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Effects of focused continuing pharmacy education on pharmacists' attitudes toward suicide prevention

MARSHALL E. CATES[1*], ANNE-CLAIRE THOMAS[2], PETER J. HUGHES[1] & THOMAS W. WOOLLEY[3]

[1]*Samford University McWhorter School of Pharmacy, Birmingham, Alabama 35229, USA.*

[2]*Orlando VA Medical Center, Crossroads Annex, Winter Park, Florida 32792, USA.*

[3]*Samford University Brock School of Business, Birmingham, Alabama 35229, USA.*

Abstract

Background: Pharmacists are ideally situated to be involved in suicide prevention, but little is known about their attitudes toward suicide prevention.

Aims: To determine whether continuing pharmacy education (CPE) focused on suicide and its prevention would positively affect pharmacists' attitudes toward suicide prevention.

Methods: A one-hour presentation on suicide and suicide prevention was developed for a school-sponsored CPE activity. Pharmacists who attended the CPE activity were asked to complete an online survey that included the Attitudes to Suicide Prevention (ASP) scale before and after the educational activity.

Results: The survey was completed by 99/173 (57%) pharmacists before the CPE activity and 87/173 (50%) pharmacists after the CPE activity. The mean ASP total score decreased from 33.1 +/- 4.3 to 30.0 +/- 6.6 (p<0.001), and 6 of 14 individual items were statistically significantly improved.

Conclusion: Focused CPE had a positive impact on pharmacists' attitudes toward suicide prevention. Future methodologically rigorous studies are warranted.

Keywords: *Attitudes, Continuing Education, Pharmacists, Suicide*

Introduction

Approximately 800,000 people die by suicide each year, which makes it a serious global public health problem (World Health Organization, 2017). Accordingly, the World Health Organization has deemed suicide prevention as a high priority on the public health agenda, and it has encouraged a multi-sectoral approach to suicide prevention strategies (World Health Organization, 2017).

One healthcare profession that has been traditionally overlooked in suicide prevention efforts is pharmacy. Nevertheless, there are various factors that make pharmacists ideally situated to play an important role in suicide prevention. First, pharmacists are uniquely accessible healthcare professionals. Pharmacists work in a variety of public settings, such as drug stores, grocery stores, hospitals, and nursing homes (American Public Health Association, 2006). Community pharmacies are so prevalent that almost 90% of people living in the United States (U.S.) live within five miles of one (Kelling, 2015). No appointment is typically needed at community pharmacies, and some pharmacies are even open 24 hours a day (American Public Health Association, 2006). Second, pharmacists are the gatekeepers of medications that are frequently used in suicide attempts and deaths. Drug-related suicide attempts resulting in emergency department visits in the U.S. almost always involve a prescription or over-the-counter medication and usually involve multiple medications, with pain relievers (*e.g.*, opiates), benzodiazepines, and antidepressants being the most frequently involved drugs (Substance Abuse and Mental Health Services Administration, 2013). According to data from the Center for Disease Control and Prevention, drug poisoning accounted for approximately eight percent of suicide deaths among males and 33% of suicide deaths among females in the U.S. during 2005-2015 (Centers for Disease Control and Prevention, 2017). In fact, poisoning is the most common method of suicide among females (Centers for Disease Control and Prevention, 2015). Finally, pharmacists routinely interact with patients who possess risk factors for suicide. Risk factors for suicide include not only psychiatric conditions, such as depression, but also serious or chronic medical conditions, such as chronic pain (American Foundation for Suicide Prevention, 2017). Of course, patients visit pharmacies to fill prescriptions for medications that treat such illnesses.

Given these factors, it is unsurprising that there have been recent calls within the profession for pharmacists to

[*]Correspondence: Marshall E. Cates, *Professor of Pharmacy Practice, Samford University McWhorter School of Pharmacy, 800 Lakeshore Drive, Birmingham, Alabama 35229, USA. Tel: +1 205 726 2457; Fax: +1 205 726 2669 Email: mecates@samford.edu*

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be more involved in depression screening and suicide prevention efforts (Menighan, 2014; Murphy *et al*., 2015; Yap, 2015; Collins, 2016). However, there are significant barriers to involvement of pharmacists in mental health care, such as suboptimal attitudes, stigma, insufficient training, and lack of confidence (Rubio-Valera *et al*., 2014; Calogero & Caley, 2017). Difficulties involving pharmacists' knowledge and skills in the area of suicide prevention have been shown in a few studies (O'Reilly *et al*., 2010; Scheerder *et al*., 2010; Coppens *et al*., 2014). Only one study has examined pharmacists' attitudes toward suicide prevention. Japanese pharmacists who had registered for a psychiatric pharmacist seminar took a self-administered Attitudes Toward Suicide questionnaire, and the results indicated that those who had previously received training in suicide prevention had more positive attitudes toward suicide prevention (Kodaka *et al*., 2013). However, most of the participants had worked at psychiatric hospitals and had interest in specialising in psychiatric pharmacy. Furthermore, the investigators did not examine changes in attitudes toward suicide as the result of recent training in suicide prevention.

Healthcare providers' attitudes toward suicide can influence their care of suicidal patients (Jacobson *et al*., 2012; Kodaka *et al.*, 2013). Thus, it is important to know pharmacists' attitudes toward suicide prevention and whether such attitudes can be improved via suicide prevention education. The objective of this study was to determine whether continuing pharmacy education (CPE) focused on suicide and its prevention would positively affect pharmacists' attitudes toward suicide prevention.

Methods

CPE Activity

The CPE activity was a one-hour live, in-person presentation at a statewide programme for pharmacists sponsored by a school of pharmacy. It was a one-time event that was held at the School of Pharmacy on November 1, 2014. The programme was accredited by the Accreditation Council for Pharmacy Education (ACPE) via the CPE office associated with the School of Pharmacy.

The CPE activity was advertised via placement on the School of Pharmacy CPE office website and a "save the date" postcard that was mailed to every licensed pharmacist in the state. Additionally, an announcement was made as part of the university's homecoming marketing effort. Any registered pharmacist could attend the event. Participants registered themselves using an online registration tool.

Content

The CPE activity was knowledge-based and used PowerPoint slides as the teaching medium. Learning objectives included: 1) discuss the basics of suicide; 2) explain the relationship between medications and suicide; 3) describe key concepts of suicide prevention; and 4) identify ways that pharmacists can be involved in suicide prevention. The content was divided into four corresponding sections. The basics of suicide included terminology, suicide statistics, risk and protective factors, and warning signs. The relationship between medications and suicide included suicide attempts via medication overdose, medication-induced suicidality, and inadequate response to antidepressants. Key concepts of suicide prevention included myths verses facts concerning suicide, assessment of suicide risk, and responding to suicide risk. Possible ways that pharmacists can be involved in suicide prevention included general involvement, patient-specific involvement, and overcoming barriers.

Speaker

An experienced Board Certified Psychiatric Pharmacist (BCPP) developed the CPE activity and was the speaker. The BCPP credential is conferred by the Board of Pharmacy Specialties upon pharmacists who have practice and/or residency experience in psychiatric pharmacy and who pass the Psychiatric Pharmacy Specialty Certification Examination. It is a validation of a pharmacist's advanced knowledge and experience to optimise pharmacotherapeutic outcomes for patients with mental illness (Board of Pharmacy Specialties, 2017).

CPE Invitees/Attendees

Every licensed pharmacist (N=7085) in the state of Alabama was invited to the CPE activity, and 173 pharmacists registered for the CPE activity. Most pharmacists who typically attend the school-sponsored, statewide CPE programmes work in the community pharmacy setting (approximately two-thirds) or hospital pharmacy setting (approximately one-fifth).

Procedures

The university's Institutional Review Board approved the research as exempt from informed consent. The study employed a one-group pre-test/post-test design. Pharmacists who attended the CPE activity were asked to complete the Attitudes to Suicide Prevention (ASP) scale (see Outcomes Instrument section) before and after the activity.

Registrants for the CPE activity supplied their email addresses as part of the registration process. An email was sent to registrants two days prior to the CPE activity that informed them of the research project and explained that their participation was both voluntary and anonymous. A link to the online Qualtrics (Provo, UT) survey containing the ASP scale was included in the email. Registrants were given until the day of the activity to complete the survey. A similar email was distributed to all registrants two days after the CPE activity, and they were given two days to complete the survey prior to its inactivation.

Outcomes Instrument

The ASP was validated to assess healthcare professionals' attitudes toward suicide prevention. It has acceptable internal consistency (Cronbach's α = 0.77), and a test-retest correlation coefficient of 0.85 (Herron *et al*., 2001). The scale contains 12 negative statements and one positive statement regarding suicide prevention, as well as a statement concerning the proportion of suicides that one considers preventable (increasing order). It uses a 5-point Likert scale from 1 ("strongly disagree") to 5 ("strongly agree"). The positive statement and statement concerning proportion of suicides that are preventable are reverse scored. Total scores thus range from 14 to 70, with lower scores indicating more positive attitudes.

Analysis

Mean total scores and item scores on the ASP before and after the CPE activity were compared using two independent group *t*-tests. In all analyses, the type I error rate (α) was maintained at 0.05.

Minitab (release 17) was used for all data management and analytics. The distribution of all outcome measures (*i.e*., item responses) was generally unimodal and skewed, some positive and some negative. Whereas the Student's independent groups *t*-test is fairly robust to violations of the normality assumption (Blair & Higgins, 1980a; 1980b; 1985) all independent groups Student *t*-tests conducted in this study were corroborated with corresponding Wilcoxon Rank-Sum tests (on independent medians). The Wilcoxon is a nonparametric test on central location not saddled by the restrictive distributional assumptions of the Student *t*-test yet nearly as powerful as the *t*-test even when all *t*-test assumptions are met. As such, with non-normal data the Wilcoxon is substantially more powerful than the analogous independent groups *t*-test. In this study, all *t*-test results were confirmed with the Wilcoxon.

The data were analysed as before/after (using independent group *t*-tests and Wilcoxon Rank-Sum tests) because anonymity prevented using matched-pair data (and consequently paired *t*-tests and Wilcoxon Signed-Ranks tests could not be used).

As part of the usual CPE evaluation, participants were asked how they would practice differently because of taking part in the learning activity. The resulting subjective responses were part of the assessment of the effectiveness of the CPE activity. All qualitative data were analysed using strictly descriptive measures.

Results

Response Rate

The survey response rate was 99/173 (57%) before the CPE activity and 87/173 (50%) after the CPE activity. There were only two unanswered items (out of 1,386) on the pre-CPE survey and one unanswered item (out of 1,218) on the post-CPE survey. There were 23 responses to the open question regarding how participants would practice differently because of taking part in the learning activity.

Table I: Scores on the attitudes to Suicide Prevention Scale (mean +/- SD)

Item	Pre-CPE (N=99)	Post-CPE (N=87)	*p*-value*
I resent being asked to do more about suicide.	1.8 +/- 0.6	1.7 +/- 0.7	NS
Suicide prevention is not my responsibility.	2.0 +/- 0.7	1.8 +/- 0.8	NS
Making more funds available to the appropriate health services would make no difference to the suicide rate.	2.4 +/- 0.9	2.2 +/- 0.9	NS
Working with suicidal patients is rewarding. (*item is reverse scored)	2.7 +/- 0.6	2.4 +/- 0.8	<0.01
If people are serious about committing suicide they don't tell anyone.	2.4 +/- 0.9	1.9 +/- 0.8	<0.001
I feel defensive when people offer advice about suicide prevention.	2.0 +/- 0.5	1.9 +/- 0.9	NS
It is easy for people not involved in clinical practice to make judgments about suicide prevention.	3.5 +/- 0.8	3.6 +/- 0.9	NS
If a person survives a suicide attempt, then this was a ploy for attention.	2.1 +/- 0.7	1.8 +/- 0.8	<0.01
People have the right to take their own lives.	2.0 +/- 1.0	2.1 +/- 1.0	NS
Since unemployment and poverty are the main causes of suicide, there is little that an individual can do to prevent it.	1.8 +/- 0.6	1.7 +/- 0.7	NS
I don't feel comfortable assessing someone for suicide risk.	3.1 +/- 1.0	2.6 +/- 0.8	<0.001
Suicide prevention measures are a drain on resources, which would be more useful elsewhere.	2.0 +/- 0.6	1.9 +/- 0.7	NS
There is no way of knowing who is going to commit suicide.	2.6 +/- 0.8	2.0 +/- 0.8	<0.001
What proportion of suicides do you consider preventable? (*scale is none → all)	2.7 +/- 0.7	2.5 +/- 0.7	<0.05
Total	**33.1 +/- 4.3**	**30.0 +/- 6.6**	**<0.001**

* **Two independent group t-tests**

ASP Scores

Scores on the ASP are shown in Table I. The mean total score decreased from 33.1 +/- 4.3 to 30.0 +/- 6.6 (p<0.001). Moreover, six of 14 items showed statistically significant positive changes in scores. The greatest mean numeric changes were seen on the following items: "If people are serious about committing suicide they don't tell anyone"; "I don't feel comfortable assessing someone for suicide risk"; and "There is no way of knowing who is going to commit suicide."

Subjective Responses

Subjective responses of participants to the evaluation question concerning how they would practice differently as the result of taking part in the CPE activity are shown in Table II. Predominant themes in these comments were awareness, willingness to assess, and counselling and communication.

Table II: Examples of responses to open-ended question regarding how the participant will practice differently

Awareness
• Be more alert to the warning signs of suicide
• Pay more attention to red flags
• More aware to signs of potential suicide
• More alert to suicide potential
• Be more mindful of mood changes/behaviours in patients starting antidepressants
Willingness to Assess
• Able to assess when I need to intervene and notify the patient's doctor
• Be more aware and ask questions that will give me a better read on how patients feel
• More prepared to assess a patient at risk for suicide
• Assess and talk more openly about depression and suicide
Counselling and Communication
• Be more open about discussing suicide with patients
• Speak about suicide more freely
• Will talk with patients who have signs of suicide
• Counsel more so than usual on patients starting antidepressants and monitor their progress
• Taking more time with patients who have depression to listen to them for clues about suicidal thoughts

Discussion

This is the first report of the effectiveness of a focused CPE activity in improving pharmacists' attitudes toward suicide prevention. Positive findings on the ASP items dealing with the rewarding nature of working with suicidal patients and comfort in assessing someone for suicide risk were particularly encouraging given that pharmacists are readily accessible healthcare professionals. Moreover, subjective findings pointed to the pharmacists' greater awareness of suicide as well as their greater willingness to open a dialogue with and assess suicidal persons.

The pharmacists' mean total scores on the ASP before and after the CPE activity were 33.1 and 30.0, respectively. The ASP has also been used in previously published studies to measure attitudes toward suicide prevention in other groups of healthcare professionals. Mean total scores in an English survey were 31.9 for community psychiatric nurses, 34.4 for junior psychiatrists, 37.2 for general practitioners, and 37.9 for accident and emergency nursing staff (Herron *et al*., 2001). Mean scores in another English survey of a wide variety of health professionals (mainly primary care staff and mental health staff) who took part in suicide prevention training were 33.7 and 32.7 before and after training, respectively (Appleby *et al*., 2000). The mean total score for nurses, midwives, and allied health professionals in a cross-sectional survey in Australia was 35.2, but the mean score was lower for those who had experienced previous suicide prevention education versus those who had not (33.0 and 36.2, respectively) (Brunero *et al*., 2008). In a Scottish survey of health and social care professionals - mostly nurses and social workers, about 50% of whom worked in adult mental health services – the mean scores before and immediately after suicide prevention training were 32.1 and 28.7, respectively (Gask *et al*., 2008). Finally, in a survey of a wide variety of professionals (*e.g.*, counsellors, social workers, psychologists, nurses) in the U.S., the mean scores before, immediately after, and four months after suicide prevention training were 27.2, 25.2, and 23.1, respectively (Jacobson *et al*., 2012). The pharmacists in the present study had attitudes toward suicide prevention that tended to be intermediate between those of mental health professionals and those of non-mental health professionals as documented in prior studies. It appears that pharmacists in the U.S. have attitudes toward suicide prevention that are conducive to clinical involvement in suicide prevention.

As noted above, various studies have documented improved attitudes of healthcare professionals toward suicide prevention after exposure to suicide prevention training (Appleby *et al*., 2000; Gask *et al*., 2008; Jacobson *et al*., 2012). The present study confirms that pharmacists' attitudes are sensitive to improvement through focused education as well. However, the suicide prevention training programmes in the prior studies were intensive programmes that lasted for many hours or even days. In contrast, the pharmacists in the present study were exposed to only basic information about suicide and suicide prevention over the course of a one-hour

knowledge-based CPE activity. Therefore, it could be that even limited exposure to suicide prevention education is sufficient to influence attitudes toward suicide prevention.

Strengths of this study include use of a validated instrument to measure attitudes toward suicide prevention and a good response rate. There are also several important limitations. Since there was no control group, it is possible that other factors could have influenced findings, such as regression to the mean (Marsden & Torgerson, 2012). Next, since data were not paired, it is uncertain which participants completed the survey at which time point. Consequently, it cannot be conclusively determined that the attitudes of the respondents actually improved, and it is also possible that those who expressed more negative attitudes before the CPE activity did not complete the survey after the activity. Another limitation was the lack of examination of the effect of demographic variables, previous exposure to mental health-related issues, or prior training in suicide/suicide prevention on the attitudes toward suicide prevention. We were concerned that asking such questions could adversely affect participation in the study despite assurances of anonymity. Finally, because the programme took place in one state, there is unknown generalisability to other locations.

The implication of this study is that pharmacists who receive focused CPE on suicide and suicide prevention can experience attitude changes toward suicide prevention that can potentially positively influence their care of suicidal patients. From a research perspective, these preliminary data can serve as the foundation for further experimental studies to establish the role of suicide prevention education and training for pharmacists more definitely as well as determine the ideal content and timing of such education and training.

Many questions remain in relation to the training of pharmacists in the area of suicide prevention. Are there unique educational requirements of pharmacists given their particular role in healthcare? What are the optimum number of training hours, and how often should such training be repeated to maintain attitudes and skills? And finally, does education and training have an impact on whether and how pharmacists screen, assess, and manage suicidal patients?

Conclusions

Focused CPE about suicide and suicide prevention had a positive effect on pharmacists' attitudes toward suicide prevention. Whereas various methodological limitations of the study prevent definitive conclusions concerning the utility of CPE in this regard, this study provides preliminary evidence that could serve as a basis for future studies in the area. Specifically, future studies should use control groups, examine content, length, and frequency of education and training, and determine effects of education and training on actual clinical interventions with suicidal patients.

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