Randomized Trial of Suicide Gatekeeper Training for Social Work Students

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Abstract

Problem: Education and research on social work’s role in suicide prevention is limited.

Methods: Seventy advanced MSW students were randomly assigned to either the training group (Question, Persuade, and Refer (QPR) suicide gatekeeper training) or the control group. Outcomes measured over time included suicide knowledge, attitudes toward suicide prevention, self-efficacy, and skills.

Results: Interaction effects suggest improvement among the intervention group with knowledge, efficacy to perform the gatekeeper role, and skills. Both groups improved over time for reluctance to engage with clients at risk for suicide, referral and gatekeeper behaviors. The intervention group reported improved knowledge of resources and perceived preparedness.

Conclusion: The QPR training is appropriate for social workers. Suggestions for enhancing the training and future research are discussed.

Keywords: suicide prevention, gatekeeper training, social work, students
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Suicide, the 11th leading cause of death in the U.S., results in more than 32,000 deaths each year (Centers for Disease Control [CDC], 2008). For every suicide death, there are an estimated 25 additional non-fatal suicide attempts, and a conservative estimate of 6 suicide survivors, including family members, friends, and professional counselors and other care providers (American Association of Suicidology, n.d.). Ten years ago, the U.S. Surgeon General declared suicide a major risk to public health (U.S. Public Health Service, 1999) and in collaboration with the U.S. Department of Health and Human Services (U.S. DHHS, 2001) developed goals and objectives comprising the National Strategy for Suicide Prevention (NSSP). Several task forces, comprising the National Action Alliance for Suicide Prevention, were recently formed to update and implement the goals and objectives of the NSSP. Goals Six and Seven of the NSSP focus on the need to train professionals to recognize suicide risk and to develop and implement effective suicide prevention and treatment practices.

Suicide does not discriminate and equally affects persons, families, and communities of all ages, racial and ethnic groups, genders, and religious beliefs (CDC, 2008). The majority of suicide deaths are preventable with accurate assessment of risk and intervention by professionals (Patterson, Dohn, Bird, & Patterson, 1983; U.S. DHHS, 1999; World Health Organization, 2005). Persons who die by suicide often see a health or mental health professional within weeks of dying (Goldsmith, Pellmar, Kleinman, & Bunney, 2002; Luoma, Martin, & Pearson, 2002). A majority of persons who die by suicide often present themselves to mental health professionals, suffering from depression or another mental illness or with substance abuse problems (Goldsmith et al., 2002; Gould & Kramer, 2001; Mann et al., 2005). Given the fact that social workers treat the majority of persons suffering from mental illness and substance abuse (Duffy et al., 2002), it
is logical that they will also treat or come in professional contact with a significant proportion of clients at risk for suicide. Approximately one-third of social workers will experience a client suicide death over the course of their career (Jacobson, Ting, Sanders, & Harrington, 2004; Feldman & Freedenthal, 2006; Ting, Jacobson, & Sanders, 2008), which is comparable to psychologists and only slightly lower than that of psychiatrists (Bongar, Cleary, & Sullivan, 2002; Brown, 1987; Chemtob, Bauer, Hamada, Pelowski, & Muraoka, 1989).

In addition to the high probability of working with clients at risk for suicide, clinical work with persons at risk for suicide has been referred to as one of the most challenging clinical tasks for social workers and other mental health professionals, contributing to negative reactions among treating professionals, such as burnout and compassion fatigue (Hendin, Haas, Maltsberger, Szanto, & Rabinowicz, 2004; Jacobson et al., 2004; Sanders, Jacobson, & Ting, 2005). Students and interns, who are just learning clinical interventions and may encounter a client at risk for suicide at their place of internship, often report higher levels of anxiety regarding working with clients at risk for suicide and feeling unprepared to talk with a client at potential risk for suicide (Brown, 1989; Kleespies, Penk, & Forsyth, 1993; Knox, Burkard, Jackson, Schaack, & Hess, 2006). Additionally, students and interns report fears of being blamed for client suicidal behavior, which can further decrease their sense of clinical competence (Chemtob, Hamada, Bauer, Torigoe, & Kinney, 1988; Jones, 1987; Menninger, 1991; Ting, Sanders, Jacobson, & Power, 2006).

To support clinicians who do challenging work with clients at risk for suicide, education, training, and on-going clinical supervision have been shown to prepare students and interns to work effectively with persons at risk for suicide (Cavanagh, Carson, Sharpe, & Lowrie, 2003; Knox et al., 2006; Spiegelman & Werth, 2005). Unfortunately, formal education and training to
recognize and respond to client suicide risk is lacking, not only in social work education, but also in psychology, psychiatry, nursing, and other helping professional programs (Bongar & Harmatz, 1989; Dickinson, Sumner, & Frederick, 1992; Feldman & Freedenthal., 2006; Jacobson et al., 2004). Failure to prepare novice professionals to work with clients at risk for suicide results in negative outcomes for both clients and professionals, with even more severe negative reactions reported among clinical students and interns (Bongar, 2002; Brown, 1989; Hendin et al., 2004; Kleespies et al., 1993; Knox et al; Ting et al., 2006).

In addition to preventing stress and anxiety among new professionals, training students to work professionally with clients at risk for suicide is considered an ethical responsibility by many researchers (Pisani, Cross, & Gould, 2011; Scheiber, Kramer, & Adamowski, 2003). Several professional organizations have responded to the need to develop practice standards for working with clients at risk for suicide (Jacobs & Brewer, 2004; Suicide Prevention Resource Center (SPRC), 2006), a formal training for suicide prevention (Gask, Lever-Green, & Hays, 2008; Jobes, 2006; Mann et al., 2005; McNeil et al., 2008; Shea, 1998; SPRC, 2006), and suicide gatekeeper training for professionals and non-professionals (Cross, Matthieu, Cerel, & Knox, 2007; Cross, Matthieu, Lezine, & Know, 2010; Mann et al., 2005; Pearce, Rickwood, & Beaton, 2003; Quinnett, 1995; Tierney, 1994).

As an introduction to suicide and suicide prevention for social work students, the Question, Persuade, and Referral (QPR) suicide gatekeeper training was selected based on its goals and supported outcomes reported in prior research. While not assessed specifically for use by social workers, the QPR gatekeeper training has been tested within settings in which social workers are often employed. For example, on college campuses, Muehlenkamp, Marrone, and Brown (2009) studies the effect of QPR for American Indian students and Tomkins and Witt
(2009) studied the use of QPR gatekeeper training with resident life advisors. Wyman et al. (2008) studied the use of QPR within K-12 school settings and Matthieu, Cross, Batres, Flora, and Knox (2008) studied the use of QPR to prevent suicide among veterans. Keller et al. (2009) studied QPR in a variety of settings within one southern state and focused outcomes among professionals and para-professionals, including but not limited to social workers, working within the settings of child welfare, juvenile justice, health, and education. Specially, the QPR training has been shown to improve attitudes toward suicide prevention that are sustained over time and increase intentions among participants to assist persons at risk for suicide (King & Smith, 2000; Quinnett, 1995; Wyman et al., 2008). Prior research also suggests that professionals who hold negative attitudes toward persons at risk for suicide can lead to challenges connecting empathically with clients at risk for suicide and intervening effectively to prevent suicide (Duberstein et al., 1995; Herron, Ticehurst, Appleby, Perry, & Cordingley, 2001; Pompili, Girardi, Ruberto, Kotzalidis, & Tarelli, 2005). For example, Herron et al. (2001) reported that mental health professionals who agreed with the statement, “suicide prevention is not my responsibility” also reported less acceptance and integration of suicide prevention training into their practice.

Suicide gatekeeper training is one popular method for training professionals and para-professionals about suicide and suicide prevention. The introductory level QPR training covers information on basic suicide awareness and prevention or intervention skills (Quinnett, 1995). Despite its popularity, QPR gatekeeper training has received only limited empirical evaluation, and it has not been tested with social work students (Wyman et al., 2008). The majority of studies evaluating QPR training has been conducted among diverse samples, consisting of some social workers, but not the majority. Social work’s core values and Code of Ethics (National
Association of Social Work, 2008) with a focus on confidentiality and self determination make the profession unique in its potential intervention and direct practice with clients at risk for social work; therefore, one cannot assume that based on prior research with non-social work populations, that the QPR training will adequately prepare social work students to work with clients at risk for suicide. Researchers have identified this gap in education and have called for suicide education programs and training to be tested with social work students and other professional social work samples (Feldman & Freedenthal, 2006; Mann et al., 2005; Oordt, Jobes, Fonseca, & Schmidt, 2009; Pisani et al., 2011; Sanders et al., 2008). In response to this need for formal training within social work education, the present study reports results from a randomized trial used to assess knowledge, attitudes, and behaviors resulting from completion of the QPR suicide gatekeeper training (Quinnett, 1995). This study included a longitudinal follow-up data collection point to assess sustainability of changes six months after training. The specific research questions included:

1) Are there differences in suicide knowledge, attitudes toward suicide prevention, and practice skills to assess and respond to suicide risk between students who completed the QPR gatekeeper training (intervention group) and students who were not offered the training (control group)?

2) After completing the QPR training, is there a change over time in social work students’ knowledge of suicide and suicide prevention, attitudes toward suicide prevention, and practice skills to assess and respond to client suicide risk?

3) How satisfied were students with the QPR gatekeeper training, and what, if any, additional feedback about the training did the students share with the researchers?
Did students share the QPR training material with others at their internship or school (i.e. diffusion of innovation)? If so, how was the material received by others?

Method

Research Design and Sample

The researchers assessed outcomes described above from the QPR suicide gatekeeper training (Quinnett, 1995) using a randomized controlled trial with students enrolled at the University of Maryland, Baltimore School of Social Work (SSW). After receiving approval from the University of Maryland Baltimore, Institutional Review Board (IRB), the researchers randomly selected 112 MSW students from a possible population of 417 MSW students, to participate. Inclusion criteria included: students had to be enrolled in their concentration (or advanced) year of their MSW program at the time of the study, in addition to entering their advanced or second year field placement. The researchers focused on second year students to ensure that students would have an opportunity to practice QPR skills within the six-month follow-up time period in their field placements. First year students do not always have opportunities to work directly with clients during the first few months of their field placement; thereby, limiting the potential to use QPR skills with clients at risk for suicide. Invitations to participate were sent to students’ university emails, and students who agreed to participate were asked to complete an online pre-test survey ($n = 75$ or 67%). Seventy two (96% of students who agreed to participate) completed the pre-test (T1), and the researchers randomly assigned participants to one of two groups: intervention (QPR training) or control (no training) group. The study Co-PI/statistician used a random number generator to assign each participant a number between 0-100; odd numbered cases were assigned to the intervention group, and even numbered cases were assigned to the control group. The principal investigator (PI) then sent a confirmation
email to all students letting them know which group they were assigned to and when and where the training would take place.

Thirty-eight students were assigned to the control group, and 35 students were assigned to the intervention group. Demographic information for the two groups is summarized in Table 1 along with comparison data for the overall advanced student body of the MSW program. Students in the control and intervention groups were primarily female (97.4% and 90.9%, respectively) and Caucasian (68.4% and 63.6%). Both groups had similar compositions in terms of age \( M = 31.4 \ (SD = 11.12) \) for the control group versus \( M = 29.4 \ (SD = 7.92) \) for the intervention group. Slightly more than one quarter (28.9%) of students in the control group were advanced standing status as compared to 24.2% in the intervention group. There were a higher proportion of students concentrating in clinical, as compared to management and community organizing (MACO) within the control group (89.2%) as compared to the intervention group (81.1%). The percentage of students reporting provision of direct client services in the control group (92.1%) was also higher than that of students in the intervention group (78.8%).

As compared to the broader MSW student body, participants versus non-participants were similar on major demographics. There were a higher percentage of Caucasian students in the study sample compared to the overall student body. There were proportionally more clinical students in the sample than the whole advanced student body at the SSW, and there was an over-representation of advanced standing students in the study as compared to the general student body.

_QPR Gatekeeper Training and Procedures_
Students randomly assigned to the intervention group attended one of two trainings. The trainings were 90 minutes in length and delivered by the same trainer who was certified by the QPR Institute. The training covered the following topics: suicide rates and statistics across the lifespan, suicide warning signs, risk factors, and protective factors, procedures regarding how to ask about suicide risk, instructions for persuading clients at risk to seek additional help, and local and national referral resources for support and response to suicide risk.

In order to support the fidelity of the training and to facilitate post-test data collection, a research team member was present at each of the two QPR trainings. The researcher completed an observation fidelity checklist that was modified from Wyman et al.’s (2008) training checklist to record the overall flow of the training and how it was perceived by participants. Both trainings covered the same material and were received similarly by student participants.

Immediately following completion of the QPR training, participants were instructed to complete the post-test survey and turn in their completed survey to the researcher. Six months following the training, participants in both study groups were emailed by the PI and prompted to complete the online follow-up survey. The PI also sent two reminder emails encouraging participation. As an incentive, participants were entered into a raffle with a chance to win an electronic reader after completing all of the surveys. Following data collection, participants in the control group were also offered the opportunity to complete the QPR training online at no cost. All data were analyzed using PASW statistics software (v. 18.0.0, 2009).

**Measures**

**Knowledge about suicide and suicide prevention.** The researchers measured three types of knowledge regarding suicide and suicide prevention: *Knowledge of Suicide Warning*
Signs and Intervention Behaviors, Self-Evaluation of Suicide Prevention Knowledge, and Knowledge of Institutional Resources.

To assess declarative or factual knowledge about suicide prevention, the researchers used a standardized 14-item self-report measure developed by Wyman et al. (2008) for use of suicide prevention within school settings. The Knowledge of Suicide Warning Signs and Intervention Behaviors scale is comprised of 8 questions focused on knowledge related specifically to the QPR training and 6 questions focused on suicide risk factors. Responses were scored as correct or incorrect, and the total score is summed from the percentage of correctly answered questions. Items for this scale were reviewed by an expert panel for content validity (Wyman et al., 2008).

The researchers developed an open-ended question that asked students to list as many risk factors and warning signs of suicide as possible. Scoring was based on criteria established by the U.S. Centers for Disease Control (2010) and the National Strategy for Suicide Prevention (U.S. DHHS, 2001). Students received one point for each correctly identified risk factor or warning sign from a list of 25 possible points.

In addition to factual knowledge, the researchers measured perceived knowledge using a 9-item scale, the Self-Evaluation of Suicide Prevention Knowledge, which assesses how participants personally evaluate their level of knowledge regarding clinical work with clients at risk for suicide (Wyman et al., 2008). In the present study, the researchers modified, with permission, the existing scale for use within a social work practice setting. Participants respond to each item using a 7-point scale ranging from 1 (nothing) to 7 (very much). Responses are then summed for a total scale score, with higher values suggesting increased knowledge. The scale has displayed good internal consistency [Cronbach’s $\alpha = .97$ (reported) and .94 (observed)].
To assess **Knowledge of Institutional Resources**, the researchers used a 4-item scale developed by Wyman et al. (2008). Individual scale items ask about knowledge of suicide prevention materials, resources, and policies within an organization or for this study, the students’ internship setting. Participants’ responses are coded as either *Yes* or *No*, and a total score is calculated using the total number of positive responses. Higher scores suggest greater knowledge of institutional resources. This scale has displayed acceptable internal consistency [Cronbach’s $\alpha = .74$ (reported) and .82 (observed)].

**Attitudes to suicide prevention.** The researchers used the *Attitudes to Suicide Prevention Scale* (ASP; Herron et al., 2001) to assess stigma regarding suicide and suicide prevention. This scale has been used with other professional and para-professionals samples (Brunero, Smith, Bates, & Fairbrother, 2008; Herron et al., 2001). The ASP has 14 items that are answered using a 5-point rating scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The researchers recoded individual responses and then summed the scale, so that higher scores indicate more positive attitudes toward suicide prevention. The scale has demonstrated acceptable reliability [Cronbach’s $\alpha = .77$ (reported) and .75 (observed)] and validity.

**Perceived preparedness.** The researchers used scales developed by Wyman et al. (2008) to assess self-efficacy and perceived ability to utilize suicide prevention within one’s field placement. The first scale is the *Perceived Preparedness for Gatekeeper Role*, which consists of 8 items, designed to assess participants’ self assessment of preparedness to perform suicide prevention activities. Responses are provided using a 7-point rating scale ranging from 1 (*nothing*) to 7 (*very much*). A total score is reported as the mean of all items with higher scores suggesting greater perceived preparedness. The *Perceived Preparedness for Gatekeeper Role*
scale has demonstrated high internal consistency [Cronbach’s $\alpha = .94$ (reported) and .94 (observed)].

The second scale used, also developed by Wyman et al. (2008), was the *Efficacy to Perform Gatekeeper Role* scale. This scale is comprised of 7-items designed to assess perceived efficacy to perform suicide prevention activities (Wyman et al., 2008). Participants are instructed to respond to items using a 7-point rating scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A total score is computed as the mean of all items after recoding responses per the developers’ instructions (Wyman et al., 2008). Higher scores indicate greater perceived efficacy, and the scale has good reliability [Cronbach’s $\alpha = .80$ (reported) and .72 (observed)].

The third scale within the perceived preparedness construct was the *Reluctance to Engage with Suicidal Clients* scale, which is comprised of 8 items designed to address a participants’ reluctance to engage in suicide prevention activities (Wyman et al., 2008). Items are scored on a 7-point scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A total score is computed as the mean of all items after recoding responses per the developers’ instructions; higher scores indicate greater reluctance. Internal consistency meets the minimum requirement [Cronbach’s $\alpha = .68$ (reported) and .63 (observed)].

**Working with clients at risk for suicide.** To assess the frequency in which students experienced contact with clients at risk for suicide at their placement, the researchers asked a series of practice-related questions, including the average number of individuals, couples or families, and groups they worked with on average, per week, as well as the average number of hours per week spent providing direct client services. Exposure to clients at risk for suicide was assessed with a single question asking students to identify the number of times they thought a client’s behavior might suggest they were at risk for suicide considering suicide.
**Suicide prevention behaviors.** To assess suicide risk assessment behaviors, the researchers used the *Asking Clients about Suicide in Response to Warning Signs*, a 6-item scale that measures participants’ behaviors regarding asking clients about suicide and responding to client suicide behavior when signs and symptoms of depression were present (Wyman et al., 2008). Responses were coded using a 5-point rating scale ranging from 1 (*never*) to 5 (*always*), with higher total scores suggesting more frequent use of suicide risk assessment behaviors. Internal consistency for the scale was high Cronbach’s $\alpha = .94$ (reported) and .83 (observed).

Due to the high correlation between depression and suicide, the researchers also used the *Asking Depressed Clients about Suicide* scale (Wyman et al., 2008) to assess how often social participants asked their clients about suicide when depression was identified. This scale uses the same 5-point rating scale described above and had fair reliability [Cronbach’s $\alpha$ for the depression subscale was .77 (reported) and .65 (observed)]. Similar to the assessment scale above, higher scores suggested more frequent assessment behaviors.

To assess referral practices, the researchers used the *Appropriate Referral of a Suicidal Client* scale (Wyman et al., 2008). Participants responded to two items asking them whether they had referred a client they identified as suicidal or at-risk for suicide. A score is calculated as either 0 (*No*) or 1 (*Yes*). This scale has demonstrated high internal consistency [Cronbach’s $\alpha = .94$ (reported) and .93 (observed)].

The researchers used the *Use of Gatekeeper Behaviors with Suicidal Clients* scale, comprised of 7 items to assess use of suicide gatekeeper behaviors related to safety protocols (Wyman et al., 2008). Participants responded to individual items using a 5-point rating scale with response categories ranging from *Never* (1) to *Always* (5), and the mean of all items is used as a total score. Higher scores indicate behavior that is more frequent. The referral behaviors
scale has demonstrated high internal consistency [Cronbach’s $\alpha = .94$ (reported) and .93 (observed)].

To gain a more comprehensive picture of how students used the skills learned during the QPR training when they encountered a client who might be at risk for suicide, the researchers asked the following open-ended questions: *Have you encountered a client at your field placement who expressed suicidal thoughts or ideation? If yes, what happened? Briefly describe the outcome.* Two research team members read through the students’ responses to these questions to identify patterns and trends. Response categories were created by grouping individual students’ responses into thematic categories or codes (Charmaz, 2006; Patton, 2002; Ryan & Bernard, 2003). Any category mentioned by at least 2% of respondents received its own code (Mayring, 2004).

**Satisfaction with the QPR Training and Diffusion of Innovation.** To assess satisfaction with the QPR training, the researchers used two questions modified by the QPR Institute. The first question asked *Would you recommend the QPR training to another social work student?* *(Yes or No)* and the second question asked *How satisfied were you with the QPR training?* Students responded using a 5-point scale ranging from *Very Dissatisfied* (1) to *Very Satisfied* (5). The researchers used the same coding process described above to analyze responses to this open-ended question.

To assess potential diffusion of innovation, the researchers asked students a series of questions modified from Cross et al. (2007). Specifically, students were asked *Did you share the training materials with another person? If so, whom and what was their response to the training materials?* The researchers used the same coding process described above to analyze responses to this open-ended question. Once the data were categorized and coded from the three open-
ended questions listed above, emerging themes were named: managing client suicide risk, satisfaction with QPR training, diffusion of innovation, and overall training feedback.

**Results**

Prior to analyses of primary outcomes, all data were screened for completeness and assessment of statistical assumptions. Overall, eight cases (11%) were missing data at T3. Missing data were determined to be missing completely at random (MCAR) based on Little’s Test of MCAR (Little, 1988). Given this finding, the researchers decided to use listwise deletion to handle cases with missing data, as this procedure only utilizes observed data; when data are MCAR, listwise deletion yields unbiased and efficient estimates (Allison, 2001). Statistical assumptions of homogeneity of variance between intervention and control groups and linearity were assessed and met for all study variables. Tests of normality were significant for nearly half of the study variables at one or more time points; however, descriptive statistics indicated that skewness and kurtosis were within acceptable ranges (±1 and ±3 respectively) for all variables, suggesting minimal impact on results.

**Knowledge about suicide and suicide prevention**

A series of three mixed-model repeated measures analysis of variance (RMANOVA) were conducted to test the hypotheses of no difference in mean scores across time from T1 to T3, between the intervention and control groups, or in the interaction of Time by Group. Descriptive statistics are summarized in Table 2. For the **Knowledge of Suicide Warning Signs and Intervention Behaviors** scale, a significant interaction was detected between Time and Group \( (F_{(1,61)} = 10.46, p = .002, \eta^2_p = .15) \). Using a Bonferroni adjusted \( \alpha \) of .025, post hoc analyses of simple effects indicated that although there was no difference between mean percent correct responses for the two groups at T1 \( (t = .97, p = .34) \). Students in the QPR training scored 77.4%
(SD = .07) correct responses at T3 compared to 72% (SD = .09) correct responses for students in the control group (t = -2.56, p = .01, Cohen’s d = -.63).

Analysis of scores for the Risk Factors List indicated a significant main effect for Time ($F_{(1,47)} = 45.47, p = .003, \eta^2_p = .18$) but not for study Group ($F_{(1,47)} = 1.19, p = .61$) or the interaction of Time by Group ($F_{(1,47)} = .42, p = .52$). Scores on the Risk Factor List can range from 0-25 correct responses. On average, the number of correct risk factors listed increased from 5.75 (SD=1.86) at T1 to 7.06 (SD=2.95) at T3.

The RMANOVA of scores Self-Evaluation of Suicide Prevention Knowledge yielded a significant interaction effect for Time by Group ($F_{1,60} = 14.75, p < .001, \eta^2_p = .197$). Using a Bonferroni adjusted $\alpha$ of .025, post hoc analyses of simple effects revealed that although scores for the two groups were not different at T1, there was a significant difference at T3 ($t = -2.47, p = .016$, Cohen’s $d = -.63$). Self-Evaluation of Suicide Prevention Knowledge uses a scale range of 1-7, with higher scores reflecting greater perceived knowledge. The mean score for the intervention group at T3 was 5.18 (SD = 1.33) compared to 4.43 (SD = 1.05) for the control group.

The Knowledge of Institutional Resources for Suicidal Clients scale utilizes a 0-1 range, with higher values indicating greater knowledge of institutional resources. Results of the RMANOVA were statistically significant for the interaction effect of Time by Group ($F_{1,58} = 5.15, p = .027, \eta^2_p = .08$). Using a Bonferroni adjusted $\alpha$ of .025, post hoc analyses of simple effects revealed that although scores for the control group did not change over time ($t = -.52, p = .60$), scores for the intervention group had a statistically significant ($t = -4.23, p < .001$, Cohen’s $d = -.62$) increase of .23 points from T1 ($M = .32, SD = .35$) to T3 ($M = .55, SD = .39$).

**Attitudes to suicide prevention**
A series of RMANOVA was conducted to test for main effects of Time and Group assignment, as well as the interaction of Time by Group, for each of the four measures of attitudes about suicide prevention. Descriptive statistics are summarized in Table 2. Results of the analysis of scores on the *Attitudes to Suicide Prevention (ASP)* scale showed no significant effects for Time ($F_{1,60} = 3.68, p = .06$), Group ($F_{1,60} = 1.26, p = .27$), or the interaction of the two factors ($F_{1,60} = 1.35, p = .25$).

A significant main effect was found for Time ($F_{1,59} = 87.76, p < .001, \eta^2_p = .598$) and for Group ($F_{1,59} = 4.38, p = .04, \eta^2_p = .07$) for *Perceived Preparedness for Gatekeeper Role*; the interaction effect of the two factors was not significant ($F_{1,59} = 3.02, p = .09$). Scores on the scale can range from 1-7, and higher scores indicate greater perceived preparedness. On average, scores for *Perceived Preparedness* increased 1.36 points from T1 ($M = 3.35, SD = 1.28$) to T3 ($M = 4.71, SD = 1.38$). Mean score for *Perceived Preparedness* for participants receiving the training was 4.36 points ($SD = 1.23$) compared to 3.76 ($SD = 1.32$) for participants who did not receive the training.

A significant interaction effect for Time by Group ($F_{1,61} = 8.27, p = .006, \eta^2_p = .12$) was found for scores on the *Efficacy to Perform Gatekeeper Role* scale. Using a Bonferroni adjusted $\alpha$ of .025, post hoc analyses of simple effects indicated that although there was no statistical difference in scores between the two groups at T1 ($t = -1.14, p = .89$), the difference in mean score at T3 was statistically significant ($t = -2.55, p = .01$, Cohen’s $d = -.65$). Scores on the scale can range from 1-7, with higher scores indicating greater efficacy. Students receiving the training ($M = 4.71, SD = .61$) scored, on average, .47 points higher than students who did not receive the training ($M = 4.24, SD = .82$).
Analysis of scores on the *Reluctance to Engage with Suicidal Clients* scale revealed a statistically significant main effect for Time ($F_{1,61} = 10.31$, $p = .002$, $\eta^2_p = .14$) but not for Group ($F_{1,61} = .001$, $p = .97$) or the interaction of Time and Group ($F_{1,61} = 1.74$, $p = .19$). Scores on the scale can range from 1-7, with higher scores indicating greater reluctance to engage with suicidal clients. The mean score at T1 was 2.46 ($SD = .62$), approximately .29 points higher than the mean score at T3 of 2.17 ($SD = .68$).

**Working with clients who are suicidal**

The majority of students (78.3%, $n = 47$) reported providing some type of direct client service in their field placement at T3. Of these 47 students, two-thirds (63.3%) reported seeing 4 or more individual clients weekly, 66% indicated they provided services to at least one couple or family weekly, and 88.8% led or co-led at least one group weekly. The amount of time spent providing direct client services ranged from 3-30 hours weekly with a mean of 13.17 hours ($SD = 7.15$). At T3, approximately 71% of respondents ($n = 35$) indicated they had encountered at least one client at their current field placement in the previous 6 months whose behavior suggested she or he was considering suicide.

**Suicide prevention behaviors**

A series of analyses was conducted to test for main effects of Time and Group assignment, as well as the interaction of Time by Group, for each of the four measures of suicide prevention behaviors. Descriptive statistics are summarized in Table 2. The *Asking Clients about Suicide in Response to Warning Signs* scale is scored on a 1-5 scale with higher values indicating behavior that is more frequent. Results of the analysis revealed a significant interaction effect between Time and Group ($F_{1,58} = 5.72$, $p = .02$, $\eta^2_p = .09$). Using a Bonferroni adjusted $\alpha$ of .025, post hoc analyses of simple effects revealed that although scores for the
control group did not change over time ($t = -1.55$, $p = .13$), scores for the intervention group had a statistically significant ($t = -4.20$, $p < .001$, Cohen’s $d = -.75$) increase of .91 points from T1 ($M = 1.84$, $SD = 1.00$) to T3 ($M = 2.76$, $SD = 1.41$).

Similar results were obtained in the analysis of scores on the *Asking Depressed Clients About Suicide* scale. The RMANOVA results indicated a significant interaction effect between Time and Group ($F_{1,57} = 5.93$, $p = .018$, $\eta_p^2 = .09$). Using a Bonferroni adjusted $\alpha$ of .025, post hoc analyses of simple effects revealed that although scores for students in the control group did not change over time ($t = .38$, $p = .74$), the mean score for students receiving the QPR training significantly increased ($t = -3.44$, $p = .002$, Cohen’s $d = -.82$) from 3.36 points ($SD = 1.70$) at T1 to 4.59 points ($SD = 1.26$) at T3.

Analysis of the *Appropriate Referral of a Suicidal Client* questions indicates the percentage of students who reported making a referral for a suicidal client in the past 6 months (at T1) or past 4 months (at T3). Based on chi-square analyses, no differences were found in referral patterns between students in the control and intervention groups at T1 ($x^2 = .03$, $p = .86$) or T3 ($x^2 = .32$, $p = .57$). There was, however, a difference between T1 and T3 ($x^2 = 8.43$, $p = .004$, $\varphi = .37$), with the percentage of students who reported making a referral increasing from 18% to 42.6%.

RMANOVA results for scores on the *Use of Gatekeeper Behaviors with Suicidal Clients* scale yielded a statistically significant main effect for Time ($F_{1,58} = 16.41$, $p < .001$, $\eta_p^2 = .22$) but not for Group ($F_{1,58} = .20$, $p = .65$) or the interaction of Time and Group ($F_{1,58} = .47$, $p = .49$). Scores on the scale can range from 1-5, with higher scores indicating greater use of gatekeeper behaviors. The mean score at T1 was 2.17 ($SD = 1.48$), approximately .78 points lower than the mean score at T3 of 2.95 ($SD = 1.64$).
Managing Client Suicide Risk

To assess student experiences with suicidal clients, participants in both study groups were asked, “Have you encountered a client at your field placement who expressed suicidal thoughts or ideation? If yes, what happened? Briefly describe the outcome.” Participants from both groups appeared to be able to recognize symptoms of suicide. For example, one student stated, “An ongoing therapy client stated that his physical symptoms due to his chronic medical condition were so bad over the previous weekend that, if he had a means of suicide nearby, he would have completed it.” Another student commented, “A few nights ago a colleague divulged to another colleague that she had attempted suicide through a drug overdose.”

Critical to a social workers’ ability to intervene with clients at risk for suicide is their ability to identify suicide risk, but also to incorporate risk into a risk management and response plan to encourage safety for their client. After identifying clients as being at risk for suicide, students reported developing safety plans with their clients. One student who worked with a client at risk for suicide stated, “I contracted a plan for safety for the week and instructed her to call me or 911 if she was having these strong feelings again.” Another student stated, “after realizing the seriousness of my clients suicidal ideation I attempted to have her complete a safety plan.”

Students in both groups, but more so in the intervention group, reported incorporating the family into the client’s safety plan to prevent suicide. For example, one student stated,

We also enlist the support of family members and friends if they are available to ensure that the patient will have good support prior to returning home. While in the hospital, we always ask law enforcement or family members to remove any dangerous weapons, such as firearms, from the home before patient's return.
About 50% of participants reported interning in social work field placements defined as crisis intervention settings (e.g., emergency room, crisis hotline, psychiatric hospital, etc.) and therefore, they did not need to refer clients at risk for suicide to other community organizations for crisis intervention. However, students from both groups reported making crisis referrals outside of their agencies for clients at risk for suicide, when additional services were necessary. Referral behaviors included providing clients with resources about community mental health services and other crisis hotlines. For example, one student reported, “if they [clients] do not meet criteria for inpatient admission, we still give them the information for BCRI and other suicide resources, and tell them to return to the ER if they feel that their symptoms have increased.” Students also reported that following referrals, clients often reported being hospitalized, referred for medication, referred for long-term treatment, or observed to have a significant decrease in symptoms.

**Satisfaction with QPR Training**

Following completion of the QPR training, students in the intervention group were asked to rate their overall satisfaction with the training. Scores could range from 1-5, with higher values indicating greater satisfaction. The observed mean for the study sample was 4.15 (SD=.97). At the conclusion of the study (T3), students who completed the training were asked whether they would recommend the training to another social work student. The overall response was positive, with 87.1% of participants indicating they would recommend the training to another student.

**Diffusion of Innovation**

Participants reported sharing the QPR training materials with a variety of people including other students, co-workers, and field site supervisors. Students reported positive
feedback overall from those with whom training materials were shared and one student stated, “they thought the materials were helpful and made copies for themselves.” While many recipients found the training materials helpful and informative, four participants reported that the response from the person they shared materials with was not positive. For example, one student stated “they [the person with whom materials were shared] liked it but thought it was not very different from other materials that are offered in other programs.”

**Additional Training Feedback**

One additional open-ended question asked participants for any other comments or feedback they had regarding the training. The following quotes reflect student perceptions regarding the usefulness of the training and recommendations for future suicide prevention education within social work. Students reported that they found the training “helpful” and suggested that it be integrated within the broader social work curriculum. Additional comments regarding the overall training included, “I think the training should be recommended for all social work students and faculty,” ….“It was a good training to help all of us remember how vital our roles are in asking questions and meeting people where they are when dealing with various life situations.”

Not all students found the QPR training helpful and some students provided critical feedback. For example, some students reported wanting a more advanced training geared specifically toward social work professionals. For example, one student stated, “I did not feel that the QPR training was appropriate for MSW students. We need something that is appropriate for professionals to use. QPR seems more appropriate for lay people who are referring to professionals.” Another student stated,
I did not feel this training was geared towards a future clinician but rather, lay people. I agree that it is important to educate lay people to recognize the signs and symptoms of suicide risk, but I did not feel I learned anything specific to my clinical practice with clients who are at suicide risk.

**Discussion and Application to Social Work**

The researchers were successful in implementing a QPR suicide gatekeeper training for MSW students enrolled in their second year of graduate education. Overall, the majority of students who completed the training were satisfied with it and reported they would recommend the training to a peer or colleague. While satisfaction with training is a positive result, it is more important to consider the actual outcomes resulting from the training with regard to knowledge, attitudes, and skills. A brief summary of the results, organized according to research question, follows this paragraph.

The first research question asked, *Are there differences in suicide knowledge, attitudes toward suicide prevention, and practice skills to assess and respond to suicide risk between students who completed the QPR gatekeeper training (intervention group) and students who were not offered the training (control group)?* Compared to the control group, results suggest, with a moderate effect, that students in the intervention group showed significantly more improvement in the following areas: knowledge of suicide warning signs and intervention behaviors, self-evaluation of suicide prevention knowledge, efficacy to perform the suicide gatekeeper role, and suicide prevention behaviors including asking clients about suicide in response to warning signs and asking depressed clients about suicide. Positive outcomes regarding training impact on suicide knowledge, perceived appraisals or self-efficacy to perform as a suicide gatekeeper, and interventions designed to increase interaction with persons at risk for
suicide have been identified in prior research, evaluating the QPR and other similar gatekeeper training programs (Chagnon, Houle, Marcoux, & Renaud, 2007; King & Smith, 2000; Matthieu, Cross, Batres, Flora, & Knox, 2008; Tierney, 1994; Wyman et al., 2008). Given the likelihood that social workers, including students, will encounter a client at risk for suicide, the results suggest that the QPR gatekeeper training may contribute to improved skills with regard to feeling more prepared to identify and inquire about suicidal behavior. Additionally, the QPR gatekeeper training contributed to empowering social work students to feel more confident in their suicide prevention knowledge and skill-set, which ultimately should lead to decreased anxiety about working with clients at risk for suicide and better client outcomes.

The second research question asked *After completing the QPR training, is there a change over time in social work students’ knowledge of suicide and suicide prevention, attitudes toward suicide prevention, and practice skills to assess and respond to client suicide risk?* While the interactions between the two groups were not significant, improvements over time were observed among the intervention group and not the control group, with regard to the following outcomes: a moderate effect was observed for knowledge of institutional resources for suicidal clients and a large effect was observed for perceived preparedness for the suicide gatekeeper role. Similar results suggesting improvement in knowledge and perceived ability to intervene as a suicide gatekeeper following completion of the QPR gatekeeper training have been reported in prior evaluation studies with non-social work samples (Cross et al., 2007; Cross et al., 2010; Matthieu et al., 2008; Wyman et al., 2008). Future research should further assess the impact of QPR gatekeeper training and trainings modified for social work education on various types of suicide knowledge, skills, and attitudes.
Both groups significantly improved over time with a moderate effect observed, with regard to reluctance to engaging with suicidal clients, appropriate referral of suicidal client, and use of gatekeeper behaviors with suicidal clients. While these results are in a positive direction, there is no way to determine if the results are due to the intervention, experience with clients at risk for suicide at field, classroom learning, or a combination of all of the above. There were no significant changes reported for attitudes to suicide prevention reported in either group.

A significant percentage of students in both groups reported having worked with clients at risk for suicide within the six months preceding the follow-up survey. When asked to describe what happened using an open-ended question, students from both groups reported feeling competent to identify warning signs for suicide and to respond to client suicide risk. Students from the intervention group; however, were more likely to report integrating family support within the suicide safety plan, a skill taught during the QPR training.

As mentioned earlier in this section, the majority of students who completed the QPR training reported being satisfied with the training. When asked to provide additional feedback about the training at T3, 96% of intervention participants reported that they found the QPR handouts helpful, and that the training should be made available for all students or even added to the regular social work curriculum. Among the subset of students \( (n = 17) \) in the intervention group that encountered a client experiencing suicidal thoughts, 80% indicated they believed the QPR invention helped save the client’s life. Several students commented that they wanted additional training that went beyond the basics of suicide prevention and would be tailored more for professional social workers and social work settings.

With regard to diffusion of innovation, 25 out of a possible 33 students in the intervention group answered the question asking if they shared training material with another person. Of
those that responded to this question, 36% (n = 11) reported positively that they shared the training materials with someone else, including classmates, co-workers, and supervisors. All but one student reported that the persons with whom the information was shared responded positively and some recipients made copies for themselves. Two participants noted that recipients of the training material commented that it was not notably different from other suicide prevention trainings they had completed.

As with any research study, there are both strengths and limitations to the research. The use of a random sample of advanced MSW students, who were randomly assigned to one of two study conditions (control or intervention group), was a strength of this study. Overall, the study sample was characteristic of the school’s current student body, and attrition from the study was very low; however, it must be noted that study participants may differ in important but unidentified ways from students who did not participate in the study. The ability to assess changes over time using a six month follow-up survey was another strength of this study; however, the inability to observe actual social practice and the reliance on self-report is a limitation of the study. Additionally, it is not clear that the training actually changed clinical behaviors among students in the experimental group as there could have been other factors influencing behavior that were not measures. While some results suggested significant improvement for the intervention group, others results suggested improvement on key outcomes among students from both groups. The researchers could not determine if these latter results were a result of the training, possible diffusion of the intervention, classroom education, or experience within the students’ field placement, or a combination of all of the above. The researchers cannot generalize results to students from other MSW programs.
The limitations should not eclipse the strengths of this study, as it represents the first empirical study to assess outcomes from a suicide gatekeeper training with a social work student sample. Additionally, the randomized control design used in the study, in addition to the standardized measures adds to the foundation of knowledge and development of evidence-based intervention within the social work and broader suicide prevention fields. Results suggest that the QPR gatekeeper training is useful as an initial training to prepare MSW students to recognize and respond to client suicide risk. Future research should assess if the QPR can be used with first-year social work students, possibly through orientation for fieldwork to prepare them to work with clients at risk for suicide who may present to them during their foundation year of field. Based on the likelihood that these students will be employed within settings where they will need to provide additional services after recognizing suicide risk, it is important that future researchers consider evaluation of more comprehensive trainings for social work students using professional trainings such as the Assessing and Managing Suicide Risk (AMSR; SPRC: http://www.sprc.org/training/institute/index.asp) or the Recognizing and Responding to Suicide Risk (RRSR; American Association of Suicidology: http://www.suicidology.org) to name just two examples. Additionally, tailoring such training to social work settings and resources available to social workers and their clients to prevent suicide is also recommended as a next step.
References


PASW Statistics. (July 30, 2009). PASW statistics 18 (Release 18.0.0) [computer software]. IBM.


Table 1

*Student and Sample Demographics*

<table>
<thead>
<tr>
<th></th>
<th>Study Sample</th>
<th>2010 Advanced MSW</th>
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<tr>
<td></td>
<td>Control Group ( n = 38 )</td>
<td>Intervention Group ( n = 35 )</td>
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<td>Gender</td>
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<tr>
<td>Female</td>
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<td>90.9%</td>
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<tr>
<td>Male</td>
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<tr>
<td>Race/Ethnicity</td>
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<tr>
<td>Caucasian</td>
<td>68.4%</td>
<td>63.6%</td>
</tr>
<tr>
<td>African American</td>
<td>5.3%</td>
<td>30.3%</td>
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<tr>
<td>Other</td>
<td>26.3%</td>
<td>6.1%</td>
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<tr>
<td>Age</td>
<td>31.4 (11.12)</td>
<td>29.4 (7.92)</td>
</tr>
<tr>
<td>Academic Standing</td>
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<td></td>
</tr>
<tr>
<td>2(^{nd}) Year</td>
<td>71.1%</td>
<td>75.8%</td>
</tr>
<tr>
<td>Adv. Standing</td>
<td>28.9%</td>
<td>24.2%</td>
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<tr>
<td>Concentration</td>
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<td></td>
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<tr>
<td>Clinical</td>
<td>89.2%</td>
<td>81.1%</td>
</tr>
<tr>
<td>MACO</td>
<td>10.8%</td>
<td>18.2%</td>
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<tr>
<td>Provide Direct Client Services</td>
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<tr>
<td>Yes</td>
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<td>78.8%</td>
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<tr>
<td>No</td>
<td>7.9%</td>
<td>21.2%</td>
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* Information not available
Table 2

*Descriptive Statistics for Primary Outcomes*

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<tr>
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<th>Control</th>
<th>Intervention</th>
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<tr>
<td></td>
<td></td>
<td>Mean(SD) T1</td>
<td>Mean(SD) T3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mean(SD) T1</td>
<td>Mean(SD) T3</td>
</tr>
<tr>
<td>Knowledge: Warning Signs &amp; Intervention Behaviors</td>
<td>0-100</td>
<td>78.3(.10)</td>
<td>72.0(.09)</td>
</tr>
<tr>
<td>Risk Factors List</td>
<td>0-25</td>
<td>5.96(.41)</td>
<td>7.11(.63)</td>
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<tr>
<td>Self-Evaluation: Prevention</td>
<td>1-7</td>
<td>3.61(.20)</td>
<td>4.39(.24)</td>
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<tr>
<td>Knowledge</td>
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<td>3.61(.20)</td>
<td>4.39(.24)</td>
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<td>Knowledge of Institutional</td>
<td>0-1</td>
<td>.44(.07)</td>
<td>.47(.07)</td>
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<tr>
<td>Resources</td>
<td></td>
<td>.30(.07)</td>
<td>.54(.07)</td>
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<tr>
<td>Attitudes to Suicide Prevention</td>
<td>14-70</td>
<td>27.77(.82)</td>
<td>27.42(.76)</td>
</tr>
<tr>
<td>Preparedness for Gatekeeper Role</td>
<td>1-7</td>
<td>3.13(1.08)</td>
<td>4.24(1.45)</td>
</tr>
<tr>
<td>Efficacy to Perform Gatekeeper</td>
<td>1-7</td>
<td>3.99(.75)</td>
<td>4.22(.84)</td>
</tr>
<tr>
<td>Role</td>
<td></td>
<td>3.50(.14)</td>
<td>5.16(.98)</td>
</tr>
<tr>
<td>Reluctance to Engage with Clients</td>
<td>1-5</td>
<td>2.42(.57)</td>
<td>2.22(.77)</td>
</tr>
<tr>
<td>Asking Depressed Clients About</td>
<td>1-5</td>
<td>4.18(1.66)</td>
<td>4.03(1.25)</td>
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<tr>
<td>Suicide</td>
<td></td>
<td>2.57(.63)</td>
<td>2.12(.56)</td>
</tr>
<tr>
<td>Asking Clients About Suicide</td>
<td>1-5</td>
<td>4.18(1.66)</td>
<td>4.03(1.25)</td>
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<tr>
<td>Use of Gatekeeper Behaviors</td>
<td>1-5</td>
<td>2.34(1.49)</td>
<td>2.60(1.45)</td>
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<td>Appropriate Referrals of Clients</td>
<td>0-100</td>
<td>23.7%</td>
<td>45.3%</td>
</tr>
<tr>
<td></td>
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<td>21.9%</td>
<td>44.0%</td>
</tr>
</tbody>
</table>
Figure 1

Flow of participants through study

Assessed for Eligibility \((n = 75)\)

Enrollment (completed pre-test) \((n = 73)\)

Excluded \((n = 0)\)

Assignment

Assigned to experimental group \((n = 35)\)

Received QPR training \((n = 34)\)

Lost to follow-up \((n = 4)\)

Discontinued participation \((n = 0)\)

Follow-Up (4 months)

Analyzed \((n = 30)\)

Excluded \((n = 0)\)

Analysis

Assigned to control group \((n = 38)\)

Lost to follow-up \((n = 3)\)

Discontinued participation \((n = 2)\)

Analyzed \((n = 33)\)

Excluded \((n = 0)\)