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The Impact of Simulation Learning on Community Opioid Overdose Prevention in Nursing Education

Lara Sheppa

The Impact of Simulation Learning on Community Opioid Overdose Prevention in

Nursing Education

by

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Abstract

Drug overdose, especially from opioids, is a global problem which has stretched across all racial, generational, and socio-economical groups. Millions of people have been affected on a personal or professional basis by the emotional, physical, and financial impacts of this crisis. There is a critical need to provide support for public health awareness and education on opioid overdose prevention. Worldwide, federal, state and grassroot initiatives have been implemented to help reduce harm from opioid use. The goal of this scholarly project was to prepare Associate Degree nursing students with the requisite knowledge, skills, and attitudes to manage opioid overdose within community settings and provide education on opioid overdose prevention to members of the community. The educational intervention consisted of classroom lecture and two low-fidelity simulations. A convenience sample of 34 senior nursing students participated in a pretest posttest design to evaluate the efficacy of the educational intervention. Study results indicated the use of classroom lecture and low-fidelity simulations were an effective educational intervention for preparing nursing students to manage opioid overdose within community settings and providing education on opioid overdose prevention to community members.

Keywords: opioid overdose, overdose prevention, simulation, nursing student, nursing education, community opioid overdose prevention

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INTRODUCTION

Opioid use and overdose statistics have been closely monitored and reported worldwide for decades. According to the 2016 World Drug Report, the world is currently experiencing a landmark moment in global drug policy (United Nations Office on Drugs and Crime [UNODC], 2016). The National Survey on Drug Use and Health (NSDUH) reported an estimated 27.1 million, or 1 in 10 individuals, in the United States over the age of 12 used an illicit drug in the past month and another 3.8 million people misused prescription pain medications (Substance and Mental Health Services Administration [SAMHSA], 2016a). Evidence has shown that drug overdose deaths have become a significant public health burden in the United States (Hedegaard, Warner, & Miniño, 2017) and current number of deaths from overdose are unacceptable and preventable (UNODC, 2016).

In response to the high mortality rates from drug overdose some nations are increasingly adopting less repressive policies, including harm reduction approaches and decriminalization (Drug Policy Alliance, n.d.). "Harm reduction is a set of practical strategies and ideas aimed at reducing negative consequences associated with drug use" (Harm Reduction Coalition [HRC], n.d., "Principles of Harm Reduction," para. 1). According to the HRC, there is no set protocol for harm reduction, since implemented strategies are based upon the needs of the community.

One of the central principles of harm reduction has been the provision of services and resources to people who use drugs and the communities they live in (HRC, n.d.). The Institute of Medicine (IOM, 2012) identified the three required domains that improve population health, which includes efforts directed towards the social and environmental

conditions that are the primary determinants of health. SAMHSA (n.d.-a) encouraged the mobilization of different sectors of the community, such as educational systems, to improve public health. The Centers for Disease Control and Prevention (CDC) have also identified that a broad range of stakeholders are needed to improve population health, including the integration of population health into healthcare professional education (CDC, October 2013). In response to the current public health crisis of drug use and overdose, it is essential that nursing education provides training on the application of harm reduction strategies that are required to meet the needs of communities throughout the United States.

SECTION I

PROBLEM RECOGINTION

Problem Setting

Global statistics reflect that 247 million people used at least one drug in 2014 with an estimated 207,400 drug-related deaths in the same year (UNODC, 2016). This same year, the UNODC estimated an approximate 33 million people used opioids and prescription opiates. Heroin has continued to require priority attention from the international community due to a resurgence in use and heroin-related fatalities. This problem is further impacted by polydrug use, which is the use of more than one drug, either concurrently or sequentially.

Drug activity in the United States has correlated with the increase seen internationally. Death from heroin overdose increased 6.2-fold and opioid overdose deaths increased 2.8-fold in the United States from 2002 to 2015 (National Institute on Drug Abuse [NIDA], 2017b). Nationally, there were 52,404 deaths from overdoses in 2015 (Rudd, Seth, David, & Scholl, 2016) and over 64,000 drug overdose deaths in 2016 (NIDA, 2017b). Death from opioid overdoses has become more prevalent than car accidents in the United States (Harrison & McClure, 2018). Along with the national growth of opioid use and overdoses, statistics have shown a significant increase in the number of heroin-related deaths in the southern regions of the United States (Rudd, Aleshire, Zibbell, & Gladden, 2016).

At the state level, North Carolina had the second largest percentage increase in deaths from synthetic opioids (other than methadone) at 46.4% and experienced the fourth largest increase in natural/semi-synthetic opioid death rates in the United States

from 2014-2015 (Rudd, Seth et al., 2016). Opioid overdose deaths increased by nearly 800% from 1999-2016 (North Carolina Department of Health and Human Services [NCDHHS], 2017). The North Carolina Office of the Chief Medical Examiner reported a 46.1% increase in fentanyl-related deaths from 2015-2016, a 43% increase in heroin-related deaths from 2014-2015 (which has remained constant), and a 67.6% increase in combined heroin and fentanyl-related deaths from 2015-2016 (Winecker, 2017).

At the local level, the "2016 Wake County Community Assessment" identified mental health and substance abuse as the fourth priority area requiring community health improvement planning initiatives over the next three years (Wake County Human Services [WCHS], 2016). This study recorded an increased prevalence of substance abuse within the county, resulting in 2.9 heroin deaths/100,000 people, 5.1 opioid deaths/100,000 people and an overall 400% increase in heroin deaths from 2011-2015. The authors of this study recognized the significant consequences of drug use and overdose: substance abuse not only the impacts the individual, but also their family and friends, and the broader community.

From a global perspective to a local community level, mortality rates from drug overdose have increased and adversely affected public health. The CDC (2015) and the United States Department of Health and Human Services (USDHHS) (2018) have referred to the issue as an *epidemic*. The CDC (2012, para. 3) defined an epidemic as "an increase, often sudden, in the number of cases of a disease above what is normally expected in that population in that area". Widespread media attention regarding the adverse consequences of the opioid epidemic has increased public and political

awareness. Substance abuse mortality statistics have continued to grow and become a concern that is affecting individuals and families across the United States.

Magnitude and Impact of the Problem

The impact of drug use in terms of its consequences has devastated global public health (UNODC, 2016). The UNODC reported opioid use as a major cause of potential harm and health consequences affecting public health. This report also noted increased heroin use in North America. Adverse consequences due to drug use include: increased rates of Human Immunodeficiency Virus, Hepatitis C, and sexually transmitted infections, high-risk behaviors, increased demand for treatment, unemployment and poverty, marginalization and social exclusion, and decreased levels of education (UNODC, 2016). In response to these public health concerns, the UNODC has identified Sustainable Development Goal #3: Ensure healthy lives and promote well-being for all at all ages, which specifically included the prevention and treatment of substance/narcotic drug abuse. Evidence-based practice has provided scientific evidence that overdose prevention strategies, including the administration of naloxone, have been effective in preventing the adverse consequences of drug abuse (UNODC, 2016).

In the United States, the loss of lives from drug addiction has just been one part of the problem. According to National Institute on Drug Abuse (NIDA) (2017a), the use of illicit drugs has resulted in costs related to crime, lost work productivity, and health care adding up to more than $193 billion dollars annually, with $11 billion from just health care costs. The exponential growth in the number of people affected by drug addiction, drug-related health issues, and overdose has overburdened society and the health care system and resulted in severe challenges for local public health facilities. Most people

dealing with substance abuse disorders do not receive treatment, which has contributed to reduced quality and increased health care costs (USDHHS, 2016).

In March 2017, President Donald Trump established the Office of National Drug Control Policy Commission (ONDCP), whose mission focused on reducing the use and consequences of drugs and to support the President's Commission on Combatting Drug Addiction and the Opioid Crisis (The White House, 2018a). The ONDCP have identified their commitment towards understanding the epidemic's trends, expanding community-based drug prevention efforts (including access to evidence-based practice treatments, naloxone, and treatment services to those administered naloxone), and addressing the healthcare needs of individuals affected by opioid use disorders (The White House, 2018c). The mission of this group included assessing the availability and accessibility of drug addiction treatment services and overdose reversal and identifying areas that are underserved. Due to the severity of the opioid crisis, on July 31, 2017 the Commission on Combatting Drug Addiction and the Opioid Crisis asked President Trump to declare a national emergency (The White House, 2017), which resulted in the declaration of a Nationwide Public Health Emergency on October 26, 2017 (The White House, 2018d).

North Carolina has been ranked 32nd in the nation for overall public health (United States Health Foundation, 2016). From 2009 to 2014, there was a 71% increase in the number of hospital admissions related to opioid-use (Agency for Healthcare Research and Quality [AHRQ], 2018a). Statistics showed 92.6% of these deaths were caused by over-the-counter, prescription and illicit drugs and medications (North Carolina Injury & Violence Prevention Branch [NCIVPB], 2016). Statewide there were 10,369 reports of successful administrations of naloxone by lay individuals between

8/1/13-3/1/18 (North Carolina Harm Reduction Coalition [NCHRC], 2018). With the growth of the opioid crisis, North Carolina has relied upon community-based initiatives to help decrease the number of deaths from opioid overdose. Within Wake County, the NCHRC (2018) has provided information and education on harm reduction strategies.

In 2017, lawmakers increased efforts to fight opioid abuse and overdose. This resulted in politically-driven efforts on a national and statewide level to save the lives of the thousands of people that have been affected by this epidemic. In North Carolina, lawmakers initiated legislative action to promote community efforts to decrease the number of deaths from overdose statewide. Former North Carolina Governor, Pat McCrory, strengthened the North Carolina Good Samaritan Law by addressing the fear of prosecution related to calling 911 to prevent an overdose (NCDHHS, 2015). On June 20, 2016, Governor McCrory signed legislation authorizing a statewide standing order for naloxone to increase the availability of naloxone to decrease opioid overdose mortality (NCIVPB, n.d.). On July 11, 2016, the Safe Syringe Exchange legislation allowed North Carolina governmental and non-governmental facilities to support Syringe Exchange Programs (SEP) (NCDHHS, n.d.). The current Governor of North Carolina, Roy Cooper, was inducted into office in January 2017. In March 2017, Roy Cooper became a member of the ONDCP (The White House, 2018b). In June 2017, the North Carolina Opioid Action Plan was released (NCDHHS, 2017). The goal of this action plan was to decrease the number of opioid overdose deaths in the state by 20% by 2021. This plan included steps to increase community awareness and prevention, make naloxone widely available, and to expand treatment and recovery oriented systems of care.

Wake County is home to the state of North Carolina's capital city of Raleigh, which is estimated to have a population of 1,072,203 people spread throughout the 12 municipalities found within the county: 64.8% of the residents are between the ages of 18 and 64 and 68.5% of the population reported being white (United States Census Bureau, 2017). The growth of unintentional heroin mortality rates has seen significant increases in North Carolina's urban areas (Gunn et al., 2018). In both 2013 and 2016, mental health and substance abuse were identified as priority issues requiring community support and allocation of resources (Wake County Human Services et al., 2016). Local media reported that Wake County's emergency medical support officials answer two to three overdose related calls a day and up 10 calls per day on weekends (Owens, 2017). Opioid overdose-related Emergency Department (ED) visits totaled 4,103 in 2016 and have resulted in 2,591 deaths in 2017 as of 7/14/17 (NCIVPB, 2017). In 2014, there were 679 (65/100,000) opioid related discharges in Wake County (AHRQ, 2018b). There has been heightened concern over the strain on local community resources from the increased numbers of drug use and overdose. The North Carolina Opioid Action Plan has called for state agencies and community members to respond to this crisis (NCDHHS, 2017).

Laderman and Martin (2017) published a call to action for health care providers to begin addressing the opioid crisis in the United States. They recognized the important role that nurses hold within the systemic approach that is required to overcome increased morbidity and mortality rates due to opioid use. This report listed four tasks for health care providers to address: (1) limiting the supply of prescription opioids in circulation, (2) raising awareness of the risk of opioid addiction, (3) identifying and treating opioid-

dependent individuals, and (4) collaborating closely with community organizations also

working on the opioid crisis (Laderman & Martin, 2017).

Gaps in Practice

Prior to the development of the Doctor of Nursing [DNP] project a literature

review was completed to identify the current recommendations for community opioid

overdose prevention. Next, a gap analysis was performed to determine whether gaps in

knowledge and current practice existed. See Table 1 for the practice change

recommendations and results of the gap analysis.

Table 1

Practice Change Recommendations and the Gap Analysis

Selected Guideline Recommendations	Existing Policy? Yes/No
Setting: Worldwide Description: The UNODC and WHO (2013) *Discussion Paper* outlined the required education and interventions for the recognition and treatment of opioid overdose. Target Population: Health Care Professionals, Patients, Families, and Community Members	No
Setting: United States Description: The *Model Naloxone Access Act* recommended providing instruction on the signs of overdose, administration of naloxone, and care following naloxone administration (National Alliance for Model State Drug Laws [NAMSDL], 2016). Target Population: First Responders, Patients, Families, and Community Members	No
Setting: United States Description: The *IHI Innovation Report* recommended providing training on stigma reduction training, prevention of fatal overdose, and the dangers of opioids (Martin, Laderman, Hyatt, & Krueger, 2016). Target Population: Health Care, Law Enforcement, Schools, the Judicial System, Addiction Treatment Centers, Emergency Medical Technicians, Public Health Officials, and Community Members	No
Setting: United States Description: The *Opioid Overdose Prevention Toolkit* recommended providing education and interventions for the prevention and management of opioid overdose (SAHMSA, 2016b). Target Population: First Responders, Patients, Families, and Community Members	No
Setting: United States Description: The *Community Management of Opioid Overdose* guidelines recommended providing training on the administration of naloxone, how to select the appropriate route, first responder actions, and post-naloxone monitoring (World Health Organization [WHO], 2014). Target Population: Community Members	No
Setting: United States Description: The USDHHS (2016) published *Facing addiction in America: The surgeon general's report on alcohol, drugs, and health* has provided strategies to reduce harm from opioid use. Target Population: Educators, Organizations, Policymakers, and Community Members	No
Setting: North Carolina Description: *Adopting Naloxone Standing Orders* is a toolkit which identified the need for North Carolina Health Departments to provide training on naloxone distribution and overdose prevention and treatment to the community (NCDHHS, 2015). Target Population: Community Members	No
Setting: North Carolina Description: The *North Carolina Opioid Action Plan 2017-2021* has identified focused areas for the reduction of overdose deaths (NCDHHS, 2017). Target Population: Community Members	No

Evidence-Based Practice Solutions

The National Alliance for Model State Drug Laws (NAMSDL) developed the

Model Naloxone Access Act, which has indicated opioid-related overdose deaths are

preventable if naloxone is readily available to first responders, family members, and

others able to help an individual experiencing an opioid-related overdose (2016). This act

recommended overdose education and naloxone distribution programs which provide

training on overdose reversal. North Carolina has approved a standing order for the

dispensing of naloxone at pharmacies, which has increased the actual/potential use of the

medication within the state (NCDHHS, 2015).

In 2016, the Martin, Laderman, Hyatt, and Krueger published the *Institute for*

Healthcare Improvement [IHI] Innovation Report on the opioid crisis following a 90-day

innovation project to research 33 ongoing programs implemented by federal, state, and

local governments, professional associations, health systems and health plans, and

academic institutions to improve the opioid epidemic (Martin et al., 2016). The project

outlined gaps and identified current approaches being used across the country. This report

listed approaches focused on the goal of reversing the opioid crisis within communities

and indicated that this would require community members and stakeholders to identify

and manage the opioid dependent population and treat opioid addicted individuals

through compassionate and consistent care, education of patients and families, and

prevention of fatal overdose.

As drug overdose statistics continue to grow and overwhelm community

resources, there have been evidence-based practice solutions published for community

guidance. The Opioid Overdose Prevention Toolkit (SAMHSA, 2016b) included

information for community members, first responders, patients, and families. Each section provided important steps to support communities affected by the consequences of drug overdose. One of the key strategies identified in this report also indicated that persons likely to witness an overdose need to be provided instructions on the prevention and management of overdose with naloxone.

In response to the current opioid epidemic, the World Health Organization (WHO) developed guidelines which were based on the findings of a systematic review of 5,594 studies on community management of opioid use (2014). These guidelines were the result of a systematic review of current literature by content experts from each of the WHO regions. The WHO (2014) recommendations included:

1. People likely to witness an opioid overdose should have access to naloxone and be instructed in its administration to enable them to use it for the emergency management of suspected opioid overdose;

2. Naloxone is effective when delivered by intravenous, intramuscular, subcutaneous, and intranasal routes of administration. Persons using naloxone should select a route of administration based on the formulation available, their skills in administration, the setting, and local context;

3. In suspected opioid overdose, first responders should focus on airway management, assisting ventilation, and administering naloxone; and

4. After successful resuscitation following the administration of naloxone, the affected person should have their level of consciousness, and breathing closely observed until they have fully recovered.

According to results of this study, providing persons likely to witness an overdose with naloxone and instructions for use is strongly recommended.

The UNODC and WHO (2014) collaborated on a discussion paper focused on the prevention and reduction of deaths due to opioid overdose. This publication identified measures required to prevent and treat opioid overdose, such as the identification of opioid overdose, administration of naloxone, and post-treatment care and education.

In 2016, the United States Surgeon General published the first-ever report on alcohol and drugs (USDHHS, 2016). This publication, entitled *Facing addiction in America: The surgeon general's report on alcohol, drugs, and health,* provided strategies to reduce harm from opioid use. This report specifies that all persons, including health care professionals, play a key role in reducing the devastating consequences from substance abuse. The report also identifies the increased use of naloxone as a high priority issue (USDHHS, 2016).

A toolkit developed by the NCDHHS provided educational and training resources for the assessment and treatment of opioid overdose (2015). The protocol, which included all training material, was written for public health department use in training first responders. The information was written for non-medical personnel, with additional information provided on fire department and law enforcement roles. An important focus of this toolkit was community outreach and the implementation of harm-reduction strategies, including education.

The *North Carolina Opioid Action Plan 2017-2021* has identified seven focused areas as a part of a comprehensive strategy for the reduction of overdose deaths (NCDHHS, 2017). This included increased community awareness and prevention and

expanding treatment and recovery oriented systems of care for opioid use and overdose. A specific strategy for increasing community awareness and prevention suggested public education campaigns for naloxone use and access, safe drug disposal and storage, and stigma reduction.

Mortality rates from drug overdose have continued to rise. This epidemic has required a multi-disciplinary approach for overdose management. Evidence-based practice has supported community education on the prevention and management of opioid overdose. These publications have identified the need for community awareness on the identification of opioid overdose, administration of naloxone, and post-resuscitation monitoring. Nurses play an essential role in the support of these community initiatives.

SECTION II

NEEDS ASSESSMENT

Expanded Literature Review

Over the past five years, published guidelines have supported community management of opioid prevention and treatment. The HRC (2012) published a guide for community-based training on overdose prevention and education (Wheeler, Burk, McQuie, & Stancliff, 2012). This guideline supported the distribution of naloxone with the provision of education on overdose prevention and treatment.

Bennett and Holloway (2012) studied the impact of naloxone training on client knowledge of opiate overdose and confidence and willingness to take appropriate action, and to examine the use of naloxone during overdose. Trainers provided an educational seminar on recognizing signs of overdose, emergency procedures and the administration of naloxone, via discussion, a movie and injection practice, and then measured the effectiveness of the teaching session on members of the community using pre/post-tests. Study findings indicated the group receiving training showed significant improvement in knowledge and willingness to act in future overdose incidents.

A qualitative analysis study was completed on 30 participants to determine the effectiveness of overdose reversal training with naloxone on current opiate users (Lankenau et al., 2012). The teaching session included didactic, role play/return demonstration, and injection practice. A unique feature of this study was the use of palm cards with the mnemonic "SCARE ME", which represented the sequence of steps for overdose reversal. Following training, the clients reported successful reversal of opiate overdose in 29 out of 30 cases (one case outcome was unknown). This study

recommended continued emphasis of hands-on exercises, such as practicing rescue breathing with a CPR dummy, drawing naloxone out of a vial, and performing an IM injection, and booster training sessions for reinforcement. These recommendations were provided to help participants learn response skills more effectively than with didactic instruction alone.

Klimas, Egan, Tobin, Coleman, and Bury (2015) completed a repeated measure design pilot study on the provision of a one-hour teaching session for general practitioners on the identification and management of opioid overdose and intranasal naloxone administration. The teaching session consisted of a small group session, a practical exercise, a video clip and anonymous evaluation, and feedback. This study was done on 23 participants and provided recommendations to inform future train-the-trainer models.

Global, national, state, and community research findings reflect evidence-based support for the treatment of opioid overdose and the provision of education on opioid overdose prevention to community members. With the global increase in mortality rates, there is an urgent need for the implementation of evidence-based interventions focused on this public health crisis. Nurses play an essential role in providing care to opioid overdose victims and educating the community on opioid overdose prevention to decrease mortality rates and improve client outcomes.

Population/Community

The selected population was currently enrolled, senior level, nursing students at a local community college. This population was selected due to the potential for 40 students, geographical location, and the relevance of current course content to community

opioid overdose prevention. Past records indicated that most graduates from this program obtained nursing positions within the same county where the college is located. This suggested large potential impact on future mortality rates from opioid overdose within the county.

PICOT Statement

The Doctor of Nursing Practice (DNP) Project Leader of this study sought to answer the practice question regarding opioid overdose and community educational preparation for Associate Degree nursing students. Will an educational intervention with traditional lecture and low-fidelity simulations improve nursing student knowledge, skills, and attitudes on opioid overdose prevention within community settings? To answer this question, an educational intervention on community opioid overdose prevention was developed and implemented at a local community college. Nursing students were provided with the opportunity to develop the requisite knowledge, skills, and attitudes to manage opioid overdose and provide education on opioid overdose to community members to improve client outcomes and mortality rates within the community.

Problem: Nursing student's knowledge, skills, and attitudes on community opioid overdose prevention

Intervention: Traditional lecture and low-fidelity simulations

Comparison: None

Outcome: Improvement of nursing student's knowledge, skills, and attitudes on community opioid overdose prevention

Time: Upon completion of the educational intervention

Sponsor and Stakeholders

The identified sponsor for the DNP project was a local community college with one of largest nursing programs in North Carolina (National Council State Boards of Nursing [NCSBON], 2018a) and accreditation from the Accreditation Commission for Education in Nursing (ACEN). The program's three-year pass rate for 2015-2017 was 98% (NCSBON, 2018b). Due the large size of the college and nursing program, positive reputation within the community, and commitment towards meeting the needs of the community this community college was an ideal location for the implementation of this scholarly project.

The identified external stakeholders for this project included: any person using opioids or diagnosed with Opioid/Substance Use Disorder, friends and family of opioid users, public facilities (libraries, restaurants, schools etc.), Syringe Exchange Programs (SEP), first responders (fire departments, emergency medical services, law enforcement etc.), substance abuse providers and facilities, the local health department, hospital emergency departments and urgent care centers, community health centers, the local harm reduction coalition, and facilities employing graduates from the local community college's nursing program (hospitals, correctional facilities, clinics, physician offices etc.).

The internal stakeholders included the Department of Nursing's administration, faculty, and students, Dean of Health Sciences, Vice President of Curriculum Education Services, and the Chief Academic Officer. Curriculum revisions were discussed and approved by the course team members, the Curriculum Committee, and the Faculty

Committee. Institutional Review Board (IRB) approval for this DNP project was obtained

from the project university and the community college.

Organizational Assessment and SWOT Analysis

A strengths, weaknesses, opportunities, and threats (SWOT) analysis was

completed as a part of the needs assessment. See Table 2 for the results of the SWOT

analysis.

Table 2

SWOT Analysis

	Positive	Negative
Internal	Strengths • High level of achievability for the plan and goal • Approval and aid from the internal stakeholders • Faculty motivation to implement evidence-based practice • Availability of resources • Minimal financial impact • ACEN accreditation status requirements for self-regulation, quality improvement and evidence-based practice • Strong reputation for providing quality nursing education within the county • High licensure pass rates within the nursing program • Faculty familiarity with the implementation of evidence-based practice • The nursing program is a part of a very large community college with increased access to resources • Congruency between the identified philosophy, mission statement, values and culture of the organization and the DNP project • Project Leader's experience and credentials include over 25 years of nursing experience, 16 years as a Nurse Educator, ranking as a Professor of Nursing, Nurse Educator certification, and familiarity with the faculty, administration, and practice setting.	Weaknesses • Lack of current instruction on the community opioid overdose prevention within the nursing curriculum • Departmental budgetary restraints • Faculty time restraints • Scheduling conflicts for physical space, classes, and faculty • Emotional impact on students and faculty • Risk of faculty turnover or change in administration • Risk of technology malfunction • Risk of lost access to resources • Risk of faculty resistance to change • Breakdown of communication • Timeline requirements

	• Large nursing faculty department with two Certified Healthcare Simulation Educators willing to assist with project implementation • Faculty and clinician mentoring and support throughout the project duration • Emergency Medical Services Simulation Coordinator and Healthcare Simulation Technology Coordinator on the same campus with faculty willing to assist with project implementation	
External	Opportunities • Improved outcomes and decreased mortality from opiate overdose • Open positions for faculty champions • Increased use of evidence-based practice within the curriculum to improve curriculum planning • Increased faculty, student, patient and community member knowledge and skill on opiate overdose • Increased collaboration between curriculum programs: Emergency Medical Services and Healthcare Simulation Technology • Direct effect on the identified stakeholders • Enhancement of the college statistics and reputation for quality nursing education and ability to meet the needs of the community • Data production to support ongoing accreditation and Board of Nursing approval status • Decreases individual, facility and corporate liability • Congruence with local, state, national and global needs • Congruence with political strategies related to overdose • Congruence with local coalition, public health department, and health care facility initiatives • Research development and contribution to nursing knowledge	Threats • Variance in drug overdose prevention education within the community • Variance in political and ethical views on drug overdose prevention • Adverse weather conditions threatening implementation

The associated strengths and opportunities for this DNP project were significant and strongly supported the potential value and impact to the community. The availability of resources was an important factor in minimizing financial impact. The community college's nursing program had achieved ACEN certification and had a strong reputation for providing quality nursing education within the county. The identified benefits of program accreditation include an ongoing self-regulatory process for routine assessments and improvements and increased student outcomes on licensure exams (Ard, Beasley, & Nunn-Ellison, 2017). The faculty's familiarity with the implementation of evidence-based practice was an asset to this project. The required use of evidence-based education within the program increased faculty acceptance and participation in the DNP project. The nursing program is part of a very large community college with increased access to resources. Congruency between the identified philosophy, mission statement, values and culture of the organization, the end of program student learning outcomes of the nursing program, and the project was identified. Lastly, the Project Leader's experience and credentials were important factors in the success of this scholarly project.

This scholarly project included many potential opportunities. The primary opportunity involved improved patient outcomes and decreased mortality from opioid overdose. The implementation of this project provided faculty with the opportunity to be involved in an educational intervention which used evidence-based practice and simulation resources to achieve end of program student learning outcomes, fulfill the college's mission statement, and improve client outcomes within the community. There was also opportunity to increase collaboration between curriculum programs, using Emergency Medical Services (EMS) and Healthcare Simulation Technology's (HST)

resources and faculty. The identified opportunities positively impacted the identified stakeholders and met the needs of the community with minimal financial impact and future sustainability. Project data was identified to support ongoing accreditation and Board of Nursing approval status. Students benefited from project implementation by learning about opioid overdose prevention and being prepared to provide care and education within the community. Long term and communitywide results of this project were unknown, however, there may have been an impact on community awareness, health care costs, and mortality rates. Collectively, the expansive list of strengths and opportunities for this scholarly project greatly supported the implementation of the project.

Weaknesses and threats for the DNP project were identified and addressed. The potential for issues to arise throughout the process of planning and implementing the project existed, however the development of counter measures to ensure the success of the project were planned. Assessment of the current program revealed that there was a lack of curriculum education on community opioid overdose prevention. Faculty was educated on the gap analysis, evidence-based guidelines, and project plans to promote acceptance of the project recruit faculty assistance. The development and implementation of this project required the availability of resources and faculty. Resources and faculty were identified in three separate curriculum programs, which helped to decrease overall cost. Four faculty volunteers who were available during project implementation were recruited, which helped to avoid scheduling conflicts. Scheduling conflicts for rooms and equipment were avoided through early planning and communication. The project team worked well together and were able to communicate professionally and meet all project

deadlines. With the use of technology there was a risk of malfunction, which required flexibility and pre-planning with alternate options identified. Meeting with team members to identify barriers and develop new strategies was essential. The success of this project required flexibility and creativity in problem-solving. Throughout project implementation, there were no unexpected costs or situations which occurred. Finally, the topic of opioid overdose had the potential risk of emotionally impacting students. The Project Leader provided information on student resources prior to project implementation in response to this concern.

The SWOT analysis was an essential part of the needs assessment. The SWOT assessment was used to develop a project which best utilized the identified strengths and opportunities. Leadership, collaboration, and communication were used to overcome weaknesses and avoid threats.

Available Resources

The community college's health science campus had 13 programs of study. The nursing department had 23 full-time faculty at the time of project implementation. There were four dedicated classrooms for use by nursing faculty. A print shop was available for the duplication of handouts. The nursing lab provided a syringe, injection pad, alcohol wipes, injection vial, and face shield for use during the teaching session in the opioid overdose prevention simulation.

The EMS and HST programs are both located on the same campus as the nursing program. Due to collaborative efforts with these programs, the Project Leader had access to a simulation room, which was set up to look like an apartment, simulation props, video equipment, a low-fidelity adult manikin, and a high-fidelity infant simulator. The

moulage material was provided by the HST program.

Desired and Expected Outcomes

Nursing education has had a significant role in preparing nursing students to respond to the current opioid epidemic. However, more research is needed on the most effective way to prepare nursing students for this essential role. Based upon the acuity of the opioid crisis and the staggering mortality rates, it is critical that nursing curriculum provides education which reflects the health care needs of both the local and global community. The desired and expected outcomes for this scholarly project was to effectively prepare nursing students with the knowledge, skills, and attitudes needed for community opioid overdose prevention to positively impact patients, families and community members affected by opioid overdose.

Team Selection

The Department Head for the nursing program accepted the role of the Practice Partner for the DNP project. The Practice Partner and DNP Practice Learning Environment contracts were reviewed and discussed, and a copy of the signed contracts and her curriculum vitae were obtained. This member was chosen due to her current position at the college, experience, and DNP education, which supported the facilitation implementation of this scholarly project.

The Simulation Lab Instructor accepted the role of a Committee member for the DNP Project. The Committee Member role was reviewed and discussed, and a copy of the signed contract and her curriculum vitae was obtained. The Committee member had a Masters in the Science of Nursing (MSN) degree with a concentration in nursing education. This member was selected due to her role as the current Simulation

Coordinator, years of nursing education and simulation experience, and credentials, which include Certified Nurse Educator (CNE) and Certified Healthcare Simulation Educator (CHSE).

The Lab Coordinator was involved in the planning and implementation of this project. This faculty member also held an MSN, was a CHSE and CNE, and was an experienced community college faculty member. Since only one faculty member was required to facilitate the simulations with the Project Leader, the Lab Coordinator and Simulation Coordinators were able to take turns filling this role.

A faculty member from the EMS and HST programs volunteered to assist with the implementation of this project, which included running the video equipment and infant simulator and setting up props in the simulation setting. Both faculty members had EMS experience and long-term experience as community college faculty. Since only one person was needed to run the equipment, these faculty members were able to take turns filling this role.

The Project Leader was responsible for coordinating all aspects of project development, implementation, and evaluation and leading team meetings. Class lecture was developed and provided by the Project Leader. For simulation, the Project Leader facilitated each pre-briefing and debriefing session and took turns with the other nursing faculty in facilitating the opioid overdose management and opioid overdose education simulations.

Cost/Benefit Analysis

A budget was not necessary for the implementation of this project. Kaléo Inc. provided two trainer naloxone nasal auto-injectors without charge (2017). Additional

equipment included syringes with needles, alcohol preps, and vials of bacteriostatic 0.9%

sodium chloride. These items were purchased in bulk by the nursing department and were

readily available for use during simulations. The college required that all handouts were

provided for each student, so all handouts were sent to the college printshop. Overall time

for implementation is addressed in Table 3. Additional resource cost included time

required to aggregate, assimilate, and disseminate data and findings.

Table 3

Faculty Time Commitment

	Classroom		Simulation			Summary of Hours	
	Pre-test	Lecture	Sim. Prep.	Simulation/ Post-Test	Sim. Recovery	Total Hours Class	Total Hours x9 (Sim. Only)
Classroom							
Faculty #1	0.5 Hrs.	1 Hr.				1.5 Hours	
Faculty #2	0.5 Hrs.					0.5 Hrs.	
Simulation							
Faculty #1			1 Hr.	2 Hrs. 15 Minutes	0.5 Hrs.		33.75 Hrs.
Faculty #2			1 Hr.	2 Hrs. 15 Minutes	0.5 Hrs.		33.75 Hrs.
Total Hours EACH: Class and Simulation Activities						2 Hrs.	67.5 Hrs.
Total OVERALL Hours for Class and Simulation Activities						69.5 Hours	

The prospective value of the DNP Project was the large impact that an additional 120-140 new graduate nursing students per year who have been trained on community opioid overdose prevention could have on local, national, and global overdose victims, families, and friends throughout their nursing career. With the current mortality rates from opioid overdose worldwide, regardless of where these students practice nursing there was the potential for positive results and patient outcomes within the community. The project setting county has been identified as the community that will most benefit from this scholarly project, since most students live and continue to work in this area.

Opioid overdose education has resulted in reduced opioid overdose death rates within the community (Walley et al., 2013) and with individuals released from prison (Bird, McAuley, Perry, & Hunter, 2016) and improved cost effectiveness for people using heroin (Coffin & Sullivan, 2013). Additional benefits of overdose education have included decreased use of emergency response resources, improved knowledge and skills of family members, friends, and other members of the community and decreased strain on community and public health resources for opioid overdoses. Evidence-based practice has provided scientific evidence supporting overdose prevention strategies, including the administration of naloxone, which have been effective in preventing adverse consequences from opiate abuse (UNODC, 2016).

Nursing education and practice have benefitted from the development of evidenced-based educational activities. The implementation of effective teaching strategies has increased student knowledge and skill in providing patient care, resulting in improved patient outcomes within employment and/or community settings. Additional benefits of this project included the achievement of meeting accreditation and Board of

Nursing requirements for the use of evidence-based practice and the valuable

contribution to nursing knowledge through the development of a research-based scholarly

project to increase patient outcomes in the field of substance abuse.

Problem Scope

The opioid epidemic has resulted in unprecedented levels of substance abuse

and mortality throughout the world. This has included a significant increase in the

abuse of opiate medications over the past decade in the United States. On July 22,

2016, former President Obama signed the Comprehensive Addiction and Recovery Act

(CARA), a major federal addiction legislation to address the opioid epidemic

(Community Anti-Opiate Coalitions of America [CADCA], n.d.). This act focused on

prevention, treatment, recovery, law enforcement, criminal justice reform and overdose

reversal and highlighted the need for expansion of prevention and educational efforts to

promote treatment and recovery. A year later, on August 10, 2017, President Trump

instructed his Administration to use all resources to respond to the crisis caused by the

opioid epidemic (The White House, 2018a) in response to increased mortality rates due

to opioid use (The White House, 2017). These political actions were initiated to support

state and local initiatives focused on public health concerns related to opioid use.

Statistics have shown a significant increase in the number of heroin-related deaths

in the southern regions of the United States (Rudd et al., 2016). With 15.4/100,000

opioid-related deaths in 2016, North Carolina ranked 26th in the nation for the highest

number of deaths in the United States (Seth, Scholl, Rudd, & Bacon, 2018). In response

to this, the North Carolina Opioid Action Plan, released June 2017, identified a goal to

decrease the number of opioid overdose deaths in the state by 20% by 2021 (NCDHHS,

2017). This plan included steps to increase community awareness on opioid use and overdose and prevention and to expand treatment and recovery-oriented systems of care.

Wake County has a population of 1,046,791 people that are spread throughout the 12 different municipalities found within the county (United States Census Bureau, 2017). The "2016 Wake County Community Assessment" identified mental health and substance abuse as the fourth priority area requiring community health improvement planning initiatives over the next three years (WCHS, 2016). This study recorded an increased prevalence of substance abuse within the county, resulting in 2.9 heroin deaths/100,000 people, 5.1 opioid deaths/100,000 people and an overall 400% increase in heroin deaths from 2011-2015. Table 4 provides further information on the effect the opioid crisis has had on the county where the project was implemented.

Table 4

Project County Opioid Crisis Statistics

Date	Community Statistics	Measurement	North Carolina County Ranking
1999-2016	583	All intents opiate poisoning deaths (NCDHHS, 2017f)	2nd Largest
1999-2016	172	All intents heroin poisoning deaths (NCDHHS, 2017c)	2nd Largest
2004-2016	1,192	All intents opiate poisoning hospitalizations (NCDHHS, 2017h)	2nd Largest
2004-2016	905	All intents commonly prescribed opioid medication poisoning hospitalizations (NCDHHS, 2017b)	2nd Largest
2004-2016	140	All intents heroin poisoning hospitalizations (NCDHHS, 2017e)	3rd Largest
2008-2016	1,008	All intents commonly prescribed opioid medication poisoning Emergency Department (ED) visits (NCDHHS, 2017a)	2nd Largest
2008-2016	1,665	All intents opiate poisoning ED visits (NCDHHS, 2017g)	2nd Largest
2008-2016	486	All intents heroin poisoning ED visits (NCDHHS, 2017d)	3rd Largest

In response to rapid growth of the opioid epidemic, there has been a call to action on global, national, statewide, and local levels. Health care professionals, including nurses, have found themselves at the center of this issue. It is essential that nurses know how to recognize, treat, and educate the public on opioid overdose prevention. Nursing associations have promoted this call to action through increased awareness and recommendations. As a national voice for nursing education, the American Association of Colleges of Nursing (AACN) outlined the priority areas that nurses need to address,

including opioid overdose deaths (2016). The American Psychiatric Nursing Association (APNA) identified the shortage of substance abuse and mental health nurses and explained that all nurses are needed in response to this crisis (Baird & Kastner, 2016). One priority area identified by Baird and Kastner (2016) was patient and family education on the use of naloxone.

The National Council of State Boards of Nursing (NCSBN) has recognized the prevalence of the opioid crisis, specifically the increase in substance abuse and overdose. In response to this epidemic, the NCSBN website provided information on opioid prescribing, abuse, and overdose (n.d.-b). The 2016 NCLEX-RN© Detailed Test Plan-Educator Version has included "Chemical and Other Dependencies/Substance Use Disorder" as a topic of study for the NCLEX-RN© (NCSBN, n.d.-a). This plan identified the need for entry-level nurses to be able to assess for opiate dependency, withdrawal, or toxicity and intervene as appropriate, plan and provide care for substance-related withdrawal or toxicity, provide information on substance abuse diagnosis and treatment plan, provide symptom management for withdrawal or toxicity, and evaluate response to a treatment plan with revisions as needed (NCSBN, n.d.-a). This plan also stated the need for nurses to identify risk factors for disease/illness, teach health risks based on family, population, and/or community characteristics, plan and/or participate in community health education and provide education on actions to promote/maintain health and prevent disease. The required competencies for beginning entry-level nurses further highlighted the level of knowledge and skills required for registered nurses to practice safely and competently in response to current healthcare demands.

National organizations and health care experts have provided additional guidance for nursing programs. The CDC committed to improve individual and community health through academic alliances (2017). The IOM identified the need to improve population health through strategic coordination of collaborative efforts between public health and health care providers (2012). The IHI recommended health care provider education on the dangers of opioids and the expansion of naloxone access to reverse unintentional overdose (Martin et al., 2016). Laderman and Martin (2017) identified the need for increased healthcare provider awareness and recognition of opiate use, provision of compassionate care, management of opioid adverse effects, and overdose prevention. The provision of evidence-based nursing education has prepared students to provide care which meets the health care needs of the community. Nurses have represented a significant portion of the healthcare providers in a community and successfully impacted the public health issue of opioid overdose.

The DNP Project was implemented at a North Carolina community college. The college's nursing program was accredited by the Accreditation Commission for Education in Nursing (ACEN) and was one of the largest programs in the state. ACEN has required congruence between the mission and philosophy of the nursing program and the core values, mission, and goals of the governing organization (ACEN, 2017). The project setting's Mission Statement reflected a commitment towards the development of a workforce that would meet the needs of the community. Mental health and substance abuse had been identified as a priority problem in project county at the time of project implementation (WCHS, 2016). This directly supported and promoted the need for the nursing program to implement training that was focused on improving mental health and

substance abuse within the county to meet the mission of the college and ACEN requirements.

The needs assessment identified that current nursing students at the project site community college did not receive education on the identification and treatment of unintentional overdose with naloxone in community settings. Education on substance abuse disorder was provided in NUR 211 Health Care Concepts, where the concept of "behavior" was taught with the exemplar of "addiction". The students were presented with an overview of addiction: etiology, pathophysiology, DSM-5 related diagnoses, risk factors, behaviors, assessment, diagnosis, planning, treatment, and prevention. This presentation included expected intoxication and withdrawal effects of substance use, pharmacotherapeutic effects of naloxone, and the assessment and planning of nursing care for chemically impaired clients. A critical thinking exercise on opiate addiction, which examined the expected withdrawal symptoms during detoxification, was also provided.

The Associate Degree Nursing Curriculum Improvement Project (ADNCIP) was developed to ensure that community college nursing students met the current workforce needs (ADNCIP, 2006). Current nursing students registered for NUR 212 Health Care Systems following the successful completion of NUR 211. This course taught the concept of "Community-Based Nursing" with an exemplar by the same name. Course content did not address community opioid overdose prevention. The DNP Project Leader met with the nursing department's administration and faculty to recommend the inclusion of class lecture and simulations on community opioid overdose prevention within the curriculum

to update the current program content to meet the current needs of the community college

and ACEN.

SECTION III

MISSION STATEMENT, GOAL, AND OBJECTIVES

Mission Statement

The mission of the DNP project was to create an evidenced-based educational intervention using Kristen Swanson's Middle-Range Caring Theory. Students enrolled in a community college nursing program were provided with the opportunity to develop the requisite knowledge, skills, and attitudes on community opioid overdose prevention to improve client outcomes within the local community.

Goal

The goal of the DNP Project was to prepare nursing students with the requisite knowledge, skills, and attitudes to manage opioid overdose within community settings and provide education on opioid overdose prevention to members of the community.

Module Student Learning Objectives

Upon completion of the theory component for this module, the student will be able to:

1. Summarize North Carolina legislation for the Good Samaritan Law and the Statewide Standing Order/Opiate Antagonist Law.

2. Identify measures to prevent and manage community opioid overdose.

3. Relate knowledge of intranasal and intramuscular naloxone.

4. Outline the key teaching points to include when educating members of the community on the prevention of opioid overdose.

Upon completion of the clinical component for this module, the student will be able to:

1. Demonstrate the knowledge and skill to provide appropriate response technique and sequence of steps in preventing death due to opioid overdose within a community setting.

2. Demonstrate the knowledge and skill to provide education on opioid overdose prevention to members of the community.

3. Demonstrate a positive increase in attitude towards perceived ability to successfully prevent opioid overdose within community settings and provide education on opioid overdose prevention to members of the community.

SECTION IV

THEORETICAL/CONCEPTUAL UNDERPINNINGS

Kristen Swanson's Theory of Caring

The rising numbers of opioid overdoses has created a global epidemic with a widespread and complex impact on humanity. The scope of the problem is multidimensional with insidious repercussions, which are both quantitative and qualitative in nature. The quantitative results from opioid overdose have included factors such as mortality rates, financial loss, and life expectancy. Martins, Sampson, Cerdá, and Galea (2015) performed a systematic review of 169 articles to document the global epidemiological profile of unintentional overdose. The study concentrated on the prevalence, time trends, mortality rates, and correlates of drug overdose. Study findings suggested the use of opioids, used alone or in combination form, in both urban and rural settings have grown, have resulted in increased hospitalizations and deaths related to opioid overdose. These factors have significantly contributed to the increased financial burden of this public health problem. Ho (2017) studied the effects of drug overdose on life expectancy in the United States. The study revealed an increase in years of life lost for all educational gradients due to drug overdose from 1992-2011.

While it is undeniable that mortality rates, life expectancy and the local, national, and global economy have been adversely affected by opioid overdose, these statistics only represent the quantifiable losses which have occurred. Human beings have been affected by this crisis, both collectively as a race and conditionally, through the essence of personhood. Swanson (1991) defined a "person" as "unique beings who are in the midst of becoming and whose wholeness is made manifest in thoughts, feelings, and

behaviors" and who "mold and are molded by the environment in which they exist" (p. 352). The prevalence of opioid overdose has become an intrinsic factor, which has subsequently affected the thoughts, feelings, and behaviors of individuals around the globe. Silva, Noto, and Formigoni (2007) studied the qualitative impact of an overdose on individual family members and the entire family. This study found that families dealing with a loss due to overdose verbalized feelings of anger, guilt, and helplessness. Frequently, overdose events also negatively impact close friends.

Along with family and friends, health care providers, including nurses, have had their thoughts, feelings and behaviors affected by opioid overdose. Worley (2017) identified a concern with stigma in nurses, which has created a barrier to caring and decreased empathy and engagement with individuals diagnosed with substance use disorders. Lightfoot et al. (2009) discussed the ethical concerns associated with illegal drug use that nurses often encounter. Each of these adverse effects has negatively impacted client outcomes and overall public health.

Nursing students have diverse cultural, generational, moral, ethical, and experiential backgrounds. Many of these students have experiences living with or caring for clients with substance abuse disorders, resulting in negative experiences and preconceived notions, which create barriers to learning. Nursing faculty play a critical role in fostering learning on topics such as opioid overdose, which may challenge personal beliefs or have an emotional impact on students. The incorporation of caring can help overcome these challenges and facilitate student learning. According to Adams (2016),

…the construct of caring remains critical to the nursing profession perhaps even

more so now than in the past and it is up to us as respectful, compassionate and

professional nurses to help ensure that caring in nursing surpasses these turbulent

times and remains at the forefront of nursing practice. (p. 1)

By mentoring and fostering the development of caring attributes throughout the

educational process, nursing faculty can prepare nurses to successfully meet the

challenges presented in contemporary nursing. As stated by Harrison and McClure

(2018), "Compassionate action is the best choice we have as we build the evidence for

what works."

Caring has often been identified as a core element of nursing. In 1991, Kristen

Swanson published a middle range theory of caring. Within this theory, Swanson defined

the concept of caring: "Caring is a nurturing way of relating to a valued other whom one

feels a personal sense of commitment and responsibility" (1991, p. 165). Kristen

Swanson's Theory of Caring consists of five caring processes. See Table 5 for a

definition of each caring process.

Table 5

Kristen Swanson's Five Caring Processes

Caring Process	Definition
1. Knowing	Striving to understand an event as it has meaning in the life of the other.
2. Being with	Being emotionally present to the other.
3. Doing for	Doing for the other what he or she would do for the self if it were at all possible.
4. Enabling	Facilitating the other's passage through life transitions and unfamiliar events.
5. Maintaining beliefs	Sustaining belief in the other's capacity to get through an event or transition and face a future with meaning.

Note. Adapted from "Empirical Development of a Middle Range Theory of Caring," by Kristen Swanson, 1991, *Nursing Research, 40*(3), p. 163-165.

Personal belief in caring science was the underpinning for this scholarly project. This project aimed to infuse Kristen Swanson's Caring Processes throughout the educational intervention. Class lecture and simulation were designed to incorporate learning and utilization of this theory.

Addressing the concerns with stigmatization and the adverse impact on client care and outcomes is essential. Swanson (1993) addressed the importance of each nurse having clarity on individual perspectives to better serve the health needs of society. Class lecture provided students with the opportunity to self-reflect on current beliefs, share feelings, and discuss common myths associated with opioid overdose victims. The Project Leader reviewed the negative consequences of stigmatization and the role of the professional nurse in providing the elements of each Caring Process throughout client care and teaching (see Figure 1).
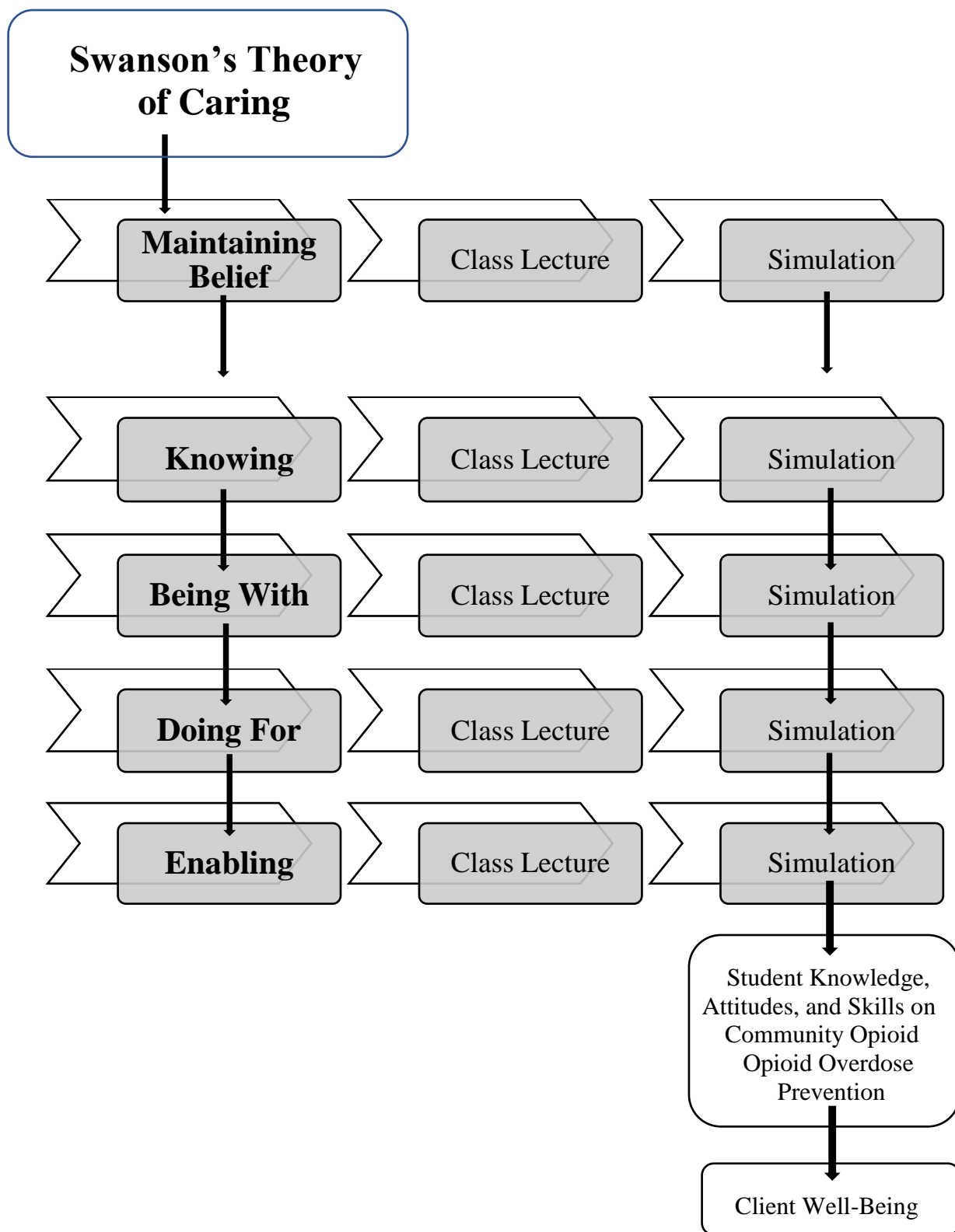
Figure 1. Applying Swanson's Theory of Caring to an Educational Intervention on Opioid Overdose Prevention

Implementing the Caring Processes while providing care for a victim of opioid overdose was discussed. For *knowing*, students were instructed to avoid making assumptions or holding on to preconceived notions about opioid overdose victims. Students were encouraged to focus on the client and actively engage in seeking cues and assessing each victim thoroughly. Providing care to victims of opioid overdose is an acute crisis. During this time, *being with* the client through physical presence and conveyance of presence to the client is an important first step in providing care. Throughout the implementation of steps to reverse the overdose, there was an emphasis on *doing for* the client. Swanson (1993) explained that this is simply doing for the client what they would do for themselves, if possible. This included measures to ensure client needs are anticipated and care is provided skillfully, while ensuring comfort, protection, and dignity. Students were encouraged to *enable* the victims by keeping them informed of their status, providing feedback and information as needed, and assisting/supporting decision-making to promote well-being. Lastly, students were directed to engage in *maintaining belief* in the client by providing realistic optimism and a hope-filled attitude will be promoted. Following lecture, each student participated in a simulation activity to provide care to a victim of opioid overdose. Faculty observed and noted the presence of each Caring Process and provide feedback during debriefing.

Students also learned how to demonstrate each Caring Process while providing education on opioid overdose prevention to members of the community. Students were instructed to provide *knowing*, by avoiding assumptions about the learner, actively engaging the learner and centering on the needs of the learner by seeking cues and assessing learning needs. Next, students were directed to convey their presence to the

learner by being present and allowing them to share their feelings. Providing time, an authentic presence, attentive listening, and reflective responses was also important (Swanson, 1993). These activities reflected the Caring Process of *being with* the client. Students were provided with interventions which supported *doing for* the learner: anticipating the client's learning needs and providing skilled education on preventing opioid overdose, while comforting the client and preserving their dignity. This Caring Process incorporated the use of interpersonal therapeutic communication (Swanson, 1993). Swanson (1993) identified the ultimate goal of nurse caring as *enabling* clients to achieve well-being, which included the provision of education. Throughout the educational process, students were guided to focus on the learning needs of the client, explain steps for opioid overdose prevention, support client learning and provide feedback to enable client learning. Finally, students were directed to *maintain belief* in the learner by holding them in esteem and maintaining a hope-filled attitude. Each student participated in a simulation activity requiring the provision of education on opioid overdose prevention to a community member. Faculty observed student performance, evaluated the use of each caring process, and provided feedback during debriefing.

At the end of this educational intervention, students were asked to complete the Overdose Knowledge Scale (OOKS), the Opioid Overdose Attitudes Scale (OOAS), and Four-Item Questionnaire. The expectation for this project was that the use of Kristen Swanson's Theory of Caring would increase student ability to develop the requisite knowledge, skills, and attitudes to manage opioid overdose and provide education on opioid overdose to community members to improve client outcomes and mortality rates within the community.

SECTION V

WORK PLANNING

Definition of Terms

Several terms are used in relation to the project activities described in this paper. According to the International Nursing Association for Clinical Simulation and Learning (INASCL) a facilitator is "a trained individual who provides guidance, support and structure at some or all stages of simulation-based learning including pre-briefing, simulation and/or debriefing" (2016f, p. S42).

Simulation is defined as "an educational strategy in which a particular set of conditions are created or replicated to resemble authentic situations that are possible in real life" (INASCL, 2016f, S44). Fidelity is defined as "the ability to view or represent things as they are to enhance believability"; the level of fidelity is determined by the environment, tools and resources which are used (INASCL, 2016f, p. S42). For this scholarly project a low-fidelity simulation is defined as: a simulation which occurs in a public setting without simulation technology such as computers, a control room, or cameras, and uses a manikin that is unable to perform specific functions, such as breathing, talking, or providing vital sign data on a monitor, for the purpose of creating an educational strategy that reflect a real-life situation.

Moulage is defined as the technique of creating simulated wounds and other physical characteristics specific to a scenario to support the sensory perception of participants to support the fidelity of the simulation scenario through the use of make-up and attachable artifacts (INASCL, 2016f).

Prebriefing is defined as an information or orientation session immediately prior to the start of a simulation, which provides instructions and preparatory information to the participants to establish a psychologically safe environment (INASCL, 2016f).

Formative evaluation is defined as "a process for determining the competence of a participant engaged in health care activity" (INASCL, 2016f, p. S41).

Debriefing is defined as a reflective process immediately following simulation, which is led by a facilitator using an evidence-based debriefing model to encourage participant's reflective thinking and provide feedback (INASCL, 2016f).

Educational Intervention Plan

The DNP Project included class lecture and two simulations scenarios. These activities were included in the 48 class hours and 96 clinical hours for NUR 212 Health Care Systems, so attendance for the classroom and simulation activities was required. Student learning outcomes were identified on the modules for Health Care Systems (see Appendix A) and Caring Interventions (see Appendix B). There was no deception involved in this project or any monetary or other incentives provided.

Prior to project implementation, all students were provided with a consent form for participating in the project and completing the surveys. The consent form was reviewed with the class and there was an opportunity for students to ask questions and seek clarification. The consent form included: the purpose of the project, duration and location, the elements of the educational intervention, potential risks and discomforts, benefits, confidentiality, compensation for participation, right to refuse or withdraw and the contact information for the Project Leader. Participation in the data collection/survey participation was voluntary; students were able to refuse to participate or discontinue

participation at any time and there were no punitive or disciplinary measures for doing so.

Project Design, Setting, and Sample

A pretest-posttest design was used to evaluate the educational intervention. The student sample was projected to be approximately 40 students. Subjects were recruited by convenience sampling of currently enrolled fifth semester nursing students at the local community college. Participation in this project was estimated to take approximately four hours. The educational intervention consisted of: a 30-minute pretest, 60-minute traditional lecture, 30-minute pre-briefing, 15-minute opioid overdose prevention simulation, 15-minute opioid overdose education simulation, 30-minute debriefing and a 45-minute posttest with evaluation.

Class Lecture

All nursing students attended a 60-minute traditional lecture and participated in a two-hour simulated scenario on a separate date during the time designated. At the beginning of class, students were invited to share any prior experiences with opioid overdose for class discussion. Students were given the opportunity to participate in question and answer throughout class. The lecture content included evidence-based information on: the risk factors for an overdose, signs of an overdose, sequence of steps to manage an opioid overdose, administration guidelines for intramuscular and intranasal naloxone, naloxone side effects, and aftercare, as well as appropriate opioid overdose education for community members. Students received hard copies of the presentation slides, module outlines, caring intervention guidelines (see Appendix C), the "OD Intervention Card- Using Naloxone" guide (Chicago Recovery Alliance, n.d.) and the

"Narcan® Quick Start Guide" (Adapt Pharma, Inc., 2017). Permission was received to use both forms. Educational materials were also available online and in hard copy format

Simulation

Following the classroom lecture, each student was scheduled to attend simulation. INASCL (2016b) recommended providing students with the opportunity to practice prior to participating in a simulation. Students were encouraged to attend the skills lab sessions provided by the nursing department to practice reversing an opioid overdose and providing education on opioid overdose. Each simulation was expected to have four to six students in attendance. It was anticipated that this simulation would need to be provided seven times to accommodate all students enrolled in the course. See Table 6 for a mock simulation schedule.

Table 6

Mock Simulation Schedule

Pre-brief	OD #1	OD #2	OD #3	T/L #1	T/L #2	T/L #3	Prep Room	Debrief	Post-test
0800-0830	15 min.	15 min.	15 min.	15 min.	15 min.	15 min.	15 min.	0915-0945	0945-1030
Group #1 0800-0830	0830-0845				0845-0900		0900-0915	0915-0945	0945-1030
Group #2 0800-0830		0845-0900				0900-0915	0830-0845	0915-0945	0945-1030
Group #3 0800-0830			0845-0900	0830-0845			0900-0915	0915-0945	0945-1030

The simulation activity consisted of two parts: managing the care for a client experiencing opioid overdose and providing education on opioid overdose management to the client's family member. The objectives were developed for each simulation

according to the INASCL guidelines (INASCL, 2016c). The design of the simulation activity was based on the INASCL guidelines: incorporation of best-practices from adult learning education, instructional design, clinical standards of care, evaluation, and simulation pedagogy (INASCL, 2016g).

The standards for professional integrity as outlined by INACSL were followed and adhered to by both faculty and students throughout the simulation activity (2016e). These standards included: confidentiality, compassion, honesty, commitment, collaboration, mutual respect, and engagement in the learning process. The simulation setting was maintained as a safe environment to promote learning and foster student self-confidence.

The Project Leader and two current faculty members with CHSE and CNE certifications performed as facilitators for pre-briefing, each simulation activity, and debriefing. The faculty collaborated to ensure the INASCL (2016b) guidelines for facilitating simulation activities were met. According to INACSL, formative evaluation provided with simulation-based activities fosters personal and professional growth and progression towards the achievement of objectives (2016d). The students were not graded on this activity, instead they were provided with verbal feedback on their performance to enhance learning and improve performance.

Two rooms were reserved for each simulation scenario. Moulage was applied to create the appearance of an opioid overdose according to guidelines (Merica, 2014). A low-weight manikin, which could be easily positioned into the recovery position during the simulation, was identified for use during the opioid overdose management simulation. Drug and alcohol related props were placed within the setting. Naloxone intranasal

medication trainer kits were obtained for demonstration and simulation use. Materials were collected for use during the opioid overdose prevention teaching simulation. Handouts were available for use during the teaching scenario. The estimated time needed to prepare for each simulation was one hour and the estimated time need to clean up after each simulation was 30 minutes.

The simulated activity included a pre-briefing session. Rudolph, Raemer, and Simon (2014) identified psychological safety as a crucial element in debriefing, so that participants feel the environment is conducive to interpersonal risk taking and they will be viewed positively despite any errors they make. Faculty ensured psychological safety through the provision of clear goals, expectations, and explanation of the evaluation process and expectation for confidentiality. This session also included a review of the steps to manage an opioid overdose, educational information for opioid overdose prevention, the simulation setting, equipment and format, the posttest procedure, and any other requested information to ensure a successful learning experience. The pre-briefing session was developed to meets the recommendations identified by INASCL (2016f). Students were given information describing the first client's assessment data on the second client describing the family member's teaching learning abilities prior to participating in the simulations.

Two low-fidelity simulations were provided for all students. There were approximately six students who were scheduled to attend each simulation session. All students attended pre-briefing and debriefing together and were paired up with a peer for team collaboration in each simulation scenario. Student pair assignments were provided at least a week prior to simulation to allow the students the opportunity to prepare and

practice together. Following the prebriefing session, each pair participated in a simulated opioid overdose scenario on a low-fidelity manikin in a mock community setting and a teaching scenario with in a classroom setting. The faculty facilitators played the role of the wife in both simulation scenarios. A script was provided for each of these roles. Students could use class handouts as needed in both simulations.

The opioid overdose scenario incorporated the entire sequence of steps to manage opioid overdose as previously instructed: recognizing signs of an overdose, securing the airway, positioning the client, naloxone administration and aftercare. INACSL (2016b) recommended that cues be provided to assist participants in achieving expected outcomes and that simulations progress without interruption. The students received a cue for when to enter the simulation setting. Upon entering, the students encountered the opioid overdose victim. The intranasal form of naloxone was available in the setting. Students were expected to demonstrate each of the identified steps for managing an opioid overdose while providing the Caring Processes discussed in lecture.

The opioid overdose teaching scenario provided the students with the opportunity to participate in educating a family member on the management of opioid overdose using intramuscular naloxone. Students were expected to apply previously acquired knowledge from NUR 212 course content on opioid overdose and educating community members and prior knowledge from previous courses on educating adults. This scenario took place in a lab setting. Sharps containers were mounted on the walls for immediate disposal of needles. Students could use the "OD Intervention Card- Using Naloxone" (Chicago Recovery Alliance, n.d.) during the simulation. The college's policy for accidental injuries was followed in the event any injuries occurred, including needle sticks. Students

were advised to notify the Project Leader if any injury or harm occurred from participating in this project.

A debriefing session was provided after the simulated activities. Specific guidelines for debriefing were provided. The debriefing session provided time for the participants to explore emotions, and question, reflect and provide feedback to one another (INASCL, 2016f). Both faculty members collaborated to ensure that the INASCL (2016a) guidelines for debriefing were met. The Promoting Excellence and Reflective Learning in Simulation (PEARLS) debriefing tool was used to guide this session (Eppich & Cheng, 2015). The PEARLS debriefing script included: setting the scene, reaction to the simulations, description of the simulations, analysis (learner self-assessment, directive feedback and teaching, focused facilitation), identification of outstanding issues for discussion, learner/educator guided discussion of applied learning, and summarization of the simulation activities. Permission was received from Dr. Walter Eppich for the use of the PEARLS debriefing guide as part of this study. Following the debriefing, all students were provided with time to complete the posttest and evaluation.

Sustainability

To ensure sustainability, the intervention was incorporated into the course and curriculum plan. Future implementation of the project would not require any additional cost. Additional faculty attended class lecture and simulation to learn about the project throughout implementation. The amount of time required to implement this educational intervention will decrease in future semesters when the pretest and posttest components are no longer implemented. Permission was obtained to continue to use the same

materials each semester. Room requests, class/simulation scheduling, and faculty

assignments will need to be determined each semester.

<div align="center">**Timeline**</div>

The timeline for the DNP project was dependent upon IRB Committee approval.

A letter of approval was received November 2017, which allowed the timeline to be

completed as written. See Table 7 for the project timeline.

Table 7

Project Timeline

	Implementation	Timeline
Summer Semester 2017	Register for NURS 705 & NURS 711	May 2017
	Present Project Topic to Nursing Faculty	May 2017
	Begin Practice Immersion Experience with Focus on Opioid Overdose	May 2017-July 2017
	Explore Potential Practice Sites for DNP Project; Preparatory Meetings with Facility Directors	May-July 2017
	Explore Available Resources for Class and Simulation	June-July 2017
	Secure Practice Learning Environment, Practice Partner, and Committee Member Contracts for DNP Project	July 2017
	Submit Problem Recognition (Step #1)	August 2017
	Submit Needs Assessment (Step #2)	August 2017
Fall 2017	Register for NURS 708 & NURS 711	August 2017
	Continue Practice Immersion Experience	August 2017
	Present Project Update to Nursing Faculty	August 2017
	Receive Notification on Faculty Chair	August 2017
	Complete CITI Research Training	September 2017
	Preparatory Meetings with Committee Member & Practice Partner to Develop Project Proposal and IRB Applications	September-October 2017

	Develop & Submit Goals, Objective & Mission Statement (Step #3)	September-October 2017
	Develop the Project Methodology and Procedure	September-October 2017
	Identify Tools for Data Collection and Obtain Permission to Use	September-October 2017
	Develop Consent Form	September-October 2017
	Develop Instruction Forms for Pretest/Posttest	September-October 2017
	Develop Four-Item Questionnaire	September-October 2017
	Develop Five-Item Evaluation	September-October 2017
	Identify Project Resources and Obtain Author Consent to Use Materials in Class/Simulation	September-October 2017
	Identify Debriefing Tool and Obtain Permission to Use	September-October 2017
	Secure and Meet with Statistician to Develop Data Analysis Plan	September-November 2017
	Develop Plan for Theoretical Framework (Step #4)	September-November 2017
	Develop & Submit Plan for Evaluation (Step #6)	September-November 2017
	Develop & Submit Project Proposal (Step #5)	September-November 2017
	Develop Class Lecture/PowerPoint	September-December 2017
	Submit IRB Application to the project setting IRB	October 2017
	Submit IRB Application to the project university IRB	November 2017
	Collect Materials for Simulation, Practice Moulage and Confirm Dates/Locations for Project	November-December 2017
	Orient & Train Faculty to Facilitate Simulation	November-December 2017
	Obtain Materials for Classroom Presentation	December 2017-January 2018
Spring Semester 2018 *All items contingent upon IRB Approval	Register for NURS 705 & NURS 712	January 2018
	Continue Practice Immersion Experience	January 2018
	Practice-Run Simulation with All Faculty	January 2018
	Present Consent Form	January 2018 *
	Present & Collect Pretest	January 2018 *
	Present Classroom Lecture	January 2018 *

	Begin Data Aggregation and Analysis	January 2018 *
	Facilitate Simulation	January-February 2018 *
	Present & Collect Posttest	January-February 2018 *
	Complete & Submit Project Implementation (Step 7)	March 2018
	Apply for Summer Graduation	February 2018
	Complete Data Aggregation and Analysis; Submit Interpretation of Data (Step 8)	April 2018
Summer Semester 2018	Register for NURS 712 & 715	May 2018
	Continue Practice Immersion Experience; Preparation for Formal Paper and Oral defense	May-July 2018
	Complete Utilization & Reporting of Results (Step 9: Present Findings in Formal Paper; Prepare/Present Oral Defense; ProQuest Submission)	July 2018
	Graduation	August 2018

SECTION VI

EVALUATION PLANNING

Data Collection

During the period of January 1, 2018 through April 30, 2018 nursing students

participated in an educational intervention study on community opioid overdose

prevention. INACSL identified the need to use valid and reliable assessment tools to

collect and interpret data for authentic evaluation of participants in simulation-based

activities (2016a). The pretest/posttest included the OOKS and OOAS, which were both

valid and reliable measurement tools for data collection (Williams, Strang, & Marsden,

2013). Permission was received from Dr. Anna Williams to use the OOKS and OOAS

instruments. An additional Four-Item Questionnaire (see Appendix D) was also used to

measure student achievement of goals for this study.

The OOKS, OOAS and the Four-Item Questionnaire were provided for all

students before and after implementation of the educational intervention. See Appendix E

for the pretest instructions and Appendix F for the posttest instructions. Prior to

participating in the educational intervention, each student was provided with the

recommended 25 minutes to complete the Opioid Overdose Knowledge Scale (OOKS)

and the Opioid Overdose Attitudes Scale (OOAS) (Williams et al., 2013) and an extra

five minutes to complete the Four-Item Questionnaire for a total of 30 minutes. The

posttest included the OOKS, OOAS, Four-Item Questionnaire, and a Five-Item

Evaluation (see Appendix G) to collect student feedback on lecture and simulation, areas

for improvement, and any additional comments. An additional 15 minutes was provided

for completion of the evaluation items for a total posttest time allotment of 45 minutes. See Table 8 for a descriptive chart of the pretest, posttest, and evaluation items.

The Project Leader developed the Four-Item Questionnaire and the Five-Item Evaluation tools. The Four-Item Questionnaire and items one through three of the Five-Item Evaluation tool consisted of 5-point Likert items. Both tools were reviewed and approved by two nursing faculty who were CHSE and full-time employees.

The pretests and posttests were proctored in a quiet setting by two faculty members. Each student was provided with a: direction sheet, student response form, OOAS form, OOKS form, Four-Item Questionnaire, and Five-Item Evaluation tool (posttest only). The provided student response form was compatible with the nursing department's exam analysis software and hardware package for statistical analysis. An envelope was provided for the return of completed responses to the Project Leader. Participants were asked to refrain from putting any identifying marks on any of the materials provided to reinforce anonymity of participants. The data collected was shared with a statistician for assistance with data analysis and interpretation.

The OOKS was used to evaluate the student's current level of knowledge on opioid overdose management (Williams et al., 2013). This instrument was developed to assess the knowledge levels of addiction professionals, patients, and family members. The OOKS recorded and scored four domains: risk (risk factors for an overdose), signs (signs of an overdose), action (actions to be taken in an overdose situation) and naloxone use (naloxone effects, administration, and aftercare) (Williams et al., 2013). This form required paper and pencil and took approximately 10 minutes to complete. The instrument consisted of four multiple choice questions, four forced choice questions, and

six true/false statements. The OOKS instrument had proven internal reliability and robustness: alpha coefficient 0.83 and Intra-class correlation (ICC) coefficient 0.90 (Williams et al., 2013). The reliability score for each domain showed the following ICC results: risks (0.87), sign (0.69), actions (0.53) and naloxone use (0.83) (Williams et al., 2013).

The OOAS was used to evaluate student attitudes toward managing an opioid overdose (Williams et al., 2013). This instrument was developed to assess the attitudes of addiction professionals, patients, and family members. The OOAS recorded and scored the sub-scales of competence, concerns, and readiness: competence is defined as the self-perceived ability to manage an overdose, concerns are related to dealing with an overdose, and readiness is the willingness to intervene in an overdose situation. Student completion of the OOAS required paper, pencil and a student response form and took approximately 15 minutes to complete. The instrument consisted of 28 items which were scored on a 5-point Likert scale. The OOAS instrument had proven internal reliability and robustness: alpha coefficient 0.90 and ICC coefficient 0.82 (Williams et al., 2013). The test-retest reliability scores for competence (ICC=0.92), concerns (ICC=0.55) and readiness (ICC=0.65) fell in the fair to excellent range (Williams et al., 2013).

Positive correlation between the OOKS and OOAS instruments was demonstrated (r=0.51 and P<0.001). The OOKS instrument positively correlated with the Brief Overdose Recognition and Response Assessment [BORRA]: BORRA overdose recognition (r=0.5 and P<0.01) and the BORRA Naloxone Indication sub-scales (r=0.44 and P<0.05). Content validity was tested for both instruments. For both the OOKS and OOAS, the scores for the addiction professional was higher than the family members.

Williams, Marsden, and Strang (2014) used the OOAKs and OOAS tools in a two-group, parallel-arm, nonblinded, randomized controlled trial of group-based training versus an information-only control to evaluate opioid overdose prevention training in community members. A repeated measure study by Klimas et al. (2015) used the OOKS and OOAS instruments to evaluate opioid overdose prevention training in general practitioners.

The OOKS and OOAS only evaluated student knowledge and attitudes for preventing an opioid overdose. However, this study also aimed to improve student skill in managing opioid overdose, as well as their knowledge, skills, and attitudes in providing education on opioid overdose prevention to members of the community. For this reason, an additional Four-Item Questionnaire was developed to address the specified content. Each of the additional four items include the same 5-point Likert scale used in the OOAS and were not previously tested for reliability. Raupach, Münscher, Beißbarth, Burckhardt, and Pukrop (2011) recognized the challenge of identifying evaluation tools which effectively match up with the specified learning objectives. A prospective, longitudinal intervention study on 636 students was performed to evaluate the reliability of comparative student self-assessment. Students self-rated their knowledge, skills, and attitudes before and after course completion. This study concluded that comparative student self-assessment was a valid tool to appraise undergraduate medical curricula. Research on a similar study performed with nursing students yielded negative results. The study's results are generalizable to nursing students, which supported the use of the Four-Item Questionnaire to evaluate student knowledge, skills, and attitudes in this study. The additional four items written for this study followed the format of the items written in the study by Raupach et al. (2011).

Table 8

Description of Pretest, Posttest, and Evaluation Items

Instrument	Sub- Category	Number of Response Items	Number of Evaluation Items	Item Description
Opioid Overdose Knowledge Scale (OOKS) PRETEST/POSTTEST	Risk Domain: Risk factors for an overdose	9 Items	14 Items	4 Multiple Choice
	Signs Domain: Signs of an overdose	10 Items		4 Forced Choice
	Actions Domain: Actions to be taken in an overdose	11 Items		6 True/False
	Naloxone Use Domain: naloxone effects, administration and aftercare procedures	15 Items		
OOAS PRETEST/POSTTEST	Competence Sub-scale: Self-perceived ability to manage an overdose	N/A	10 Items	5 Point Likert
	Concerns Sub-scale: Concerns on dealing with an overdose	N/A	8 Items	5 Point Likert
	Readiness Sub-scale: Willingness to intervene in an overdose situation	N/A	10 Items	5 Point Likert
Four-Item Questionnaire PRETEST/POSTTEST	Skills evaluation on overdose management	N/A	1 Item	5 Point Likert
	Knowledge evaluation on providing overdose prevention education	N/A	1 Item	5 Point Likert

	Skills evaluation on providing overdose prevention education	N/A	1 Item	5 Point Likert
	Attitude evaluation on providing overdose prevention education	N/A	1 Item	5 Point Likert
Five-Item Evaluation POSTTEST ONLY	Traditional lecture evaluation	N/A	1 Item	5 Point Likert
	Opioid overdose simulation evaluation	N/A	1 Item	5 Point Likert
	Opioid overdose prevention education simulation	N/A	1 Item	5 Point Likert
	Improvement feedback	N/A	1 Item	Short answer
	Additional comments feedback	N/A	1 Item	Short answer
Total Pre-Test Evaluation Items (Time Allotment-= 30 minutes)			46 Items	
Total Post-Test Evaluation Items (Time Allotment-= 45 minutes)			51 Items	

Instrument Scoring

Scoring for the OOKS was completed per instructions (Williams et al., 2013; Williams et al., 2014). The OOKS responses were scored as directed; each correct item scored one point and each response which was incorrect or marked "Don't know" was scored zero. The total score range was 0-45 points. The total score for the OOKS was calculated.

The 5-point Likert scale items on the OOAS was also calculated per instructions. The OOAS instrument included 12 negative items, which were reversed before computing the total points: 4, 6, 7, 9, 11, 15, 16, 17, 18, 23, 24, and 25. After the negative items were reversed, all points were added: completely disagree (5 points), disagree (4 points), agree (3 points), agree (2 points) and completely agree (1 point). The total score range was 0-45 points. The total score for the OOAS was calculated.

The four questionnaire items and the Likert scale evaluation items were calculated using the same scoring system as the OOAS. The total score range for the Four-Item Questionnaire was 4-20 points and the Likert scale evaluation items were 3-15 points. See Table 9 for scoring of the Four-Item Questionnaire and Table 10 for scoring of the Five-Item Evaluation.

Table 9

Four-Item Questionnaire Scoring

Questionnaire Items	Likert Scale	Minimum Score	Maximum Score
Item #1	5 4 3 2 1	1 Point	5 Points
Item #2	5 4 3 2 1	1 Point	5 Points
Item #3	5 4 3 2 1	1 Point	5 Points
Item #4	5 4 3 2 1	1 Point	5 Points
Score Totals		4 Points	20 Points

Table 10

Five-Item Evaluation Scoring

Evaluation Items	Likert Scale	Minimum Score	Maximum Score
Item #1	5 4 3 2 1	1 Point	5 Points
Item #2	5 4 3 2 1	1 Point	5 Points
Item #3	5 4 3 2 1	1 Point	5 Points
Item #4 Short Answer	N/A	N/A	N/A
Item #5 Short Answer	N/A	N/A	N/A
Score Totals		3 Points	15 Points

Plan for Data Analysis

A pretest/posttest design was used to evaluate the educational intervention.

Descriptive statistics were calculated and used for analysis. Aggregated data from the

OOKS/OOAS instruments and the Four-Item Questionnaire were entered into an

electronic file using the Statistical Package for the Social Sciences (SPSS), Version 24. A

pair-wise t-test was used to determine whether or not there was a statistically significant

difference in the sample mean scores of the OOKS, OOAS, and each item of the Four-

Item Questionnaire after the educational intervention. A chi-square goodness of fit test

was used for the three Likert scale items on the Project Evaluation to determine whether

or not the observed proportions differ significantly from the expected proportions. The

expected proportion for each selection was assumed to be .20. These findings were used

to determine whether an educational intervention with traditional lecture and low-fidelity

simulations improved nursing student knowledge, skills, and attitudes on opioid overdose

prevention within community settings. A one-tailed alpha level of significance was set at

<.05 with a power of .80 and Levene's test was performed. The qualitative data retrieved from items 4 and 5 of the Five-Item Evaluation were listed in the results and noted in the project evaluation.

Quality Improvement Method

The Plan-Do-Study-Act (PDSA) method was utilized throughout the DNP project to guide decision-making. As each step was implemented, observational data was collected and studied to determine future actions. See Table 11 for examples of how the PDSA was used.

Table 11

PDSA Examples

Plan	Do	Study	Act
I plan to see if the opioid overdose instructions and demonstration provided in class adequately prepares students for simulation	Assess student readiness during pre-briefing; Observe student performance during the opioid overdose simulation; Discuss performance during debriefing	Study observation, pretest/posttest, and evaluation results	Identify conclusion and revise plan of action as needed
I plan to see if the OD Intervention Card-Using Naloxone is effective in helping students teach the steps for overdose reversal with intramuscular naloxone	Assess student readiness during pre-briefing; Observe student performance during the opioid overdose prevention teaching simulation; Discuss performance during debriefing	Study observation, pretest/posttest, and evaluation results	Identify conclusion and revise plan of action as needed: Identify an alternate form or plan for teaching the steps for overdose reversal with intramuscular naloxone
I plan to see if the PEARL tool is an effective debriefing tool	Observe student/faculty implementation of PEARL debriefing tool	Study observation and evaluation results	Identify conclusion and revise plan of action as needed: Identify an alternate debriefing tool
I plan to see if the Four-Item Questionnaire is an effective tool to measure project outcomes	Observe student's using this tool	Study observation, pretest/posttest, and evaluation results	Identify conclusion and revise plan of action as needed: Revise questionnaire items
I plan to see if the Narcan Nasal Spray Quick Start Guide is an effective tool for teaching the use of Narcan nasal spray during an opioid overdose	Assess student readiness during pre-briefing; Observe student performance during the opioid overdose simulation; Discuss performance during debriefing	Study observation, pretest/posttest, and evaluation results	Identify conclusion and revise plan of action as needed: Identify an alternate form or plan for teaching the use of Narcan nasal spray during an opioid overdose

Logic Model

A logic model depicting the overall scope of the DNP project was provided (see Figure 2). This model reflected the initial identification of the problem through expected outcomes. Specific inputs and outputs were also addressed.
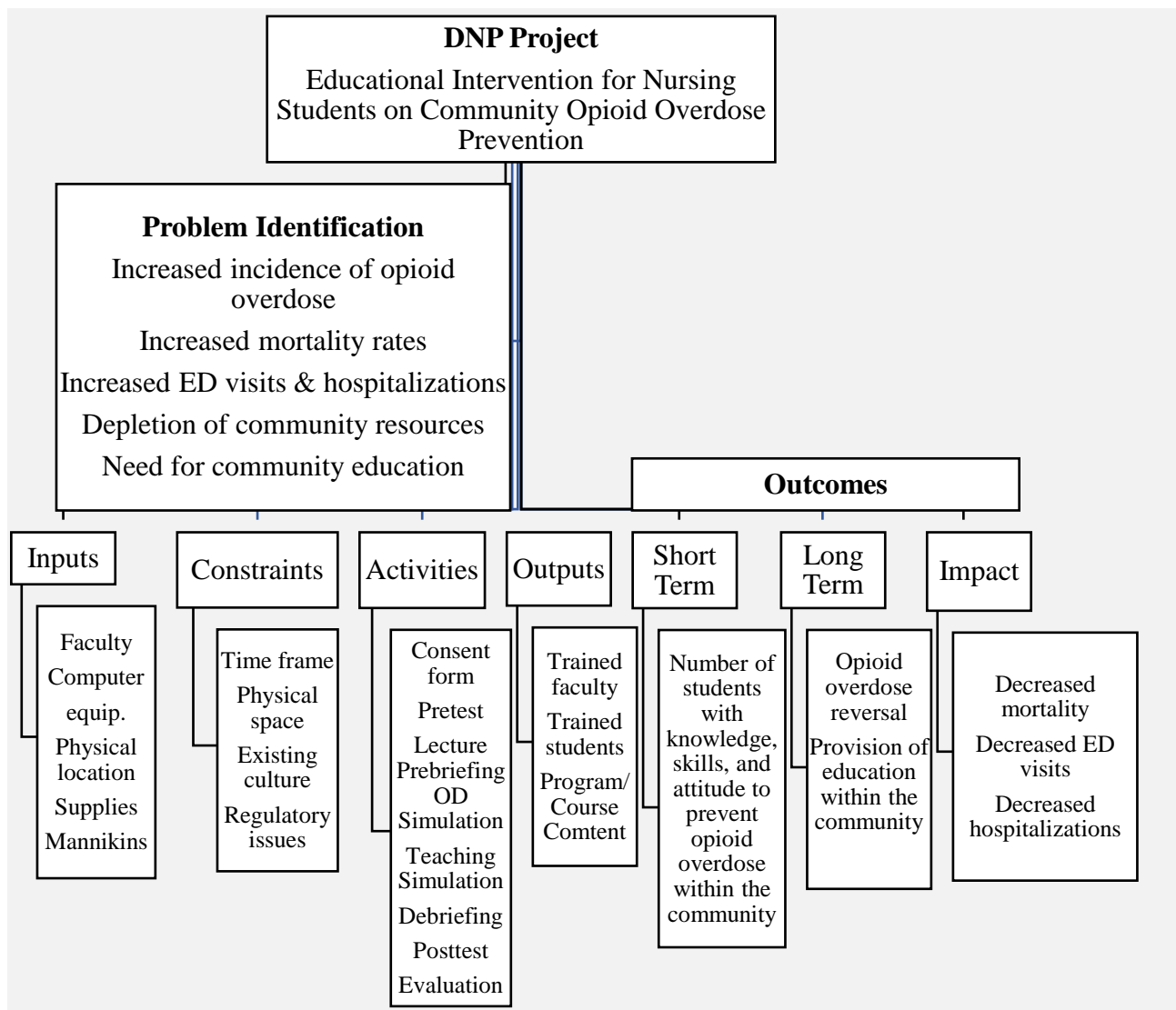
Figure 2. DNP Project Logic Model

SECTION VII

IMPLEMENTATION

Institutional Review Board Process

The DNP project required IRB approval by the college where the project was to be implemented and the academic institution. The DNP Project Team Leader wrote and presented the initial IRB applications to the simulation faculty and the Faculty Chair. Revisions were made according to faculty feedback prior to application submission. The guidelines for IRB submission required the host site for project implementation to provide initial IRB approval. On October 30, 2017, verification of approval for the "Exempt Protocol Summary Form" submitted for the *Educational Intervention for Nursing Students on Community Opioid Overdose Prevention* was received. Once IRB approval was received from the host college, the project university IRB application was submitted. On November 20, 2017, IRB approval for the exempt category was received from the project university (see Appendix H).

Preparation for Project Implementation

Once IRB approval was received from both institutions, the implementation phase was confirmed to start January 2018. Leadership, communication, and collaboration were integral in preparing for project implementation. The DNP Project Team Leader prepared the materials for the class discussion on the project and consent forms, class lecture, and simulation. As materials were developed, feedback was sought from the Faculty Chair, Project Partner, and other important stakeholders. The Practice Partner and program/course faculty were kept apprised of all progress made on the project. Practice sessions were held to prepare for the classroom presentation.

The Project Leader collaborated with college faculty to develop class and simulation schedules, schedule rooms, and collect materials for the classroom demonstration and each simulation scenario. Two rooms were reserved for clinical: one for prebriefing, debriefing, and the education simulation and one for the overdose management simulation. A rotation schedule for each simulation session was designed to provide clear directions for the faculty and students. The Project Leader developed both scenarios with the storyline and scripts for each simulation (see Appendix I) and sought feedback from the both certified simulation faculty members.

Faculty training was required prior to implementation of the simulation sessions. The Project Leader met with both faculty members to provide training on the simulation activity. Each simulation session required one faculty member to run the simulation with the Project Leader and one faculty member to run the equipment. A practice session for moulage application, scenario staging and each simulation scenario was provided.

Threats and Barriers

Initial barriers identified for this project were related to the topic and individual fears, preconceived notions, and motivation to learn about community opioid overdose prevention. The students participating in the educational intervention were notified about the project approximately four weeks prior to project implementation to make them aware of the content and provide time to verbalize thoughts and concerns. Students were also given the date for classroom lecture, an individualized schedule for simulation participation, and the peer assignment for who they would work with during each simulation. No students reported any emotional or psychological concerns related to the educational intervention.

Prior to project implementation, a classroom session was held to review and discuss the project consent form with all students. The students were provided with an opportunity to ask questions and seek clarification. All 34 students signed the project consent forms.

The educational intervention did not pose any greater risks than those encountered in everyday life and those associated with educational activities. An outline of the college's wellness services for students, which are free for students, was provided for all students for informational and referral purposes. No reports of harm or injury from participation in this educational intervention were received.

Participants did not receive any incentives for participation. Educational materials were available online and in hard copy format. Prior to the pretest/posttest, each student was provided with a direction sheet, student response form, OOAS form, and OOKS form. An envelope was provided for the return of completed responses to the Project Leader to ensure confidentiality. In total, 34 students signed the consent form and completed the pretest.

Due to the risk of adverse weather and illness, alternate dates and times were identified for both class and simulation. Additional classrooms were also identified as a back-up plan. Since the course ran twice in a semester, it would have been possible to implement during the second eight-week semester if implementation did not occur during the first eight weeks.

Project Implementation

Implementation of the DNP Project took place on the project college campus. The educational intervention consists of: a 60-minute traditional lecture, 30-minute pre-

briefing, 15-minute opioid overdose prevention simulation, 15-minute opioid overdose education simulation, and a 30-minute debriefing. Class and simulation attendance were required for the course. The Project Leader ensured that all activities adhered to the approved IRB application.

Classroom Lecture

All the students attended a 60-minute traditional lecture provided by the Project Leader. Class discussion and sharing of experience was encouraged. Lecture presentation and a demonstration of the steps for overdose management was provided without complication.

Simulation

All students participated in both simulation scenarios. During the overdose management simulation, students were able to demonstrate the knowledge and skill to provide appropriate response technique and sequence of steps in preventing death due to opioid overdose within a community setting. A few students opted to use class handout during this simulation. Students demonstrated the knowledge and skill to provide education on opioid overdose prevention to members of the community in the opioid overdose teaching session. Some students opted to use a script during this simulation.

A faculty member and the DNP Project Team Leader implemented each simulation session. The DNP Project Team Leader took turns facilitating the overdose management simulation and the education simulation with the other faculty member. This was done to ensure that the DNP Project Team Leader could monitor both simulation sessions, measure student progress in meeting project goals and objectives, address concerns, and provide leadership. The faculty collaborated to ensure the INASCL

(2016b) guidelines for facilitating simulation activities were met. According to INACSL, formative evaluation provided with simulation -based activities fosters personal and professional growth and progression towards the achievement of objectives (2016d). The students were not graded on their performance during either simulation. Verbal feedback on student performance was provided during the debriefing session to enhance learning and improve future performance. All simulation sessions for the overdose management simulation were videotaped.

A pre-briefing session directed by the Project Leader was provided prior to the simulations (see Appendix I for the pre-briefing guidelines). Due to the use of a low-fidelity manikin in the overdose simulation, the students were informed prior to participating in the overdose simulation that the victim would not be breathing, did have a pulse, and only rescues breathing would be needed. They were also informed to ask for the naloxone when it was needed and that only one dose would need to be provided. Information on the educational history of the wife was provided prior to simulation to assist students with developing an educationally appropriate script.

A debriefing session directed by the Project Leader was provided after both simulations were completed by each group of students (see Appendix J for the debriefing guidelines). The PEARLS debriefing tool was used to guide this session (Eppich & Cheng, 2015). Participants discussed their thoughts and reactions and provided feedback to one another. Following the debriefing, all students were provided with time to complete the posttest and evaluation. There were 34 posttests and evaluations collected.

Overall, project implementation was a success with minimal issues occurring. All faculty, room assignments, and equipment were available as scheduled. The first two

simulation sessions had to be rescheduled due to inclement weather, which required calendar revisions and room/faculty scheduling changes. For a couple of the overdose management simulations, the infant simulator did not work, and an auditory clip of a crying infant had to be used. Two students were unable to attend simulation on their assigned date and a make-up session had to be scheduled.

Project Closure

The DNP Project Team Leader provided leadership throughout the implementation of the DNP Project. The classroom presentation was provided as planned without any problems. Many students had stories to share and questions to discuss. For this reason, it would be reasonable to lengthen the class period to 90 minutes in the future.

Each simulation session started with a 30- minute prebriefing. During the overdose reversal simulation, students were observed having difficulty with holding the naloxone spray correctly. This was corrected by providing students with the opportunity to hold and practice the correct technique with the naloxone spray during prebriefing. This was the student's first simulation activity that was not being performed in the nursing simulation suite. To address this, students were given the opportunity to verbalize any fears or concerns with faculty support provided.

Following prebriefing, two groups were assigned to a simulation room and one group took a 15-minute break. During this time, it was identified that the students who were on break were able to hear the beginning of the overdose simulation. For this reason, it was preferable to assign a room for during break to avoid them from learning about the scenario ahead of time. The overdose simulation ran smoothly. During one of

the sessions the high-fidelity infant simulator was not working. To replace the crying sound during the scenario, a cell phone was used to play a repeating audio clip of infant crying. This replacement technique was successfully used until the high-fidelity mannikin could be repaired.

During the opioid overdose simulation, the students participated in the simulation without difficulty. Students chose to either implement care independently or to use their partner for assistance. If the partner did not participate in the scenario, they were able to observe. Most students did choose to have their partner participate. All students were able to satisfactorily demonstrate providing care for an opioid overdose victim.

The teaching simulation was also successful. All students used either prepared scripts or brief outlines to refer to as needed throughout the teaching session. Most students were able to provide education within 15 minutes, although some groups went as much as five minutes longer. A future recommendation would be to increase the teaching simulation from 15 minutes to 20 minutes.

After the three groups of students had participated in both simulations, the Project Leader began the debriefing session. This was completed successfully, with students using the debriefing questions to self-reflect communicate their thoughts and feelings regarding each simulation scenario. No further recommendations were identified.

All pretest, posttest, and evaluation data were collected as scheduled. All data was organized into spreadsheets in preparation for statistical analysis. None of the students chose to withdraw from participating in the project.

The Project Leader sought feedback from both students and participating faculty both during and upon completion of the implementation phase. Feedback was

overwhelmingly positive from faculty and students on the classroom presentation and simulation activity. At the end of the project implementation, the participating faculty were asked to share feedback and discuss potential revisions for the future. Faculty feedback for the classroom lecture was positive and supportive of the relevance of the topic, thoroughness of the information provided, and selection of appropriate educational methods. Faculty commentary on the classroom content included, "It was really good, and I learned a lot" and "The demonstration was helpful." Faculty involved in the simulation activities identified each scenario as being easy to set up and implement.

All evaluation data was compiled and put into a summarized report. This information was presented to program faculty and provided to individual stakeholders. This project also served as a faculty benchmarking project and was uploaded into the college's database.

Overall, it was determined that this educational intervention was feasible for implementation in the community college setting with Associate Degree nursing students. A monetary budget was not required for this project. The benefit to the community was an increased number of health professionals with the ability to have a strong impact on meeting both the state and national goals for increasing community education on opioid overdose and decreasing mortality rates.

As more research is provided on community opioid overdose prevention and more treatment options are made available for opioid overdose, there will be a need to continue to explore which treatment options are most readily available, financially affordable, and appropriate for use by community members. Nursing students need to be prepared to

address the health and educational needs of the community where they practice,

especially in times of crisis, such as the current worldwide opioid overdose crisis.

SECTION VIII

INTERPRETATION OF DATA

Data Results and Interpretation

The paired-samples *t*-test was chosen for the statistical analysis of the OOKS,

OOAS, and the Four-Item Questionnaire to compare the means of the pretest/posttest

results. This statistical test required: the dependent variable was measured on a

continuous scale, the independent variable consisted of two matched pairs, there should

be no significant outliers in the differences between the two related groups, and the

distribution of differences in the dependent variables between the two related groups

were approximately normally distributed (Laerd Statistics, 2018b). For the purposes of

this project, all criteria were met. Aggregated data were entered into an electronic file

using the Statistical Package for the Social Sciences (SPSS) version 24.0 (SPSS Inc.,

Armonk, NY).

Opioid Overdose Attitudes Scale (OOAS)

Would an educational intervention using classroom lecture and low-fidelity

simulations improve student attitudes regarding opioid overdose management? The

OOAS was provided as a pretest and posttest to determine the answer. On this instrument

there were 28 5-point Likert scale questions with a maximum score of five points for

each item and a total possible score of 140. Tables 12 and 13 presents the OOAS

individual test item pretest and posttest results and Table 15 presents a summary of each

instrument's pretest/posttest results. A paired samples *t*-test was calculated to compare

the mean pretest score to the mean posttest score. The mean on the pretest was 90.56

(*sd*= 8.039), and the mean on the posttest was 111.03 (*sd*= 8.806). A significant increase

from the pretest to the post test was found (*t* (33)= -8.933, *p*<.05).

Table 12

Individual OOAS Pretest Results

Item Number	Completely Disagree	Disagree	Unsure	Agree	Completely Agree
1. I already have enough information about how to manage an overdose	47%	41.1%	11.88%	0	0
2. I am already able to inject naloxone into someone who had overdosed	50%	23.5%	20.5%	5.8%	0
3. I would be able to check that someone who had an overdose was breathing properly	2.9%	5.8%	29.4%	47%	5
4. I would be afraid of giving naloxone in case the person becomes aggressive afterwards	20.5%	50%	17.6%	11.7%	0
5. If someone overdoses, I want to be able to help them	0	0	0	23.5%	76.4%
6. I would be afraid of doing something wrong in an overdose situation	2.9%	5.8%	617.6%	70.5%	2.9%
7. I would be reluctant to use naloxone for fear of precipitating withdrawal symptoms	32.3%	52.9%	14.7%	0	0
8. Everyone at risk of witnessing an overdose should be given a naloxone supply	2.9%	11.7%	35.2%	38.2%	11.7%
9. I couldn't just watch someone overdose, I would have to do something to help	0	0	2.9%	41.1%	55.8%
10. If someone overdoses, I would call an ambulance but I wouldn't be willing to do anything else	38.2%	44.1%	8.8%	2.9%	5.8%
11. I am going to need more training before I would feel confident to help someone who had overdosed	0	0	5.8%	29.4%	64.7%
12. I would be able to perform mouth to mouth resuscitation to someone who had overdosed	5.8%	2.9%	20.5%	50%	20.5%

13. Family and friends of drug users should be prepared to deal with an overdose	0	0	2.9%	50%	47%
14. I would be able to perform chest compressions to someone who had overdosed	0	0	12.9%	64.7%	32.3%
15. I would be concerned about calling emergency services in case the police come around	67.6%	26.4%	12.9%	0	2.9%
16. If I tried to help someone who had overdosed, I might accidently hurt them	5.8%	14.7%	70.5%	8.8%	0
17. If I witnessed an overdose, I would call an ambulance straight a way	2.9%	0	2.9%	41.1%	52.9%
18. I would be afraid of suffering a needle stick injury if I had to give someone a naloxone injection	29.4%	50%	2.9%	14.7%	2.9%
19. If I saw an overdose, I would panic and not be able to help	20.5%	47%	26.4%	5.8%	0
20. If someone overdoses, I would know what to do to help them	23.5%	29.4%	129.4%	17.6%	0
21. I would be able to place someone who had overdosed in the recovery position	20.5%	20.5%	26.4%	23.5%	8.8%
22. I would stay with the overdose victim until help arrives	0	0	5.8%	26.4%	67.6%
23. I would prefer not to help someone who has overdosed, because I'd feel responsible if they died	11	50%	14.7%	0	2.9%
24. I know very little about how to help someone who has overdosed	0	6	3	50%	23.5%
25. Needles frighten me and I wouldn't be able to give someone an injection of naloxone	32.3%	23.5%	0	0	0
26. I would be able to deal effectively with an overdose	8.8%	23.5%	55.8%	11.9%	0
27. If I saw an overdose, I would feel nervous, but I would still take the necessary actions	0	0	5.8%	67.6%	26.4%
28. I will do whatever is necessary to save someone's life in an overdose situation	0	0	11.9%	32.3%	55.8%

Table 13

Individual OOAS Posttest Results

Item Number & Statement	Completely Disagree	Disagree	Unsure	Agree	Completely Agree
1. I already have enough information about how to manage an overdose	0	0	0	55.8%	44.1%
2. I am already able to inject naloxone into someone who had overdosed	0	0	2.9%	32.3%	64.7%
3. I would be able to check that someone who had an overdose was breathing properly	0	0	2.9%	38.2%	58.8%
4. I would be afraid of giving naloxone in case the person becomes aggressive afterwards	41.1%	41.1%	5.8%	8.8%	2.9%
5. If someone overdoses, I want to be able to help them	2.9%	0	5.8%	23.5%	67.6%
6. I would be afraid of doing something wrong in an overdose situation	20.5%	41.1%	20.5%	14.7%	2.9%
7. I would be reluctant to use naloxone for fear of precipitating withdrawal symptoms	58.8%	29.4%	2.9%	8.8%	0
8. Everyone at risk of witnessing an overdose should be given a naloxone supply	0	0	5.8%	29.4%	64.7%
9. I couldn't just watch someone overdose, I would have to do something to help	0	0	0	70.5%	58.8%
10. If someone overdoses, I would call an ambulance but I wouldn't be willing to do anything else	52.9%	38.2%	2.9%	2.9%	2.9%
11. I am going to need more training before I would feel confident to help someone who had overdosed	32.3%	50%	5.8%	11.7%	0
12. I would be able to perform mouth to mouth resuscitation to someone who had overdosed	2.9%	2.9%	17.6%	41.1%	35.2%
13. Family and friends of drug users should be prepared to deal with an overdose	0	0	0	20.5%	79.4%

14. I would be able to perform chest compressions to someone who had overdosed	2.9%	2.9%	5.8%	41.1%	47%
15. I would be concerned about calling emergency services in case the police come around	82.3%	14.7%	0	2.9%	0
16. If I tried to help someone who had overdosed, I might accidently hurt them	32.3%	50%	17.6%	0	0
17. If I witnessed an overdose, I would call an ambulance straight a way	2.9%	0	0	70.5%	67.6%
18. I would be afraid of suffering a needle stick injury if I had to give someone a naloxone injection	41.1%	44.1%	5.8%	5.8%	2.9%
19. If I saw an overdose, I would panic and not be able to help	61.7%	26.4%	5.8%	5.8%	2.9%
20. If someone overdoses, I would know what to do to help them	2.9%	0	2.9%	47%	47%
21. I would be able to place someone who had overdosed in the recovery position	0	0	2.9%	38.2%	58.8%
22. I would stay with the overdose victim until help arrives	5.8%	0	2.9%	32.3%	58.8%
23. I would prefer not to help someone who has overdosed, because I'd feel responsible if they died	64.7%	32.3%	2.9%	0	0
24. I know very little about how to help someone who has overdosed	64.7%	32.3%	2.9%	0	0
25. Needles frighten me and I wouldn't be able to give someone an injection of naloxone	73.5%	26.4%	0	0	0
26. I would be able to deal effectively with an overdose	2.9%	0	11.7%	52.9%	32.3%
27. If I saw an overdose, I would feel nervous, but I would still take the necessary actions	0	5.8%	0	44.1%	50%
28. I will do whatever is necessary to save someone's life in an overdose situation	2.9%	0	5.8%	41.1%	50%

Opioid Overdose Knowledge Scale (OOKS)

Would an educational intervention using classroom lecture and low-fidelity simulations improve student knowledge of opioid overdose management? The OOKS was provided as a pretest and posttest to determine the answer. This instrument contained a total of 14 questions related to knowledge of opioids, which were multiple choice, select all that apply, and true/false. The maximum score for this instrument was 45 points. One pair of pretest/posttest results were omitted from the statistical calculations due to multiple incomplete responses. Table 14 presents the OOKS individual test item pretest and posttest results and Table 15 presents a summary of each instrument's pretest/posttest results. The mean on the pretest was 31.12 (*sd*= 2.747), and the mean on the posttest was 39.58 (*sd*= 2.305). A significant increase from the pretest to the posttest was found (*t* (32) = -14.091, *p*<.05).

Table 14

Individual OOKS Pretest & Posttest Results Items

Item Number & Question/Statement	Pretest % Correct	Posttest% Correct
1. Which of the following factors increase the risk of a heroin (opioid) overdose? (Select all that apply)	44.1%	73.5%
2. Which of the following are indicators of an opioid overdose? (Select all that apply)	8.8%%	29.4%
3. Which of the following should be done when managing an opioid overdose? (Select all that apply)	58.8%%	88.2%
4. What is naloxone used for?	73.5%	91.2%
5. How can naloxone be administered? (Select all that apply)	5.9%	21.2%
6. Where is the most recommended place for non-expert to administer naloxone?	52.9%	97%
7. How long does naloxone take to start having effect?	67.6%	97%
8. How long do the effects of naloxone last for?	11.8%	84.8%
9. If the first dose of naloxone has no effect a second dose can be given (True/False)	50%	100%
10. There is no need to call for an ambulance if I know how to manage an overdose (True/False)	2.9%	0%
11. Someone can overdose again even after having received naloxone (True/False)	85.3%	100%
12. The effect of naloxone is shorter than the effect of heroin and methadone (True/False)	48.5%	87.9%
13. 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)	2.9%	0%
14. Naloxone can provoke withdrawal symptoms (True/False)	14.7%	97%

Four-Item Questionnaire

Item #1. *Would an educational intervention using classroom lecture and low-fidelity simulations improve student skill level in managing an opioid overdose within a community setting?* The first item on the Four-Item Questionnaire was provided as a pretest/posttest tool to answer this question. Table 15 presents a summary of each instrument's pretest/posttest results. The mean on the pretest was 2.2941 (*sd*= .97041), and the mean on the posttest was 4.3824 (*sd*= .60376). A significant increase from the pretest to the post test was found (*t* (33) = -9.286, *p*<.05).

Item #2. *Would an educational intervention using classroom lecture and low-fidelity simulations improve student knowledge on providing education on opioid overdose to members of the community?* The second item on the Four-Item Questionnaire was provided as a pretest/posttest tool to answer this question. Table 15 presents a summary of each instrument's pretest/posttest results. The mean on the pretest was 1.9412 (*sd*= 1.04276), and the mean on the posttest was 4.3824 (*sd*= .60376). A significant increase from the pretest to the post test was found (*t* (33) =-11.088, *p*<.05).

Item #3. *Would an educational intervention using classroom lecture and low-fidelity simulations improve student skill level for providing education on opioid overdose to members of the community?* The third item on the Four-Item Questionnaire was provided as a pretest/posttest tool to answer this question. Table 15 presents a summary of each instrument's pretest/posttest results. The mean on the pretest was 2.2353 (*sd*= 1.01679), and the mean on the posttest was 4.2647 (*sd*= .70962). A significant increase from the pretest to the post test was found (*t*(33)=-8.852, *p*<.05).

Item #4. *Would an educational intervention using classroom lecture and low-fidelity simulations improve student attitude regarding their ability to provide education on opioid overdose to members of the community?* The fourth item on the Four-Item Questionnaire was provided as a pretest/posttest tool to answer this question. Table 15 presents a summary of each instrument's pretest/posttest results. The mean on the pretest was 2.0000 (*sd*= .15223), and the mean on the posttest was 4.1765 (*sd*= .14299). A significant increase from the pretest to the post test was found (t (33) =-10.214, $p \leq .05$).

Table 15

Summary of Pretest/Posttest Results for all Instruments

Pretest/Posttest Instrument	Pretest Mean/Posttest Mean	Pretest SD/Posttest SD	Pretest Average/Posttest Average
OOAS	90.56/111.03	8.039/8.806	89.3%/97.9%
OOKS	31.12/39.58	2.747/2.305	69.2%/87.9%
Four-Item Questionnaire Item #1	2.2941/4.3824	.97014/.60376	45.9%/87.6%
Four-Item Questionnaire Item #2	1.9412/4.3824	1.04276/.60376	38.8%/87.6%
Four-Item Questionnaire Item #3	2.2353/4.2647	1.01679/.70962	44.7%/85.2%
Four-Item Questionnaire Item #4	2.0000/4.1765	.15223/.14299	45%/83.5%

Project Evaluation

Items #1-3. The Project Evaluation consisted of three, 5-point Likert Scale items to evaluate the effectiveness of the: (1) community opioid overdose prevention classroom material on participation in simulation activities, (2) opioid overdose management simulation preparation for the management of an opioid overdose within the community,

and (3) opioid overdose education simulation preparation for providing education on opioid overdose to members of the community. The total possible score for each question item was five. Overall, 94% (32/34) of students completed the Project Evaluation. A summary of data results is listed in Table 16.

The chi-square goodness of fit test was used to analyze the results of Evaluation Tool items #1, #2, and #3. Prior to using this single-sample non-parametric test, the data was confirmed to have met all four assumptions: one categorical variable, independence of observations, the groups of the categorical variable were mutually exclusive, and there were at least five expected frequencies in each group of the categorical variable (Laerd Statistics, 2018a).

For the purposes of this project, all criteria were met. Aggregated data were entered into an electronic file using the Statistical Package for the Social Sciences (SPSS) version 24.0 (SPSS Inc., Armonk, NY).

For item #1, a one-sample chi-square test was conducted to assess to whether students "Agree" or "Strongly Agree" on whether class material provided on community opioid overdose prevention prepared them for participation in the simulation activities. The results were found to be statistically significant, $x^2(1, n = 32) = 6.125$, p<.05. The proportion of students who "Strongly Agreed" (71.8%) was greater than the hypothesized proportion (50%). The results suggest that students did not just randomly select "Strongly Agree" to reflect whether class material provided on community opioid overdose prevention prepared them for participation in the simulation activities. Instead it appears the "Strongly Agree" option ($p = 23/32$) was selected more often than the "Agree" option.

For item #2, a one-sample chi-square test was conducted to assess to whether students "Agree" or "Strongly Agree" on whether the opioid overdose management simulation prepared students to manage opioid overdose within the community. The results indicated there was no significant difference in the proportion of students who chose "Strongly Agreed" (59%) as compared with the students who chose "Agree" (41%), $x^2(1, n = 32) = 1.125$, $p = .289$.

For item #3, a one-sample chi-square test was conducted to assess to whether students "Agree" or "Strongly Agree" on whether the opioid overdose education simulation prepared me to provide education on opioid overdose to members of the community. One response was omitted in the statistical calculations due to a response of "unsure". The results indicated there was no significant difference in the proportion of students who chose "Strongly Agreed" (58%) as compared with the students who chose "Agree" (42%), $x^2(1, n = 31) = .806$, $p = .369$.

Table 16

Data Results for Project Evaluation Items #1-#3

Item	"Agree" Average	"Strongly Agree" Average	Mean	Median/ Mode	Standard Deviation	Average (Total Score/Max Score)
Question #1	28.125%	71.875%	4.72	5/5	0.457	94.3%
Question #2	40.625%	59.375%	4.59	5/5	0.499	91.8%
Question #3	40.625%	56.25%	4.53	5/5	0.567	90.6%

Items #4-5. Project Evaluation item #4 solicited feedback on how individual

experiences in class or simulation could be improved received a 79% response rate.

Project Evaluation item #5 provided students with an opportunity to provide further

feedback. This item had a 70.5% response rate. See Table 17 for the student comments on

items #4 and #5. Students felt prepared for simulation, enjoyed and appreciated the

simulation experiences, and were able to learn from these experiences.

Table 17

Student Comments for Project Evaluation Items #4 and #5

Project Evaluation Item #4: How could your experiences in class and/or simulation have been improved?	Project Evaluation Item #5: Additional comments or feedback are welcome!
It was a great experience!	It was very educational, and I really appreciated the opportunity to further my learning!
Being more prepared in knowing the steps of SCARE ME and being less nervous	Great experience, gained a lot of knowledge and feel more confident in dealing with an overdose
One thing would to prepare more in advance.	It was a good learning experience and extremely helpful to know more about opioid overdose. After the simulation I feel confident to reverse an overdose. In an overdose situation, I would help and hopefully save a life.
Not sure	Good sims
The information provided was efficient and useful to prepare me for the simulation	No comment
Combine the blue, yellow, & pink/salmon colored handouts to one sheet.	I believe that this was very useful information. I now feel confident that I would be able to help someone in an overdose situation
In simulation, I felt that I could have been more empathetic with the wife and could have supported her better.	I felt that this simulation has made me feel comfortable about going out into the community; and educating and helping people with overdoses.
During Post Conference, it was mentioned possibly having loud music in a future simulation… I think that would be a good idea. I think this sim was very informative.	Great job! Learned a lot! Thanks
I learned a lot about opioid overdose in class & I was able to perform that SCAREME steps based on information I had & taught family successfully	It was nice creative (actual) simulation environment that we can find in actual opioid overdose situation in community

Don't think they could have, information was great & simulation scenario was a good enactment/ set up.

This was great information to have not only for my career as a nurse but also just to have for real life situations and for me to have the knowledge to teach those around me.

Honestly, I think this sim was set up excellently, the teaching part allowed us to test our knowledge & see how well we would be able to teach someone about opioids and overdose. The sim allowed us to practice how we would respond and it was a GREAT learning experience

See above. Seriously awesome sim

No suggestions. Lecture was thorough, and sim was appropriate

I feel exponentially prepared for opioid OD/EDU after this experience

I can't think of anything.

I really enjoyed the sim and the opportunity to practice an emergency situation. I always enjoy opportunities to practice teaching as well. The info about opioid OD and Narcan is relevant & empowering. Thank you!

Sim to education to better now

No comment

I should have reviewed the ppt. to be able to provide better teaching & have more knowledge since it was several weeks after class (snow days)

Love that this is relevant to current community problems!

Simulation first than education for the better flow of the simulation.

Important simulation. I wish other clinical simulations were as realistic as this sim.

none; everything was good

No comment

I wish I had a little more information about what was going to happen before arriving.

I really learned a lot with this Study. I feel very confident that I could help in an overdose situation and can teach others what I know.

I actually enjoyed the simulation. It was hard to be completely unbiased in the environment but my focus was on the unconscious victim and I knew what interventions to implement.

It would be great if the reversal was different for each person that way the person that goes second doesn't automatically know the entire process (put Doug on the couch or have the wife be aggressive)

Don't tell me about the video until the end, less nerves that way

Great material, with great advice that we can use in the community, also able to educate others with this info

I would prefer not to know I am being recorded

I enjoyed this sim and really do feel ready to help if I ever experienced this scenario. I thought it was well done and I gained a lot of useful knowledge.

I think the man operating the camera was distracting purely off the size of the equipment other than that it was amazing!

I really think having the students unaware of when they enter the opioid OD sim would be beneficial. It really made it real and unplanned for me and my partner!

Although the man working the camera was silent, I think his presence made me more nervous, because of how I was thinking about how I was being watched. I think I would have acted more natural if he wasn't there.

Awesome sim!! Very realistic and absolutely prepared us students for if that situation ever occurred. Of course, we won't be perfect in executing steps, but I can 100%

	say I feel comfortable assessing and caring for an opioid overdose patient if need be.
Watching out for my safety when entering the scene.	Great sim lab! I learned a lot! Thank you!
The class and sims provided all the information I needed.	No comment
Time mgmt. w/ assessment questions	Great experience. Thanks. I know more bc you care!!
It was a good experience. I cannot think of anything to be improved on.	Maybe offer the SIM as extra credit and not make it mandatory.
I don't feel improvement is needed. There was a surprise factor to the SIM which made it more realistic. This SIM has felt the most like a real life experience than all of them.	Great learning experience and very applicable to society.

Results Analysis Summary

This educational intervention on community opioid overdose was the first time that the nursing program had provided material focused on preparing students to; (1) manage opioid overdose within community settings, or (2) provide education on opioid overdose prevention to members of the community. Upon completion of this project, the student's feedback indicated they felt prepared for simulation, enjoyed, and appreciated the simulation experiences, and were able to learn from their experiences throughout the project. Additional evaluation feedback resulted in 100% of students agreeing that class material provided on community opioid overdose prevention prepared them for participation in the simulation activities and that the opioid overdose management simulation prepared them to manage opioid overdose within the community. And finally, 97% of students felt the opioid overdose education simulation prepared them to provide education on opioid overdose to members of the community.

The focus of the posttest for this project was to determine if class lecture and simulation would positively impact student's knowledge, skills, and attitudes on opioid

overdose management and ability to provide education on opioid overdose prevention. The OOAS reflected that student attitudes towards overdose management within the community was 97.8%, an improvement of 9.6%. The OOKS reflected that student knowledge of opioid overdose within community settings was 87.9%, an improvement of 27%. The Four-Item Questionnaire reflected that classroom lecture and low-fidelity simulations improved: (1) student skill level in managing an opioid overdose within a community setting up to 87.6%, an improvement of 90.8%, (2) student knowledge on providing education on opioid overdose to members of the community up to 87.6%, an improvement of 125.8%, (3) student skill level for providing education on opioid overdose to members of the community up to 85.2%, an improvement of 90.6%, and (4) student attitude regarding their ability to provide education on opioid overdose to members of the community up to 83.5%, an improvement of 85.6%.

SECTION IX

UTILIZATION AND REPORTING OF RESULTS

Limitations

Outcomes of this scholarly project were limited due to the sample size of 34 students. Students were required to attend class lecture and simulation; however, completion of pretests and posttests was voluntary, and the results did not affect course grades. This may have affected student performance on the pretest, posttest, and during simulation. Students were aware that this scholarly project was a curriculum assignment for the course faculty member, which may also have influenced student performance.

The OOKS was developed in 2013 by Williams et al. Item #10 on this instrument states, "There is no need to call for an ambulance if I know how to manage an overdose", and according to the directions the correct answer for this item was "True". WHO (2014) recommended having a trained professional observe the affected person following an opioid overdose and SAMHSA (2016b) further supported this by recommending that the public call 911 following all opioid overdoses. This information was provided to students during class lecture, which explains why students chose "False" for item #10. Due to this correction, the actual student performance on the pretest for this item was 97% with a posttest score of 100%. A similar issue also occurred with item #13 on this instrument, which states, "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". According to the directions this was a "True" statement. WHO (2014) has recommended not using opioids with other drugs that could interfere with recovery from opioid overdose and SAHMSA (2016b) has recommended never mixing pain pills with alcohol or sleeping pills. Both

recommendations were reviewed during class lecture, which is the most likely reason all students chose "False" for this item. Due to the concern of rebound toxicity, there is a concern that alcohol or sleeping pills could mask a future overdose. For this reason, the students were correct in choosing "False", and the revised student performance on the pretest for this item was 97% with a posttest score of 100%.

The OOKS instrument included multiple choice items which required the selection of either one answer or multiple answers. Some students selected only one answer for the test items with more than one answer or selected more than one answer for test items with only one answer. The combined use of both types of test questions on the same pretest/posttest may have inadvertently resulted in student errors when answering these test items.

Recommendations

This scholarly project was successfully able to prepare nursing students with the requisite knowledge, skills, and attitudes to manage opioid overdose within community settings and provide education on opioid overdose prevention to members of the community using class lecture and low-fidelity simulations. Project results reflected statistically significant results and improvement percentages which supported the effectiveness of this project. This educational intervention is recommended for use in preparing nursing students on community opioid overdose prevention.

In the future, it is recommended to increase class lecture time to 90 minutes. During implementation of class lecture, students had more questions and stories to share than anticipated. Additional time would provide students with the opportunity to share their experiences with opioid overdose and ask questions related to class content.

The simulation experience on opioid overdose management was enhanced with the use of a high-fidelity infant with the ability to cry. However, this was not an essential aspect of this simulation. The use of a cellular phone with an audio clip of an infant crying would also work, or the infant could be quiet during the simulation or omitted.

The use of video equipment to record student performance during the opioid overdose management simulation was a non-essential aspect of this DNP Project. The students were given the opportunity to view their performance following debriefing. However, most students did not want to see their performance. Also, according to student feedback, some of the students felt that this added to their feelings of anxiety during their performance. The performance videos were useful in allowing faculty to review student performance for the provision of constructive student feedback.

All students participated in the opioid overdose prevention simulation. Prior to this experience, students were provided with instructions on information to include in the teaching session. A written script was not required, although it was noted that students who had prepared a written script were more relaxed and thorough with the education they provided. For this reason, it is recommended to have students write a script for use during the teaching session.

This project is a sustainable educational intervention for future semesters at the local community college. One faculty person will continue to provide class lecture with the time increased to 90 minutes. The simulations required two to three faculty members. The overdose management simulation will continue to use the same equipment and room. This simulation requires at least one faculty member to oversee and participate in the simulation and (if available) one faculty member to run the high-fidelity infant simulator

and video equipment. The opioid overdose prevention simulation requires classroom space and one faculty member to oversee and perform as the individual receiving the education on opioid overdose. The same faculty will continue to participate in each simulation and facilitate prebriefing and debriefing.

Written and Oral Dissemination

Results were presented via written and oral dissemination at the degree-granting university upon completion of this DNP Project and submission of doctoral manuscript. Further dissemination of project outcomes may include additional Project Leader presentations to the college's employees via oral, written, or electronic measures. Results of the project may be published in scholarly, professional journals or presented at professional meetings/conferences, but the results will be aggregated so that no individual person will be identified. The final written manuscript will be uploaded to the ProQuest database. Following project completion, all data was stored at the degree-granting university for three years and then destroyed.

Conclusion

Class lecture and low-fidelity simulations on community opioid overdose prevention were successful methods for providing nursing students with the knowledge, skills, and attitudes to manage opioid overdose within community settings and provide education on opioid overdose prevention to members of the community. Prior to the implementation of this project, the literature review yielded minimal results for methods on providing nursing students with educational interventions on community opioid overdose prevention. Mortality rates from opioid overdose continue to increase worldwide. The IHI published an innovation report on the opioid crisis which focused on

the goal of reversing the opioid crisis within communities (Martin et al., 2016). This DNP Project was created to meet the needs of the local community and was based upon global, national, and statewide recommendations for preventing and managing opioid overdose. The use of Kristen Swanson's Middle-Range Caring Theory facilitated the use of caring behaviors when implementing community opioid overdose prevention interventions, due to the prevalence of stigmatization. Class lecture and simulation are commonly used teaching methodologies in nursing education. The results of this project proved that this educational intervention was an effective and sustainable teaching method for nursing students. With the current global crisis on opioid overdose, it is essential that nursing students are prepared to meet the needs of their community by managing opioid overdoses within community settings and providing education on opioid overdose prevention to members of the community.

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Appendix A

Caring Interventions Module

NUR 212: Health System Concepts
Module: Caring Interventions Part B
Domain: Nursing

Description:
This module addresses the concept of Health Care Systems, and focuses on the following exemplar:
- Community Opioid Overdose Prevention

Student Learning Outcomes:
Upon completion of this module, the student will be able to:
1. Demonstrate the knowledge and skill to provide appropriate response technique and sequence of steps in preventing death due to opioid overdose within a community setting.
2. Demonstrate the knowledge and skill to provide education on opioid overdose prevention to members of the community.
3. Demonstrate a positive increase in attitude towards perceived ability to successfully prevent opioid overdose within community settings and provide education on opioid overdose prevention to members of the community.

Learning Resources:
PowerPoint Presentation: Community Opioid Overdose Prevention
Handout: *OD Intervention Card- Using Naloxone* (Chicago Recovery Alliance, n.d.)
Handout: *Narcan Quick Start Guide* (Adapt Pharma, Inc., 2017)
Handout: *SAMHSA Opioid Overdose Prevention Toolkit: Safety Advice for Patients & Family Members* (Substance Abuse and Mental Health Services Administration [SAHMSA], 2016)
Handout: *Caring Interventions*
Open Skills Lab

Learning Activities:
   Class
   * See Health Care Systems Part B module

   Clinical
   Simulation
      1. Opioid Overdose Prevention Simulation A: Overdose Reversal (Intranasal Naloxone)
      2. Opioid Overdose Prevention Simulation B: Overdose Education (Intramuscular Naloxone)

Evaluation
Simulation (Oral feedback)

NUR 212 Simulation Guidelines

PRIOR TO SIMULATION
Opioid Overdose Prevention Simulation A: Overdose Reversal: Each student needs to practice the SCARE ME steps on the *OD intervention card- using naloxone* (Chicago Recovery Alliance, n.d.) in open lab on a manikin with intranasal naloxone 4mg and a rescue mask.

Opioid Overdose Prevention Simulation B: Overdose Education: Each student has been paired up with a partner (see the "Student Weekly Schedule"). Each group must develop a teaching plan which includes a knowledge assessment, the SCARE ME steps on the *OD intervention card- using naloxone* (Chicago Recovery Alliance, n.d.), and safety advice for the patient and family. Only the learning resources identified for this module may be used. Each student needs to participate in teaching the plan. The teaching session must not take longer than 15 minutes. Practice the teaching plan in the open lab using a manikin, syringe, injection pad, rescue mask, and naloxone 0.4mg/ml naloxone vial to demonstrate the steps for reversal.

ON THE DAY OF SIMULATION
- Arrive at HSB 116 at least 10 minutes prior to your scheduled simulation
- Wear uniforms and a watch
- Bring class handouts and any personal notes you plan to use during the teaching session (See "Learning Resources")

Opioid Overdose Prevention Simulation A: Overdose Reversal: Each student will individually demonstrate the steps to reverse an opioid overdose, while the other student observes and assists as needed. You may use class handouts during this simulation. (Approximately 7 minutes/student)
➢ Materials provided: a manikin, 4mg intranasal naloxone, rescue breathing mask

PERFORMANCE CRITERIA
▪ Assess environment, ensure safety, and locate naloxone
▪ Perform the SCARE ME steps on the *OD intervention card- using naloxone* (Chicago Recovery Alliance, n.d.) to reverse an overdose using intranasal naloxone (verbalize steps as they are performed)
▪ Incorporate appropriate caring interventions throughout performance (See *Caring Interventions* handout)

Opioid Overdose Prevention Simulation B: Overdose Education: Students will co-teach opioid overdose prevention to a person who has no prior experience with injections

or opioids and has graduated from high school. You may use class handouts during this simulation. (15 minutes maximum)

➢ Materials provided: a manikin, 0.4mg naloxone vial, alcohol preps, injection pad, syringe, rescue breathing mask

PERFORMANCE CRITERIA
▪ Introduction and knowledge assessment on prior knowledge of: opioids, signs of overdose, naloxone, overdose reversal, CPR ▪ Explain what an opioid is and give examples * ▪ Explain signs and symptoms of an overdose * ▪ Provide education on naloxone: use, duration, where to find it, how to store it, side effects * ▪ Provide education on how to prepare and administer intramuscular injection (deltoid or thigh) ▪ Demonstrate the SCARE ME steps on the *OD intervention card- using naloxone* (Chicago Recovery Alliance, n.d.) to reverse an overdose using intramuscular naloxone ▪ Discuss methods to prevent opioid overdose* ▪ Request a return demonstration and ask if there are any further questions ▪ Incorporate appropriate caring interventions throughout performance (See *Caring Interventions* handout) *Use the *SAMHSA Opioid Overdose Prevention Toolkit: Safety Advice for Patients & Family Members* (SAHMSA, 2016)

References

Adapt Pharma, Inc. (2017). *Narcan quick start guide*. Retrieved from

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MD: Substance Abuse and Mental Health Services Administration.

Appendix B

Caring Interventions Guidelines

NUR 212
Health Care Systems Part B Handout: Caring Interventions

PURPOSE: Each student will need to demonstrate the use of these caring interventions during simulation.

Opioid Overdose Prevention Simulation A: Overdose Reversal:
Knowing: Avoid making assumptions or holding on to preconceived notions about opioid overdose victims. Focus on the victim and actively engage in seeking cues and performing a thorough assessment.

Being with: Be with the victim through physical presence and the conveyance of presence.

Doing for: Provide measures to ensure the victim's needs are anticipated and care is provided skillfully, while ensuring comfort, protection, and dignity.

Maintain belief in the victim by providing realistic optimism and a hope-filled attitude.

Enable the victim by keeping them informed of their status, providing feedback and information as needed, and assisting/supporting decision-making to promote well-being.

Opioid Overdose Prevention Simulation B: Overdose Education

Knowing: Avoid making assumptions about the learner, actively engage the learner, and center on the needs of the learner by seeking cues and assessing learning needs.

Being with: Convey your presence to the learner by being present and allowing them to share their feelings. Providing time, an authentic presence, attentive listening, and reflective responses are also important.

Doing for: Anticipate the client's learning needs and prepare skilled education on opioid overdose prevention, while comforting the client and preserving their dignity. Incorporate the use of interpersonal therapeutic communication as needed.

Enable the client to achieve well-being, by focusing on the learning needs of the client, providing education on opioid overdose prevention, supporting learning, and providing feedback.

Maintain belief in the learner by holding them in esteem and maintaining a hope-filled attitude.

References

Swanson, K. (1991). Empirical development of a middle range theory of caring. *Nursing Research, 40*(3), 161-166.

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Appendix C

Community Opioid Overdose Prevention: Pre-briefing Guidelines

NUR 212
Community Opioid Overdose Prevention: Pre-briefing Guidelines

Place: HSB 116
Time: 30 minutes

All faculty will need to follow INASCL Standards: Confidentiality, Compassion, Honesty, Commitment, Collaboration, Mutual Respect, and Engagement of the learning process

1. Introductions
2. Remind students to avoid discussing simulation activities outside of simulation
3. Review Student Learning Outcomes:
   Upon completion of this module, the student will be able to:
   1) Demonstrate the knowledge and skill to provide appropriate response technique and sequence of steps in preventing death due to opioid overdose within a community setting.
   2) Demonstrate the knowledge and skill to provide education on opioid overdose prevention to members of the community.
   3) Demonstrate a positive increase in attitude towards perceived ability to successfully prevent opioid overdose within community settings and provide education on opioid overdose prevention to members of the community.
4. Review of handouts:
   - Handout: *OD Intervention Card- Using Naloxone* (Chicago Recovery Alliance, n.d.)
   - Handout: *Narcan Quick Start Guide* (Adapt Pharma, Inc., 2017)
   - Handout: *SAMHSA Opioid Overdose Prevention Toolkit: Safety Advice for Patients & Family Members* (Substance Abuse and Mental Health Services Administration [SAHMSA], 2016)
   - Handout: *Caring Interventions*
5. Review of role expectations:

Opioid Overdose Prevention Simulation A: Overdose Reversal: Each student will individually demonstrate the steps to reverse an opioid overdose, while the other student observes and assists as needed. You may use class handouts during this simulation. (Approximately 7 minutes/student)
➢ **Materials provided:** a manikin, 4mg intranasal naloxone, rescue breathing mask
➢ **Setting:** HSB 115, environment set up to look and sound like a typical home setting

PERFORMANCE CRITERIA
▪ Assess environment, ensure safety, and locate naloxone ▪ Perform the SCARE ME steps on the *OD intervention card- using naloxone* (Chicago Recovery Alliance, n.d.) to reverse an overdose using intranasal naloxone (verbalize steps as they are performed) ▪ Incorporate appropriate caring interventions throughout performance (See *Caring Interventions* handout)

Opioid Overdose Prevention Simulation B: Overdose Education: Students will co-teach opioid overdose prevention to a person who has no prior experience with injections or opioids and has graduated from high school. You may use class handouts during this simulation. (15 minutes maximum)
➢ **Materials provided:** a manikin, 0.4mg naloxone vial, alcohol preps, injection pad, syringe, rescue breathing mask
➢ **Setting:** HSB 116, environment includes table and chairs

PERFORMANCE CRITERIA
▪ Introduction and knowledge assessment on prior knowledge of: opioids, signs of overdose, naloxone, overdose reversal, CPR ▪ Explain what an opioid is and give examples * ▪ Explain signs and symptoms of an overdose * ▪ Provide education on naloxone: use, duration, where to find it, how to store it, side effects * ▪ Provide education on how to prepare and administer intramuscular injection (deltoid or thigh) ▪ Demonstrate the SCARE ME steps on the *OD intervention card- using naloxone* (Chicago Recovery Alliance, n.d.) to reverse an overdose using intramuscular naloxone ▪ Discuss methods to prevent opioid overdose* ▪ Request a return demonstration and ask if there are any further questions ▪ Incorporate appropriate caring interventions throughout performance (See *Caring Interventions* handout)   *Use the *SAMHSA Opioid Overdose Prevention Toolkit: Safety Advice for Patients & Family Members* (SAHMSA, 2016)

6. Review simulation sites and schedule (See schedules)
7. A debriefing session, followed by the posttest, will take place in HSB 116 as noted on the schedule.
8. Let students know that their performance during the **Overdose Reversal Simulation** will be recorded for discussion during debriefing.
9. Remind students that they are not being graded on their performance. Feedback will be provided during debriefing.
10. *Relax and have fun learning!*

References

Adapt Pharma, Inc. (2017). *Narcan quick start guide*. Retrieved from

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Chicago Recovery Alliance. (n.d.). *OD intervention card- using naloxone*. Retrieved

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   MD: Substance Abuse and Mental Health Services Administration.

Appendix D

Four-Item Questionnaire

Educational Intervention for Nursing Students on Community Opioid Overdose Prevention
Project Leader: Lara J. Sheppa, MSN, RN, CNE

Directions: Please mark your answers to the Four-Item Questionnaire on the student response form provided; items 29-32 on the FRONT of the student response form. (5 minutes)

1. I can manage an opioid overdose on a client within a community setting.

    A. Completely Disagree
    B. Disagree
    C. Unsure
    D. Agree
    E. Completely Agree

2. I know the necessary information to include when providing education on opioid overdose prevention to members of the community.

    A. Completely Disagree
    B. Disagree
    C. Unsure
    D. Agree
    E. Completely Agree

3. I can provide education on opioid overdose prevention to members of the community.

    A. Completely Disagree
    B. Disagree
    C. Unsure
    D. Agree
    E. Completely Agree

4. I feel confident in my ability to provide education on opioid overdose prevention to members of the community.

    A. Completely Disagree
    B. Disagree
    C. Unsure
    D. Agree
    E. Completely Agree

Appendix E

Pre-Test Directions

**Educational Intervention for Nursing Students on Community Opioid Overdose
Prevention
Project Leader: Lara J. Sheppa, MSN, RN, CNE**

**Thank you for agreeing to participate in this project. Please do not put any
identifying marks on any of the materials provided to reinforce anonymity of
participants. Below you will find the directions for submitting your responses to the
pretest. Completion of these items will take approximately 30 minutes.**

I.   <u>**Opioid Overdose Attitudes Scale (OOAS)**</u>
     Directions: Please mark your answers to the OOAS items on the student response
     form provided; items 1-28 on the FRONT of the student response form. (15 minutes)

II.   <u>**Four-Item Questionnaire**</u>
     Directions: Please mark your answers to the Four-Item Questionnaire on the student
     response form provided; items 29-32 on the FRONT of the student response form. (5
     minutes)

III.   <u>**Opioid Overdose Knowledge Scale (OOKS)**</u>
     Directions: Please mark your answers to the OOKS items on the BACK of the
     student response form. (10 minutes)

**Once you have finished filling out the student response form, please place the
student response form, instruction sheet, OOKS form, OOAS form and Four-Item
Questionnaire in the provided envelope and give the envelope to the Project Leader.
If you have decided to not participate in this project, then leave the forms blank and
put them in the provided envelope and give the envelope to the Project Leader.**

Appendix F

Post-Test Directions

Educational Intervention for Nursing Students on Community Opioid Overdose Prevention
Project Leader: Lara J. Sheppa, MSN, RN, CNE

Thank you for agreeing to participate in this project. Please do not put any identifying marks on any of the materials provided to reinforce anonymity of participants. Below you will find the directions for submitting your responses to the posttest. Completion of these items will take approximately 45 minutes.

IV.   <u>**Opioid Overdose Attitudes Scale (OOAS)**</u>
       Directions: Please mark your answers to the OOAS items on the student response form provided; items 1-28 on the FRONT of the student response form. (15 minutes)

V.   <u>**Four-Item Questionnaire**</u>
       Directions: Please mark your answers to the Four-Item Questionnaire on the student response form provided; items 29-32 on the FRONT of the student response form. (5 minutes)

VI.   <u>**Feedback**</u>
       Directions: Please mark your answers to the Five-Item Evaluation on the student response form provided; answers 1-3 as items 33-35 and answers 4-5 on the BACK of the student response form. (15 minutes)

VII.   <u>**Opioid Overdose Knowledge Scale (OOKS)**</u>
       Directions: Please mark your answers to the OOKS items on the BACK of the student response form provided. (10 minutes)

Once you have finished filling out the student response form, please place the student response form, instruction sheet, OOKS form, OOAS form, Four-Item Questionnaire and Five-Item Evaluation in the provided envelope and give the envelope to the Project Leader. If you have decided to not participate in this project, then leave the forms blank and put them in the provided envelope and give the envelope to the Project Leader.

Appendix G

Project Evaluation

Educational Intervention for Nursing Students on Community Opioid Overdose Prevention
PROJECT EVALUATION
Project Leader: Lara J. Sheppa, MSN, RN, CNE

Feedback
Directions: Please mark your responses to the Five-Item Evaluation on the FRONT of the student response form provided. (15 minutes)

1. The class material provided on community opioid overdose prevention prepared me for participation in the simulation activities.

    A. Completely Disagree
    B. Disagree
    C. Unsure
    D. Agree
    E. Completely Agree

2. The opioid overdose management simulation prepared me to manage opioid overdose within the community.

    A. Completely Disagree
    B. Disagree
    C. Unsure
    D. Agree
    E. Completely Agree

3. The opioid overdose education simulation prepared me to provide education on opioid overdose to members of the community.

    A. Completely Disagree
    B. Disagree
    C. Unsure
    D. Agree
    E. Completely Agree

Directions: Please mark your responses to items 4-5 on the back of the student response form provided.

4. How could your experiences in class and/or simulation have been improved?
5. Additional comments and feedback are welcome!

Appendix H

Health Care Systems Module

NUR 212: Health System Concepts
Module: Health Care Systems Part B
Domain: Healthcare

Description:
This module addresses the concept of Health Care Systems, and focuses on the following exemplar:
- Community Opioid Overdose Prevention

Student Learning Outcomes:
Upon completion of this module, the student will be able to:
4. Summarize North Carolina legislation for the Good Samaritan Law and the Statewide Standing Order/Opiate Antagonist Law.
5. Identify measures to prevent and manage community opioid overdose.
6. Relate knowledge of intranasal and intramuscular naloxone.
7. Outline the key teaching points to include when educating members of the community on the prevention of opioid overdose.

Learning Resources:
*Varcarolis 3rd ed., Opiates pp. 305-306 and Table 19-6
*Video: *Using Nasal Naloxone to Reverse Opiate Overdose (*Multnomah County Health Department, 2015) Available at https://www.youtube.com/watch?v=FZpgjRBby_M
Handout: *OD Intervention Card- Using Naloxone* (Chicago Recovery Alliance, n.d.)
Handout: *Narcan Quick Start Guide* (Adapt Pharma, Inc., 2017)
Handout: *SAMHSA Opioid Overdose Prevention Toolkit: Safety Advice for Patients & Family Members* (Substance Abuse and Mental Health Services Administration [SAHMSA], 2016)
Handout: *Caring Interventions*

Learning Activities:
  Class
  PowerPoint Presentation: Community Opioid Overdose Prevention
  Demonstration
  Class Discussion

  Clinical
  Simulation * See Caring Interventions Part B module

Evaluation
Simulation (Oral feedback)

*Required Reading Assignment PRIOR to class

References

Adapt Pharma, Inc. (2017). *Narcan quick start guide*. Retrieved from

https://www.narcan.com/pdf/NARCAN-Quick-Start-Guide.pdf

Chicago Recovery Alliance. (n.d.). *OD intervention card- using naloxone*. Retrieved

from http://www.anypositivechange.org/odcard.pdf

[Multnomah County Health Department]. (2015, January 12). *Using Nasal Naloxone to*

Reverse Opiate Overdose [Video File]. Retrieved from

https://www.youtube.com/watch?v=FZpgjRBby_M

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MD: Substance Abuse and Mental Health Services Administration.

Appendix I

Simulation Guidelines

NUR 212
Community Opioid Overdose Simulation
Lara Sheppa, MSN, RN, CNE

Student Learning Outcomes:
Upon completion of this module, the student will be able to:
1. Demonstrate the knowledge and skill to provide appropriate response technique and sequence of steps in preventing death due to opioid overdose within a community setting.
2. Demonstrate the knowledge and skill to provide education on opioid overdose prevention to members of the community.
3. Demonstrate a positive increase in attitude towards perceived ability to successfully prevent opioid overdose within community settings and provide education on opioid overdose prevention to members of the community.

OPIOID OVERDOSE PREVENTION SIMULATION A: OVERDOSE REVERSAL
- ➢ **Materials provided:** intranasal naloxone 4mg, rescue breathing mask
- ➢ **Setting:** Environment set up to look and sound like a typical home setting: couch, coffee table, end table with lamp, bed, alcohol bottles and cans, drug paraphernalia (heroin, spoon, syringes, lighter), bassinet
- ➢ **Simulators:**
  1. Clothed infant, crying, positioned in a bassinet/crib
  2. Clothed adult male or female victim with heroin overdose moulage on face and body, syringe placed in lower arm, pupils constricted. Position victim on the floor, leaning against a wall.

Scenario Stage	Victim's Condition	Faculty Role & Script	Expected Interventions
Stage 1	**History** • Doug Heron, age 25, white male • PMH: Opioid Use Disorder • Victim was at his home in his apartment caring for his infant son, while his spouse was working. During this time, the victim IV injected an unknown quantity of heroin. The spouse arrives home and is	**Role:** Victim's Spouse *Prior to the start of this simulation, notify the students that upon their arrival the victim will be unresponsive, respirations are absent, and pulse is "slow".*	▪ Assess environment, ensure safety, and locate naloxone ▪ Perform the SCARE ME steps on the *OD intervention card- using naloxone* (Chicago Recovery Alliance, n.d.) to reverse an overdose using intranasal naloxone (verbalize steps as they are performed)

Scenario Stage	Victim's Condition	Faculty Role & Script	Expected Interventions
	unable to wake the victim. The spouse then leaves the victim to find assistance and is brings back two student nurses. **Condition:** • The body is limp • Fingernails and lips have a blue or purple cast • Unresponsive • Breathing has stopped. • The heartbeat is "slow"	*Students should wait in the hallway until summoned by the victim's wife* **Script:** 1. Go to the door of the room and shout, "Somebody help me! I can't wake my husband up!" 2. Bring the student nurses into the room where the victim is. 3. Answer student's questions. Possible responses may be: • My husband is addicted to heroin. • He has been using heroin for the past 7 years. • I was at work for the past 8 hours. • Here is the naloxone. • I don't know how to use naloxone. • I don't know how to do rescue breathing/CPR. • I don't know where he got the heroin. • I don't know if he took anything else with the heroin. • We don't have any prescription pain medications here.	S: Stimulation C: Call for help A: Airway clear R: Rescue breathing (1:5) (AHA, 2015) E: Evaluate status M: Administer naloxone 1 spray intranasally (tilt neck) (Adapt Pharma, Inc., 2017) • Displays caring interventions throughout each stage: *Knowing:* Avoid making assumptions or holding on to preconceived notions about opioid overdose victims. Focus on the victim and actively engage in seeking cues and performing a thorough assessment. *Being with:* Be with the victim through physical presence and the conveyance of presence. *Doing for:* Provide measures to ensure the victim's needs are anticipated and care is provided skillfully, while ensuring comfort, protection, and dignity. *Maintain belief* in the victim by providing realistic optimism and a hope-filled attitude. *Enable* the victim by keeping them informed of their status, providing feedback and information as needed, and assisting/ supporting decision-making to promote well-being.
Stage 2	**Condition**: Remains the same until 2 minutes after naloxone is provided. ▪ Victim begins to breathe independently ▪ Eyes open	Quietly observes resuscitation efforts from a distance.	• E: Evaluate and Support: provide rescue breathing until victim starts breathing independently, continue to provide caring interventions

Scenario Stage	Victim's Condition	Faculty Role & Script	Expected Interventions
Stage 3	Awake and alert	State arrival of EMS: "Oh thank goodness, the ambulance is here!"	**Scenario Ends**

OPIOID OVERDOSE PREVENTION SIMULATION B: OVERDOSE EDUCATION

- ➢ **Materials provided:** 0.4mg naloxone vial, alcohol preps, injection pad, syringe, rescue breathing mask
- ➢ **Setting:** Environment must include table and chairs
- ➢ **Simulators:** Clothed adult male or female, lying on a table

Scenario Stage	Client Condition	Faculty Role & Script	Expected Interventions
Stage 1	**History** • Daisy Heron, age 25, female • Married to Doug Heron • Infant son, Daniel Heron • Recently experienced finding husband experiencing an opioid overdose • High school graduate • Works as a cashier in a retail store • No prior history of drug use • No prior knowledge of opioid overdose or naloxone beyond recent experience • No prior history administering naloxone or any intramuscular medications	**Role:** Victim's Spouse **Script:** **Introduction** "My name is Daisy Heron. My husband recently had an overdose from heroin, so I would like to know what to do in case that ever happens again." **Responses to questions:** "I have never used heroin before." "I don't know what an opioid is." "I don't know all of the signs for an opioid overdose." "I don't know anything about naloxone." "I have never given naloxone." "I do not know what to do if someone overdoses." "I do not know how to do rescue breathing/CPR." Ask questions to clarify content as needed	▪ Introduction and knowledge assessment on prior knowledge of: Opioids, signs of overdose, naloxone, overdose reversal, CPR ▪ Displays caring interventions throughout each Stage: *Knowing:* Avoid making assumptions about the learner, actively engage the learner, and center on the needs of the learner by seeking cues and assessing learning needs. *Being with:* Convey your presence to the learner by being present and allowing them to share their feelings. Providing time, an authentic presence, attentive listening, and reflective responses are also important. *Doing for:* Anticipate the client's learning needs and prepare skilled education on opioid overdose prevention, while comforting the client and preserving their dignity. Incorporate the use of interpersonal therapeutic communication as needed. *Enable* the client to achieve well-being, by focusing on the learning needs of the client, providing education on opioid overdose prevention, supporting learning, and providing feedback.

Scenario Stage	Client Condition	Faculty Role & Script	Expected Interventions
			Maintain belief in the learner by holding them in esteem and maintaining a hope-filled attitude.
Stage 2	Interested in learning about opioid overdose prevention	**Script:** Give verbal acknowledgement of understanding as information is presented If a demonstration of the SCARE ME steps on the *OD intervention card- using naloxone* (Chicago Recovery Alliance, n.d.) or how to prepare and administer naloxone is not provided, ask for this to be done Ask questions to clarify content as needed	▪ Explain what an opioid is and give examples (SAHMSA, 2016) ▪ Explain signs and symptoms of an overdose (SAHMSA, 2016) ▪ Provide education on naloxone: use, duration, where to find it, how to store it, and side effects (SAHMSA, 2016) ▪ Demonstrate how to prepare and administer intramuscular injection using correct sites (thigh or deltoid) ▪ Demonstrate the SCARE ME steps on the *OD intervention card- using naloxone* (Chicago Recovery Alliance, n.d.) to reverse an overdose using intramuscular naloxone (verbalize steps as they are performed) S: Stimulation C: Call for help A: Airway clear R: Rescue breathing (1:5) (AHA, 2015) E: Evaluate status M: Administer naloxone 1ml IM in deltoid or thigh ▪ Discuss methods to prevent opioid overdose
Stage 3	Appreciative of new knowledge	**Script:** Ask questions to clarify content as needed If a return demonstration is not requested, ask if you can perform one Once all steps are completed and a return demonstration is requested, state "Thank you	▪ Request a return demonstration and ask if there are any further questions **Scenario Ends**

Scenario Stage	Client Condition	Faculty Role & Script	Expected Interventions
		very much for teaching me about opioid overdose. I am so glad that I will be able to do something if it ever happens again!" *ACTUAL RETURN DEMONSTRATION IS NOT REQUIRED*	

References

Adapt Pharma, Inc. (2017). *Narcan quick start guide*. Retrieved from https://www.narcan.com/pdf/NARCAN-Quick-Start-Guide.pdf

American Heart Association. (2015). Highlights of the 2015 American Heart Association Guidelines Update for CPR and ECC.

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No. (SMA) 13-4742. Rockville, MD: Substance Abuse and Mental Health Services Administration.

Appendix J

Debriefing Guidelines

NUR 212
Community Opioid Overdose Prevention: Debriefing Guidelines

Place: HSB 116
Time: 30 minutes

All faculty will need to follow INASCL Standards: Confidentiality, Compassion, Honesty, Commitment, Collaboration, Mutual Respect, Engagement of the learning process

Debriefing Guidelines:
1. Remind students to avoid discussing simulation activities outside of simulation
2. Set the scene using the PEARLS Debriefing Script (Eppich & Cheng, 2015)
3. Review each of the following for the Overdose Reversal simulation: reaction, description, analysis, outstanding issues, and application/summary using the PEARLS Debriefing Script (Eppich & Cheng, 2015)
4. Review each of the following for the Overdose Education simulation: reaction, description, analysis, outstanding issues, and application/summary using the PEARLS Debriefing Script (Eppich & Cheng, 2015)
5. Discuss the student's use of caring interventions during simulation
6. Answer any remaining questions
7. Remind students that Wellness Services are available through the college if needed
8. Encourage ongoing practice to increase proficiency with community opioid overdose prevention
9. Once debriefing is complete, the posttest procedure may begin

References

Eppich, W. & Cheng, A. (2015). Promoting excellence and reflective learning in simulation

(PEARLS): Development and rationale for a blended approach to health care simulation

debriefing. *Society for Simulation in Healthcare, 10*(2), 106-115.

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