RESEARCH

Training Student Pharmacists in Suicide Awareness and Prevention

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Objective. To determine whether students gained knowledge, confidence, and skills in identifying and preventing suicide in patients, peers, friends, and family after receiving training in suicide prevention.

Methods. Student pharmacists participated in a 3.5-hour suicide prevention training program. A pre-and post-intervention assessment and pre- and post-intervention survey were administered before and after completion of the training program. Questions were designed to assess knowledge of, comfort with, and confidence in assessing and intervening with individuals at risk of suicide. A standardized patient prescription counseling session was conducted two weeks after the training session. Videos of the counseling sessions were reviewed to determine whether student pharmacists assessed the patient for suicide risk. Additionally, a post-counseling reflection was completed asking students to reflect on incorporation of the suicide prevention training into their prescription counseling session.

Results. One-hundred seventy-one student pharmacists participated in the training. Knowledge increased across all areas as evidenced by improved scores on the post-intervention knowledge assessment. Students’ comfort level with asking about suicidal ideation and their confidence with intervening significantly increased from the pre- to post-intervention survey. After the training, 40% stated they knew someone who may need help and 21% said they had decided to seek help for themselves.

Conclusion. The training program increased student pharmacists’ knowledge of and confidence in assessing and counseling individuals considering suicide. Encouraging student pharmacists to participate in prevention training may aid future providers in preventing death by suicide.

Keywords: suicide prevention, suicidal ideation, mental health

INTRODUCTION

In the United States, suicide is the second leading cause of death for individuals aged 10-34 years and fourth for those 35-54 years old.1 According to the Centers for Disease Control, from 2001 to 2016, the number of individuals dying by suicide in the United States increased 28%.2

A 2019 survey of over 67,000 undergraduates from 108 US universities indicated 24% of college students reported suicidal ideation and 9% attempted suicide.3 Lifetime prevalence of suicidal ideation worldwide is 9%, with 2.7% of the population attempting suicide, resulting in 1.4% of all deaths.4 Stigmatizing attitudes and behaviors related to suicide among the general population are well documented and can result in individuals in crisis not seeking help.5-9

In 1985, the World Health Organization put forth a “Health for All” strategy that included a focus on suicide prevention.10 Many studies have investigated the effectiveness of suicide prevention strategies and initiatives.11 Restriction of access to lethal means of committing suicide and school-based awareness programs are evidenced-based strategies that significantly reduce suicide attempts.11 Further investigation is needed to determine whether health care provider training and interventions have a similar impact.11

In 1972, Gibson and Lott described the need for pharmacist engagement in preventing suicide, advocating for inclusion of suicide prevention training in pharmacy schools and as continuing education for pharmacists.12 Recommendations were based on a lack of student knowledge regarding suicide and a community need for intervention-based support. However, little progress has been made and suicide continues to be a major public health concern. While coursework on mental health and anti-stigma interventions have
increased, a gap in suicide prevention training and research remains.13-16

Pharmacists are accessible health care providers and well-positioned to intervene for patients at risk for suicide. Reported barriers include lack of privacy, time, education, and experience to appropriately intervene.17-21 With the accessibility of pharmacists and the pharmacists’ role in distributing medications potentially used in a suicide attempt, increased education is needed to empower pharmacists to intervene. A recent review identified several suicide prevention training options, including in person, online, and written, but research is lacking on the impact of training on pharmacist skills and behaviors.22

In 2016, Washington State passed legislation mandating a one-time suicide prevention training program for pharmacists and inclusion of training in pharmacy education.23,24 A training program was developed by the Washington State Pharmacy Association (WSPA) and the Forefront Suicide Prevention Center to fulfill the requirements for the training.25 The training program, entitled Suicide Prevention for Pharmacy Professionals, can be delivered as a three-hour live or online presentation. The objective of this study was to determine whether students gained knowledge, confidence, and skills in identifying and preventing suicide in patients, peers, friends, and family members from completing the suicide training.

METHODS

The Suicide Prevention for Pharmacy Professionals training program was adapted by the Washington State University College of Pharmacy and Pharmaceutical Sciences and incorporated into Pharmacy Communications, a required course for all first-year student pharmacists.25 The course is delivered as a one-hour large-group tutorial with a two-hour laboratory session each week. In the fall of 2018, 171 student pharmacists were enrolled in the course across two campuses, with 136 students at the Spokane campus and 35 at the Yakima campus. The material was taught synchronously on the two campuses by a live instructor.

The course content was taught as a one-week module.21 The learning outcomes included: explain suicide’s impact in communities; demonstrate how a pharmacist can help prevent suicide; integrate Safer Homes (safe storage and disposal) messaging into daily patient care; and apply LEARN (ie, look for warning signs, empathize and listen, ask about suicide, remove the danger, next steps) suicide prevention skills professionally and personally.25 The didactic portions were converted to a video-recorded format and posted in the course learning management system (LMS). Content included six videos lasting 10-20 minutes each, providing students with background knowledge relating to the four learning outcomes. The videos used embedded questions to increase engagement and assess understanding. Completion of the online content was required prior to the laboratory session. The online content served as a tutorial, lasting approximately two hours, then students met for a reduced laboratory session to complete the module.

The laboratory session was delivered live to allow students to engage and practice the interactive components of the training. During the live session, students practiced incorporating Safer Homes messaging into patient prescription counseling and applied the LEARN framework to patient case scenarios using role-play and group discussions.25 This session was designed to take approximately 90 minutes, with time reserved for questions and emotional recovery from the topic. Students were given a list of available campus resources, including counseling services and a crisis hotline. A staff member was also available to escort students to campus counselors.

A mixed-methods approach was used to gauge the impact of the training program. Students were given a pre- and post-training knowledge assessment and pre- and post-training survey. The survey included a combination of yes/no questions and five-point Likert-scale items. The knowledge assessment included 15 questions and was combined with the 17 questions from the survey for a total of 32 questions. The knowledge assessment and survey questions were adapted from the Suicide Prevention for Pharmacy Professionals training and the QPR Gatekeeper Training for Suicide Prevention program.25,26 The questions were administered via Qualtrics (Qualtrics, Provo, UT) beginning one week prior to the training. Students had six days to complete the questions and were sent a reminder email before the survey closed.

The post-training survey and knowledge assessment included the same questions as the pre-training survey and knowledge assessment along with three additional items: “I believe this training will help me with assisting someone who is suicidal (Likert-scale response), “From what I just learned, I know someone who may need help and I intend to reach out to them now” (yes/no response), and “From what I just learned, I have decided to seek help for myself” (yes/no response). The pre-training survey also included one question that was not on the post-training survey: “Do you have experience (personally or someone you know) with suicide?” (yes/no response).

After the training, students had two weeks to complete the post-training survey, and two email reminders.
were sent. Surveys responses were confidential and anonymous to study investigators. Course participation points (0.8% of the final grade) were given for completion of the survey. To ensure confidentiality, the survey responses were sent to the study investigators and a survey completion report was sent to course faculty members. While students were required to answer all questions, “prefer not to answer” was always included as an answer choice. Age was included as a post-survey item but was not included on the pre-survey with other demographic information because of a survey construction error. Questions from the pre- and post-training knowledge assessment and survey are presented in Tables 1-3.

For analysis, pre- and post-training survey and knowledge assessment data were exported from Qualtrics and analyzed in Microsoft Excel. The Mann-Whitney U test was used to compare the survey questions and the Fisher exact test was used to analyze responses to knowledge assessment questions. The survey questions only included in the post-survey were analyzed using descriptive statistics.

To assess students’ ability to apply skills, student pharmacists were given an opportunity to incorporate look for warning signs, ask about suicide, and discuss next steps into the prescription counseling assessment. To meet competency for the course, student pharmacists had to successfully demonstrate foundational prescription counseling skills required by the Omnibus Budget Reconciliation Act of 1990 (OBRA-90) and use verbal, nonverbal, organizational, and professional behaviors.27 The prescription counseling activity was a summative assessment and used a standardized patient. The standardized patients were trained to provide a consistent performance but not to provide feedback to the student related to suicide awareness and preventions skills. During the summative assessment, students were required to counsel the patient regarding a randomly assigned medication (venlafaxine or citalopram) that had been prescribed for depression. The assessment occurred two weeks after the student pharmacists completed the training program. The scenario resembled a patient consultation that might take place in a private consultation room of a community pharmacy. The room contained a table and chairs for the standardized patient and the student pharmacist. No other individuals were in the room at the time of the assessment.

The prescription counseling assessment was videorecorded and reviewed for the following student behaviors: attempting to identify whether the patient was at risk of suicide, directly asking about suicide, referring the patient for help, and using terminology presented in the suicide awareness and prevention training (ie, suicide or suicidal thoughts). Norming discussions were held prior to

| Knowledge Assessment Questions | Students Providing the Correct Response | Pre-training No. (%) | Post-training No. (%) | p Value |
|--------------------------------|---------------------------------------|----------------------|-----------------------|---------|
| Which of the following age groups is at highest risk of suicide? | 12 (8) | 51 (33) | <.001 |
| Which gender is at higher risk of attempting suicide? | 100 (63) | 142 (91) | <.001 |
| Which gender is at higher risk of dying by suicide? | 112 (71) | 156 (100) | <.001 |
| What is the most common means used in suicide deaths? | 56 (35) | 142 (91) | <.001 |
| What is the most common means used in suicide attempts with hospitalization? | 131 (83) | 148 (95) | <.001 |
| It is a myth that asking someone directly if they are thinking about suicide may put the idea into their head. | 96 (61) | 135 (87) | <.001 |
| The first step in the LEARN suicide prevention step is L. What does L stand for? | 98 (62) | 135 (87) | <.001 |
| Empathy is the same thing as sympathy. | 145 (92) | 150 (96) | .657 |
| What is the key to displaying empathy, the E step in LEARN? | 123 (78) | 125 (80) | .62 |
| A in LEARN stands for "Ask about suicide." Which of the following is the best way to ask about suicide? | 66 (42) | 138 (88) | <.001 |
| What is the number for the National Suicide Prevention Hotline? | 93 (59) | 147 (94) | <.001 |

Abbreviations: LEARN = look for warning signs, empathize and listen, ask about suicide, remove the danger, next steps.
to data analysis and again at midpoint of analysis to ensure consistent interpretation of the questions. Use of suicide assessment and prevention skills were not included in the assessment grade.

Following the prescription counseling assessment, students were asked to complete a four-question reflection administered through Qualtrics. The reflection link remained open for two weeks. Student responses were confidential and anonymous and were addressed using the same methods as the survey instrument. Questions included whether or not the student pharmacist mentioned the word “suicide,” whether or not the student directly asked the patient if they were thinking about suicide, the student’s rationale for either asking or not asking, and how the student planned to incorporate discussions about suicidal ideation into future practice.

Reflections were exported into Excel and coded to identify themes. Research performed first-level coding (identifying text that is meaningful and recurrent) independently, using printed reflections and inductive coding methods. The team discussed independent results of first-level coding and developed a codebook by comparing coded phrases and descriptions. The codebook was created and stored in Excel. It was continually modified as needed to organize and improve code names. Second-level coding (grouping codes into meaning units and organizing the units into larger thematic areas) was performed during a series of meetings to determine themes. Disagreements were reconciled via group discussion. The WSU Office of Research Assurances found the project to be exempt from review by the institutional review board.

RESULTS

One-hundred fifty-eight students (92%) completed the pre-training knowledge assessment and 156 students (91%) completed the post-training knowledge assessment. The respondent student population was 63% female and 34% male (four students chose not to disclose this information). In terms of race, the student population was 1% American Indian or Alaska Native, 37% Asian, 7% Black, 7% Hispanic/Latino ethnicity, 1% Native Hawaiian or Pacific Islander, 43% White, and 1% other; 3% indicated they preferred not to answer. Results of the pre- and post-knowledge assessments are displayed in Tables 1 and 2. As expected, knowledge increased across all areas from the pre- to post-assessment.

One-hundred fifty-eight students (92%) completed both the pre- and post-training surveys. Likert-scale survey results are displayed in $p$ values are displayed in Table 3. Question 15, regarding experience with suicide, was only on the pre-training survey. Results for question 15 showed that 47% ($n=74$) of the student pharmacists had previous experience with suicide ideation or suicide, either personally or with someone they knew. Questions 16 and 17, regarding the respondents’ need for intervention or to intervene, were only asked on the post-training survey. Forty percent ($n=57$) of the student pharmacists responded “yes” to the question, “From what I just learned, I know someone who may need help and I intend to reach out to them now.” Twenty-one percent ($n=30$)
responded “yes” to the question, “From what I just learned, I have decided to seek help for myself.”

During the live prescription counseling assessment, only a small percentage of students (n=171) attempted to identify risk factors (11%) or ask the patient for more information during the encounter (5%). One-hundred fifty-three students (89%) used the word “suicide” or “suicidal thoughts” during the session, and 140 (82%) referred the patient to other resources including family/friends, the suicide hotline, or another health care provider.

One-hundred forty-eight students (87%) completed the reflection. During the reflection, students were asked if they used the words “suicide” or “suicidal thoughts.” Of the respondents (n=148), 115 (78%) said yes, 28 (19%) said no, and 5 (3%) preferred not to answer. To the question “Did you ask the patient if he/she was thinking about suicide?” 31 students (21%) said yes, 111 (75%) said no, and 6 (4%) preferred not to answer. Student pharmacists who did not ask the patient about suicide expressed many reasons for this omission in the reflection. Resulting themes included: believing that discussing rather than directly asking was sufficient; simply forgetting to include it; finding this topic too challenging to discuss; feeling uncomfortable because of not having a prior relationship with the patient; believing that discussion was not needed because the patient did not exhibit symptoms; concerns about stigma and bias; and running out of time during the five minutes allotted for prescription counseling. Several students who did not ask about

Table 3. Suicide Prevention Training Pre- and Post-survey Questions

| Survey Question                                                                 | p Value |
|--------------------------------------------------------------------------------|---------|
| 1. If I was concerned about someone, I would feel comfortable asking him/her if they were thinking about suicide. | .002    |
| 2. I would feel comfortable NOT dispensing medications to someone if I were concerned that he/she may use them for suicide. | .169    |
| 3. I might offend my patients if I ask about their medication storage and disposal practices. | .230    |
| 4. It is NOT my responsibility to discuss personal issues with my patients. | <.001   |
| 5a. How confident are you in your ability to identify suicide warning signs in a patient? | <.001   |
| 5b. How confident are you in your ability to identify suicide warning signs in a family member or close friend? | .025    |
| 5c. How confident are you in your ability to identify suicide warning signs in a co-worker or peer? | <.001   |
| 6a. How confident are you in your ability to empathize and listen without judgement to a patient? | .107    |
| 6b. How confident are you in your ability to empathize and listen without judgement to a family member or close friend? | .236    |
| 6c. How confident are you in your ability to empathize and listen without judgement to a co-worker or peer? | .139    |
| 7a. How confident are you in asking a patient directly about suicide? | <.001   |
| 7b. How confident are you in asking a family member or close friend directly about suicide? | <.001   |
| 7c. How confident are you in asking a co-worker or peer directly about suicide? | <.001   |
| 8a. How confident are you in your ability to provide resources for suicide prevention to a patient? | <.001   |
| 8b. How confident are you in your ability to provide resources for suicide prevention to a family member or close friend? | <.001   |
| 8c. How confident are you in your ability to provide resources for suicide prevention to a co-worker or peer? | <.001   |
| 9. If someone I knew was showing signs of suicide, I would directly raise the question of suicide with them? | <.001   |
| 10. If a person’s words and/or behavior suggest the possibility of suicide, I would ask the person directly if he/she is thinking about suicide. | <.001   |
| 11. If someone told me they were thinking of suicide, I would intervene. | <.001   |
| 12. I don’t think I can prevent someone from suicide. | .003    |
| 13. I believe all student pharmacists would benefit from suicide prevention training. | .394    |
| 14. I believe this training will help me with assisting someone who is suicidal. | .469    |
| 15. Do you have experience (personally or someone you know) with suicide? | N/A     |
| 16. From what I just learned, I know someone who may need help and I intend to reach out to them now. | N/A     |
| 17. From what I just learned, I have decided to seek help for myself. | N/A     |

Abbreviation: N/A: not applicable
DISCUSSION

Suicide is a leading cause of death, with suicide rates continuing to increase each year. Inclusion of the Suicide Awareness module in our PharmD curriculum increased student knowledge, comfort, and confidence regarding the topic of suicide. Student pharmacists were better able to recognize risk factors associated with suicidal ideation and expressed increased confidence with intervening and providing resources. Student pharmacists recognized the value of the training, with 95% agreeing or strongly agreeing that all student pharmacists would benefit from training to increase suicide awareness.

Relationships and emotional connection are thought to affect our mental health. Additionally, the depth of our relationships can impact our confidence in our ability to recognize the warning signs for suicide, empathize, and intervene. Student pharmacists’ confidence levels were affected by relationships with family or close friend, peer or co-worker, or patient regarding recognition of suicide warning signs. Students were least confident in their ability to intervene with patients, followed by peers or coworkers, and most confident in their ability to intervene with family and friends. This highlights the importance of building connections and relationships with others as relationships are integral to having confidence in using these skills. As pharmacists are enlisted to assist with suicide prevention, developing strong relationships with patients may be important to having the confidence needed to intervene. As demands for productivity within pharmacy settings increase, pharmacists must remember the importance of face-to-face interactions and pharmacist-patient relationships.

Suicide crosses all socioeconomic boundaries and no group is immune. Because of the shame and embarrassment people may feel over having suicidal ideation, many people may suffer in silence rather than asking for help. After the training, 40% of student pharmacists planned to reach out to someone who could be at risk for suicide and 21% of student pharmacists decided to seek help for themselves. The result of 21% of student pharmacists planning to seek personal help is consistent with the finding of Liu and colleagues that 24% of undergraduate college students reported suicidal ideations during the past year. Our research demonstrates that learning about suicide can aid in overcoming perceived stigma, fears or biases, and supports behavior to speak up and reach out. The significant number of students seeking help also reinforces that student pharmacist are not immune, thus pushing educators to incorporate the topic into the curriculum.

Recognizing the warning signs for suicide is not enough. Pharmacists being comfortable with asking about suicide ideation and assessing a patient’s risk are crucial to implementing suicide prevention. However, asking about suicide ideation or even saying the word “suicide” can be difficult for student pharmacists. Our survey found an increase in student pharmacists’ confidence in asking patients directly about suicide, but this did not translate to using their skills in the simulated prescription counseling session. When students reflected on why they did not ask about suicide, common reasons given were the difficulty of the topic, biases they had, and the stigma associated with suicide. Other reasons included the patient’s lack of warning signs or the perceived time constraints on the prescription counseling session. Upon reflection, many students expressed regret about not asking the patient about suicide. While students did not ask the direct question, “Are you thinking about suicide?” many students discussed suicide risk with the patient and provided them with information about the suicide helpline. However, the standard of care should be for a pharmacist to ask every patient who displays warning signs or has risk factors about suicide. Warning about and discussing their suicide risk factors are not enough.

This training will remain imbedded in the course. Faculty members and students felt the training was valuable and that pharmacists can make a major impact on at-risk individuals. However, this project had limitations. One limitation related to the sensitivity of the subject. Analysis of themes from student reflections indicated that discussing suicide was difficult for students and that the topic continues to have a stigma. These reflections echoed faculty emotions as well. Students may have been uncomfortable or felt strong emotions which could have affected student responses and performance. Another limitation relates to the survey itself. Students completed the survey as a required element of the course but were given the response option of “prefer not to answer” for every question. Participants answering survey questions regarding sensitive topics are less likely to respond honestly and may answer in the manner in which they believe the survey team expects them to. This may create bias and a trend toward answers respondents believe investigators find desirable. While survey responses were reported anonymously, students may have not answered accurately because of the belief that faculty members who assigned course grades would identify their responses. Another potential limitation was the standardized patient training. The standardized patients were directed to act depressed
and answer questions from a script, but some standardized patients did not convincingly portray being depressed. One of the most common reasons cited by students for not asking the standardized patient about suicide was that the patient was not exhibiting warning signs, which may have been the result of the quality of the standardized patient’s acting. For future trainings, faculty members plan to emphasize teaching students their role in conducting the discussion about suicide with the patient and also will prompt standardized patients to strengthen their portrayal of warning signs. A final limitation was that the sample size for this study included only one cohort of first-year students from one school. This methodology may have created selection bias and results that are not representative of all student pharmacists, although the rate of students planning to seek help were similar to national survey results.

CONCLUSION
As suicide continues to be a leading cause of death, pharmacists and student pharmacists must intervene. Implementation of suicide awareness and prevention training increased student pharmacists’ knowledge and confidence regarding suicide and suicide prevention. Reflections demonstrated a need to continue addressing biases and the stigma surrounding the discussion of suicide and suicidal ideations. Areas for future research include analyzing the impact of interventions to address suicidal ideation in students, use of skills of suicide prevention by pharmacist in practice, and identification of best practices for incorporation of suicide risk assessment in the community pharmacy.

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Appendix 1. Themes and Quotes Regarding Why Students Did Not Counsel on Risk of Suicide

| Theme                                                                 | Illustrative Quote                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Students believed discussing the risk of suicide rather than directly asking was sufficient | “I did not ask the patient if they were thinking about suicide because I have a lot of friends on anti-depressants and being on an anti-depressant does not mean that you are thinking about committing suicide. If they came back for a refill and their status had not changed then I would have asked them about suicide.” “My patient did not show any signs that she was going to commit suicide. To assume that a patient who is depressed is going to commit suicide seems inappropriate.” |
| Students forgetting to discuss the risk of suicide                  | “It did not cross my mind to ask that question but looking back it would have been a good question to ask.” “I was too focused on making sure I covered other important information about the antidepressant, so the thought of asking about suicide slipped my mind.” |
| Students believed this was a difficult topic to discuss              | “Although we did practice on how to bring out suicide with our classmates, when it was actually the patient, it was hard asking if they were thinking of suicide. The patient seemed sad so it was even more difficult asking they were thinking of suicide.” |
| Students felt uncomfortable asking about suicide because the student did not have a prior relationship with the patient | “Suicide is extremely personal. If I’ve never met the person before, I don’t expect them to tell me what’s going on.” “With no background knowledge of the patient and no familiarity with them as a patient directly asking if they were considering suicide would have been presumptuous.” |
| Students believed asking about suicide was not needed because the patient did not exhibit symptoms | “She didn’t seem like she considered suicide because she was behaving relaxed and also wanted to know what alternative of drugs would not cause adverse effects. So she seemed like she just wanted to get better and she did not display any unusual behavior.” “I was uncertain as to how familiar I was to the patient, and they were not exhibiting any of the warning signs from Learn Steps.” |
| Students did not discuss due to beliefs regarding stigma or bias     | “My patient was sad, but not to the brink of suicide. I thought if I asked her about suicide, she would have been irked... There is a lot of stigma associated when asking a patient in the face about suicide; it’s important not to label someone as suicidal just because he or she is unhappy.” “I do not want to scare the patient by asking that... The patient did not offer any signs that alarmed to give information or coaching about suicide. I did not want to frighten the patient if the signs were not there to coach on suicide.” |
| Students believed there was not enough time to discuss suicide during the scenario | “I felt pressured by the timed assessment to rush through my encounter with the patient. I did not feel like I had enough time for conversation and get all the information out to the patient in 5 minutes.” “There was not enough time to ask. I was limited by a timer and I tried to be as empathetic as possible and not speed through it so the patient knew I cared about them.” |

(Continued)
Students expressed regret that discussion about suicide was forgotten

“Going back in time I realized that I should have mentioned about suicide because the patient have high risk of suicidal thoughts. It would have been best to ask the patient the suicide question because depression is one of the risk factors for suicidal thoughts.”

“I did not think to ask if they were considering suicide... in retrospect, it would be good practice to ask anyone who is picking up a prescription for antidepressants for depression whether or not they are considering suicide.”

Students believed suicide counseling was not their role

“The patient was prescribed an antidepressant already and had most likely discussed suicidal thoughts with doctor. I did not feel the patient needed to discuss it further.”

“I spoke to the patient informing them of the risk of suicide. My patient did not show any signs that she was going to commit suicide. To assume that a patient who is depressed is going to commit suicide seems inappropriate.”