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**Pharmacy Student Opinions Related to Question, Persuade, and Refer (QPR) Suicide
Prevention Training**

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Abstract

Suicide is one of the leading causes of death in the United States (Centers for Disease Control and Prevention [CDC], 2017). The Coronavirus Disease 2019 (COVID-19) pandemic has increased concerns related to suicide, with additional attention placed on the potential long-term negative impact of COVID-19 on mental health. Pharmacists are healthcare providers who are readily accessible and underutilized in suicide prevention efforts. This study uses survey methodology and comparative analyses to develop recommendations for the timing and administration of Question, Persuade, and Refer (QPR) suicide prevention training in the Doctor of Pharmacy (PharmD) curriculum at the University of Kentucky College of Pharmacy (UK COP). The findings indicate that QPR suicide prevention training should be administered in the first and third years of pharmacy school, with a supplemental lesson in the third year on medications commonly associated with suicide attempts.

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Executive Summary

QPR Gatekeeper Training for Suicide Prevention is a training program developed by the QPR Institute that aims to “reduce suicidal behaviors and save lives by providing innovative, practical, and proven suicide prevention training” (QPR Institute, n.d.). Components of the course include how to question, persuade, and refer someone who may be suicidal; common causes of suicidal behavior; warning signs of suicide; and how to help someone in crisis (QPR Institute, n.d.). Pharmacists are in position to utilize QPR to assist patients at risk for suicide, as they are among the most accessible and trusted healthcare providers (Reinhart, 2020). Two separate classes of PharmD students at UK COP have received QPR suicide prevention training in last five years, once in the First Professional Year (PY1) and once in the Third Professional Year (PY3).

Previous studies on suicide prevention training in schools of pharmacy have focused on the impact of a one-time training on PY1 students’ confidence and knowledge when discussing suicide with patients. The current study used survey methodology to compare PY1 and PY3 student opinions on the role of the pharmacist in suicide prevention and the utility of suicide prevention training, to determine if and when suicide prevention training should be required in the UK COP PharmD curriculum. The results of this study indicate that regardless of class year, students agree that pharmacists have a role in suicide prevention and suicide prevention training should be provided in pharmacy school. However, PY3 students may receive the most benefit, as they are more likely to report that they will use the QPR technique in their professional lives. The majority of PY3 students also indicated they would be interested in a refresher course, which opens the possibility of providing QPR training twice in the curriculum. Overall, the results indicate that QPR suicide prevention training is a tool that the majority of students believe they

will use in their personal and professional lives. The provision of QPR suicide prevention training is especially important given the rise in patients with mental and emotional health needs during the COVID-19 pandemic (Gionfriddo, 2020).

Introduction

In the years leading up to the COVID-19 pandemic, suicide was the tenth leading cause of death in the United States (CDC, 2017). Suicide mortality rates had been rising for almost every age group in the United States, with a widening gap in rates between rural and urban counties (Hedegaard et al., 2020). For every death by suicide, there were 29 suicide attempts. The WHO has recognized suicide as a public health concern.

Impact of the COVID-19 pandemic on mental health

The COVID-19 pandemic has increased concerns related to mental health, suicide, and the accessibility of mental health resources and treatment. Mental Health America released data indicating a significant increase in utilization of their online anxiety and depression screening tools during the pandemic. There have been more positive anxiety and depression screens, in addition to higher numbers of individuals reporting thoughts of suicide or self-harm (Gionfriddo, 2020). Primary care clinicians are also observing an increase in the number of patients with mental or emotional health needs (Primary Care Collaborative [PCC], 2020). The most commonly cited reason for mental health problems in the general population is loneliness/isolation (Gionfriddo, 2020). Given that the perception of loneliness is strongly associated with suicidal ideation and parasuicide (deliberate self-harm not intended to cause death), adequate access to mental health resources is necessary (Strayvnksi & Boyer, 2001). However, patients may have a harder time accessing their primary care clinicians due to lack of

access to telehealth, redeployment of providers to different roles, and an increase in practice time allocated to COVID-19 screenings (PCC, 2020).

As the number of individuals with mental and emotional health needs has increased, there has been a subsequent increase in the number of anxiolytic, antidepressant, and hypnotic medication therapies prescribed by doctors (Luddy, 2020). This is notable, given that all three of these classes of medications were commonly identified on toxicology reports in a study of individuals who had died by suicide, specifically by means of overdose (Sinyor et al, 2012). In Kentucky, pharmacists are required to offer patients medication counseling for all new prescriptions. Knowledge of the medications most often used in suicide attempts may assist pharmacists in identifying patients who are at higher risk of suicide by overdose. Additional time can be dedicated to counseling patients on these medications and having open discussions about suicidal ideation.

Long-term mental health impact of pandemics

While the long-term impact of the COVID-19 pandemic on mental health has yet to be determined, past research on infectious diseases, including Middle East Respiratory Syndrome and Severe Acute Respiratory Syndrome, suggest that social isolation and quarantine are associated with a sustained negative impact on mental health in the general population (Jeong et al., 2016; Wu et al., 2009). Feelings of anxiety and anger can persist for months following isolation, especially in individuals with a history of mental illness (Jeong et al., 2016). Healthcare workers are at risk for post-traumatic stress disorder, depression, and alcohol abuse or dependency, indicating that it is important for healthcare workers to consider their colleagues' mental health in addition to their patients' (Wu et al., 2009; Brooks et al., 2020).

Pharmacists' role in suicide prevention

Pharmacists have an opportunity to play a key role in suicide prevention given that they are among the most accessible and trusted healthcare providers (Reinhart, 2020). Pharmacists in both the community and hospital settings can be utilized to identify patients and colleagues who display risk factors for suicide. Given the historical upward trend in suicide rates and the potential long-term impact of COVID-19 on mental health, it is imperative that pharmacists embrace their role in suicide prevention; however, education and training is needed (Hedegaard et al., 2020). Pharmacists report poor suicide intervention skills and lack of experience in assisting patients contemplating suicide, especially in comparison to other community professionals (Scheerder et al., 2012). Currently, the only state that requires suicide prevention training is Washington, although some schools of pharmacy across the nation have started providing suicide prevention training (Carpenter et al., 2018; Willson et al., 2020; Witry et al., 2019). Overall, more widespread training is needed to improve pharmacy students' and pharmacists' skills in suicide prevention.

Problem Statement/Hypothesis

PharmD students at UK COP have intermittently participated in suicide prevention training, but there is no formal requirement for students to receive suicide prevention training prior to graduation. QPR suicide prevention training has been administered twice in the past five years at the discretion of course coordinators. The first offering was in April 2016, when First Professional Year (PY1) students received training as part of the class titled "PHR 920: Communication and Behavior in Pharmacy Practice," a course that was phased out with curricular reform in August 2016. The second QPR suicide prevention training offering occurred in August 2019, when Third Professional Year (PY3) students received training as part of the

class titled “PHR 956: Integrated Drugs and Diseases: Psychiatry.” Components of the training sessions included background and statistical information on suicide, suicide myths and misconceptions, identifying individuals at risk for suicide, how to communicate about suicide, and referral resources (Carpenter et al., 2018). I aim to understand if the timing of suicide prevention training in the PharmD curriculum impacts student opinions regarding the utility of training. PY3 students have more clinical knowledge and have had more interactions with patients through experiential education and internships, which improves understanding of the role and capabilities of pharmacists in providing patient care. Therefore, PY3 students previously enrolled in “PHR 956: Integrated Drugs and Diseases: Psychiatry,” are likely to have more positive responses regarding the administration of suicide prevention training in pharmacy school and the role of pharmacists in suicide prevention, compared to PY1 students previously enrolled in “PHR 920: Communication and Behavior in Pharmacy Practice.”

Literature Review

State requirements for suicide prevention training

Washington is the only state that requires pharmacists to participate in suicide prevention training (Carpenter et al., 2018). The Matt Adler Suicide Prevention, Treatment, and Management Training Act of 2012 requires that pharmacists receive a one-time, three-hour training course during the first continuing education reporting period following licensure (Washington State Legislature, 2012). The bill encountered objections from healthcare providers, including concerns regarding cost of training and time commitment (Stuber & Quinnett, 2013). Proponents of the bill hypothesized that there may be less resistance to passage of similar legislature in other states if the requirements for training are specific to graduate training programs rather than licensed healthcare professionals (Stuber & Quinnett, 2013).

Suicide prevention training programs in colleges of pharmacy

Schools of pharmacy have recently started piloting suicide prevention training programs despite no formal state requirements for training (Carpenter et al., 2018; Willson et al., 2020; Witry et al., 2019). The University of Iowa College of Pharmacy administered suicide prevention training to PY1 students (Witry et al., 2019). The 50-minute session included information on suicide statistics and public health significance; protective factors, risk factors, and warning signs for suicidal ideation; strategies for asking about suicidal ideation; resources specific to the local community; and case scenarios with questions. An optional survey was administered following the session. The majority of students indicated that they were confident in asking someone if they are thinking about suicide, however there was no formal assessment to support this statement. When prompted to provide topics for additional learning, students expressed interest in more practice, medication-specific knowledge, and learning to intervene in a pharmacy context (Witry et al., 2019). The feedback from students warrants further investigation into appropriate suicide prevention training content and timing in the pharmacy curriculum.

Washington State University College of Pharmacy and Pharmaceutical Services also initiated a suicide prevention training program (Willson et al., 2020). The 3.5-hour training for PY1 students included an online didactic portion and a laboratory session. Pre- and post-surveys were administered to gauge students' knowledge and confidence surrounding discussions on suicide. Additionally, a laboratory assessment with a standardized patient was performed. Survey responses indicated that students had increased knowledge and confidence in discussing the topic of suicide. However, when paired with a standardized patient, they were unable to identify risk factors for suicide, elicit more information from the patient regarding suicidal ideation, or

directly ask about suicide (Willson et al., 2020). These results suggest that a one-time training may not be sufficient to change student behavior.

Data Plan

This study used survey methodology to investigate students' opinions on incorporating QPR suicide prevention training into the PharmD curriculum at UK COP. In both student cohorts (i.e., PY1-2016 students and PY3-2019 students), QPR suicide prevention training was provided by certified QPR instructors from the University of Kentucky Counseling Center and students were trained in small groups (~30-35 students per group) in sessions lasting approximately 90 minutes. Attending a QPR session was required for both cohorts, although no course "grade" was associated with the training. This study compared opinions related to QPR suicide prevention training between the cohorts to determine if the timing (PY1 versus PY3) of QPR suicide prevention training in the PharmD curriculum impacts student opinions on the utility of training.

Survey data from the PY1-2016 cohort was previously collected in September 2016, approximately 5 months after the QPR suicide prevention training session in April 2016. The survey was designed, disseminated, and collected using the Research Electronic Data Capture (REDCap) web application hosted by the University of Kentucky. Permission to access the data from the PY1-2016 survey through REDCap was granted by Dr. Karen Blumenschein, the course coordinator of "PHR 920: Communication and Behavior in Pharmacy Practice" and co-investigator of a research project that analyzed the PY1-2016 survey results (Ekinici, 2017). The data collected from the PY1-2016 cohort was compared to that collected from the PY3-2019 cohort.

To capture the opinions of the PY3-2019 cohort, a 25-item survey (see Appendix A) was generated using REDCap. The survey was anonymous and did not collect identifying

information. Questions were designed to assess student pharmacists' opinions on the role of pharmacists in suicide prevention, the likelihood of using QPR suicide prevention training in the future, and the claim that QPR is analogous to cardiopulmonary resuscitation (CPR). Survey items included demographic, multiple choice, and Likert scale questions that had fixed responses. Contingency questions followed responses indicating that a student did not believe they would use QPR suicide prevention training in the future. If a participant selected "other" in response to a contingency question, they were prompted with a free response text box to provide an alternative response. One question allowed participants to provide a free response in the form of suggestions or comments related to the training session.

All 139 PY3-2019 students who participated in QPR suicide prevention training were invited to participate in the PY3-2019 survey. The survey data was collected in November 2020, approximately one year after their training session. Students were invited through email to participate in the survey. In addition to a survey link, the email included a brief description of the study and informed students that the survey would close in two weeks. One reminder email was sent one week after the initial email. This project was approved by the University of Kentucky Institutional Review Board in August 2020 and all students were required to provide informed consent prior to completing the survey.

Research Design

Survey questions were adapted from the PY1-2016 survey that was designed for a research project with objectives listed as 1) assess first-year pharmacy student (PY1) opinions related to a suicide prevention training module and 2) identify PY1 opinions on the pharmacist's role in suicide prevention (Ekinici, 2017). All questions with an asterisk (see Appendix A) were carried over from the PY1-2016 survey. These questions were included to allow for a direct

comparison between the PY1-2016 and PY3-2019 cohorts regarding opinions of QPR suicide prevention training and the role of a pharmacist in suicide prevention. The majority of PY1-2016 respondents believed that pharmacists should have a role in suicide prevention, suicide prevention training should be provided in pharmacy school, and that they would utilize the training in their personal and professional lives.

Given the positive responses on the prior survey, additional questions were included in the PY3-2019 survey to capture more information related to utilization of training; perceptions of CPR training, which is currently required biennially for all students; and the impact of COVID-19 on mental health. To determine if there is a benefit in requiring QPR suicide prevention training prior to students entering pharmacy internships and clinical rotations, students were asked if they have used CPR and/or QPR since receiving the trainings. Responses to questions regarding CPR training will provide a better understanding of the analogy between QPR and CPR, which is presented in QPR suicide prevention training courses. This will indicate whether a refresher course should be provided in QPR, similar to what is currently required for CPR. It was also important to collect information regarding perceptions of COVID-19 and mental health given that the timing of this survey may impact opinions on the utility of suicide prevention training.

Based on preliminary mental health data collected during the COVID-19 pandemic, it is likely that the pandemic is negatively impacting the mental health of the general public and healthcare workers, including pharmacists. There is a set of questions that explicitly asked for opinions regarding the impact of COVID-19 on the mental health of the general population and pharmacists. Additionally, there is a set of questions that solicited data regarding the perceived stress level of pharmacists, which may be influenced by the pandemic. Questions pertaining to

the perceived stress of pharmacists served a dual purpose of indirectly gauging how the pandemic has impacted pharmacists' stress levels and determining if suicide prevention training may be beneficial to increase awareness of suicide risk factors. Given that results from prior research suggest that social isolation and quarantine during infectious disease outbreaks are associated with a sustained negative impact on mental health, it was important to collect information regarding the anticipated long-term impact of COVID-19 on the mental health of pharmacists.

The question order and format of the survey was designed intentionally to avoid biasing participant responses. The survey (see Appendix A) is divided into three sections that can be summarized as demographics (questions 1-7), CPR/QPR (questions 8-22), and COVID-19 (questions 23-25), with all questions for each individual section appearing on one page. Participants were not able to navigate backwards to change responses on prior sections.

IBM SPSS version 26 statistical software was used to analyze the survey data. All Likert scale responses were converted to a numerical value ranging from 1 (definitely not) to 5 (definitely). Fisher's exact tests were used to compare PY1-2016 and PY3-2019 survey responses to dichotomous questions, and Mann-Whitney U tests were used to compare responses to Likert scale questions. The PY3-2019 survey data were analyzed further. Descriptive statistics were generated for all questions. The Wilcoxon Signed-Rank test was used to determine if there is a significant change in perceived stress levels from the beginning of pharmacy school to the time the survey was completed. The Kruskal-Wallis test was used to determine if the pharmacy setting that a student has the most experience in impacts the perceived stress level of pharmacists.

Survey responses and subsequent analyses will help determine if incorporating suicide prevention training into the UK COP curriculum is beneficial to PharmD students. They will also indicate if students are interested in receiving additional, pharmacy-specific training beyond the programming that is currently available to students on campus. This will help shape future programming to better educate students on suicide prevention. Overall, the survey responses and analysis will help determine if changes should be made to UK COP graduation requirements to include QPR suicide prevention training.

Results

Demographics of participants

In total, 67 out of 139 students completed the PY1-2016 survey, for a response rate of 48.2%. Forty-seven out of 138 students completed the PY3-2019 survey, for a response rate of 34.1%. Participant demographics are provided in Table 1. There was no difference in gender or prior QPR training between survey participants. There were significantly more students in the PY1-2016 cohort with plans to work in a community pharmacy post-graduation compared to the PY3-2019 cohort ($p = 0.031$), but there was no difference in post-graduation plans across other work settings. The PY3-2019 cohort had the majority of their recent work experience in chain pharmacies ($n=18$), independent pharmacies ($n=13$), academic medical center pharmacies ($n=6$), ambulatory care pharmacies ($n=4$), community hospitals ($n=4$), and long-term care settings ($n=2$).

	PY1 N (%)	PY3 N (%)	p value
Female sex	45 (67.16)	32 (68.09)	1.000
Age			
18-24	46 (86.57)	22 (46.81)	--
25-30	5 (10.45)	22 (46.81)	--
Over 30	1 (2.99)	3 (6.38)	--
Plans post-graduation (work setting)			
Community	31 (46.27)	12 (25.53)	0.031
Hospital	28 (41.79)	29 (61.70)	0.057
Long-term care	1 (1.49)	3 (6.38)	0.304
Setting without patient care	6 (8.96)	3 (6.38)	0.734
Not reported	1 (1.49)	0 (0.00)	1.000
Prior QPR training	9 (13.43)	12 (25.53)	0.14

Table 1: Demographics of survey participants

Comparison of PY1-2016 and PY-2019 survey data

Table 2 and Figures 1a-d provide comparisons of PY1-2016 and PY3-2019 survey responses. There was no difference in student opinions related to a pharmacist's role in suicide prevention, suicide prevention training in pharmacy school, or the analogy between CPR and QPR. Additionally, there was no significant difference in responses regarding the anticipated use of information from QPR training in students' personal lives ($p = 0.17$). However, the PY3-2019 cohort had significantly more positive responses compared to the PY1-2016 cohort when asked if they anticipated utilizing information from QPR training in their professional lives ($p = 0.04$).

	PY1 N (%)	PY3 N (%)	p value
Q8: Suicide is one of the top-ten leading causes of death in the U.S. Do you think pharmacists have a role in suicide prevention?			0.121
Yes	58 (86.57)	45 (95.74)	
No	9 (13.43)	2 (4.26)	
Q9: Do you think suicide prevention training should be provided in pharmacy school?			0.079
Yes	59 (88.06)	46 (97.87)	
No	8 (11.94)	1 (2.13)	
Q17: QPR has been described as analogous to CPR because both are the initial step in saving a life. Do you agree or disagree with this analogy?			0.810
Yes	54 (80.60)	39 (82.98)	
No	13 (19.40)	8 (17.02)	

Table 2: Comparison of PY1-2016 and PY3-2019 survey responses

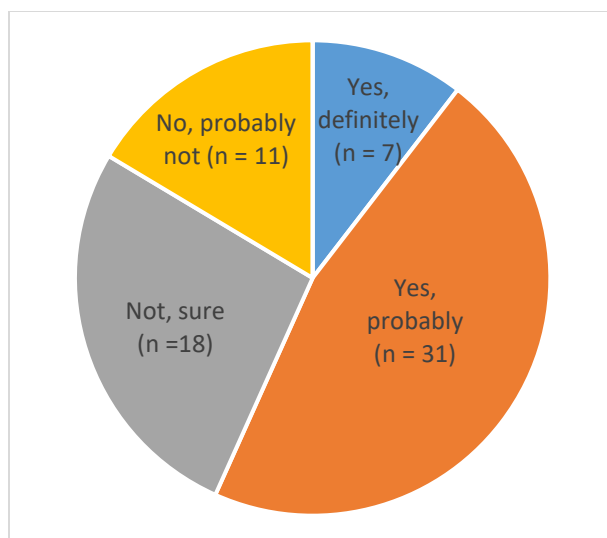


Figure 1a: PY1 expected use of QPR training in personal life

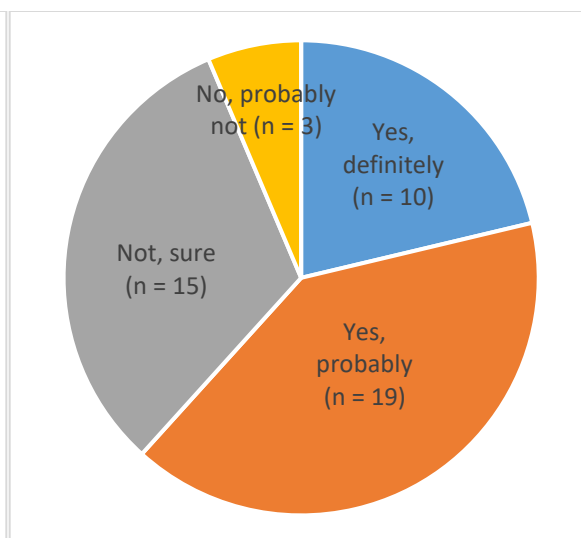


Figure 1b: PY3 expected use of QPR training in personal life

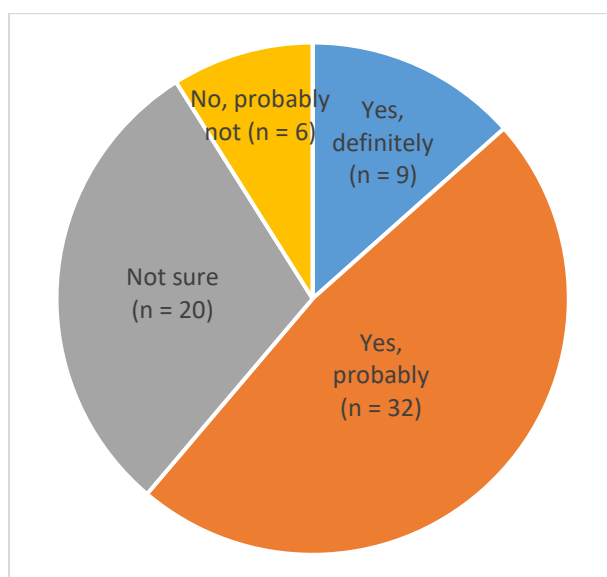


Figure 1c: PY1 expected use of QPR training in professional life

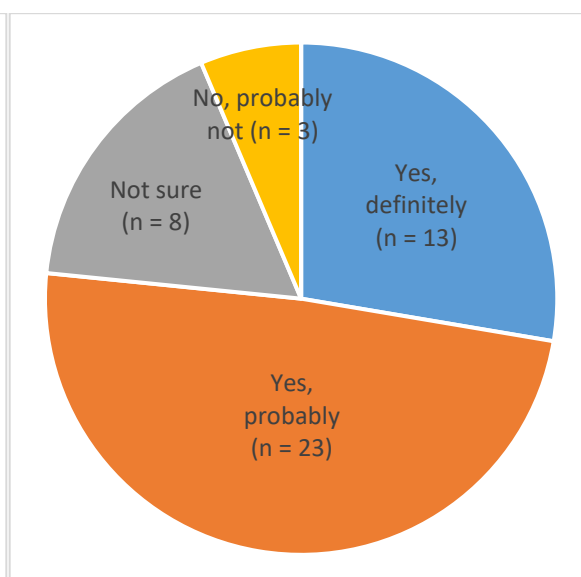


Figure 1d: PY3 expected use of QPR training in professional life

Analysis of PY3-2019 data

To understand how students' impressions of a pharmacist's stress level have changed over time, students were queried on what they believed the stress level of a pharmacist to be prior to pharmacy school and at the time they were completing the survey. A Wilcoxon Signed-Rank indicated that the students' current perceived stress level of pharmacists was statistically significantly higher than the perceived stress level of pharmacists prior to entering pharmacy school ($Z = -5.11$, $p = 0.00$). However, there is no difference in students' current perceived

stress level of pharmacists based on the pharmacy setting in which the student has the most experience ($H(5) = 4.05$, $p = 0.54$). Appendix B includes all descriptive statistics and open responses for the PY3-2019 survey.

Discussion

There is a lack of pharmacists who are competent in assisting patients experiencing mental health crises and/or contemplating suicide. Optional Mental Health First Aid and suicide prevention programs are available to pharmacy students and pharmacists who desire to improve the mental health of their communities (Carpenter et al, 2018; Witry et al., 2020). Participants have benefited from these programs through increased knowledge about suicide and increased confidence to directly ask an individual about suicide and provide resources (Willson et al., 2020; Witry et al, 2019). However, not all pharmacists are required to receive suicide prevention training. Dedicating time to suicide prevention training in the pharmacy school curriculum increases the likelihood that future pharmacists are able to identify and assist individuals at risk for suicide. Therefore, colleges of pharmacy should consider providing training to students.

UK COP is in a position to equip students with a tool to provide quality, competent care, while acknowledging the importance of prioritizing mental health. In the past few years UK COP has focused efforts on respecting and maximizing the well-being of students, which has increased discussion surrounding mental health. Incorporating QPR suicide prevention training into the curriculum would promote mental well-being and solidify the commitment to destigmatizing mental illness. If administered during the first year of school, training may have a protective effect on the cohort, as students would be able to identify classmates who may be contemplating suicide. Regardless of when suicide prevention training is administered, there will be a benefit to the communities that students go on to serve as practicing pharmacists.

Limitations

This analysis has several limitations. First, there was a difference in the timing of the surveys post-training. The PY1-2016 survey was dispensed five months after training, while the PY3-2019 survey was dispensed 15 months after training. This difference in time may have influenced responses and the response rate. The response rate from the PY3-2019 cohort was lower than that of the PY1-2016 cohort. Of note, the PY3-2019 cohort was on clinical rotations and no longer in the classroom at the time they received the survey. Rotation responsibilities may have impacted their willingness to dedicate time to responding to the survey.

Second, there were already high rates of positive responses in the PY1-2016 cohort to questions regarding the utility of suicide prevention training in pharmacy school and the role of a pharmacist in suicide prevention. The PY3-2019 also had a large number of positive responses, which led to a small number of statistically significant results. While this suggests that students are receptive to suicide prevention training, it does not help differentiate when training should be provided.

Finally, this study relied on self-reporting. There was no formal assessment to confirm the response to the question, “Do you feel comfortable using the QPR technique?” The majority of students responded that they were comfortable using the technique, but findings from Willson et al. (2020), suggest that despite reported confidence in using suicide prevention techniques, students do not utilize the techniques when confronted with a standardized patient. A formal assessment is needed following QPR suicide prevention training to confirm that students are comfortable and able to use the QPR technique when confronted with actual patients displaying risk factors for suicide.

Conclusions & Policy Recommendations

Recommendation #1: QPR suicide prevention training should be a graduation requirement for the PharmD program at UK COP.

The majority of PY1 and PY3 students agreed that suicide prevention training should be provided in pharmacy school and that pharmacists have a role in suicide prevention. This indicates an understanding of the utility of training and a willingness to intervene using the QPR technique. Given the rising suicide rates in the United States and the increase in the number of individuals reporting thoughts of suicide or self-harm during the COVID-19 pandemic, it would be beneficial to establish QPR suicide prevention training as a graduation requirement (Gionfriddo, 2020; Hedegaard et al., 2020). This requirement would ensure that students receive suicide prevention training regardless of changes in course coordinators.

Recommendation #2: QPR suicide prevention training should be administered twice in the PharmD curriculum, in the fall semesters of PY1 and PY3.

While the majority of the PY3-2019 cohort indicated that they are comfortable using the QPR technique, a majority also indicated that they are interested in a refresher QPR session. This information, combined with results reported by Willson et al (2020) indicating that students do not use the QPR technique in practice, suggests that a one-time training is not sufficient. The QPR Institute states that QPR certification is active for two years (QPR Institute, n.d.). If QPR training is provided in PY1, then it can be provided again in PY3 to refresh students' skills and to remain consistent with the QPR Institute's recommendation for re-certification every two years.

Recommendation #3: During PY3, QPR suicide prevention training should be supplemented with a session on medications commonly associated with suicide attempts.

Almost all of the PY3-2019 cohort indicated that they are interested in a supplemental training session on medications commonly associated with suicide attempts. In the PharmD curriculum, Integrated Drugs and Diseases classes are those in which students learn about medications as they relate to disease states. These classes are not introduced until the spring semester of the first year of pharmacy school. Therefore, if training is provided in the fall semester of the first year, then it is unlikely that students would benefit from a supplemental session due to their lack of a general understanding of medications. It would be most beneficial to incorporate the supplemental training session into the third year of pharmacy school.

References

- Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., & Rubin, G. J. (2020). The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *The Lancet*, 395(10227), 912-920. [https://doi.org/10.1016/S0140-6736\(20\)30460-8](https://doi.org/10.1016/S0140-6736(20)30460-8)
- Carpenter, D. M., Lavigne, J. E., Roberts, C. A., Zacher, J., & Colmenares, E. W. (2018). A review of suicide prevention programs and training policies for pharmacists. *Journal of the American Pharmacists Association*, 58(5), 522-529. <https://doi.org/10.1016/j.japh.2018.05.004>
- Centers for Disease Control and Prevention. (2017, March 17). *Leading causes of death*. <https://www.cdc.gov/nchs/fastats/leading-causes-of-death.htm>
- Cigna. (2016, April 16). *America's state of mind: Use of mental health medications increasing with spread of coronavirus*. <https://www.cigna.com/about-us/newsroom/news-and-views/press-releases/2020/americas-state-of-mind-use-of-mental-health-medications-increasing-with-spread-of-coronavirus>
- Ekinci, E. (2017, July). Pharmacy Student Opinions of Suicide Prevention Training. [Poster Presentation].
- Gionfriddo, P. (2020, June). COVID-19 and mental health: what we are learning from www.mhascreening.org [PowerPoint slides]. Mental Health America. Retrieved from <https://mhanational.org/sites/default/files/Coronavirus%20Mental%20Health%20Presentation%206-1-2020.pdf>
- Hedegaard, H., Curtin, S. C., & Warner, M. (2020). *Increase in suicide mortality in the United States, 1999-2018* (Data brief No. 362). National Center for Health Statistics.

- Jeong, H., Yim, H. W., Song, Y. J., Ki, M., Min, J. A., Cho, J., & Chae, J. H. (2016). Mental health status of people isolated due to Middle East Respiratory Syndrome. *Epidemiology and Health*, 38, e2016048. <https://doi.org/10.4178/epih.e2016048>
- Primary Care Collaborative. (2020, April 9). *Primary care & COVID-19: Week 4 survey*. <https://www.pcpcc.org/2020/04/08/primary-care-COVID-19-week-4-survey>
- QPR Institute. (n.d.). What is QPR? <https://qprinstitute.com/about-qpr>
- Reinhart, R. (2020, January 6). *Nurses continue to rate highest in honesty, ethics*. Gallup. <https://news.gallup.com/poll/274673/nurses-continue-rate-highest-honesty-ethics.aspx>
- Scheerder, G., Reynders, A., Andriessen, K., & Van Audenhove, C. (2010). Suicide Intervention Skills and Related Factors in Community and Health Professionals. *Suicide and Life-Threatening Behavior*, 40(2), 115-124. <https://doi.org/10.1521/suli.2010.40.2.115>
- Sinyor, M., Howlett, A., Cheung, A. H., & Schaffer, A. (2012). Substances Used in Completed Suicide by Overdose in Toronto: An Observational Study of Coroner's Data. *The Canadian Journal of Psychiatry*, 57(3), 184-191. <https://doi.org/10.1177/070674371205700308>
- Stravynski, A., & Boyer, R. (2001). Loneliness in relation to suicide ideation and parasuicide: A population-wide study. *Suicide and Life-Threatening Behavior*, 31(1), 32-80. <https://doi.org/10.1521/suli.31.1.32.21312>
- Stuber, J., Quinnett, P. (2013). Making the case for primary care and mandated suicide prevention education. *Suicide and life-threatening behavior*, 43(2), 117-124. <https://doi.org/10.1111/sltb.12010>
- Washington State Legislature. (2012). Matt Adler suicide assessment, treatment, and management training act of 2012. <https://app.leg.wa.gov/rcw/default.aspx?cite.43.70.442>.

- Willson, M. N., Robinson, J. D., McKeirnan, K. C., Akers, J. M., & Buchman, C. R. (2020). Training Student Pharmacists in Suicide Awareness and Prevention. *American Journal of Pharmaceutical Education*, 84(5). <https://doi.org/10.5688/ajpe847813>
- Witry, M., Karamese, H., & Pudlo, A. (2020). Evaluation of participant reluctance, confidence, and self-reported behaviors since being trained in a pharmacy Mental Health First Aid initiative. *PLoS ONE*, 15(5), e0232627. <https://doi.org/10.1371/journal.pone.0232627>
- Witry, M. J., Neblett, K., Hutchens, S., & Catney, C. (2019). When a patient talks about suicide: Adding a social worker led session on the pharmacist's role in suicide prevention to the PharmD curriculum. *Currents in Pharmacy Teaching and Learning*, 11(6), 585-591. <https://doi.org/10.1016/j.cptl.2019.02.027>
- Wu, P., Fang, Y., Guan, Z., Fan, B., Kong, J., Yao, Z., Liu, X., Fuller, C. J., Susser, E., Lu, J., & Hoven, C. W. (2009). The psychological impact of the SARS epidemic on hospital employees in China: exposure, risk perception, and altruistic acceptance of risk. *Canadian Journal of Psychiatry*, 54(5), 302–311. <https://doi.org/10.1177/070674370905400504>

Appendix A

1. What is your gender?*
2. How old are you?*
3. In what setting do you have the MOST pharmacy experience?
 - 3a. Follow up question: If you chose "Other" please specify:
4. Prior to entering pharmacy school, what did you perceive the stress level of pharmacists to be?
5. Currently, what do you perceive the stress level of pharmacists to be?
6. If your perception of pharmacists' stress level has changed, why do you think it has changed?
7. When you finish your training in pharmacy, where do you anticipate that you will practice?*
8. Suicide is one of the top-ten leading causes of death in the U.S. Do you think pharmacists have a role in suicide prevention?*
9. Do you think suicide prevention training should be provided in pharmacy school?*
10. One form of suicide prevention training is QPR (Question, Persuade, Refer). In August 2019 you completed QPR training. Did you ever receive QPR training prior to August 2019?*
11. Do you feel comfortable using the QPR technique?
12. Have you used the QPR technique since receiving QPR training?
 - 12a. Follow up question (if "yes"): In what setting did you use the QPR technique?
13. Do you foresee utilizing the information you learned during the QPR training session in your PERSONAL LIFE?*
 - 13a. Follow up question (if "no, probably not" or "no, definitely not"): Why not?*
 - 13b. Follow up question: If you chose "Other" as your reason, please specify:*
14. Do you foresee utilizing the information you learned during the QPR training session in your FUTURE PRACTICE AS A PHARMACIST?*
 - 14a. Follow up question (if "no, probably not" or "no, definitely not"): Why not?*
 - 14b. Follow up question: If you chose "Other" as your reason, please specify:*
15. Would you be interested in a refresher QPR session?
16. Do you believe that you would benefit from a supplemental training session on medications commonly associated with suicide attempts?
17. QPR has been described as analogous to CPR because both are the initial step in saving a life. Do you agree or disagree with this analogy?*
18. Do you think CPR should be required in pharmacy school?
19. Have you used CPR since receiving CPR training?
 - 19a. Follow up question (if "yes"): In what setting did you use CPR?
20. CPR training is required for all pharmacy students. Do you think QPR training should also be required for all pharmacy students?*
21. Recertification in CPR is required every two years. Do you think recertification in QPR should be required every two years?
22. Do you have any suggestions or comments related to the QPR training session that you completed in August 2019?*
23. How do you think that quarantine and/or social isolation during the COVID-19 pandemic has impacted suicidal ideation in the general population?

- 23a. Follow up question (if “increase”): Do you foresee that this increase will be sustained following the lifting of all social distancing restrictions?
- 23b. Follow up question (if “yes”): How long do you think this increased level will be sustained?
24. Do you foresee the COVID-19 pandemic having a long-term impact on the mental health of the GENERAL POPULATION?
25. Do you foresee the COVID-19 pandemic having a long-term impact on the mental health of PHARMACISTS?

*question asked in PY1-2016 survey

Appendix B

	N (%)
Q1: What is your gender?	
Male	15 (31.91)
Female	32 (68.09)
Other	0 (0.00)
Prefer not to answer	0 (0.00)
Q2: How old are you?	
18-24	22 (46.81)
25-30	22 (46.81)
Over 30	3 (6.38)
Q3: In what setting do you have the MOST pharmacy experience?	
Chain pharmacy	18 (38.30)
Independent pharmacy	13 (27.66)
Compounding pharmacy	0 (0.00)
Ambulatory care pharmacy	4 (8.51)
Academic medical center	6 (12.77)
Community hospital	4 (8.51)
Long-term care setting	2 (4.26)
Other	0 (0.00)
Q4: Prior to entering pharmacy school, what did you perceive the stress level of pharmacists to be?	
High	12 (25.53)
Average	33 (70.21)
Low	2 (4.26)
Q5: Currently, what do you perceive the stress level of pharmacists to be?	
High	38 (80.85)
Average	9 (19.15)
Low	0 (0.00)
Q7: When you finish your training in pharmacy, where do you anticipate that you will practice?	
Community	12 (25.53)
Hospital	29 (61.70)
Long-term care	3 (6.38)
Setting without patient care	3 (6.38)
Not reported	0 (0.00)
Q8: Suicide is one of the top-ten leading causes of death in the U.S. Do you think pharmacists have a role in suicide prevention?	
Yes	45 (95.74)
No	2 (4.26)
Q9: Do you think suicide prevention training should be provided in pharmacy school?	
Yes	46 (97.87)
No	1 (2.13)

	N (%)
Q10: One form of suicide prevention training is QPR (Question, Persuade, Refer). In August 2019, you completed QPR training. Did you ever receive QPR training prior to August 2019?	
Yes	12 (25.53)
No	35 (74.47)
Q11: Do you feel comfortable using the QPR technique?	
Yes	33 (70.21)
No	14 (29.79)
Q12: Have you used the QPR technique since receiving QPR training?	
Yes	4 (8.70)
No	42 (91.30)
Q13: Do you foresee utilizing the information you learned during the QPR training session in your PERSONAL LIFE?	
Yes, definitely	10 (21.28)
Yes, probably	19 (40.43)
Not sure	15 (31.91)
No, probably not	3 (6.38)
No, definitely not	0 (0.00)
Q14: Do you foresee utilizing the information you learned during the QPR training session in your FUTURE PRACTICE AS A PHARMACIST?	
Yes, definitely	13 (27.66)
Yes, probably	23 (48.94)
Not sure	8 (17.02)
No, probably not	3 (6.38)
No, definitely not	0 (0.00)
Q15: Would you be interested in a refresher QPR session?	
Yes	36 (76.60)
No	11 (23.40)
Q16: Do you believe that you would benefit from a supplemental training session on medications commonly associated with suicide attempts?	
Yes	45 (95.74)
No	2 (4.26)
Q17: QPR has been described as analogous to CPR because both are the initial step in saving a life. Do you agree or disagree with this analogy?	
Yes	39 (82.98)
No	8 (17.02)
Q18: Do you think CPR should be required in pharmacy school?	
Yes	47 (100.00)
No	0 (0.00)
Q19: Have you used CPR since receiving CPR training?	
Yes	4 (8.51)
No	43 (91.49)
Q20: CPR training is required for all pharmacy students. Do you think QPR training should also be required for all pharmacy students?	
Yes	43 (91.49)
No	4 (8.51)

		N (%)
Q21: Recertification in CPR is required every two years. Do you think recertification in QPR should be required every two years?		
Yes		32 (68.09)
No		15 (31.91)
Q23a: How do you think that quarantine and/or social isolation during the COVID-19 pandemic has impacted suicidal ideation in the general population?		
Increase		47 (100)
No change		0 (0.00)
Decrease		0 (0.00)
Q23b: Do you foresee that this increase will be sustained following the lifting of all social distancing restrictions?		
Yes		27 (57.45)
No		20 (42.55)
Q24: Do you foresee the COVID-19 pandemic having a long-term impact on the mental health of the GENERAL POPULATION?		
Yes		43 (91.49)
No		4 (8.51)
Q25: Do you foresee the COVID-19 pandemic having a long-term impact on the mental health of PHARMACISTS?		
Yes		41 (87.23)
No		6 (12.77)

Q6: If your perception of pharmacists' stress level has changed, why do you think it has changed?
"I know more about the responsibilities of pharmacists"
"Before pharmacy school I was not aware of many additional responsibilities of pharmacists outside of dispensing medications in the community pharmacy setting"
"More exposure to the field, especially exposure to clinical settings "
"personal experience"
"Increased responsibilities with short staffing, pressure to meet company metrics, increased difficulty of insurance companies."
"My stress level has changed due to the increased intensity of professional school compared to undergrad. I also believe it has increased because I want to continue to increase my knowledge therefore I take less healthy mental breaks."
"I have seen how long and hard pharmacists work."
"Understanding of responsibilities "
"I think when you are new it is high but pharmacists that have been practicing for a while are average stress level"
"growing responsibilities"
"Larger workload"
"the exposure has shown me that pharmacists are often times very stressed."
"Corporate pressure to meet unobtainable goals, reduced staffing, etc."

"I have learned more about the profession and all the things that go into being a pharmacist."
"I have spoken with more pharmacists about their experiences"
"I guess I didn't realize the breadth of the responsibilities of a pharmacist until I gained more responsibility as an intern."
"I have been more exposed to a pharmacist's day-to-day work and responsibilities."
"I think it has changed because now I have been able to experience many environments pharmacist work in. I have experienced stressful days and the many roles and responsibilities."
"Seeing/being around it and getting first hand experience"
"Understaffed, high demand work. Especially in the pandemic"
"Talking to pharmacists at work"
"I think my increased exposure to pharmacists in different settings has opened my eyes to the high level of stress that pharmacists deal with."
"The lack of understanding from other professionals AND patients."
"Working with more pharmacists outside of independent"
"I have realized since starting rotations that pharmacists have even more to check than I thought."
"Pushing residency"
Q22: Do you have any suggestions or comments related to the QPR training session that you completed in August 2019?
I think it's such an important training for all healthcare professionals. I could use a good refresher though!
I 100% absolutely would love a refresher and a lecture on the common drugs used for suicide. This is such a great idea!!
The actual application or "practice" doesn't really happen or stand out to remember easily like CPR lessons.