Middle and High School Staff and Students' Perceptions of QPR Training

By

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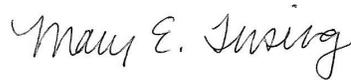The University of Wisconsin-Eau Claire

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The University of Wisconsin-Eau Claire, 2020
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Suicide in youth continues to be on the rise, becoming the second leading cause of death for children and young adults ("Vital Signs," 2018; Center for Disease Control and Prevention, 2016). In order to best address this significant concern, it has become crucial to find effective and impactful suicide prevention methods, especially within a school given that it is a place that youth spend a significant proportion of their time. Question, Persuade, Refer (QPR) is a gatekeeper suicide prevention program that has often been used in communities and is beginning to be used in schools for students and staff. The current study looked at the social validity of QPR within schools by analyzing post-evaluation surveys completed by middle and high school students and staff after attending the training. Descriptive analyses found that all areas related to perceived knowledge about suicide risk detection and prevention increased for both students and staff. This included perceived ability to ask a person about suicidal ideation, knowledge of warning signs and resources, and staffs' self efficacy to prevent suicide in their community. Students and staff were also found to have overall positive satisfaction with the QPR training. Satisfaction with the training was not related to perceived ability to ask

a person about suicidal ideation for staff and was only marginally related for students. Overall, QPR was found to have positive social validity for middle and high school students and staff, which is important given that perceived acceptability of a training can impact the effectiveness of a suicide prevention program. Implications of these findings, limitations of the research, and directions for future research are discussed.

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Thesis Advisor (Signature)   Date

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The rates of suicide in nearly every state have risen from 1999 through 2016 ("Vital Signs," 2018). This increase is especially evident in younger populations. Recent national data indicates the prevalence of suicide has become the second leading cause of death in children and young adults from ages 10 to 24 years old (Center for Disease Control and Prevention, 2020). From 1999 to 2014, death by suicide for 10-14 year olds has doubled to become 425 deaths per year in 2014 (Center for Disease Control and Prevention, 2016), surpassing death by traffic accidents, which consisted of 384 deaths per year in 2014. Deaths by suicide for children and adolescents continue to be a concern, with 2,388 individuals ages 5-18 having died by suicide across the country in 2018 ("WISQARS Leading Causes of Death Reports," n.d.). The Wisconsin Youth Risk Behavior Survey is part of a national effort to monitor health-risk behavior of the nation's high school students. For the year of 2019, it was reported that, within the last 12 months, 15.7% of students seriously considered suicide, 13.0% made a plan, and 7.4% attempted suicide (McCoy, 2020). High rates of suicide around the country has led the U.S. Surgeon General to create action plans and make it a national priority to reduce suicide among youth (Office of Surgeon General & National Action Alliance for Suicide Prevention, 2012).

The Importance of Schools in Suicide Prevention

Due to these high rates of suicide and suicidal ideation, research is often focusing on how to best prevent suicide in youth. One area of focus is looking at how schools can play a role in suicide prevention and intervention. Children and adolescents spend a large portion of their day in schools, and are often interacting with the students and staff

around them. This presents an opportunity for individuals in schools to monitor students'
wellbeing. For example, students, teachers, or other staff may observe many risk factors
that are associated with suicide. Common risk factors include exhibiting symptoms of
mental health disorders, especially depression (Franklin et al., 2017), engaging in non-
suicidal self-injury (Whitlock et al., 2013), substance use (Consoli et al., 2013),
experiencing negative life events (Rubenstein et al., 1989), having high total stress
(Rubenstein et al., 1989), and being a sexual minority group member (Russell & Joyner,
2001). Taliaferro and Muehlenkamp (2014) found that important risk factors that
distinguished students who have experienced suicidal ideation versus students who
attempted suicide within the last twelve months included males who experienced dating
violence victimization and cigarette smoking, females who had a same-sex sexual
experience, and either gender having engaged in self-injury. There are also other risk
factors that are distinct to the school environment that may be even easier for teachers or
other students to notice. These included repeating a year in school (Consoli et al., 2013),
being a bully perpetrator or victim of bullying (Holt et al., 2015), and having poor school
performance (Kosidou et al., 2014).

Additionally, schools are a practical and important place to implement strategies
to help with concerns related to suicide. For example, schools can help break down the
barriers that often stop individuals from receiving mental health services. Researchers
have cited a lack of mental health providers, difficulties in the referral process, long wait
times to receiving services, access to transportation to providers, and time availability for
appointments as a few of the common barriers that stopped children and adolescents from
receiving services for mental health concerns (O'Brien, Harvey, Howse, Reardon, &

Creswell, 2016; Reardon et al., 2017). Schools that have mental health providers available in the building could cut down many of these barriers by providing various forms of mental health services to students during the school day. Schools are also an ideal place to screen for suicide risk because of the proximity and access to many children and adolescents. Supporting this notion, Scott and colleagues (2009) studied the effectiveness of universal screeners and referrals by school professionals to identify students who were struggling with emotional well-being. They discovered 34% of students with emotional distress were identified through the screening alone, 13% were identified by school professional referral alone, and 34.9% were identified by both the screening and school professionals. While not all students with concerns for emotional well-being were identified, the school setting is an essential entity to begin identifying these students through universal screenings and school staff referrals.

School Staff's Knowledge about Suicide Prevention

To augment screening tools it is important that school staff also know what to watch for to help identify students who may be at risk. Unfortunately, research is showing that many school staff often lack the background knowledge of suicide risk and do not feel able to meet the needs of their students. Hamrick, Goldman, Sapp, and Kohler (2004) examined teachers' knowledge of suicide risk by asking teachers to read vignettes and then rate 35 behaviors according to whether or not they were signs of suicidal behavior. Both general and special education teachers had difficulty correctly recognizing at-risk signs for suicide in adolescents. They found no significant difference between regular education and special education teachers at correctly identifying suicide risk, with both groups not recognizing about 25% of the at-risk warning signs. Both groups of

teachers especially struggled with identifying covert at-risk signs, which included not recognizing about 44% of the covert warning signs. Similarly, Scouller, and Smith (2002) found that teachers were only able to correctly answer about 59% of the knowledge questions on a suicide behavior questionnaire. They noted that teachers had relatively poor knowledge about suicidality, and in particular the risk factors that led to suicidality.

Similarly, Westefeld, Kettmann, Lovmo, and Hey (2007) found that 67% of high school teachers reported that they "don't know" what procedures to follow when intervening with an adolescent who may be suicidal. Hatton et al. (2017) noted that while most secondary level teachers reported that they should have a role in suicide prevention and intervention, many did not feel comfortable assisting suicidal youth. Years of teaching experience was not correlated with teachers' comfort and confidence related to working with suicidal students, and teachers described barriers to assisting related to limited training and fear of making the situation worse. Research on teachers' knowledge and perceptions on suicide prevention overwhelming indicate that teachers have limited knowledge of how to prevent suicide, and do not feel prepared to appropriately assist students despite being on the "front lines" to help detect and intervene. Many of these researchers suggest that further training and time should be spent on developing suicide prevention procedures and teaching teachers the skills to identify and intervene with students who are having suicidal thoughts so that they can help to prevent suicide among students.

Best Practices of Suicide Prevention and Intervention within the Schools

Because research indicates that many teachers do not have sufficient knowledge regarding suicide in youth, it is important to better understand what comprises effective

suicide prevention and intervention practices in schools. Despite suicide ranking as one of the top reasons for death of children, only a few states have laws related to mandatory suicide prevention programs in the school systems (LaFleur & Poland, 2012). This means that most schools and districts decide for themselves the amount of suicide prevention and intervention programs they would like to have within their system. Additionally, LaFleur and Poland (2012) noted that since there are not federal laws mandating suicide prevention programs in schools, there are no national tracking systems that report on the number of schools that have any suicide prevention programs. In addition, these programs may not be standardized or evidence-based. The number of these schools and districts that are deciding for themselves to include suicide prevention and interventions is unknown.

Lieberman, Poland, and Kornfeld (2014) reviewed research to analyze what strategies for suicide prevention are being used within schools and their effectiveness. One of the common strategies in schools is gatekeeper training. This involves teaching school staff (i.e. "gatekeepers") to identify children at risk for suicide and link them to necessary resources (American Foundation for Suicide Prevention, 2011). Gatekeeper programs teach what risk and protective factors to watch for, explain how to ask students about their experiences, and then make a referral to mental health resources as necessary. Many Gatekeeper trainings also prepare staff for crisis situations by helping staff identify when a student is in crisis and explaining how students may react when feeling suicidal (American Foundation for Suicide Prevention, 2011). Staff members are typically trained to remain calm, listen, be non-judgmental, reassure the student that there is help, and supervise the student until appropriate services are available ("NASP," n.d.). The goal is

to have school staff understand student suicidality, notice indicators of possible risk, and be able to intervene early to connect the youth to support resources.

A second strategy that Lieberman and colleagues (2014) found to be effective is teaching students about suicide risk and ways to support and intervene with peers. Educating students on the topic of suicide is very important, since peers are often the first to encounter a suicidal student (Lazear, Roggenbaum, & Blase, 2003). Using a similar model to gatekeeper training, this approach consists of providing education on risk factors and warning signs, how to seek help, and increasing self-confidence to intervene with peers (Lieberman et al., 2014). Peer trainings often aim to help students feel more able to ask peers about suicidal thoughts and increase the likelihood of a suicidal student having someone else to talk to in school. Research has indicated that peer trainings were found to be helpful in these areas, even when compared to control groups that did not attend the training. High school students who attended peer trainings were found to have more self-confidence with discussing a peer's suicidal thoughts, better interpersonal relationships with friends, and helped to reduce suicide probability in their high school (Shin & Kim, 2013).

These gatekeeper trainings also provide schools an opportunity to provide resources for those experiencing suicidal thoughts and list the trained professionals in the schools that students can turn to as a part of the program. Students are often provided this gatekeeper education through curriculum taught to students within required classes (such as health classes or homeroom). In general, these trainings are found to help increase students' knowledge of suicidal risk factors and decrease reluctance to seek help for themselves and their peers. A meta-analysis, conducted by Cuisimano and Sameem

(2010), reviewed 8 controlled studies related to middle and high school peer gatekeeper trainings. Across the studies, the research showed statistically significant increases of knowledge, attitude, and help-seeking behavior reported by the students after these trainings. Ciffone (2007) surveyed 421 high school students and found statistically significant decreases in unwanted attitudes about suicide (i.e. "suicide is just a result of stress"), and decreases in reluctance to seek mental health treatment for themselves and their peers. Overall, peer gatekeeper trainings appear to be effective in student's self-reported changes, but some peer gatekeeper trainings can vary in style and the exact information presented. Specific peer gatekeeper trainings need further analysis to determine effectiveness. In addition, few studies have examined peer perspective on the potential value of such trainings.

Question, Persuade, and Refer Suicide Prevention Training

One of the most commonly utilized gatekeeper suicide prevention programs within community settings is Question, Persuade, and Refer (QPR) ("QPR Institute," n.d.; Quinnett, 2007). This training was developed to help those in the general public that do not have a background in mental health, or those that do not often work with individuals with suicidal thoughts, understand enough about suicide so they could help someone in crisis. The QPR program includes teaching participants about suicide risk factors, common early warning signs of suicide, modeling how to directly ask someone if they are experiencing suicidal thoughts, instructing how to persuade someone to seek help, and describing how to refer someone to a trained mental health professional for further intervention. Individuals are taught common gatekeeper procedures and may practice or role-play how to implement these with another person. QPR procedures are

likened to the cardiopulmonary resuscitation (CPR) medical method, in that QPR is also meant to be an early intervention that helps stabilize a person until further treatment can be applied ("QPR Institute," n.d.). Further suicide risk assessments and treatment will be needed after an individual is referred to a mental health professional. Additional benefits of the QPR trainings for schools are that they are relatively short, typically lasting 1-2 hours, and are delivered by QPR trained instructors (Quinnett, 2007). Each instructor completes an 8 hour certification class, where participants master training models covering "facts, theory, program delivery and required content, teaching methods and answering audience questions," (Quinnett, 2007).

QPR training was originally developed for and is often provided to adults within the community. The QPR institute specifically recommends the training for many professions that work with large quantities of people, such as law enforcement, doctors and physician assistants, nurses, occupational and physical therapists, firefighters, emergency medical system workers, and school health professionals ("QPR Institute," n.d.). The majority of the research on QPR has focused on its use in the community with professions like these, with the trainings generally found to positively increase knowledge and attitudes about suicide. For example, Cross, Matthieu, Cerel, and Knox (2007) found that after a one-hour QPR training, hospital employees reported greater knowledge about suicide and more positive attitudes about intervening with an individual experiencing suicidal thoughts. Cross et al. (2007) also found that these employees demonstrated better skills related to working with someone with suicidal thoughts and even reported sharing their new knowledge and skills with friends and family. Litteken and Sale (2017) measured the long-term effectiveness of QPR for community members.

The 2,988 participants in their study included youth service providers, parents, college students, school staff, physical and mental health care providers, clergy, and probation and parole officers. Participants completed a QPR training survey that asked questions related to knowledge, self-efficacy, and help-giving behaviors. This survey was completed right before the training, immediately after completing the training, as well as two years after completing the training. Results of the study indicated that these community members reported an increase in knowledge of suicide and self-efficiency to intervene both immediately after the training as well as two years after the program, suggesting the positive effects are long lasting.

With many positive results for the QPR training for community members, researchers have also begun evaluating the use of QPR trainings in schools; primarily focusing on various school staff's knowledge and attitudes of suicide. Tompkins, Witt, and Abraibesh (2010) analyzed the effects of QPR training for school personnel (n=106) compared to a control group who did not take the QPR training. They found that the school staff that completed the training made substantial gains in their self-reported knowledge of working with suicidal youth, attitudes toward suicide and suicide prevention, and beliefs regarding their self-efficacy in intervening with a suicidal youth. Wyman and colleges (2008) found similar results, with effects maintained by school staff (n = 249) one year after the QPR training was delivered. School staff reported an increase in their perceived knowledge of suicide, self-efficacy to respond effectively, and knowledge of services where students can be referred. Similarly, Reis and Cornell (2008) measured both teachers and school counselors' (n = 238) beliefs and prevention practices after QPR was delivered across the state of Virginia due to the state's concern about the

rise in adolescent deaths of suicide. They found that both teachers and counselors had greater knowledge of suicide risk factors and reported questioning more potentially suicidal students as well as making more referrals to outside agencies for continued mental health support. QPR has also been used with resident advisors who work with college students. Tompkins and Witt (2009) found that resident advisors who completed the QPR training reported higher "preparation, efficacy, and intentions to perform in a gatekeeper role" compared to a control group who did not complete any suicide prevention training.

While these studies have begun to highlight positives effects, almost all of these researchers have called for further studies with larger sample sizes to replicate these results. While some studies have begun to look at the impact of QPR on staff, larger sample sizes are needed to help replicate these findings in school to ensure the effects are generalizable and ecologically valid. Other programs have also been designed for school settings and include teaching students suicide prevention information to help their peers. Some of these preventions trainings include SOS Signs of Suicide ("Signs of Suicide," n.d.), Sources of Strength ("Sources of Strength," n.d.), and Hope Squad ("Hope Squad," n.d.). These additional programs follow similar procedures to QPR, which include teaching middle and high school students warning signs of suicide and how to reach out for assistance if that student or a peer is feeling suicidal.

Studies are finding that some of these gatekeeper trainings for students enhance self-reported knowledge and perceptions of their ability to help. Shilling and colleagues (2014) found that the Signs of Suicide program increased middle school students reported knowledge of suicide, knowledge of suicide prevention, and decreased reported suicidal

ideation in those students that reported some suicidal ideation before the training began. Wyman and colleagues (2010) found that Sources of Strength training improved high school students reported connectedness to adults, school engagement, and the likelihood of referring a peer experiencing suicidal ideation. These preliminary program results indicate that gatekeeper trainings for peers have potential for success and may help to reduce suicide risk by increasing the likelihood peers refer a friend to a mental health professional. While these other suicide prevention programs have some initial research regarding their effects, the popularity of QPR has resulted in many schools using that program. However, no known study has evaluated the effectiveness of QPR when delivered directly to middle school and high school students. Given that many schools use, and are likely to use QPR, how staff, high school students, and middle school students perceive the training can help advance knowledge and guide decisions regarding suicide prevention programs in schools.

Social Validity

When analyzing the effectiveness of a prevention program or interventions, such as QPR trainings, it is important to assess how the techniques are being viewed by those receiving the training. Analyzing how those involved in an intervention/prevention program view its components and whether the program is considered to be beneficial is a common part of best practices for program development and implementation (Elliott, 2017). This is especially true for research in mental health and school psychology disciplines, where it is particularly important to understand the social validity of a program due to the desire to understand the impact of interventions on vulnerable individuals (Finn & Sladeczek, 2001). Wolf (1978) coined the term social validity to

refer to a treatment's acceptability and the social significance to those who receive the treatment. This typically involves understanding if individuals view the treatment to be important in their lives and beneficial in its setting (Leko, 2014). Social validity is commonly analyzed by measuring stakeholders' and participants' opinion of an intervention (Elliott, 2017).

Social validity can also impact the effectiveness of an intervention. Greenwood and Abbott (2001) cited that a common barrier for effective implementation of programming in schools was that teachers did not view the intervention as acceptable and relevant. Marchant, Heath, and Miramontes (2013) found that when school staff had less positive attitudes about a bullying prevention program, students were also less likely to see the benefit of the program and were less likely to want to assist bullying victims. Similar results have been found for many school-wide programs, with social validity being found to have a significant positive relationship with the treatment (ie, program) integrity (Lane, Kalberg, Bruhn, Driscoll, Wehby, & Elliott, 2009). Conducting social validity research on programs has helped to identify barriers to teachers implementing school-wide programs, which allowed school districts to adjust their programs and provide additional support for teachers (Miramontes, Marchant, Heath, & Fischer, 2011). Within this research, evaluating the social validity of the program was essential to its success and potential positive benefits for students. As such, given the sensitive topic of suicide and the reported discomfort that teachers express, it is essential to evaluate the social validity of any gatekeeper training program in a school. However, it is unknown whether research on the social validity of gatekeeper programs, such as QPR, has been conducted within middle and high schools. As evidenced by the research on social

validity, the opinions of those involved in a suicide prevention training should be assessed during its implementation to ensure staff and student gatekeepers find the prevention program beneficial, and that it will be implemented correctly.

The Research Gap

With suicide in youth populations continuing to be an increasing concern, research has focused on how to best address suicide prevention. Question, persuade, refer (QPR) has emerged as a frequently used gatekeeper training across a variety of settings, and may be an effective way to address suicide prevention in schools. Preliminary research indicates that QPR trainings positively affect recipients' reports of their knowledge and beliefs about suicide. While this emerging research is encouraging, many of the researchers for these studies call for further replication of these findings and larger sample sizes. Additionally, there is a gap in the research in having a well-defined understanding of the social validity of QPR trainings when used in schools. Previous research has focused on outcomes of QPR training (i.e. school staff's knowledge and beliefs about suicide), but research on QPR has not evaluated how staff view or perceive value in QPR trainings. To further understand QPR's social validity, it would be beneficial to understand not only if participants report increases in their knowledge and beliefs in their ability to intervene, but also whether participants viewed the training positively, if they would recommend it, and if their satisfaction with QPR is related to any other specific outcomes of the training (e.g., improved confidence to respond).

Finally, no known studies have evaluated high school or middle school students' perceptions of QPR training designed for them. It is imperative to understand this social validity, not only to see if students are viewing a youth adapted QPR training positively,

but because social validity has been linked with the effectiveness of an intervention. An effective QPR training for students can help youth (who are often the first individuals to encounter a student who is feeling suicidal) be more likely to have the skills to discuss the often stigmatized topic of suicidal ideation, know resources to utilize, and help students identify suicidal ideation in themselves and peers. Examining social validity among students can also help to ensure that the QPR training has been well adapted from an adult suicide prevention training, to one that is helpful for students. Evaluating the social validity of QPR trainings for school staff and students, can assist with ensuring QPR is perceived positively by participants, which, based on prior research suggests that the program would be more likely to be implemented with fidelity, and may more effectively provide help for students who are experiencing suicidal ideation.

The purpose of this study is to better understand the social validity of the QPR suicide prevention program in schools from both staff and student perspectives. It was hypothesized that QPR trainings will have a positive impact on both staff and students' perceptions of their knowledge and skills (i.e. a change in their ability to ask about suicidal ideation, staff's self-efficacy, knowledge about referral resources, and students ability to refer an acquaintance), replicating past QPR research completed with school staff, and expanding knowledge by introducing students' perceptions of the trainings. Secondly, this study hypothesized that staff and students will rate the social validity of the QPR training positively (i.e. staff's overall reported satisfaction with the training and students' reported overall utility). Finally, this study hypothesizes that staff and students' satisfaction with the training program will be related to a change in their perceived ability to ask a person about suicidal thoughts.

METHOD

Participants

The current study used archival survey data collected by organizations that presented the QPR training to staff and students in public and private middle and high schools located in Northwestern Wisconsin. These surveys were anonymous and collected minimal demographic information on participants. The current study included 263 staff members from six different schools. Of all staff members, 27.4% were between 18-34 years old, 28.1% were between 35-44 years old, 20.9% were between 45-54 years old, 15.6% were between 55-64 years old, 1.5% were between 65-74 years old. The modal age range was 35-44 years. Although not frequently recorded, the organizations presenting the QPR training reported that staff members typically included general and special education teachers, principals, and counselors, although it is unclear what the proportions across these roles were. The current study also included 1,549 students from eleven middle schools and high schools, grades 8-12. No demographic information was included on the evaluation survey for students.

Materials

In the current study, the two different organizations that presented the QPR trainings used slightly different evaluation surveys for the staff that completed the training. One of these organizations is a county health department (see appendix A, *County Health Department QPR Staff Survey,* to reference the corresponding survey*).* The other organization is a regional hospital group, (see appendix B, *Regional Hospital Group QPR Staff Survey,* to reference the corresponding survey*).* Both evaluation surveys were based on the standard, validated, QPR evaluation tool provided to authorized

trainers ("QPR Institute," n.d.). Both evaluation surveys included similar questions about their opinions of the presentation, their perceptions before the presentation about asking a person if they are feeling suicidal, and their perceptions after the presentation about asking a person if they are feeling suicidal.

The County health department used a 5-point scale for each question (ranging from "strongly agree" to "strongly disagree"). These questions included: "I feel the overall program was well organized," "I feel the instructor demonstrated thorough knowledge of the subject matter," "overall, I feel the instructor presented the material well," "before the training, I knew how to ask a person if he/she is feeling suicidal," "after the training, I know how to ask a person if he/she is feeling suicidal," and "I feel able to help prevent suicide in my community." These evaluation surveys also included an open-ended question asking for general comments.

The Regional hospital group had two questions using a 4-point scale (with the descriptions of "excellent", "good", "fair", and "poor"), which included: "how would you rate the overall program" and "how would you rate the presentation?" This evaluation survey also included questions with the response choices of "yes," "no," or "maybe." These questions included: "before attending the QPR program were you comfortable asking someone if they felt suicidal, "after attending the QPR program do you feel you are now able to ask someone you are concerned about if they are suicidal," and "after attending this training, has your knowledge of available mental health resources increased?" The survey also included open-ended questions asking "do you have any suggestions for future speakers or topics focused on mental wellness" and "additional comments."

Composite scores for satisfaction with the training were created by combining like-items within each of the surveys. Responses to the items assessing overall program organization, instructor knowledge, and presentation quality from the county health department survey were combined to create a single score evaluating overall satisfaction with the QPR training (internal consistency; $\alpha = .867$) Similarly, the ratings from questions about the overall program organization and presenter knowledge from the regional hospital group survey were combined to create an overall satisfaction rating (internal consistency; $\alpha = .902$).

The student evaluation survey was the same across both agencies providing the training (see appendix C, *QPR Student Survey,* to reference the corresponding survey*)*. The student survey questions were similar to questions asked on the staff surveys. Two of the questions on the survey asked about how prepared the rater felt to ask "the suicide question" before and after this class, using a 5-point scale (from "not prepared at all" to "very prepared"). Three more questions asked the rater to answer "yes," "no," or "not sure." These questions included: "would you tell an adult if someone you knew was considering suicide even if you believed they would be angry with you," "would you recommend this training for other teens," and "after this training do you have a better understanding of what resources are available if you or your friends needed help?" Finally, two open-ended questions were also included on the evaluation survey, asking: "what suggestions do you have to help improve the training" and "other comments?"

Procedures

The current study used archival data provided to the researcher by the two agencies providing QPR presentations to the schools. Both agencies (a county health

department and a regional hospital group) presented the QPR trainings on dates pre-arranged with the schools. As part of the presentations, the presenter distributed the surveys, asking staff and students to complete program evaluation surveys anonymously as part of the agency's goal to gather program evaluation data for their own use. That data was then provided to the current researcher for the purpose of this study. Staff and students completed the QPR trainings and evaluation surveys separately on the dates they received the training.

　　　　School Staff Procedure: School staff members generally completed the QPR training during staff meetings or professional development time. Staff received the standard hour and half QPR training, for which the QPR program was initially designed. This included the presentation beginning with introductions and overview of the presentation topics. Participants were also encouraged to talk with a presenter if they were feeling uncomfortable or triggered by any presentation topics, including being encouraged to take a step out of the room if needed. Topics of the training included statistics of suicide, myths and facts about suicide, warning signs that someone is feeling suicidal, ways to directly ask if someone is feeling suicidal, instructions on how to persuade an individual to get further assistance, instructions on how to refer the individual to a mental health professional, time to practice the QPR steps, and opportunities for questions. Presenters followed a general script and power point to assist with fidelity to the QPR training, although no fidelity data was gathered. At the end of the presentation, program surveys were passed out to all participants. Participants were allowed as much time as they needed to complete the QPR survey. All responses were anonymous. The QPR trainers then collected surveys.

Student Procedure: Students generally completed the training during a health class, or classes that all students in a grade would participate in. Students received a QPR Institute-approved modified version of the standard QPR adult training that was adapted for middle and high school youth. These student trainings generally lasted about 1-2 hours, with some presentations split into two sessions in order to work with class schedules. These youth trainings still followed the core QPR training process, which included topics of statistics of suicide, myths and facts about suicide, warning signs that someone is feeling suicidal, ways to directly and less directly ask if someone is feeling suicidal, instructions on how to persuade an individual to get further assistance, instructions on how to refer the individual to a mental health professional, time to practice the QPR steps, and opportunities for questions. The youth training was adapted to be more interactive and allow for greater student participation. This included additional activities and asking students to participate in different parts of the presentation. For example, students were each given a piece of paper and were asked to write down people in their "circle of trust," in which they felt they could talk about serious problems. Additionally, students were given 10 minutes during the training to reteach part of the presentation to their peers again. For example, students were asked to review/reteach warning signs that people may exhibit who are feeling suicidal. The QPR trainings still followed a general script and used a power point for the adapted youth version to assist with fidelity to the QPR training, although no fidelity data was gathered. At the end of the presentation, program surveys were passed out to all participants. Participants were allowed as much time as they needed to complete the QPR survey. All responses were anonymous. The QPR trainers then collected surveys.

RESULTS

Data Analysis

Data was analyzed through the IBM SPSS Statistics Version 24 for Windows. Since evaluation surveys were anonymous, and were not checked before they there returned, some items were left unanswered by participants. If required data was missing from a participant in an analysis, that participant's information was not used in that specific analysis. This case-by-case exclusion led to different sample sizes for some analyses. For all analyses, the level of significance for detecting meaningful effects was set at $p < .01$ in order to be relatively conservative given the large sample size and numerous analyses conducted.

As noted in the methods section, the school staff surveys differed between the two organizations that presented the QPR trainings (i.e. either the county health department (CHD) or the regional hospital group (RHG)), which also differed from the student survey. This means that surveys from staff at CHD trainings, surveys from staff at RHG trainings, and student surveys were analyzed separately.

Descriptive and parametric analyses were used to evaluate the study hypotheses. When data were continuous, paired samples t-tests were used to compare differences between means within the study participants. For example, paired sample t-tests were used to evaluate perceived changes in knowledge among the school staff receiving the training from the CHD, and for the students. A paired sample t-test is the appropriate test for this type of comparison because the variables being measured are continuous (Warner, 2013).

Chi-square tests were used to determine if expected and observed frequencies were significantly different for the outcome variables assessed with categorical and nominal-level responses. Chi-square tests are most appropriate for analyzing the current nominal level data because there are at least two groups for each categorical variable, an assumed independence of observations, and relatively large sample sizes across the data (Warner, 2013).

Lastly, Spearman's Rho correlations were used to analyze the relationships between a change in staff and students' ability to ask about suicidal ideation and their satisfaction with the QPR training. Spearman's rho correlations were the most appropriate test for this type of comparison because both variables were interval data and allows for the assessment of the strength of a monotonic relationship (Warner, 2013).

Knowledge and Skills

Ability to Ask About Suicidal Ideation

<u>County Health Department</u>. To evaluate changes in school staff's perceived ability to ask about suicidal ideation before and after the training, a paired samples t-test was run. There was a significant change in the mean scores of staff's perceived ability to ask about suicide before (M = 3.26; SD = 1.12) and after (M = 4.59; SD = .54) the training, t(116) = -13.77, p < .01

<u>Regional Hospital Group.</u> The data evaluating pre- and post-training perceived ability to ask about suicide was nominal ("no, maybe, yes"), so a cross-tab chi-square was conducted. Results indicate that there was a significant change in the proportion of staff reporting comfort with asking about suicide, X^2 (2, N = 144) = 22.42, p < .01.

Specifically, 124 staff endorsed "yes" they are confident asking about suicide after the training. This increased from 34.5% pre-training endorsing "yes," to 86.1% post-training indicating "yes." Among those who said "maybe" at pre-training (n = 59; 40.97%), 88.83% said "yes" at post-training. Among those who said "no" at pre-training (n = 35; 24.30%), 37.14% said "maybe" at post-training, and 62.86% said "yes" at post-training (see Table 1).

Table 1

Number of RHG Staff Responses in Ability to Ask

	No	Maybe	Yes
Pre-Training	35	59	50
Post-Training	0	20	124

Students. A paired samples t-test indicated that the mean scores of students' perceived ability to ask a peer about suicide before the training ($M = 2.81$; $SD = 1.16$) significantly improved after the training ($M = 4.11$; $SD = .87$); $t(1,525) = -46.91$, $p < .01$. This result suggests that the QPR training had a positive effect on students' perceived ability to ask a peer about suicidal ideation.

Resource Knowledge and Referral Self-Efficacy

County Health Department. There were no questions specifically asking about knowledge of resources or ability to refer. Instead, the evaluation survey included an item inquiring about self-efficacy to prevent suicide in the community as a result of attending the training. The average answer for the staff surveyed was in the agree to

strongly agree range (M = 4.5; SD = 0.65; n = 117). These responses were then collapsed into nominal categories of agreeability ("disagree, neutral, agree"), with 89.7% of the school staff agreeing that they were able to help prevent suicide in their community. Staff's answers were further collapsed into nominal categories ("disagree/neutral vs. agree"), to facilitate analyses using a chi-square test. Results indicate that there was a significant amount of staff that were in the agree range, X^2 (1, N = 117) = 73.92, p < .01 relative to the disagree range. Specifically, 105 staff were in the "agree" category, while 12 staff were in the "disagree/neutral".

Regional Hospital Group. The data evaluating staff's increased knowledge of referral resources as a result of the training included 143 responses, with 90.9% indicating "yes", 2.8% indicating "no", and 6.3% indicating "maybe." With collapsed nominal categories ("no/maybe, yes"), a chi-square was conducted. Results indicated that there was a significant amount of staff that indicated "yes," X^2(1, N=143) = 95.73, p < .01 relative to those saying maybe/no. Specially, 130 staff endorsed that they did have increased knowledge of available mental health resources as a result of the training.

Students. Students were also asked if their knowledge of resources had increased after the QPR training. Of the 1,520 student responses, 90.4% indicated "yes", 2.1% indicated "no", and 5.6% indicated "not sure." With collapsed nominal categories ("no/not sure and yes"), a chi-square was conducted. Results indicated that there was a significantly larger proportion of students that indicated "yes," X^2(1, N = 1,520) = 1081.27, p < .01 compared to those who indicated "no/not sure". Specifically, 1,401

students endorsed that they did have increased knowledge of available resources as a result of the training.

Satisfaction

County Health Department. Staff's survey responses related to their overall satisfaction with the program were averaged, suggesting that staff had generally high satisfaction (Mean = 4.68, SD = 0.53) with the program. To examine whether a significant proportion of staff were satisfied with the program, responses were re-coded into nominal categories (disagreement/neutral = 1 – 3.4 and agreement = 3.5 - 5) for a chi-square test. Results indicated that there were significantly more staff that indicated high overall satisfaction with the QPR training program relative to those who were not satisfied, X^2 (1, N = 118) = 106.31, $p < .01$.

Regional Hospital Group. Similarly, evaluation responses from staff receiving the training from RHG related to overall satisfaction were analyzed for an effect of the program. The answer choices ("excellent, good, fair, poor") were given the respective point values of 4, 3, 2 and 1, with higher scores indicating more positive views. Response related to satisfaction were averaged, suggesting that staff had a generally high satisfaction (Mean = 3.59, SD = 0.56). To examine whether a significant proportion of staff were satisfied with the program, responses were recoded into nominal categories (dissatisfaction = 1-2.5 and satisfaction = 2.6-4) for a chi-square test. Results indicated that there were significantly more staff that indicated satisfaction with the QPR training program relative to those who were not satisfied, X^2(1, N = 145) = 121.99, $p < .01$.

Students. Student evaluation surveys included one question asking if students would recommend the QPR training to other teens. This was conceptualized as the students' perception of the utility of the training provided. Of the 1,528 students who had available responses, 88.5% indicated "yes," 2.2% indicated "no," and 9.2% indicated "not sure." With further collapsed nominal categories ("no/not sure, yes"), a chi-square was conducted. Results indicated that there was a significant amount of students that indicated "yes," they would recommend the training to other teens X^2 (1, N = 1,528) = 908.17, $p < .01$, compared to the proportion who would not recommend the training.

Training Satisfaction and Ability to Ask About Suicidal Ideation

To examine whether self-reported changes in the ability to ask about suicide were related to satisfaction with the program, change scores were calculated and correlated with the program satisfaction/ utility variables for each sample. For all samples, change scores were calculated by subtracting the before-training question response values from the after-training question so that higher scores indicate greater change. The change scores were then associated with the corresponding overall satisfaction/utility variable, using spearman's rho correlations, to test the strength of relationship between variables. When interpreting strengths of these correlations, it was determined that correlations coefficients above 0.7 would be considered a strong correlation, correlation coefficients between 0.5 and 0.7 would be considered a moderate correlation, and correlation coefficients under 0.5 would be considered a weak correlation (Warner, 2013).

County Health Department. The change scores for the 117 staff that received training from CHD with available responses are reported in Table 2. Overall, school staff reported an average change score of (M = 1.32; SD = 1.04), indicating slightly more than a 1-point level increase in their ability to ask students about suicide. The relationship between change scores in ability to ask about suicide and overall satisfaction with the program was not significant, r_s = 0.06, p = .54, n = 117. This indicated that there did not appear to be a relationship between reported staff's satisfaction in the training from CHD and reported change in their ability to ask a person about suicidal thoughts.

Regional Hospital Group. The change score for the 144 staff that received training from RHG with available responses are reported in Table 2. Overall, school staff reported an average change score of (M = 0.76; SD = 0.71), indicating slightly more than half a point level increase in their ability to ask students about suicide. The relationship between change scores in ability to ask about suicide and overall satisfaction with the program was not significant, r_s = -0.12, p = .14, n = 144. This indicated that there also did not appear to be a relationship between reported staff's satisfaction that received the training from RHG and reported change in their ability to ask a person about suicidal thought.

Students. The change scores of 1,526 students are reported in Table 2. Overall students reported an average change score of (M = 1.30; SD = 1.08), indicating slightly more than a 1-point level increase in their ability to ask others about suicide. The relationship between change scores in ability to ask about suicide and the overall satisfaction with the program was significant, r_s = 0.28, $p < .01$, n = 1,517. This

indicated that there may be a small relationship between students reported utility of the training and reported change in their ability to ask a person about suicidal thoughts.

Table 2

Frequency of Participant Change Scores

Change Scores	CHD Staff	RHG Staff	Students
-4	0	0	2
-3	0	0	3
-2	0	0	4
-1	0	1	39
0	32	55	300
1	32	66	517
2	37	22	482
3	15	0	154
4	1	0	25
Total	117	144	1526

*Negative scores indicate participants feeling less able to ask about suicide after the training, higher scores indicate participants feeling more able to ask about suicide after the training

DISCUSSION

The purpose of this study was to better understand the social validity of the Question Persuade Refer (QPR) suicide prevention program in schools, from both school staff and student perspectives. Overall, the study hypotheses were mostly supported. This study first hypothesized that QPR trainings would have a positive impact on the knowledge and skills of both staff and students. Results indicated that there did appear to be a perceived increase in knowledge and skills for both staff and students after the training. For staff, this included a perceived change in their ability to ask others about suicidal ideation, indicating that they perceived themselves to be more able to ask about suicidal thoughts after the training. Staff also perceived themselves to have more knowledge of available mental health resources after completing the QPR training, as well as reported higher self-efficacy for being able to prevent suicide in their community. These results are similar to previous findings on QPR trainings among school staff and adults within the community, such that adult participants reported increased knowledge of suicide, self-efficacy, knowledge of mental health resources, and positive attitudes about intervening (Matthieu, Cerel, &Knox, 2007; Litteken and Sale, 2017; Tompkins, Witt, & Abraibesh, 2010; Reis & Cornell, 2008). Previous research has also indicated that school staff often have relatively low knowledge of suicide warning signs, what procedures to follow for suicidal ideation response, and confidence in responding to a suicidal youth (Hamrick, Goldman, Sapp, & Kohler, 2004; Scouller & Smith, 2002; Westefeld, Kettmann, Lovmo, & Hey, 2007; Hatton et al., 2017) prior to training. Post training these elements appear to improve (e.g., Tompkins et al., 2010). The similarity of past research of QPR with the current findings

of perceived increases in ability to ask about suicide, knowledge of mental health resources, and self-efficacy, continues to validate that QPR appears to be an effective and potentially helpful suicide prevention training for school staff members.

Similar to the effects for adult school staff, students in the current study also perceived themselves to have a positive change in their ability to ask others about suicidal ideation, have more knowledge of available mental health resources, and generally reported that they would be able to refer a peer that is considering suicide to an adult as a result of having the training. While no known previous research has evaluated students' perceptions of QPR trainings, previous studies with middle and high school students that completed other gatekeeper suicide prevention trainings have found similar effects of increased perceived knowledge, attitudes, help-seeking behavior, and willingness to seek mental health treatment for themselves and their peers (Cuisimano &Sameem, 2010; Ciffone, 2007). The congruency of findings from the past research on gatekeeping programs and the current findings for school-based QPR suggest that QPR is likely to be similarly impactful as the other gatekeeper training programs. In addition, students in the current study perceived the QPR training to be a valuable gatekeeper program, lending further credibility for using this program with students.

Along with demonstrating that QPR resulted in improvements in knowledge and self-efficacy to intervene with a suicidal student, the current results supported the hypothesis that both school staff and students would rate the QPR training positively, supporting the social validity of the program. Across both county health department (CHD) and regional hospital group's (RHG) evaluation surveys, school staff reported

having a high level of satisfaction with the program, indicating positive social validity. This finding expands prior work related to perceptions of the QPR training, where participants endorsed more positive views of suicide prevention trainings and preparedness after the completing the QPR program training (Wyman, et al., 2008; Tompkins & Witt, 2009). Demonstrating social validity of a program, such as QPR, among school staff is important because social validity has been shown affect the overall attitude about school-wide programs, treatment (i.e., program) integrity, and has led to identifying and reducing barriers to implementation (Marchant, Heath, & Miramontes, 2013; Lane, et al., 2009; Miramontes, et al., 2011). The positive social validity of QPR observed in the current study is encouraging, given that it could likely affect the buy-in and effectiveness of the suicide prevention components of QPR when used with school staff.

Similar to the results with school staff, students also reported positive reactions to the QPR program they received, indicating they found the program useful and would recommend the training to a peer. These findings compliment existing research that also demonstrated positive reactions to gatekeeper-training (Wyman, et al., 2008; Tompkins & Witt, 2009), and expands it to students. As Lazear, Roggenbaum, and Blasé (2003) found, peers are often the first to hear about a student with suicidal ideation so it is important to ensure youth value and respond favorably to a suicide prevention program as they may be more likely to use skills from the training if they perceive it favorably (Luiselli, Worthen, Carbonell, & Queen, 2017). In addition, previous studies have suggested that students' positive perceptions of school-wide programs may impact their interest and engagement during the training, thereby

affecting their ability to continue to use the skills taught (Felver, et. al, 2017). As such, having positive student social validity for a program is likely to enhance potential effectiveness. The positive social validity results indicates that the QPR program is perceived as valuable to students, and could mean it may be more effective at reducing suicides in youth because both the school staff and student populations are viewing the training positively.

Contrary to hypotheses, school staff's satisfaction with the QPR training program was not significantly related to their perceived increased ability to ask a person about suicidal thoughts. While this comparison was not specifically measured in past studies, this finding is inconsistent with the concept in prior research suggesting that aspects of social validity (i.e, the satisfaction) is correlated with aspects of effectiveness of the training (i.e., perceptions of change in ability to ask about suicidal thoughts; Marchant, Heath, & Miramontes, 2013; Lane, et al., 2009). The lack of significance observed in the current study could be because of how the variables were assessed. Both concepts, increased ability to ask and program satisfaction, are rater's perceptions and do not represent objective measures of the actual effectiveness of the trainings in producing skill change, like prior studies assessed. The lack of a significant association may also be due to the fact that while there was meaningful change in the proportion of staff reporting they felt more able to ask about suicide post-training, many started off with high confidence. As a result, the variability in the change scores was small, as was the variability in satisfaction, which could result in a ceiling effect for the data. It may also be that the current results are true, and satisfaction with the program does not affect the perceived knowledge

obtained and resulting increased ability to ask about suicide. Such an effect is encouraging because it could mean that even if participants do not like the training, they may still experience some of the positive effects. This could be important for suicide prevention trainings, since these trainings may be required in certain facilities, like in schools for staff professional development, and some staff may not see the need to attend or think the training is worthwhile. Even if school staff required to attend do not like this suicide prevention program, they may still improve in their ability to ask students about suicide, and could hopefully connect more students to needed mental health resources.

While satisfaction with the program was not related to perceived ability to ask about suicide for school staff, it did show a weak effect for students. Specifically, student-rated program utility was associated with an increased perceived ability to ask a peer about suicide. This could mean that while staff do not require a need to have satisfaction with the program to experience some of its positive effects, middle and high school students could need to have some affinity for the program in order to experience its effects. Similar findings have been noted in past research, with student performance and learning gains linked to the buy-in of the lessons being taught (Cavanagh, et al., 2016; Shaw, et al., 2019). This research along with the current findings indicates that schools may see a better impact of suicide prevention training by ensuring or increasing student buy-in before implementing the training with any middle or high school students. In order to increase the overall effects of the training for students, staff could take extra time to explain the need for suicide prevention, the

benefits of QPR, and how skills can be used, along with making sure the program is developmentally tailored and engaging.

Limitations

Sample Limitations

When interpreting the findings for this study, there are some noteworthy limitations to consider; the first of which relate to the current sample used. This study used archival data from a convenience sample of previously collected surveys from students and staff in schools in Northwestern Wisconsin. This limited sample affects the overall generalizability of these findings, meaning results cannot be directly generalized to middle or high school students and staff in other areas, or with drastically different backgrounds. Additionally, minimal demographic information was collected from the students and staff as part of the evaluation survey, limiting knowledge of some features that may be important when considering implementation in schools. While it was reported by the CHD and RHG that provided the QPR trainings that the majority of the staff included general and special education teachers, principals, and counselors, this demographic information could not be verified through the evaluation surveys; subsequently preventing analysis of effects across staff roles as well. In addition, the surveys being archival meant that participant qualities, such as previous education or experience with suicide prevention trainings, exposure to working with a suicidal student, and interest in the subject matter, were not assessed. These are other variables that could impact the perception of a gatekeeper training's usefulness, value, and impact on knowledge, attitudes, or skill development.

Additionally, it is unknown what experiences or background the included schools may have had related to suicide/suicide prevention, and what their reasons were for seeking out QPR trainings. Background factors such as previous deaths by suicide within the school district, or administration that prioritizes mental health education, could also impact the culture and social validity around offering QPR in the schools and should be considered in future evaluations. It was also unknown whether participation in these trainings was voluntary or required by school administration, which could be another factor impacting perceived satisfaction with the training, and should be considered in future evaluations of suicide prevention gatekeeper trainings in the schools.

In addition, due to the archival nature of the trainings and surveys, little information is known about each presentation's fidelity to the training format. QPR does include standardization of the trainings, standardized core training slides, trainer certification with tri-annual booster sessions recommended, and the need for any changes to be approved by the QPR institute ("QPR Gatekeeper Training for Suicide Prevention," 2012). Despite this, no data was collected regarding the specific integrity of the program deliver for these trainings, which would have helped to assure each training, across both organizations, were given in the same way to all participants.

Survey Limitations

Another group of limitations relate to the survey methods used within this study. Since archival data was used, this study could only analyze information from the items pre-established in the QPR evaluation surveys used by the CHD or RHG groups as well as the methods used to collect the data. As a result, only the participants' perceptions could be used to evaluate the study outcome variables.

Additional questions that may have more effectively assessed social validity of the program and the constructs of knowledge, attitudes, and self-efficacy to intervene were not able to be added, limiting the range of the assessment. Furthermore, the current study was constrained to rely on perceived changes in knowledge and skills to ask about suicide based on the one-time post-assessment survey. Reliance on perceptions of change can be problematic because of concerns with validity and reliability of actual change in knowledge. When there is not an objective measure of knowledge, participants could be conceptualizing knowledge in different way or have an inaccurate understanding of whether their knowledge legitimately changed and skills improved. Others studies have used pre-tests and post-tests to more accurately evaluate changes in knowledge or skills that participants are expected to know after completing the training (Litteken & Sale, 2017). Other studies have asked participants to read vignettes and identify signs of suicidal behavior pre- and post-training to obtain an objective assessment of knowledge changes (Hamrick et al., 2004), which allows for a more objective assessment of change. The questions in the current study asked about knowledge and skills before and after the training in one evaluation survey, which was given at the end. Participants were not able to quantify their knowledge and skills at the beginning, and then quantify these items again at a later time. Participants may have felt a need to increase their scores for knowledge and skills due to seeing the scores right next to each other and feeling like that was the response that trainers desired from participants. A separate pre- and post-test may have helped with this factor. Utilizing a more systematic and concrete way to gauge changes in participants'

knowledge and skills learned from the training would enhance confidence that the training produced actual change.

The fact that the survey items evaluating social validity were only asked right after the training poses another limitation. Due to lack of training provided to teachers regarding suicide prevention (Hamrick et al., 2004; Scouller &Smith, 2002) and their self-reported discomfort with responding to a suicidal student (Westefeld et al., 2007; Hatton et al., 2017) it makes sense that immediately after a suicide prevention training school staff would respond positively. It may have been beneficial to complete a second, follow-up post-test evaluation survey a few weeks or months later to assess participants' perceptions of their knowledge, their skills, and the social validity of the training. A second post-test follow-up survey could allow time for participants to utilize the knowledge and skills learned in the training and reflect on whether QPR is considered a useful training to help with suicide prevention over a longer time period. Following up with participants 1, 3, or even 6 months post-training to determine if they found the training information useful during the time lapsed, and if they still felt knowledgeable and able to intervene, would strengthen confidence in the social validity of the program.

Another potential limitation within the current study that may be related to the survey is the social desirability bias. This bias occurs when individuals answer questions within a survey based on how their responses will be interpreted by others, rather than answering the questions honestly (Chan, 2020). This can lead to inflated scores for desirable factors participants assume researchers want to see. Van de Mortel (2008) completed a meta analysis and found that over half of studies that included scales that detect social desirability (n =31) had results that were influenced by social desirability

bias. Social desirability has also commonly been cited as a likely influence on results in evaluations of suicide prevention trainings (Flynn, et al., 2016; Lamis, Underwood, & D'Amore, 2017). It is plausible that participants in the QPR trainings for this study may have perceived any training for suicide prevention to be altruistic and beneficial to a school district. Rather than the positive results for social validity being specific for QPR, many suicide prevention trainings could be seen to have high social validity due the nature of suicide prevention trainings being presented as a way to help others. Future evaluations of QPR for the schools should include a measure of social desirability to ensure the positive effects observed are actually due to the training and not a social desirability response bias.

Suicide Research Limitations

One final area of limitations relates to challenges when studying effectiveness of suicide prevention programs. Researching concepts that relate to effectiveness of suicide prevention programs, such as social validity, can help give insight into the usability and program integrity, but are still not synonymous with effectiveness of the program. Within the current study, no comparison of the knowledge or ability to ask about suicidal ideation could be compared to schools that did not complete QPR. In order to better understand these factors, randomized clinical trial designs could be utilized to compare school districts where QPR was implement to school districts where it was not. Such designs strengthen confidence that the training program is producing the results and not other unaccounted for variables.

Analyzing suicide rates or the amount of students with suicidal ideation over time could also give further insight into understanding if QPR is effective at reducing suicides

and to see the long-range effects of a suicide prevention program. The current study was also not able to assess the effectiveness of increasing gatekeeper behaviors taught within the training as it did not evaluate participants' engagement in actual gatekeeping behaviors such as asking and referral. Future studies might want to consider collecting data on the frequency of staff or student check-ins about suicidal ideation, the amount of students who were detected at risk, or referrals to suicide resources/agencies before and after a QPR program is implemented within the school to better understand the impact of the training. While research on social validity can help give insight into aspects that make a suicide prevention program effective, additional research on the actual effectiveness of reducing suicide is needed.

Directions for Future Research

Replicating Findings

To date, no previous known studies have analyzed the social validity of QPR for both staff and students within middle and high school settings. While the results from the current study are promising, further research is needed to see of these findings will be consist across multiple settings and research studies. Future research could address some of the limitations that were seen in this study. For example, studies could adjust the methodology to include independent pre-tests, post-tests, and an additional follow-up-test at a later date to see if positive findings were maintained over time. Knowledge and skills could also be further quantified and assessed by using objective assessments like quizzes on concepts taught in the training, or having participants read vignettes and answer questions about suicidal warning signs and

next steps to follow. Additionally, many previous studies called for larger sample sizes when looking at QPR participants' or school staff's knowledge and skills related to suicide. While the current study sample was among the largest to date, 263 staff and 1,549 student participants, larger studies could still take place to help validate the findings. The generalizability of the current findings would also be greater with a more diverse sample that includes participants from multiple locations outside of northwestern Wisconsin.

Comparing Social Validity Across Other QPR & Gatekeeper Programs

Despite some previous research on QPR's effect on perceived knowledge and skills, little research has been completed on the social validity of QPR from the perceptive of middle and high school students and staff. Understanding the social validity of QPR may bring to light any differences between the QPR training that is typically utilized for adults and the adapted QPR training for youth. Additionally, the QPR social validity could be compared to other suicide prevention trainings that are used in schools, especially those that are more comprehensive in nature. An example of this is Hope Squad ("Hope Squad," n.d.), which has partnered with QPR to include components within their training, and provides selected students a more in-depth training on how to watch for at-risk students, provide friendship, look for warning signs, and seek help from adults. Hope Squad has been shown to have generally positive social validity with positive reviews (Rainock, 2018), and has also increased students' reported self-efficacy in a crisis, knowledge of suicide protocols, and referrals of suicidal youth to adults (Wright-Berryman et al., 2018; Wright-Berryman et al., 2019). Other trainings commonly used include Signs of Suicide ("Signs of

Suicide," n.d.), Sources of Strength ("Sources of Strength," n.d.), and ASIST

("ASIST Suicide Prevention," 2020). Studying the social validity across different

programs could help determine which programs feel most useful and acceptable to

staff and students. This could shed light on which trainings school staff and students

would be more likely to follow to fidelity, which could then impact the effectiveness

of a suicide prevention training in schools. Finally, other social-emotional-learning

programs in schools could also be analyzed to better understand their social validity

and to evaluate whether they also contribute to reducing suicide risk. This could

include programs commonly implemented like bullying prevention, drug and alcohol

deterrence, and aspects of the commonly used Positive Behavioral Interventions and

Supports (PBIS). As future research continues to understand the social validity of

different programs, more barriers may become unearthed, and researchers could

determine why some programs are not be implemented to fidelity or effectively. After

the barriers are identified, improvements can be put into place to help increase the

social validity, and hopefully the overall effectives of any programs that could

decrease rates of suicide.

Effectiveness of QPR

As previously mentioned, it can be challenging for researchers to complete

methodologically rigorous studies on the effectiveness of different suicide prevention

programs. Future studies in QPR could address some of the limitations noted within

the current study. More comprehensive studies could be completed to that include

control groups in a randomized clinical trial design, in order to better assess the

effects that of QPR. Additionally, collecting more meaningful data related to

effectiveness could help determine if QPR trainings are reducing suicidal ideation or deaths by suicide. This could include measuring rates of suicide, number of students with suicidal thoughts, or referrals to suicide resources/agencies. Additionally, studies could analyze similar data for schools using QPR trainings and schools using other suicide prevention programs to assess which program may be more effective. Future trainings could also look at the effectiveness of delivering QPR, or other suicide preventions trainings, when delivered whole grade levels of students, or even smaller cohorts of students who know each other (e.g., sports teams, theater club), to assess any difference in the effectiveness of the trainings when delivered to cohesive student groups versus general groups of students. As these factors are further researched, trainings may continue to evolve to become more effective at preventing suicide in youth.

SUMMARY

Suicide continues to be a national concern in the United States, with suicide recently becoming the second leading cause of death in children and young adults (Center for Disease Control and Prevention, 2018). Previous research has begun to look into best practices for suicide prevention trainings and understanding the effectiveness of prevention trainings used, particularly within school settings. QPR appears to be a valuable gatekeeper suicide prevention program (Matthieu, Cerel, & Knox, 2007; Cross et al., 2007; Litteken & Sale; 2017) and may also be beneficial for use in middle and high school settings. It has the ability to not only train staff, but also students, in how to engage with someone feeling suicidal and how to refer them to a mental health professional. The current study's findings indicate that QPR was well-received by both staff and students, and that both groups also feel that they increased their knowledge and skills and are better equipped to prevent suicide. Demonstrating the social validity and positive impacts of a training is important for guiding administrative decisions that determine which suicide preventions trainings to use in schools. As administrators decide, they should consider the training's social validity given that staff and students' buy-in to the program is important to the training's overall effectiveness. The current findings support the social validity of QPR for schools, but it is necessary for future research to confirm these social validity findings, as well as assess the true effectiveness that QPR has in decreasing deaths by suicides in middle and high school students. Despite the study limitations, the current findings begin to offer insight into the perspective of the staff and students that use the program, suggesting that QPR is a potentially valid and effective prevention

training for both staff and students, and may help to end current trends of high rates

of suicide in youth.

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Appendix A

County Health Department QPR Staff Survey

QPR Training Program Evaluation

Please indicate the extent to which you Agree or Disagree with each of the statements below: (Circle One)	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I feel that the overall program was well organized.	5	4	3	2	1
I feel that the instructor demonstrated thorough knowledge of the subject matter.	5	4	3	2	1
Overall, I feel the instructor presented the material well.	5	4	3	2	1
Before the training, I knew how to ask a person if he/she is feeling suicidal.	5	4	3	2	1
After the training, I know how to ask a person if he/she is feeling suicidal.	5	4	3	2	1
I feel able to help prevent suicide in my community.	5	4	3	2	1

Circle your age range:

<17   18-34   35-44   45-54   55-64   65-74   75+

Comments:

_____
_____
_____
_____
_____

Appendix B

Regional Hospital Group QPR Staff Survey

QPR Community Training
PROGRAM EVALUATION

How would you rate the overall program?
　Excellent　Good　Fair　　Poor

How would you rate the presentation?
　Excellent　Good　Fair　　Poor

Before attending the QPR program were you comfortable asking someone if they felt suicidal?
　Yes　No　Maybe

After attending the QPR program do you feel you are now able to ask someone you are concerned about if they are suicidal?
　Yes　No　Maybe

After attending this training, has your knowledge of available mental health resources increased?
　Yes　No　Maybe

Please list any workgroups, agencies, employers, community groups, or anyone else you feel could benefit from this type of training?

_____

_____

Circle your age range:
<17　18-34　35-44　45-54　55-64　65-74　75+

Do you have any suggestions for future speakers or topics focused on Mental Wellness?

_____

_____

Additional Comments:

_____

_____

Thank-you

Appendix C

QPR Student Survey

Youth QPR Training Program Evaluation

Your responses will be combined with those of the other participants and will be used to evaluate and make improvements on future classes. Fill out the evaluations indicates that you are willing to have your responses compiled and shared with other professionals who may learn from the results.

1. Before this class, would you have felt prepared to ask "the suicide question" if needed? (circle one)

Not prepared at all	A little prepared	Somewhat prepared	Quite a bit prepared	Very prepared
1	2	3	4	5

2. After this class, do you feel prepared to ask "the suicide question" if needed? (circle one)

Not prepared at all	A little prepared	Somewhat prepared	Quite a bit prepared	Very prepared
1	2	3	4	5

3. Would you tell an adult if someone you knew was considering suicide even if you believed they would be angry with you? (circle one)

       Yes   No   Not Sure

4. Would you recommend this training for other teens? (circle one)

       Yes   No   Not Sure

5. After this training do you have a better understanding of what resources are available if you or your friends needed help? (circle one)

       Yes   No   Not Sure

6. What suggestions do you have to help improve the training?

7. Other comments?

Thank you for your feedback!