

Addressing the Opioid Epidemic: Strategies for Interprofessional Health Education

Cindy Jean Hadenfeldt EdD, RN *College of Nursing, Omaha Campus, Creighton University*

Heather M Naylor MSN, FNP-BC, AP-PMN, FAIPM *College of Nursing, Phoenix Campus, Creighton University*

Jennifer Lynn Jessen EdD, MSN, RN *College of Nursing, Omaha Campus, Creighton University*

Sara Banzhaf DNP, APRN-NP, PMHNP-BC *College of Nursing, Omaha Campus, Creighton University*

Kate Martens-Stricklett MS, NHA, COS, SHCM *Center for Interprofessional Practice Education and Research (CIPER), Creighton University*

Abstract

INTRODUCTION Opioid use disorder impacts families in the United States from all walks of life with premature loss of life and devastating financial and social consequences. An online interprofessional program was designed and implemented to assist pre-licensure health professions students to understand the complexities of the opioid epidemic. The program included information related to the epidemic's impact on individuals, patients, families and the community, solutions to this crisis, and the benefit of interprofessional care in addressing the epidemic.

METHODS The purpose of this study was to explore students' perceptions of individuals experiencing opioid use disorder and the value of interprofessional care. There were 217 students of medicine, dental, nursing, emergency medical services, and physical therapy who participated in the discussion-board format activity that enabled them to acquire new knowledge and apply it to two unfolding case studies of individuals experiencing opioid use disorder.

RESULTS Thematic analysis was applied to the discussion that was generated from the activity. Six themes were identified from the discussion board responses: 1) Opioid use disorder can happen to anyone, 2) Mismanaged health care contributes to opioid addiction, 3) Overwhelming life stressors can impact opioid use, 4) Seeking relief from chronic pain can dominate a person's life, 5) A strong sense of empathy and compassion is essential for health professionals, and 6) Interprofessional collaboration improves outcomes.

CONCLUSION This educational strategy was an effective approach to engage students in informed discussions regarding the complexities of the epidemic and to appreciate the benefit of interprofessional care in addressing opioid use disorder.

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Implications for Interprofessional Practice

- The magnitude of the opioid epidemic in the United States and globally necessitates interprofessional care in addressing opioid use disorder.
- An online interprofessional program can be an effective strategy for assisting health professions students to understand the complexities of opioid use disorder, to uncover its impact on individuals, patients, families, and the community, to develop potential solutions to the crisis, and to understand the benefits of interprofessional care in addressing the epidemic.
- Students identified the potential for opioid use disorder in the population, the contribution that mismanaged health care brings to opioid addiction, the impact of overwhelming life stressors on individual opioid use, the understanding that seeking relief from chronic pain can dominate a person's life, an understanding that empathy and compassion are needed in health care providers towards individuals who are addicted, and that interprofessional collaboration improves health care outcomes.

Introduction

Opioid use disorder impacts families around the United States with the premature loss of life and devastating financial and social consequences. In 2018 alone, 67,000 people died of drug overdoses and 70% of these deaths involved opioids – either prescribed or illicitly obtained (Centers for Disease Control, 2020). Health professions students are likely to care for those who are suffering from opioid use disorder and other addictions in their future practice. In order to prepare these students to understand the complexities of the epidemic and the importance of an interprofessional approach in addressing this disorder, an online program was developed and implemented in a university setting. The purpose of this qualitative study was to explore health profession students' perceptions of individuals experiencing opioid use disorder and the importance of interprofessional care following the learning activity.

Literature Review

In order to prepare future health care clinicians for interprofessional practice, universities are developing programs and learning activities that incorporate multiple health care disciplines. Specific guidelines and competencies are identified by the Health Professions Accreditors Collaborative (2019) for interprofessional education which includes learning activities that foster understanding of roles of other professions in a climate of mutual respect and support a team approach to health promotion and disease prevention.

Individuals with opioid use disorder can benefit greatly from an interdisciplinary approach due to the complexity of the disorder and has been the focus of several interprofessional education activities. Learning activities developed by Langford, Gordon, Loeser, Tauben & Doorenbos (2019) and Hager, Blue, Zhang & Palombi (2020) used student scores on the Interprofessional Collaborative Competency Attainment Scale (ICCAS) pre and post learning activity to evaluate the effectiveness of their learning activities in terms of collaboration.

In the Langford et. al study (2019), active learning and case study exercises related to pain management were used with 160 pre-licensure students. Students were presented with written and video material and then participated in small group discussions with expert facilitators in pain management and/or interprofessional collaboration (Langford et al., 2019). Hager et al. (2020) utilized a case-based activity with 59 pharmacy and medical students. Students participated in collaborative problem solving related to the case.

In both learning situations, based on the results of the ICCAS, the researchers concluded that the interactive IPE session was successful in achieving competencies for interprofessional teams in acute pain management in the case of opioid use disorder. Competencies included recognizing interprofessional team members' knowledge, skills, and contributions to the team, communicating effectively across professions, learning with, from, and about interprofessional team members, and actively listening to interprofessional team members (Langford et al, 2019; Hager et al., 2020).

Brooks, Holm, Thomas & Rich (2017) piloted a 90-minute interprofessional panel discussion by individuals with professional experiences addressing substance abuse to engage 70 students and faculty in understanding opioid misuse. A question and answer session followed the panel presentations. An evaluation of the 8-item satisfaction survey completed by participants at the end of the panel demonstrated support that students had achieved a greater understanding of the magnitude of the opioid epidemic and an appreciation for the interprofessional aspects of opioid management.

Monterio et al. (2017) brought together four learning activities – a patient panel, a simulated patient encounter, a case session focused on an individual who was misusing opioids and experiencing homelessness, and training in naloxone administration. There were 272 pre-licensure students in medicine nursing, pharmacy, social work and physical therapy who participated in the four activities. The researchers used the Opioid Overdose Knowledge Scale as a pre-test post-test measure to compare changes in knowledge and evaluate medical student knowledge. Comparison of scores demonstrated a significant increase in opioid overdose knowledge ($p < 0.001$). Participant satisfaction scores from all professions were high related to the activity (Monteiro et al., 2017).

Dumenco et al. (2019) provided health professions students with a half-day interprofessional workshop on substance use disorder training. One component of the workshop was a live panel of patients who had experienced opioid use disorder and had since recovered from the disorder. The presentations were followed by requesting that participants complete a short rapid reflection of the experience. Of special interest to those providing the workshop was to discover that the presentations impacted the attitudes of the students by decreasing bias and stigma against those experiencing addiction. Of the 514 participants, 70% indicated a change in attitude following the patient panel. The authors used thematic analysis to further identify major themes of the student responses.

All of these interprofessional learning activities deter-

mined that students gained knowledge related to opioid use disorder, an increased appreciation for the value of the interprofessional health team, and the ability to collaborate with the team in addressing substance use disorder. Additionally, the Dumenco study confirmed their hypothesis that student attitudes would change in a positive way towards individuals who were impacted by opioid use disorder following a patient panel.

Methods

This study was a retrospective qualitative analysis of discussion board data from an interprofessional activity offered to health professions students in one university setting. Approval for the study was granted by the University Institutional Review Board. In the initial implementation of this online learning activity, there were 217 participants from the departments of medicine, nursing, emergency medical services, and dentistry. All participants were enrolled in the online course that was to be completed over the course of one week.

Ten students were intentionally assigned to each discussion group in advance of the activity to ensure a mix of health professions were included in each group. Students were required to listen to four pre-recorded lectures by professionals in family medicine, pain management, mental health, and emergency medical services focused on contributing factors to the crisis, management of individuals with acute opioid overdose, and strategies for providing a comprehensive and holistic approach in the treatment of individuals with opioid use disorders. Students were asked to respond to questions about two unfolding case studies at specific intervals in an online discussion board format with a minimum of 150 words for each response. They were also required to reply to two other students in their group with new substantiated ideas or thoughtful questions at a minimum of 50 words per response. A final personal reflection of a minimum of 150 words was required to complete the activity. The students spent approximately 4-6 hours on the learning activity throughout the week. Table 1 displays the submission timeline for discussion posts.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Opioid Interprofessional Activity opens at 0800	First original responses to part 1 of Ellie and Mark case studies are due by midnight		Two replies to other student's posts are due by midnight	Second original responses to part 2 of Ellie and Mark case studies are due by midnight		Two replies to other student's posts are due by midnight Personal reflection due by midnight

Table 1. *Submission Timeline*

The Cases

The first unfolding case study centered on Ellie, a 19-year old female from a middle-class family who had been a star athlete on the women's volleyball team in high school and had received scholarships to continue her athletics in college. Ellie was first prescribed oxycodone after a tear of her anterior cruciate ligament during her senior year of high school that resulted in a surgical repair of the tear and extensive physical therapy. Upon arriving on the college campus in the fall, she felt overwhelmed with expectations to succeed as a college student and athlete. This stress contributed to her use of opioids until she is taken to a hospital emergency department (ED) after an opioid overdose. The second part of the case was focused on her recovery in the ED, being reunited with her parents, and planning for inpatient substance abuse treatment.

The second unfolding case study was Mark, a 46-year old male with a past medical history of lower vertebral fractures with spinal cord compression from a fall. He was prescribed hydrocodone post-operatively but had ongoing pain beyond the expected six-week healing period so he was prescribed an extended-release opioid for around-the-clock pain. Mark can no longer work the job he had prior to the fall because he does not tolerate standing for long periods of time. When his wife returned from a recent shopping trip, she found him in his recliner un-arousable. She gave him naloxone and called the ambulance. The second part of the case focuses on Mark's wife becoming visibly upset about Mark's depression with his life of pain and inactivity and consulting with hospital staff.

The questions

Students were asked to discuss several questions for each case, but for the purposes of this study, only data from four questions were analyzed to prevent bias to students' answers. "What are your initial reactions to Ellie?" and "What are your initial reactions to Mark?" were asked related to the unfolding cases. "How has completing this activity impacted your attitude toward those with opioid use disorder?" and "How does interprofessional practice promote quality outcomes to resolve the opioid epidemic?" were asked in the final reflection that student's completed.

The Analysis

The researchers performed thematic analysis of student submissions according to the steps described by Castleberry and Nolen (2018). In order to assure that the thematic analysis is systematic and comprehensive, Castleberry and Nolen (2018) recommend five steps to the analysis: compiling, disassembling, reassembling, interpreting, and concluding. Compiling is transcribing or copying interviews to get them in a useable format for analysis. Disassembling involves taking the data apart, looking for important statements and beginning to put data with connections together in meaningful groupings or with coding. Reassembling is the process of putting data into a context with each other and beginning theme identification. During the interpretation phase, researchers extract excerpts from the data and support the use of the theme based on direct quotations from the transcripts. Drawing conclusions is the final stage of the method of analysis (Castleberry & Nolen, 2018).

Due to the large volume of data that were collected, thematic data analysis for this study was limited to 50 participants. An effort was made to include representative data from all health professions who participated in the activity, and student submissions for analysis were randomly selected from these groups prior to any review of the data. The researchers determined that data saturation was achieved in the analysis as they found repeated insights from the students and they determined that no additional submissions were needed to be included in the analysis.

Responses of the 50 students used for the analysis were copied from the selected questions of the discussion board and compiled into word documents for both the Ellie and Mark cases. Responses for the final reflection were likewise compiled so that researchers could work from common transcripts and highlight important phrases and sentences. The research team members each reviewed the transcripts individually to disassemble the data and then worked collaboratively to further this disassembling and begin the reassembling with the development of themes. During the interpretation phases, data were reviewed to assure that important data was captured into themes and direct quotes were identified that helped to describe the theme. Members came together regularly to provide inter-coder reliability of the themes.

Results

Six themes emerged from the discussion board responses. They were: 1) Opioid use disorder can happen to anyone, 2) Mismanaged health care contributes to opioid addiction, 3) Overwhelming life stressors can impact opioid use, 4) Seeking relief from chronic pain can dominate a person's life, 5) A strong sense of empathy and compassion is essential for health professionals, and 6) Interprofessional collaboration improves outcomes. The themes are presented below with a summary of participants discussion about the theme and representative quotes from the student transcripts that support the theme.

Theme number 1: Opioid Use Disorder can happen to anyone.

Participants reported that the activity illustrated that opioid use disorder can happen to anyone across demographics of race, age, gender, and socioeconomic status. They reflected that their thoughts and attitudes changed as they were presented with individuals facing an opioid crisis through the case studies. Prior to the activity, some said that they had negative, stereotypical views of those who become addicted and that they perceived addiction as a choice and not something that could occur unintentionally. Some participants shared personal experiences with loved ones or colleagues who struggled with addiction, grateful that they had avoided a similar fate, "It could have been me."

"Prior to completing this passport, I didn't fully understand this type of addiction and didn't know that it could literally affect anyone of us."

"Before this activity, I feel as though I had a very negative and stereotypical view of who can be addicted to opioids/drugs when, in fact, anyone can fall victim to addiction."

Theme number 2: Mismanaged health care contributes to opioid addiction

Participants in the activity described a theme of "Mismanaged health care contributes to opioid addiction." Based on the description of the cases, participants noted a lack of appropriate pain management, a failure to offer alternative therapies, an ineffective coordination of transitional care, insufficient patient education and psychosocial support, and patient lack of knowledge that there were risks of long-term opioid use. Partici-

pants noted that the health care teams who worked with the patients did not recognize the lack of knowledge, nor did they share adequate education on the risks and adverse effects of opioids. Professionals missed opportunities to intervene.

"Her (Ellie's) initial reasons for the opioid use were legitimate, but somewhere along the line the healthcare team (physician, RN, etc.) or even her family did not pick up on the fact that her pain was not being managed without the oxycodone."

"Starting with her surgery, someone, either a doctor, a parent, or her physical therapist should have been trying to do a better job of helping Ellie monitor how often and how much oxycodone she was taking."

Theme 3: Overwhelming life stressors can impact opioid use

Participants described that the case study individuals were experiencing a lack of balance or equilibrium in their lives. The impact of intense multiple competing factors with high performance expectations were challenging and exhausting their ability to successfully navigate daily life. Participants perceived both individuals had a lack of understanding on how to effectively manage a change in life trajectory.

"This story seems scarily realistic. With increasing pressure, commitments, and obligations, it is only understandable that Ellie would feel the need to find some relief."

"Having the feeling of around the clock pain can make a person feel useless and insignificant and lead to depression thus affecting your will or desire to interact with life."

Theme 4: Seeking relief from chronic pain can dominate a person's life

Participant comments reflected an understanding that Mark's situation with chronic pain necessitated long term opioid use which was very different from the reason that Ellie was drawn to opioids with her acute injury. They felt that his injury and subsequent disability resulted from ineffective pain management which led to a life dominated by chronic pain. Both case study patients were affected by pain, but participants were frus-

trated by the lack of effective integration of alternative strategies for patients seeking chronic pain relief. They identified that pain affected every aspect of life and could contribute to the inability to fulfill desired roles.

“Wanting to live a pain free life is a legitimate and reasonable desire.”

“He (Mark) isn’t taking opioids because he is trying to get high from the med, but he is just looking for relief from pain.”

Theme 5: A strong sense of empathy and compassion is essential for health professionals

Students identified empathy and compassion as essential components for health professionals in their interactions with individuals experiencing opioid use disorder. This includes an ability to understand an individual’s story and path leading to the current challenge. Initiating and maintaining professional helping relationships involves the establishment of trust, freedom from judgment, and stigma reduction to address opioid use disorder from a comprehensive perspective considering the unique needs of the whole person. This challenged some previously held attitudes about those with addiction.

“It’s so important to be aware that everyone is important, every patient has a story, and regardless of what brought them here we as providers have the opportunity to be the light at the end of the tunnel for these patients.”

“It is easy for us to look down upon people for getting caught up in drugs... It is not our job to judge people, but it is our job to help them recover. Everyone deserves respect, dignity, and healthcare regardless of what got them there.”

“After completing this activity, I feel a strong sense of compassion for patients in these situations. I feel like patients in these situations are often misunderstood and often do not receive the compassion that they deserve. This activity really showed that these patients can come from all walks of life and can have different circumstances that led them to this point.”

Theme 6: Interprofessional collaboration improves outcomes.

Students identified teamwork and interprofessional relationships as being essential to effectively integrate the unique contribution of skills and knowledge of each health care profession. A comprehensive approach is necessary to address the severity of the issue. Students commented that interprofessional collaboration brings individuals from various health professions together offering multiple perspectives with different skills and expertise to the treatment of opioid abuse disorder and patient needs and recovery. Interprofessional practice was seen as pivotal with all health professions having the same end goal for best care for the patient and an end to the opioid epidemic. Students commented that opioid use disorder is a complex issue because it relates to both physical and mental health. In addition, students described the transition of care that needs to take place from hospital to clinic settings, especially in chronic management of pain. Physical therapy, mental health services, and other members of the interprofessional care team are needed to provide adequate support.

“The opioid epidemic started, unintentionally, with the health care system, and it will take all health care professionals working together to end it.”

“...each profession in health care has different opinions, skill sets, and careers. One thing we should all agree on is that addressing the opioid epidemic will require attention, education, and promotion from an array of professionals...”

“The opioid epidemic requires the help of everyone.”

Discussion

The data from this study, particularly the reflection questions, were rich written expressions that the students were engaged in the activity and that the knowledge gained by listening to the recordings and interacting over the cases could be applied to their personal life experiences and would serve to better prepare them for their future practice. Reflections indicated that, in many cases, attitudes towards individuals with Opioid Use Disorder had changed as students began to understand the complexities of the illness.

The themes uncovered in this study were similar to the themes that emerged from the study by Dumenco et al. (2019). Major theme similarities included putting a “name and a face” to the problem of addiction or creating a humanistic perspective, developing increased compassion and decreased bias towards clients with opioid use disorders, identifying the perspectives provided by each profession, and noting the participants’ beliefs that teamwork improves patient care which were similar to the themes in this study (Dumenco et al., 2019).

Conclusions

This study demonstrated that this educational strategy was an effective approach to engage students in informed discussions regarding the complexities of opioid use disorder, its impact on individuals, patients, families and the community, solutions to the crisis, and to appreciate the benefit of interprofessional care in addressing the epidemic. Future health care practices may be impacted by activities such as the one reported in this study.

The strengths of this activity were the online format that allowed for asynchronous delivery of the content, consistent content with recorded media for a large number of students, inclusion of interprofessional presenters for recordings, and avoidance of the logistical challenges associated with accessing clients experiencing opioid use disorder to present to the students. Few faculty members were needed to facilitate the activity. Student discussion groups were established with two or more disciplines represented in each group to facilitate robust interprofessional discussion. Case studies were designed to present high functioning clients with opioid use disorder to diminish the stigma that addiction happens only to socioeconomically disadvantaged populations.

A limitation of the study was that the reflection question asked students to reflect on how interprofessional practice promoted quality outcomes. The wording of this question may have introduced bias in the student reflections by suggesting that quality outcomes would result from an interprofessional effort.

For future study it would be desirable to use a pre-test/post-test validated survey for quantitative analysis of the large number of student participants. It would be desirable to include additional students from several

other disciplines in the discussion. Patient care simulations might also be used to evaluate how the online interprofessional education activity directly influenced the ability to deliver comprehensive interprofessional care to an individual with opioid use disorder.

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Corresponding Author

Cindy Jean Hadenfeldt, EdD, RN

College of Nursing
Creighton University
2500 California Plaza
Omaha, NE 68178

cynthiahadenfeldt@creighton.edu