finally, readiness questions assessed participants' willingness to intervene in an overdose situation.

Pretest and Posttest surveys were generated and distributed to participants using Qualtrics (2021) survey software, which is a platform that allows researchers to develop personalized questionnaires for use when collecting and analyzing data in research projects. Permission to adapt the OOKS and OOAS tools for use in the Qualtrics survey platform was granted by the scales' authors. Zoom (2019) was utilized to record the naloxone education and training session. Finally, the data were analyzed using IBM SPSS Statistics (Version 27) predictive analytics software.

Data Collection

Data collection took place between October 7 and December 5, 2020. This project's intervention was implemented entirely online allowing all students equal access to participate in the scholarly project. In the pretest, students answered questions to determine whether they previously witnessed an overdose event or had personal experience administering IN naloxone. Additionally, student demographic information was collected in the pretest portion of data collection. Demographic information included year of study (i.e. freshman, sophomore, junior, or senior), field of study (i.e. healthcare, music, business, science, art, history, undecided, or other), age, gender, and race. By collecting this demographic information, other universities may be able to compare their student populations to this sample population, allowing for determination of generalizability.

The pretest and posttest questionnaires were administered using Qualtrics (2021) software. A QR code was generated with the link to the Qualtrics survey and displayed within the presentation so that participants could quickly access the appropriate questionnaire when needed. The link text was also displayed so that participants could manually copy it into the browser of their choice to complete the questionnaires on either their personal cell phone or computer.

The pretest questionnaire was administered to participants just prior to the opioid overdose prevention education and IN naloxone training session. The posttest was made available for students to complete immediately after the education and training intervention. The WELL Core module was available online for students to access anytime at their convenience. The module was pre-recorded through the Zoom platform and included an introduction of the PI, administration of the pretest questionnaire, education session on the opioid overdose epidemic, statistics and information from evidence-based sources, training session on the use of IN naloxone, and administration of the posttest questionnaire. The presentation was designed specifically to target and engage with the college-aged population, including a case study of a likely scenario affecting college-aged persons. Content for this project's education and training session was created based on information gathered from publicly available naloxone training resources from the Tennessee Department of Health and the National Addiction Centre (TDH, 2020; Williams et al., n.d.).

Statistical Analysis

A paired-samples *t*-test was utilized to analyze a change in knowledge and attitudes before and after the opioid overdose prevention education and IN naloxone training session was implemented. This parametric test was selected as it measures scale variables for normally distributed data in samples with at least 30 pairs (Plichta & Kelvin 2013). Descriptive statistics were used to analyze demographic data collected from participants. Participant questionnaires were matched between pretest and posttest through the use of a unique code that students were asked to create in the pretest and replicate in the posttest. This matching allowed for a true comparison of individual data before and after the intervention and allowed this researcher to evaluate the success of the research project.

Results

A total of 39 (n = 39) students participated in this project's pretest, naloxone education and training intervention, and posttest. Sociodemographic characteristics of participants are shown in Table

1. A total of four students (10.3%) reported previously witnessing an overdose, and three students (7.7%) reported prior experience administering IN naloxone. The majority of students were in their freshman year (35.9%, *n* = 14), studying a healthcare-focused major (48.7%, *n* = 14), between ages 18-24 years old (89.7%, *n* = 35), female (89.7%, *n* = 35), and Caucasian (82.1%, *n* = 32).

Pretest Scores

Overall, students' mean pretest score was 121.36 (*SD* = 14.69) points out of a possible 169 points. Therefore, students scored an average of 71.81% (*SD* = 8.69%) on the pretest. See Table 2 for overall pretest scores.

When assessing only the OOKS portion of the pretest, students scored a mean of 29.49 (*SD* = 3.79) out of a total of 39 possible points. Converting this to a percentage, students scored an average of 75.61% (*SD* = 9.72%). The strongest OOKS pretest scores were in the "Action" category with an average score of 87.65% (*SD* = 9.21%). Conversely, the lowest OOKS scores were seen in the "Naloxone Use" category, with students scoring on average 57.55% (*SD* = 25.60%). See Table 3 for OOKS pretest scores.

For the OOAS portion of the pretest, students scored an average of 91.87 (*SD* = 12.07) points out of a possible 150 for a percentage score of 70.67% (*SD* = 9.29%). The lowest scoring category in the OOAS pretest was the "Competence" category with students scoring an average of 57.28% (*SD* = 15.14%). The highest OOAS scores were seen in the "Readiness" category with an average score of 85.59% (*SD* = 7.72%). See Table 3 for OOAS pretest scores.

Posttest Scores

Overall on the posttest, students scored a mean of 144.79 (*SD* = 10.30) points. When converted to a percentage, students averaged 85.68% (*SD* = 6.09%) on the posttest. See Table 2 for overall posttest scores.

For the OOKS portion of the posttest, students scored an average of 34.79 (*SD* = 3.16) points on the posttest. This converts to a percentage score of 89.22% (*SD* = 8.09%). The highest scoring category

on the OOKS posttest was “Signs” with students scoring an average of 99.1% (*SD* = 15.78%). The lowest scoring OOKS category was the “Action” category with a mean posttest score of 84.85% (*SD* = 11.10%). See Table 3 for OOKS posttest scores.

The mean posttest OOAS score was 110 (*SD* = 8.97) out of a possible 130 points. Converting this to a percentage, students scored an average of 84.62% (*SD* = 6.90%) on the OOAS posttest. The lowest scoring OOAS category was “Concerns” with an average of 80.26% (*SD* = 8.36%) on the posttest. Conversely, the highest scoring OOAS category was the “Readiness” category with a mean posttest score of 91.44% (*SD* = 6.88%). See Table 3 for OOAS posttest scores.

Pretest and Posttest Score Comparison

A paired-samples *t*-test was conducted to determine whether or not the education and naloxone training intervention influenced overall OOKS & OOAS scores in student participants. The overall posttest scores (*M* = 144.79, *SD* = 10.30) were 13.86% higher than the overall pretest scores (*M* = 121.36, *SD* = 12.69). See Table 2 for overall scores. Statistical analysis using a paired-samples *t*-test indicated that the overall posttest scores were significantly higher than the pretest scores ($t[38] = -12.636$, $p < .001$). When assessing each subcategory significant improvements ($p < .001$) were seen across all categories with the exception of “Risk” and “Action” ($t[38] = -1.790$, $p = .081$; $t[38] = 1.138$, $p = .262$, respectively). See Table 3 for categorical scores.

Discussion

The results of this scholarly project supported the conclusion that an opioid overdose education and IN naloxone training event targeted towards undergraduate college students positively impacted knowledge and attitudes related to opioid overdose and response. This scholarly project was able to successfully address and improve both knowledge and attitudes in undergraduate students as demonstrated by improved overall scores on both the OOKS and the OOAS questionnaires ($p < .001$) by approximately 13.86%. Although 48.7% of participating undergraduate students were in healthcare-

related majors, this project addressed a gap in the literature by targeting the general college student population. Findings suggested that all college students stand to benefit from this type of opioid overdose education and IN naloxone training, not just those aspiring to work in healthcare-related fields.

Furthermore, at a time when many institutions around the globe were forced to make the switch to remote or asynchronous learning options during the COVID-19 pandemic, this project supported the use of online education modules as a feasible and effective learning tool for college students as evidenced by improved posttest scores ($p < .001$). Other studies recently examined the efficacy of online learning due to changes brought about during the COVID-19 pandemic. Mukhtar et al. (2020) utilized focus groups of faculty and students and identified flexibility and student-centered learning as advantages of e-learning. Similarly, another study found that online learning reduced barriers around accessibility and flexibility, allowing students to learn at a time and place that is convenient for them (Jowsey et al., 2020).

This scholarly research project utilized a pretest and posttest design in order to measure a change in participants' knowledge and attitudes from before to after the education and training intervention. Similarly, a study by Monterio et al. (2017) found that students' OOKS test scores improved from pretest to posttest ($p < 0.001$) after an educational and training intervention covering students' knowledge, skills, and attitudes towards opioid misuse. Their study differed from this scholarly research project in that they hosted an interprofessional workshop targeted only toward students with healthcare-related majors.

Another study by Bachyrycz et al. (2019) evaluated pharmacy students' self-assessed knowledge, clinical skills related to naloxone and opioids, and attitudes towards naloxone prescribing. Their study similarly utilized a pre- and post-survey with an education and training event. They demonstrated significant improvements in students' confidence following the educational modules,

with the exception of items assessing counseling ($p < .697$) and availability of naloxone ($p < .076$) as overdose prevention and harm-reduction strategies. This study similarly utilized a Likert-scale questionnaire to assess attitudes and confidence in participants. It differed from the current project because students self-ranked their perceived knowledge strengths and gaps using a Likert-scale questionnaire rather than a scored knowledge exam with correct and incorrect answers, as was used in this scholarly research project.

As previously stated, posttest scores in this project showed a significant increase ($p < .001$), however, when looking at results in the action category, the average overall score decreased by approximately 2.8% from pretest to posttest. This category assessed students' knowledge of how to manage an overdose using a select all that apply question format. Out of the 11 items scored for this category, students' scores improved on five items, stayed the same on three items, and worsened on three items. The item that saw the most improvement on the posttest was the item that encouraged checking for blocked airways in the nose and mouth. Items that the students did worse on included knowledge of the need for mouth to mouth resuscitation and placing the overdose victim in the recovery position. Students also incorrectly selected "put the person in bed to sleep it off" as a management strategy which should not be done because of the risk of death with overdose. In future education and training presentations, this researcher suggests extra time and attention be focused on these items to ensure that they are emphasized to this population.

The IMB Model of Health Behavior

Information

Participants in this DNP scholarly project showed a significant, positive improvement in knowledge scores from pretest to posttest, scoring an average of 13.59% higher after the intervention for an average score of 89.21% ($SD = 8.10\%$, $p < .001$). Another study by Lee and Park (2021) utilized the IMB Model as a framework to teach and promote preventative behaviors against respiratory infection in

community-dwelling older adults. Researchers found that knowledge was significantly improved in the intervention group when compared to the control group ($p = .001$). This correlated with significant qualitative improvements in hand hygiene, respiratory hygiene, and oral hygiene ($p < .001$, $p = .001$, and $p = .001$, respectively) when compared to the control group. These findings supported the present scholarly project because students were similarly able to gain information as demonstrated by improved OOKS posttest scores ($p < .001$), which suggests they would be able to perform the desired health behavior of opioid overdose recognition.

Another study by Meunier et al. (2016) reported a positive and significant correlation between information and the self-care behavior of blood glucose testing ($p < .05$ from one to six months, and $p < .01$ from six months to 12 months). When patients tested their blood glucose more frequently, they better understood their diabetes promoting and reinforcing the need for frequent blood glucose testing in the long term. Their study demonstrated that information led to long-term performance of the desired health behavior. So, while the present DNP scholarly project was unable to conduct a longitudinal project or implement a skills check-off, it is reasonable to assume that with the significant improvements in knowledge scores ($p < .001$), students would be able to recognize an opioid overdose.

Motivation

Results from this scholarly project demonstrated an improvement in students' motivation as evidence by increased scores on the OOAS from pretest to posttest (70.67% and 84.62% respectively, $p < .001$). Talley et al. (2017) utilized the IMB Model as their framework to study the predictors of intentions to obtain breast cancer screening in racial/ethnic minority women. They determined that the association between motivation and screening behavior was significant ($p < .001$). They also noted that in the context of breast cancer screening behavior skills, functional breast literacy was not associated with motivation, indicating that education alone did not motivate women to adjust screening intentions

and motivation to be screened did not indicate functional breast cancer literacy. These findings supported that both information and motivation are needed to affect behavior change.

Another study examining pre-exposure prophylaxis (PrEP) use among men who have sex with men (MSM) surveyed participants to determine the effect of information, motivation, and behavioral skills on PrEP intentions and use (Walsh, 2019). Survey questions addressing motivation included PreP attitudes, stigma, descriptive norms, and subjective norms. The author discovered that PrEP attitudes, stigmas, and descriptive norms predicted PrEP self-efficacy ($p < .05$, $p = .001$, and $p < .01$, respectively). Persons with higher PrEP stigma reported lower self-efficacy with regards to PrEP intentions and use, and conversely, persons with better attitudes towards PrEP and more positive descriptive norms indicated higher self-efficacy for PrEP use. Walsh's (2019) study demonstrated the importance of motivation on affecting behavior change, supporting the assumption that because students' motivation scores improved in the present scholarly project ($p < .001$), they would be likely to perform the intended behavior change and respond to an opioid overdose event.

Behavioral Skills

As previously mentioned, the present scholarly research project was unable to demonstrate acquisition of the behavioral skill of opioid overdose response with IN naloxone due to the circumstances surrounding the COVID-19 pandemic that precluded in-person gatherings. Therefore, the researcher was unable to organize a live skills-check off in a simulated overdose scenario which would have been able to verify students' newly acquired skills. That being said, because IN naloxone is exceptionally user-friendly as it was designed for layperson use and the behavioral skill of administration is both intuitive and rapid, students would more than likely have no issues administering the life-saving medication (Krieter et al., 2016).

In a study by Saucier et al. (2016), researchers found that prior to IN naloxone education and training, law enforcement officers either did not respond or responded passively to an opioid overdose

event. After education and training, officers showed significant improvements in knowledge scores (p < .001) and self-efficacy scores (p < .001), which correlated with improvements in overdose response with naloxone. Attitudes scores also showed significant improvements across four out of seven items (p < .001, p = 0.04, p <.001, and p = .05), however, attitude measures were only assessed on a smaller portion of municipal officers due to concerns raised by senior ranking state police. Overall, officers demonstrated appropriate active responses in an overdose scenario after completing the education and training, suggesting that an intervention aimed at increasing knowledge of and attitudes towards opioid overdose recognition and response has a significant, positive effect on trainees' performance.

In the current DNP scholarly project, it was shown that students were able to make marked improvements in both information and motivation as evidence by improved OOKS and OOAS scores after receiving the education and training intervention (p < .001). In other studies, it has been shown that learning to perform a task through modeling behaviors and improved self-efficacy to perform a task were significant predictors of successful task completion in the future (Schunk, 1981; Compeau & Higgins, 1995; Meyer & Raich, 1983; Locke et al., 1984; Kozlowski et al., 2001; Mitchell et al., 1994). Thus, by demonstrating the skill of IN naloxone administration through modeling during the training intervention and demonstrating improvements in information as evidence by improved OOKS scores (p < .001) and self-efficacy as evidence by improved OOAS scores (p < .001), students would be likely to perform the behavioral skill of IN naloxone administration and adopt the health behavior of opioid overdose recognition and response. A future longitudinal study is recommended to further demonstrate the efficacy of this intervention in cultivating participants' ability and willingness to intervene appropriately in an opioid overdose situation, thus achieving the intended health behavior change.

Limitations

Four out of 39 participants (10.3%) reported witnessing an overdose, and three participants (7.7%) reported personal experience administering naloxone before. Due to the relatively small sample

size, the percentage of participants who reported previously witnessing an overdose or administering naloxone may not be representative of the total student population at Belmont University. One possible explanation of the relatively high percentage of students with previous personal experience with overdoses and naloxone is sampling bias. Students with a personal familiarity with the subject matter may have been more inclined to complete the education and training module. Additionally, the sample was quite homogenous, with most participants reporting Caucasian race (*n* = 32; 82.1%) and female gender (*n* = 35; 89.7%). Although, the percentage of Caucasians participating in this project did correlate with the university's reported racial distribution with 82.1% of project participants reported Caucasian race, while 79.7% of university's students reported Caucasian race. Future research with larger student samples may be needed to determine generalizability of this project's findings.

Unfortunately, due to restrictions on social gatherings amidst the COVID-19 pandemic, this researcher was unable to host an in-person event to carry out the education and training intervention. Because the education and training session was presented virtually, it prevented a means for distribution of IN naloxone kits to program participants, which would have fully equipped students with the tools to respond to a real overdose in the future. To mitigate this issue, all participants were made aware of how and where to obtain an IN naloxone kit at pharmacies on campus and in the community.

Additionally, restrictions on social gatherings disallowed a live simulation experience at the conclusion of the session. A simulation check-off experience would have provided the opportunity for this researcher to definitively measure participants' ability to perform the behavior skill of overdose recognition and response while also allowing participants to practice and reinforce their skills, encouraging better retention. It is recommended that future researchers, when safely able to do so, test and refine participants' newly acquired skills through the use of a simulated skills check-off for an opioid overdose scenario.

Conclusion

As the number of opioid overdose deaths surges amidst the COVID-19 pandemic, it is imperative that persons who may be likely to witness an overdose event are educated on the opioid crisis and trained in overdose response with IN naloxone. Data gathered in this scholarly research project support the need for increasing awareness and education in college students about opioid overdose and response. Approximately 10% of students reported previously witnessing an overdose, leading this researcher to believe that this type of education and training is warranted within the college campus community.

The current model of a virtual opioid overdose education and IN naloxone training module could be easily replicated and utilized at other institutions. This delivery model allows for training of laypersons at their own convenience and is not restricted by instructor or participant schedules. It is also not limited by social distancing restrictions or physical gathering space, which has become scarce amidst the COVID-19 pandemic. With this training model, 39 students were prepared to save the life of an individual experiencing an opioid overdose in less than one hour. Other universities should consider implementing similar opioid overdose education and IN naloxone training as it has been shown effective in preparing students to recognize and respond to an opioid overdose emergency and could ultimately help save a life.

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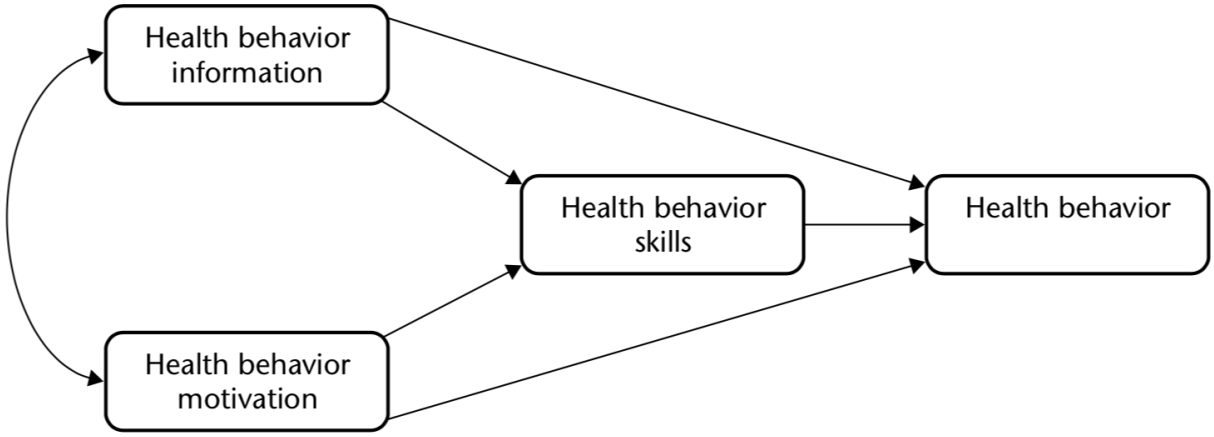
Figure 1. The Information–Motivation–Behavioral Skills Model of Health Behavior



(Fisher et al., 2003)

Figure 2. The IMB Model of Health Behavior: Opioid Overdose Response

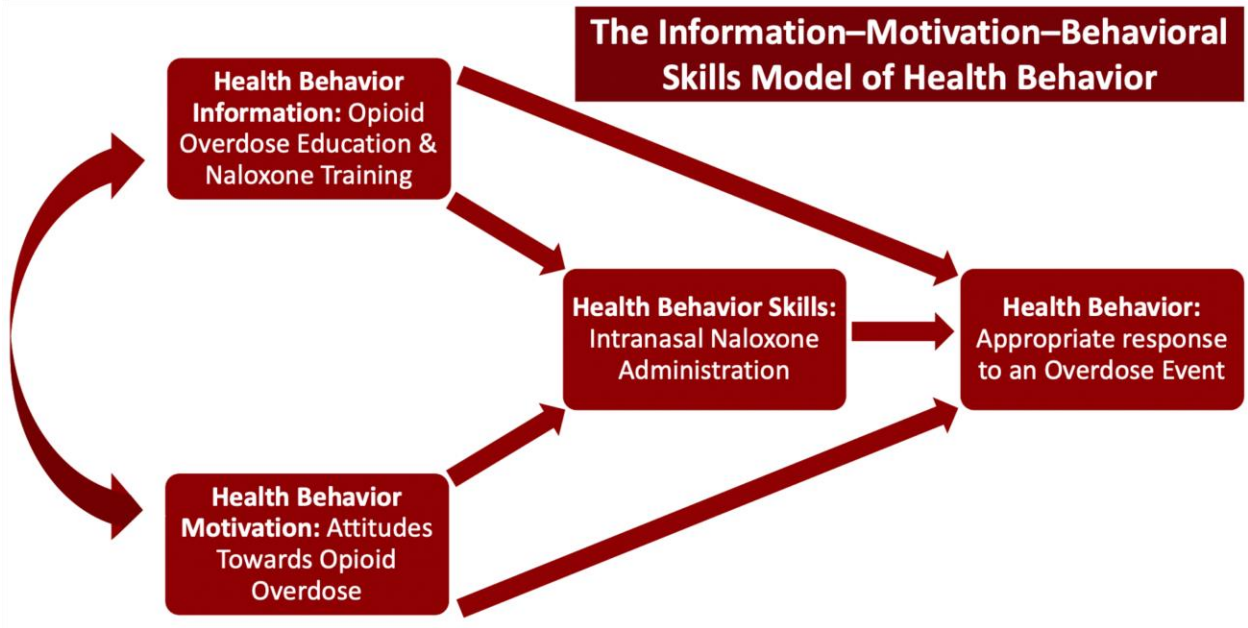


Table 1

Sociodemographic Characteristics of Survey Respondents (n = 39)

Characteristic	*n*	%
Witnessed Overdose		
Yes	4	10.3
No	35	89.7
Administered Naloxone		
Yes	3	7.7
No	36	92.3
Year of Study		
Freshman	14	35.9
Sophomore	4	10.3
Junior	11	28.2
Senior	10	25.6
Field of Study		
Healthcare	19	48.7
Business	4	10.3
Music	2	5.1
Science	6	15.4
Art	4	10.3
Other	4	10.3
Age Range		
18-24 years old	35	89.7
25-30 years old	4	10.3
Gender		
Male	3	7.7
Female	35	89.7
Other	1	2.6
Race		
Caucasian	32	82.1
African American	1	2.6
Hispanic or Latino	2	5.1
Asian	1	2.6
Other	3	7.7

Table 2

Paired Samples t-Test: Overall Scores

		Pretest		Posttest			95% Confidence Interval of the Difference				
Questionnaire	TPP	*M*	*SD*	*M*	*SD*	*n*	Lower	Upper	*t*	*df*	*p*
OOKS	39	29.49	3.79	34.79	3.16	39	-6.62792	-3.98747	-8.139	38	.000
OOAS	130	91.87	12.07	110.00	8.97	39	-21.09192	-15.16449	-12.383	38	.000
Total	169	121.35	14.68	144.79	10.30	39	-27.19041	-19.68139	-12.636	38	.000

Note. TPP = total possible points; *M* = average; *SD* = standard deviation; *n* = frequency; *t* = computed test statistic; *df* = degrees of freedom; *p* = *p*-value

Table 3

Paired Samples t-Test: Categorical Scores

Questionnaire & Associated Category	TPP	Pretest		Posttest		*n*	95% Confidence Interval of the Difference		*t*	*df*	*p*
		M	*SD*	*M*	*SD*		Lower	Upper			
OOKS Risk	9	7.69	1.73	8.18	1.47	39	-1.03806	.06371	-1.790	38	0.81
OOKS Signs	9	6.97	1.58	8.92	1.42	39	-2.59682	-1.30061	-6.087	38	.000
OOKS Action	11	9.64	1.01	9.33	1.22	39	-.23958	-.85496	1.138	38	.262
OOKS Naloxone Use	9	5.18	2.30	8.35	0.93	39	-3.93743	-2.42155	-8.492	38	.000
OOAS Competence	50	28.64	7.57	40.21	5.25	39	-13.33149	-9.79672	-13.246	38	.000
OOAS Concerns	30	20.44	3.10	24.08	2.51	39	-4.59771	-2.68434	-7.705	38	.000
OOAS Readiness	50	42.79	3.71	45.72	3.44	39	-4.00687	-1.83928	-5.460	38	.000

Note. TPP = total possible points; *M* = average; *SD* = standard deviation; *n* = frequency; *t* = computed test statistic; *df* = degrees of freedom; *p* = *p*-value

Appendix A

Opioid Overdose Knowledge Scale

Modified with permission from original authors.
Original source: Williams, A., Strang, J., & Marsden, J. (2013). Development of Opioid Overdose Knowledge (OOKS) and Attitudes (OOAS) Scales for take-home naloxone training evaluation. Drug and Alcohol Dependence, 132(1), 383–386. https://doi.org/10.1016/j.drugalcdep.2013.02.007

Q1 Which of the following factors increase the risk of a heroin (opioid) overdose? (tick all that apply)
☐ Taking larger than usual doses of heroin
☐ Switching from smoking to injecting heroin
☐ Using heroin with other substances, such as alcohol or sleeping pills
☐ Increase in heroin purity
☐ Using heroin again after not having used for a while
☐ Using heroin when no one else is present around
☐ A long history of heroin use
☐ Using heroin again soon after release from prison
☐ Using heroin again after a detox treatment

Q2 Which of the following are indicators of an opioid overdose? (tick all that apply)
☐ Having blood-shot eyes
☐ Slow/shallow breathing
☐ Lips, hands or feet turning blue
☐ Loss of consciousness
☐ Unresponsive
☐ Fitting
☐ Deep snoring
☐ Very small pupils
☐ Agitated behavior
☐ Rapid heartbeat

Q3 Which of the following should be done when managing an opioid overdose? (tick all that apply)
☐ Call an ambulance
☐ Stay with the person until an ambulance arrives
☐ Inject the person with salt solution or milk
☐ Mouth to mouth resuscitation
☐ Give stimulants (e.g. cocaine or black coffee)
☐ Place the person in the recovery position (on their side with mouth clear)
☐ Give naloxone (opioid antidote)
☐ Put the person in a bath of cold water
☐ Check for breathing
☐ Check for blocked airways (nose and mouth)
☐ Put the person in bed to sleep it off

Q4 What is naloxone used for?
☐ To reverse the effects of an opioid overdose (e.g. heroin, methadone)
☐ To reverse the effects of an amphetamine overdose
☐ To reverse the effects of a cocaine overdose
☐ To reverse the effects of any overdose
☐ Don't know

Q5 How long does naloxone take to start having effect?
☐ 2-5 minutes
☐ 5-10 minutes
☐ 10-20 minutes
☐ 20-40 minutes
☐ Don't Know

Q6 How long do the effects of naloxone last for?
☐ Less than 20 minutes
☐ About one hour
☐ 1 to 6 hours
☐ 6 to 12 hours
☐ Don't know

Q7 If the first dose of naloxone has no effect a second dose can be given
☐ True
☐ False
☐ Don't Know

Q8 There is no need to call for an ambulance if I know how to manage an overdose
☐ True
☐ False
☐ Don't Know

Q9 Someone can overdose again even after having received naloxone
☐ True
☐ False
☐ Don't Know

Q10 The effect of naloxone is shorter than the effect of heroin and methadone
☐ True
☐ False
☐ Don't Know

Q11 After recovering from an opioid overdose, the person must not take any heroin, but it is ok for them to drink alcohol or take sleeping tablets
☐ True
☐ False

☐ Don’t Know

Q12 Naloxone can provoke withdrawal symptoms
☐ True
☐ False
☐ Don’t Know

Appendix B

Opioid Overdose Attitudes Scale

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Please, mark how much you agree with each statement:	Completely Disagree	Disagree	Unsure	Agree	Completely Agree
Q1 I already have enough information about how to manage an overdose	☐	☐	☐	☐	☐
Q2 I am already able to administer naloxone to someone who had overdosed	☐	☐	☐	☐	☐
Q3 I would be able to check that someone who had an overdose was breathing properly	☐	☐	☐	☐	☐
Q4 I would be afraid of giving naloxone in case the person becomes aggressive afterwards	☐	☐	☐	☐	☐
Q5 If someone overdoses, I want to be able to help them	☐	☐	☐	☐	☐
Q6 I would be afraid of doing something wrong in an overdose situation	☐	☐	☐	☐	☐
Q7 I would be reluctant to use naloxone for fear of precipitating withdrawal symptoms	☐	☐	☐	☐	☐
Q8 Everyone at risk of witnessing an overdose should be given a naloxone supply	☐	☐	☐	☐	☐

Please, mark how much you agree with each statement:	Completely Disagree	Disagree	Unsure	Agree	Completely Agree
Q9 I couldn't just watch someone overdose, I would have to do something to help	☐	☐	☐	☐	☐
Q10 If someone overdoses, I would call an ambulance but I wouldn't be willing to do anything else	☐	☐	☐	☐	☐
Q11 I am going to need more training before I would feel confident to help someone who had overdosed	☐	☐	☐	☐	☐
Q12 I would be able to perform mouth to mouth resuscitation to someone who had overdosed	☐	☐	☐	☐	☐
Q13 Family and friends of drug users should be prepared to deal with an overdose	☐	☐	☐	☐	☐
Q14 I would be able to perform chest compressions to someone who had overdosed	☐	☐	☐	☐	☐
Q15 I would be concerned about calling emergency services in case the police come around	☐	☐	☐	☐	☐
Q16 If I tried to help someone who had overdosed, I might accidently hurt them	☐	☐	☐	☐	☐
Q17 If I witnessed an overdose, I would call an ambulance straight away	☐	☐	☐	☐	☐
Q18 If I saw an overdose, I would panic and not be able to help	☐	☐	☐	☐	☐
Q19 If someone overdoses, I would know what to do to help them	☐	☐	☐	☐	☐
Q20 I would be able to place someone who had overdosed in the recovery position	☐	☐	☐	☐	☐

Please, mark how much you agree with each statement:	Completely Disagree	Disagree	Unsure	Agree	Completely Agree
Q21 I would stay with the overdose victim until help arrives	☐	☐	☐	☐	☐
Q22 I would prefer not to help someone who has overdosed, because I'd feel responsible if they died	☐	☐	☐	☐	☐
Q23 I know very little about how to help someone who has overdosed	☐	☐	☐	☐	☐
Q24 I would be able to deal effectively with an overdose	☐	☐	☐	☐	☐
Q25 If I saw an overdose, I would feel nervous, but I would still take the necessary actions	☐	☐	☐	☐	☐
Q26 I will do whatever is necessary to save someone's life in an overdose situation	☐	☐	☐	☐	☐