Suicide, or "death caused by self-directed injurious behavior with (sic) intent to die as a result of the behavior" [Centers for Disease Control and Prevention (CDC), 2013, p. 1], is a major public health concern in the United States. As of 2016, suicide was the 10th leading cause of death for individuals nationally, due to a total of 44,965 suicide deaths (CDC, 2017). This results in a national rate of 13.6 suicides per 100,000 people, or one suicide death every 12.6 minutes (CDC, 2017). Additional suicide data provide some insights as to those who may be most impacted. Results from the CDC's national injury reporting survey revealed that suicide was the third leading cause of death for persons aged 10-14, and second for persons aged 15-34 (2016). An ongoing trend, suicide is most common in middle aged adults (ages 45-54), whose suicide rate has increased by nearly 34% between 1999 and 2016 (CDC, 2017; Sullivan, Annest, Luo, Simon, & Dahlberg, 2013). Suicide is also the seventh leading cause of death for males and 14th for females across all age groups (CDC, 2017). Within Native American and Alaska Native populations, suicide is the eighth leading cause of death across all ages. Specific to this population, suicide is the second leading cause of death in youth and young adults (ages 10-34), with a suicide rate is 1.5 times higher than the national average (Kann et al., 2014). Overall, suicide results in $69 billion in combined work loss, medical, and other instrumental, with more people who die by suicide than homicide in the United States in a given year [CDC, 2017].

With the prevalence of suicide death and other forms of suicidality in our current culture, counselors are highly likely to encounter suicidal clients. The majority of persons who attempt suicide seek help from a mental health or related professional in the few months leading to their attempt (Luoma, Martin, & Pearson, 2002). Further, upwards of 90% of clinicians work with suicidal clients at some point in their career (Feldman & Freedenthal, 2006), while over one third of mental health clinicians will experience the suicide death of a client (Gill, 2012).

Aside from the obvious negative repercussions of client suicide (e.g., loss of life, effects on loved ones, costs to healthcare system, etc.), clinical and community service providers across helping professions universally report that client suicide is a deeply detrimental experience to their professional and personal well-being (Hoffman, Osborn, & West, 2013; Wachter Morris & Barrio Minton, 2012; Barrio Minton & Pease-Carter, 2011). Bongar (2002) suggested that when working with suicidal clients, clinicians expose themselves to an occupational hazard, which can result in a myriad of negative ramifications. These include burnout (Hoffman et al., 2013), compassion fatigue (Hendin, Haas, Maltsberger, Szanto, & Rabinowicz, 2004), traumatic stress (Jacobson, Ting, Sanders, & Harrington, 2004), guilt (Chemtob, Hamada, Bauer, Torigoe, & Kinney, 1988), intrusive or avoidant thoughts (McAdams & Foster, 2000), and anxiety (Neimeyer, 2000). In addition to these intrapersonal emotional and cognitive effects due to exposure to suicidality, counselors often encounter ethical and theoretical barriers in this work. When faced with suicidal clients, counselors experience high levels of fear related to professional ramifications and liability (Fleet & Mintz, 2013). They suggested that counselors face the interpersonal challenge of "duality" (Fleet & Mintz, 2013, p. 50), or negotiating the conflict between their own preference for the client to not die by suicide while the client sees suicide as a solution with a myriad of potential benefits.

Suicide prevention became a targeted area for change in the United States in the 1950s, and these early efforts expanded over the next several decades. While several policy changes and clinical advancements have occurred in the decades since, this work culminated in a revision to the National Strategy for Suicide Prevention (U. S. Department of HHS Office of the Surgeon General and National Action Alliance for Suicide Prevention, 2012). Specifically, the National Strategy called for helpers and mental health providers to be trained in, implement, and conduct

research on evidence-based suicide prevention, intervention, and treatment approaches (U. S. Department of HHS Office of the Surgeon General and National Action Alliance for Suicide Prevention, 2012). Members of the National Action Alliance placed especially high emphasis on the training of mental health and related practitioners, and highlighted the dimensions of knowledge, attitudes, and behaviors as core dimensions of competence and foci for mental health educators and researchers (Schmitz et al., 2012). Within the counseling profession, the Council for Accreditation of Counseling & Related Educational Programs (CACREP, 2015) includes a counseling and helping relationships standard that requires, "suicide prevention models and strategies" and an assessment and testing standard that requires "procedures for assessing risk of aggression or danger to others, self-inflicted harm, or suicide." (p. 13).

The Association for Counselor Education and Supervision (ACES) Ethical Guidelines for Counseling Supervisors (1993), as well as the American Counseling Association (ACA) Code of Ethics (2014) specifically discuss the need for competence and the use of evidence-based practice in guiding students through crisis situations. Considering the fact that the terminal degree in the counseling profession has a distinct focus on education and training future counselors, it stands to reason that counselor educators and researchers are uniquely suited to build upon the existing research and policy work regarding suicide response preparedness in graduate students.

However, relatively few researchers within the counseling and counselor education discipline have focused explicitly on suicide response preparedness in counselors-in-training (Barrio Minton & Pease Carter, 2011; Binkley & Leibert, 2015; McAdams & Foster, 2000, 2002; Wachter Morris & Barrio Minton, 2012). For example, Juhnke (1994) was among the first counselor educators to explore the process and outcomes of teaching suicide risk assessment to

counselor education students. Juhnke (1994) identified that inadequately trained and supported student counselors' development may be negatively and permanently affected by clients with suicide attempts or deaths. In response, McAdams & Keener (2008) formulated a conceptual framework for counselor development regarding response to client crisis, though not explicitly focusing on suicide. Using a temporal frame, McAdams & Keener (2008) suggested that crisis curriculum should be multiphasic, segmented into pre-crisis, in-crisis, and postcrisis; each including components of knowledge, attitudes, and skills, with an emphasis on reflective self-awareness.

Still, very little empirical research exists regarding counseling student preparedness on any of these dimensions. Wachter Morris and Barrio Minton (2012) stated that in a review of the literature, they only identified one empirical study regarding crisis-related preparation in CACREP-accredited master's level counseling programs. Binkley and Leibert (2015) conducted a survey study of 113 pre-practicum master's level counseling students, in which they investigated type of suicide response training received (e.g., no training, in-class training, out-of-class training, both in- and out-of-class training), and its relationship with participants' self-reported confidence and anxiety about providing counseling to clients at risk for suicide. The authors found that students with no training in suicide response reported significantly lower confidence than students with any type of response training. This is the only study to date on suicide-related preparedness in counseling students at the pre-practicum level. The researchers suggested that identifying students' attitudes and reactions related to their anticipated work with suicidal clients is an important component in assessing and intervening in their readiness to enter the field (Binkley & Leibert, 2015). Altogether, research on the design, implementation, and

outcomes of suicide response competency interventions for graduate counseling students is in its infancy.

Theoretical Framework

An empirical model for the impact of knowledge and attitudes on suicide response behavior has had an increasing presence in the literature over the past ten years (Jacobson, Osteen, Jones, & Berman, 2012; Oordt, Jobes, Fonseca, & Schmidt, 2009; Pompili, Girardi, Ruberto, Kotzalidis, & Tatarelli, 2005; Wyman et al., 2008). Ultimately, the constructs of knowledge, attitudes, and behavior presented in the empirical literature comprise the larger concept of counselor competence in responding to suicidal clients. Within counselor education, competence is largely regarded as developmental and able to be impacted by training and experience (McAuliffe & Eriksen, 2010). While multiple theories exist that relate to counselor competence (i.e., Skovholt & Rønnestad, 2003), fewer models related directly to mechanisms of change that lead directly to counselor behavioral skill development exist. Due to this dearth in theoretical bases, Bennett-Levy (2006) incorporated empirical research and existing conceptual frameworks to create a cohesive model of therapist skill development. Bennett-Levy's (2006) cognitive model of therapist skill development consists of three systems of skill development: the declarative system, the procedural system, and the reflective system (DPR).

The declarative system of the DPR model pertains to the knowledge of factual information. The declarative system includes three components: conceptual knowledge, interpersonal knowledge, and technical knowledge. Declarative knowledge is typically acquired through didactic teaching strategies (e.g., lectures, reading) (Bennett-Levy, 2006). While this system is integral to counselor competence, Bennett-Levy (2006) suggested that these training strategies alone may fail to translate this system into practical usability. The procedural system

includes the application and demonstration of declarative knowledge and includes the "how and when" (p. 59) of using certain skills properly and at the right time (Bennett-Levy, 2006). Bennett-Levy (2006) stated that procedural knowledge is largely implicit, and becomes increasingly refined with experience. The reflective system, is solely responsible for moving the novice counselor developmentally forward into the domain of expert. He suggested that reflection plays a more significant role in the later stages of counselor development, but serves to enhance the quality and longevity of the learning that occurs within the declarative and procedural systems (Bennett-Levy, 2006). Specifically, Bennett-Levy (2006) suggested that the reflective system allows for the counselor to develop a working awareness of his or own self- and self-as-therapist schemas (e.g., knowledge, attitudes, personal attributes), which are invariably related to the counselor's interpersonal effectiveness with clients.

The constructs described in Bennett-Levy's (2006) DPR model relate very closely to those in the empirical literature about suicide response. The declarative system is represented by knowledge about suicide (e.g., suicide statistics, warning signs of suicide). The reflective system comprises the counselor's attitudes about suicide and his or her perceptions about confidence or self-efficacy to intervene with a suicidal client. The procedural system reflects suicide response behavior in that this is the domain in which counselors must implement their knowledge and navigate their own attitudes and beliefs to intervene when a client is at risk for suicide. A cohesive exploration of these constructs in counseling students could generate significant implications for what it means to create competence in suicide response within counselor training.

Purpose of Study

The relationship among knowledge, attitudes, and behaviors regarding suicide prevention and intervention has been explored within counseling (Wachter-Morris & Barrio-Minton, 2012; Fleet & Mintz, 2013) and other helping professions, including social work (Jacobson et al., 2004), psychology (Gagnon & Hasking, 2011) and nursing (Gask, Dixon, Morriss, Appleby, & Green, 2006). Researchers have also expanded this inquiry to include students in helping profession graduate programs (Bongar & Harmatz, 1989; Binkley & Leibert, 2014; Jacobson et al., 2012; Oordt et al., 2009; Pompili et al., 2005; Wyman et al., 2008). However, no studies currently exist that include an investigation of the relationship among all three of these indicators of competency within the counseling student population. Further, no studies with a focus on students in any of the helping professions have attempted to assess student response behavior that is simulated. This includes students that do not have to engage with "real" clients in the practicum or internship phase of their training, thusly preventing any additional risk to student or client due to lack of training (Binkley & Leibert, 2014). Still, none of the suicide response preparedness-related studies have attempted to assess the extent to which knowledge and attitudes might relate to and predict simulated suicide response behaviors in counseling students.

The purpose of this study was to explore and describe counseling students' knowledge about suicide, attitudes about suicide and suicide response, and simulated suicide response behavior. A secondary purpose of this study was to identify if and to what extent counseling students' knowledge and attitudes about suicide and suicide response relate to and predict simulated suicide response behavior using bivariate correlation and hierarchical linear regression (HLR).

Method

Research Questions

This study sought to answer several research questions.

RQ1: How do counseling students perform on assessments of knowledge about suicide, attitudes about suicide, and simulated behavioral response to suicidal clients?

RQ2: How does counseling students' knowledge about suicide, attitudes about suicide, and simulated behavioral response to suicidal clients relate to one another?

RQ3: To what extent do counseling students' knowledge and attitudes about suicide simultaneously predict simulated behavioral response to suicidal clients after controlling for previous suicide response training?

RQ4: To what extent does the interaction between counseling students' knowledge and attitudes about suicide predict simulated behavioral response to suicidal clients after controlling for previous suicide response training?

Participants

We conducted power analyses using G*Power software to determine a sufficient sample size. Using an alpha level of $p = .05$, a power level of 0.80, and a medium effect size ($f^2 = .15$) (Faul, Erdfelder, Buchner, & Lang, 2013), the desired sample size was 85 or more. The target population for this study was graduate students enrolled either part- or full-time in master's clinical mental health or school counseling programs. Students from both CACREP and non-CACREP accredited programs were included in this study, as students from both types of programs are likely to practice with clients who may be at risk for suicide both during and after

their graduate training. The sample included participants recruited electronically through counseling email listservs (e.g., CESNET, Counsgrads) from counseling programs throughout the United States. The electronic recruitment email also invited recipients to forward the request for participation to their peers and/or students. The only exclusion criterion for this study pertained to whether or not a student held a master's or doctorate degree in a related field (e.g., psychology, social work, marriage and family therapy, nursing, or medicine) as this level of prior training had potential to skew results. In addition, all participants who completed the survey instrument received a $5 Amazon, Starbucks, or Walmart electronic gift card.

A total of 119 participants completed the survey instrument in this study; $N = 119$. A total of 139 participants provided consent to participate in the study, but we did not include 20 participants in the analyses due to data integrity issues or non-completion of the survey instrument. We were unable to calculate an accurate response rate due to two major factors: no available data related to number of eligible participants who were subscribed to recruitment listervs (i.e., unknown percentage of listerv subscribers who met eligibility criteria; and lack of recruitment control as result of snowball sampling). Of the 119 participants, 88.2% identified as female ($n = 105$), 10.9% identified as male ($n = 13$), and .8% ($n = 1$) indicated preference not to disclose. The majority of participants identified their ethnicity as not Hispanic or Latino (95%, $n = 118$) with 3.4% ($n = 4$) endorsing a Hispanic or Latino ethnicity and 1.7% ($n = 2$) preferring not to disclose. A total of 89.1% ($n = 106$) identified their race as White or Caucasian, followed by 4.2% ($n = 5$) as Multiracial, 2.5% ($n = 3$) as Black or African American, and the remaining 4% ($n = 5$) distributed amongst American Indian or Alaska Native, Native Hawaiian or other Pacific Islander, Arab or Arab American, or other. The sample comprised $n = 94$ graduate mental health counseling students (79%) and $n = 25$ graduate school counseling students (21%) from

both CACREP (*n* = *110)* and non-CACREP accredited (*n* = 9) programs. Participants also indicated their status in their respective training programs, resulting in 66.4% (*n* = 79) currently enrolled in the practicum or internship phase of their graduate programs, and 33.6% (*n* = 40) in the pre-practicum phase of their graduate programs. Participants disclosed the number of hours in suicide-related training they had received before completing the survey. Participants' responses varied widely (0 – 60), with an average of *M* =9.03, *SD* = 7.02 hours of prior training.

Procedures

Before recruiting participants and beginning data collection, we secured approval from the Institutional Review Board (IRB) and adhered to all research ethics codes within the American Counseling Association (ACA) *Code of Ethics* (2014) in the construction of the study design and implementation. Data collection occurred electronically via an online survey constructed using the HIPPA-compliant Qualtrics survey platform. Upon clicking the link embedded in the initial email, participants were directed to the study consent form, where they selected "Yes" or "No" to indicate their consent to participate in the study. The survey included a total of 66 items and required 25-30 minutes to complete. We stored survey data in the secure, encrypted, password protected Qualtrics survey platform until completion of all data collection and downloaded the data in a .CSV Excel file and immediately transferred it to a password-protected SPSS database for analysis.

Measures

Demographics. Demographic data were collected for descriptive purposes for this study. This included gender, age, and race/ethnicity. We also asked participants to report information relevant to their specific graduate training experiences, including training status (i.e., practicum, internship), type of program (i.e., school or clinical mental health), program's CACREP

accreditation status, and number of hours of suicide response training received prior to the time of the study.

Knowledge. To assess knowledge, we used two self-report scales. First, the Suicide Knowledge Survey (SKS; Smith et al., 2014) is a nine-item scale composed of statements about suicide designed to elicit either a true or false response. We selected this scale to assess declarative (e.g., factual) suicide knowledge. This scale was originally normed on a mixed sample of skilled behavioral healthcare professionals including bachelor level case managers, licensed therapists, and physicians. Creators of the scale used the Kuder–Richardson Formula 20 (KR20) to calculate reliability for this scale as responses are binary and the level of difficulty of the questions varied ($\alpha = .50$). The low alpha indicates that the knowledge items are various and reflective of different facts about suicide, and thus were not expected to factor together well (Smith et al., 2014). Scores for the SKS are calculated by tallying the number of responses correctly indicated as true or false, resulting in a possible score range of 0 to 9. Second, participants completed the Warning Signs of Suicide Checklist (WSSC). We created this checklist to reflect the 11 key warning signs of suicide as identified by the American Association of Suicidology. We used the Kuder–Richardson Formula 20 (KR20) to calculate reliability for this scale as responses are binary and the level of difficulty of the questions varied ($\alpha = .48$). Similar to the SKS, the low alpha indicates that the variability in knowledge items reflective of qualitatively different suicide warning signs, and thus were not expected to factor together well. Scores on this scale result from the sum of the number of correctly identified warning signs, resulting in a possible score range of 0 to 11.

Attitudes. To assess attitudes about suicide and suicide response, we used the Attitudes to Suicide Prevention Scale (ASPS; Herron et al, 2001), a 14-item scale composed of statements

reflective of perceptions of accuracy and interpretation of suicide risk assessment, responsibility of clinician to prevent suicide, practicality of suicide prevention, and impact of non-clinical factors on suicide. Each of these themes is presented as statements to be rated on a 5-point Likert-type scale, with 1 indicating "strongly disagree" and 5 indicating "strongly agree." In its original validation study, this measure showed good internal consistency (Cronbach's $\alpha = 0.77$) and high test–retest reliability within a sample of front-line health and behavioral health professionals (Herron et al. 2001), and has since been utilized with a wide array of populations, including behavioral health graduate students (Kodaka, Inagaki, Postuvan, & Yamada, 2013). We calculated scores on this measure by summing the response scores, resulting in a possible score range of 14 to 70.

Behavior. To assess suicide response behavior, the outcome variable for the study, we used the Suicide Intervention Response Inventory – Revised (SIRI – R; Neimeyer & Bonnelle, 1997). Creators of this 25-item self-report measure developed it to assess the ability of paraprofessional and professional counselors to indicate appropriate responses to suicidal clients. It includes a total of 25 hypothetical client remarks, each followed by two hypothetical counselor responses. For each client remark, one of the counselor responses reflects a facilitative reply, while the other indicates a neutral or detrimental reply. Participants rate each counselor response using a 7-point Likert-type scale, with -3 indicating a highly inappropriate response and +3 indicating a highly appropriate response. The original version of this measure included a similar structure, but required participants to select one counselor response or the other for each client remark. This resulted in a ceiling effect when administered to higher-level clinicians (Neimeyer & Bonnelle, 1997). Therefore, researchers implemented the Likert-type scale to address this issue in the revised version. The original validation study revealed acceptable construct and

discriminant validity, and high internal consistency (Cronbach's α = .90) within a sample of counselor trainees and undergraduate psychology students. We calculated scores on this measure by identifying the difference between the mean rating of members of an expert panel and the participant's rating on each counselor response item.

Results

Prior to analysis, we screened all data for assessment of statistical assumptions. Descriptive statistics indicated that skewness and kurtosis were within acceptable ranges (±1 and ±2 respectively) for all variables, suggesting minimal impact on results. To assess for linearity and homoscedasticity among each predictor variable and the outcome variable, we used scatterplots as a visual assessment. All predictor variables met both assumptions. Additional assumptions were assessed specifically for the regression analyses. We tested for normality of residuals using residual histograms for both regression analyses. Residuals for both regressions fit the normal distribution, thusly meeting this assumption. We assessed collinearity within each regression model using VIF, with values over 10 suggesting the presence of multicollinearity (Keith, 2006). No values surpassed 10 and this assumption was met.

Descriptive Outcomes

Knowledge. The mean score on the SKS was M = 7.19, SD = 1.22, indicating a moderately high level of suicide knowledge. However, only 11.3% of participants correctly identified all statements as true or false. The overall mean on the WSSC scale was M = 8.69, SD = 2.34, indicating moderately high knowledge of suicide warning signs. Despite the mean being relatively high overall, only 35.3% of participants correctly identified all 11 warning signs of suicide. Using the Kuder-Richardson Formula 20 (KR-20), internal reliability was low for both scales (α = .48, α = .56), but consistent with the results of the validation study of the SKS (α =

.50). The low alpha indicates that the knowledge items are various and reflective of different facts about suicide, and thus were not expected to factor together well.

Attitudes. The mean score on the ASPS was $M = 31.78$, $SD = 4.56$, which represents moderately positive/appropriate attitudes about suicide. This measure demonstrated good internal reliability with this sample (Cronbach's $\alpha = .71$).

Simulated behavior. The mean score on the SIRI-R was $M = 47.93$, $SD = 12.38$, indicating moderately appropriate response behaviors (Neimeyer & Bonelle, 1997). This instrument demonstrated high internal validity with this sample (Cronbach's $\alpha = .89$).

Table 1

Descriptive Statistics of Study Variables

	N	Minimum	Maximum	Mean	Std. Deviation
Suicide Knowledge	119	2	9	7.19	1.22
Attitudes	119	23	43	31.78	4.56
Warning Signs	119	2	11	8.69	2.34
Suicide Intervention Response	119	27.68	81.28	47.93	12.38

Inferential Outcomes

We conducted a series of Pearson bivariate correlational analyses to examine relationships among key study variables. All study variables were related to one another to a statistically significant degree. Per the reverse scoring convention on the ASPS (e.g., lower scores indicate more appropriate attitudes) and SIRI –R (e.g., lower scores indicate more appropriate response behavior), negative relationships between the knowledge instruments (SKS and WSSC) and attitudes (ASPS) and behavioral response instrument (SIRI-R) suggest that as knowledge about warning signs and facts about suicide improves, appropriateness of attitudes and response behavior also increases. We found a positive relationship between attitudes and

response behavior, indicating that the more appropriate a participant's attitudes about suicide were, the more appropriate their behavioral responses were. Table 2 contains results of these analyses.

Table 2

Correlation Matrix of Study Variables

		Warning Signs	Suicide Knowledge	Attitudes	Suicide Intervention Response
Warning Signs	Pearson	1	.672**	-.543**	-.385**
	Sig. (2-tailed)		.000	.000	.000
	N	119	119	119	119
Suicide Knowledge	Pearson	.672**	1	-.640**	-.496**
	Sig. (2-tailed)	.000		.000	.000
	N	119	119	119	119
Attitudes	Correlation	-.543**	-.640**	1	.360**
	Sig. (2-tailed)	.000	.000		.000
	N	119	119	119	119
Suicide Intervention Response	Pearson	-.385**	-.496**	.360**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	119	119	119	119

**. Correlation is significant at the 0.01 level (2-tailed).

We used hierarchical linear regression (HLR) to assess the extent to which counseling students' scores on the SKS, WSSC, and ASPS simultaneously predicted their SIRI-R scores. We included the number of hours of previous suicide related training in the first step of the model as a control variable and main effect variables (SKS, WSSC, and ASPS) in the second step. The model in the first step included the control variable of hours of previous training and was not significantly related to SIRI-R scores, $R = .148$, and predicted only 2.2% of the variance in SIRI-R scores. For Step 2, a statistically significant relationship exists among these variables as evidenced by significance of the overall model, $F (4, 119) = 9.789, p < .001$, which explained

approximately 26% of the variance in the outcome variable, $R^2 = .256$. Of the predictor variables, only scores on the SKS (Smith et al., 2014) significantly contributed to the model ($B = -4.06$, $p = .001$). From this model, I identified a prediction model of $\hat{Y} = 76.35 - 4.056*SKS\ Score - .413*WSSC\ Score + .148*ASPS\ Score - .041*Hours\ of\ Training$.

We conducted a second HLR with the addition of an interaction effect between scores on the SKS and the ASPS based on the assumption that the unique effect of knowledge on behavioral response could be moderated by his or her attitudes about suicide and vice versa. This model was identical to the previous, with the addition of a third step which included the interaction effect of standardized scores for the SKS and the ASPS. We used the SKS instead of the WSSC due to its statistical significance in the previous model. For step 3, analysis revealed a statistically significant relationship among these variables as evidenced by significance of the overall regression model, $F(5, 119) = 8.985$, $p < .001$. The overall model explained approximately 28% of the variance in the outcome variable, $R^2 = .284$. The third step individually accounted for an additional 2.9% of the variance in the outcome variable beyond the model in step 2. Of the predictor variables, scores on the SKS (Smith et al., 2014) maintained their significant contribution to the model ($B = -2.93$, $p < .05$). The interaction effect of SKS and ASPS scores also significantly contributed to the model ($B = -1.84$, $p < .05$). We identified a prediction model of $\hat{Y} = 66.209 - 2.932*SKS\ Score - 1.839*SKS\ Score*ASPS\ Score - .207*WSSC\ Score + .123*ASPS\ Score - .051*Hours\ of\ Training$. Table 3 contains results of the final model analysis.

Table 3

Results of Final Hierarchical Regression Model

Variable	B	SE	β	t	Sig.	F	R^2
Model						8.99	.28**
Hours of Training	-.051	.059	-.071	-.869	.387		
Knowledge – WSSC	-.207	.591	-.039	-.350	.727		
Knowledge – SKS	-2.93	1.33	-.288	-2.20	.030*		
Attitudes – ASPS	.123	.287	.045	.427	.670		
Interaction – SKS*ASPS	-1.84	.862	-.223	-2.13	.035*		

**p ≤ .001
*p ≤ .05

Discussion

Researchers within counselor education have increased their attention to crisis preparation beginning at the graduate level (Wachter Morris & Barrio Minton, 2012; Barrio Minton & Pease-Carter, 2011). However, we still lack understanding in how to conceptualize suicide prevention competency and how to create pedagogical interventions to create said competency (Beidas, Cross, & Dorsey, 2013). This study attempted to address these issues by seeking to identify and better understand the relationships among the levels of knowledge, attitudes, and simulated response behavior related to suicide in counseling students.

Bennett-Levy (2006) described knowledge as part of the declarative system of counselor competence, which mainly includes didactic information about a construct. Overall, results indicated a moderately high level of suicide knowledge. However, only a third of participants correctly identified all warning signs of suicide; whereas signs correctly recognized most often pertained to overt demonstrations of risk (e.g., stating the desire to die, seeking lethal means) and symptomology akin to depression (e.g., hopelessness, few reasons for living). Participants were

far less successful at identifying emotional and behavioral dysregulation not overtly related to suicide (e.g., rage/agitation, sleep disturbance, drastic changes in mood, and increases in substance use). This assumes that only persons who are depressed are at high risk for suicide; a notion that could lead to missed intervention opportunities.

Described in Bennett-Levy's (2006) model as the reflective system, appropriate attitudes are vital for the development and maintenance of counseling competence over time. Participants generally had appropriate attitudes about suicide and their role in preventing suicide. As counselor training heavily emphasizes self-reflection on and self-awareness of one's personal biases and attitudes, appropriate attitudes can be expected. Regarding the preventability of suicide, all participants indicated at least some belief that suicide could be prevented. A scale item that reflected varying attitudes pertained to a person's right to take his or her own life. The generally accepted assumption in the mental health community is that a person is entitled this "right to die" (Herron et al., 2006). However, due to the religious, moral, and/or philosophical underpinnings related to this assumption, it is not surprising that this item generated more response variability.

While Bennett-Levy (2006) maintained that knowledge and attitudes were essential in developing competency in counselors, they must be behaviorally implementable in real world situations with clients. Participants' scores on this measure showed moderately to highly appropriate simulated behavioral response to suicidal clients. Scores were generated based upon how participants rated the appropriateness of a series of "counselor" responses to client prompts compared to an expert panel's ratings. The creators of the SIRI-R assumed that if a participant rates the counselor's response to a client prompt similarly to the expert panel, then the participant may respond to a real client in a clinically appropriate way (Neimeyer & Bonnelle, 1997). In this

study, participants deemed the "counselor's" response inappropriate if he/she was combative, argumentative, or dismissive of the client's experience; which aligned closely with the expert panel. While maintaining therapeutic connection with clients is a general counseling skill, it is especially important when a client discloses suicidality, as interrupted connectedness is a significant predictor of suicide death (Joiner, 2005).

Correlational analyses revealed that all key variables were significantly related to scores on the SIRI-R. Knowledge as measured by the SKS demonstrated the strongest relationship ($r = -.496$) while attitudes had the weakest relationship ($r = .360$). Despite its statistical significance, this correlation coefficient is relatively low. While this could be due to several factors (e.g., relatively high sample size, large error percentage, etc.), this relationship should be interpreted carefully. This finding contrasts with the generally accepted assumption that the counselor's attitudes and his or her skill-based behaviors are strongly related (Bennett-Levy, 2006; Wyman et al., 2012).

Hierarchical linear regression results suggest that any training that participants received before this study had limited effect on their suicide response behaviors. This does not, however, mean that training is not effective. To answer this question, between-groups comparison studies using quasi-experimental or experimental research design are necessary, and extend beyond the scope of the present study. Both regression models were statistically significant, with only SKS and interaction scores producing individual statistical significance ($B = -4.06$, $p = .001$). As the correlation between attitudes and response behaviors was not significant, its lack of significance in the regression model is to be expected. Practical interpretations for this outcome are similar to those in the correlations (e.g., knowledge and attitudes are related to response behaviors and should be conceptualized as a "unit" in suicide specific training). However, this analysis

provides additional robustness to the argument that improving counseling students' knowledge about suicide is integral to improving their response behaviors when working with suicidal clients.

This study also included several limitations that should be considered when interpreting its results. First, this study included a non-experimental survey research design. While correlational and even predictive relationships can be inferred from this design, it cannot identify causality. Another limitation of this study pertains to the sample; in both strategy and structure. We relied on a convenience sampling approach, which resulted in a relatively low level of control over the participants that completed the survey, which may also have contributed to the high degree of variability in participants' training and experience related to suicide. Regarding the structure of this sample, most participants identified as white females, potentially limiting generalizability to other demographic groups. A known limitation of linear regression is that a predictive model can only be as strong and comprehensive as the variables that are included in it. In this study, a relatively small (though theoretically and empirically based) number of predictors were included in the regression model and accounted for 28% of the variance in simulated response behaviors. While this amount of prediction is considered satisfactory within the social sciences (Keith, 2006), it suggests that many other constructs need to be investigated to more fully understand suicide response behaviors in counseling students. These could include self-efficacy to prevent suicide, the type of training previously received, personal lived experience with suicide, social desirability, religious affiliation, theoretical orientation, direct experience working with suicidal clients, and other factors. Finally, some limitation may be present with the measures used in this study. While all assessments demonstrated usability with this sample, the extent to which they captured a true measure of knowledge, attitudes, and behavioral response is

debatable. For example, none of the measures used in this study included a latent factor structure of variable sub-scales. Also, while the SKS and ASPS include items that pertain to several different types of suicide knowledge and attitudes, the scoring structure for these measures is cumulative. The SIRI-R demonstrates a similar problem, with various types of client suicide scenarios (e.g., varying levels of lethality/immediacy, types of affective escalation, etc.) but no factors were included in the scoring structure.

The results from this study stand to add to the argument that the counselor education community need to increase their focus on incorporating suicide-specific training into their curricula. One particular finding of this study that unfortunately aligns with the existing literature (Binkley & Leibert, 2015) is that nearly a third (27%) of participants had received no training in suicide response. And while a lower percentage, the fact that 13% of participants enrolled in practicum/internship at the time of this study had zero hours of training in suicide is even more alarming. CACREP (2015) is the only social science accrediting body that requires instruction in suicide and crisis intervention; however, this discrepancy still exists. As previous research suggests, counseling students are likely to encounter a suicidal client as early as their first practicum placement (Binkley & Leibert, 2015). Counselor education as a whole runs the risk of violating its own ethical code (ACA, 2014) by sending students into the field unprepared to identify, manage, and treat suicidal clients. Therefore, counselor educators must prioritize the implementation of quality, evidence-based training in suicide.

As the need to increase suicide-specific competence in counseling students is clear, counselor educators may not need to reinvent the wheel. Multiple gatekeeper (QPR, ASIST) and clinician-focused trainings (AMSR, Suicide 2 Hope, CAMS) are available at cost from national leading organizations that focus on suicide (Suicide Prevention Resource Center, Living Works,

QPR Institute), while others are provided for free in online formats (Columbia Suicide Severity Rating Scale). Prioritizing access and requirement of these and similar trainings early in the counselor development process is key in ensuring competence in suicide response in counseling students.

Findings from the present study may serve as a foundation from which to build future research in suicide response competency in counselor education. Perhaps most obvious, training effectiveness needs to be further investigated within the counseling student population. An opportunity for pedagogically based research exists here as virtually no research exists around the implementation and effectiveness of any current training models (e.g., ASIST, AMSR, etc.) with counseling graduate students. For example, researchers could explore causal effectiveness of existing trainings by randomizing counseling students to treatment and control groups and comparing between group differences. Another significant need is the development of more comprehensive and theoretically sound measures that assess knowledge, attitudes, and behaviors. The measures used in the present study could serve as a means to establish concurrent validity with newly developed measures. We are currently in the process of developing and conducting psychometric analyses on measures that assess these constructs, in addition to developing novel means of assessing suicide-specific competency (e.g., standardized patient actors, virtual reality). Future studies should also include other components when considering factors that contribute to behavioral response. Again, these could include personal characteristics such as lived experience with suicide, theoretical orientation, performance using other counseling skills, meaning made of training, and personal emotional regulation in the face of high stress client scenarios, and other attitudes such as social desirability and self-efficacy.

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