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An Evaluation of Suicide Risk Assessment and Management Trainings in Clinical Psychology Doctoral Programs

Maureen F. Monahan

University of South Florida, maureen11@mail.usf.edu

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An Evaluation of Suicide Risk Assessment and Management Trainings
in Clinical Psychology Doctoral Programs

by

Maureen F. Monahan

A dissertation manuscript submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
Department of Psychology
College of Arts and Sciences
University of South Florida

Major Professor: Marc S. Karver, Ph.D.
Margaret Booth-Jones, Ph.D.
Tammy Allen, Ph.D.
Jack Darkes, Ph.D.
Vicky Phares, Ph.D.
Brent Small, Ph.D.

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DEDICATION

Words cannot adequately express the gratitude I feel toward my fiancé, Greg Mauro; my parents, Patricia and Stephen Monahan; my sister, Elizabeth Tierney; and my family and friends for their unwavering love and support. Without them, the completion of my dissertation and my doctoral degree would never have been possible.

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ABSTRACT

It has been suggested that mental health professionals are insufficiently trained to assess and manage suicide risk (U.S. Department of Veterans Affairs and Defense [USDVA/DOD], 2013; Goldsmith, Pellmar, Kleinman, & Burney, 2002; Jobes, Rudd, Overholser, & Joiner, 2008; Mirick, McCauley, Bridger, & Berkowitz, 2015; Silverman & Berman, 2014) and this problem may originate during graduate training (Feldman & Freedenthal, 2006; Mackelprang, Karle, Reighl, & Cash, 2014; Rudd, Cukrowicz, & Bryan, 2008; Schmitz et al., 2012). Unfortunately, however, this area has been inadequately studied (Battista, 2007; Cramer, Johnson, McLaughlin, Rausch, & Conroy, 2013; Department of Health and Human Services, 2012; Stuber & Quinnett, 2013), precluding a full understanding of this problem.

The present study surveyed clinical psychology doctoral students' behavioral competency in responding to suicidal clients, attitudes toward suicide prevention, perceived ability to engage in appropriate practices, subjective norms surrounding SRA behaviors, intentions to engage in these behaviors, and the relationship of amount of graduate training in suicide risk assessment (SRA) core competencies to the aforementioned constructs. It was hypothesized that amount of training in SRA competencies would be significantly related to participants' attitudes, perceived behavioral control, and subjective norms related to SRA behaviors. Further, it was hypothesized that the aforementioned variables would be significantly related to participant intentions to engage in these behaviors. Finally, it was hypothesized that intentions to engage in SRA behaviors would be positively related to participants' behavioral competency in SRA. Study participants were 167 students from 46 clinical psychology doctoral programs. Hypotheses were

tested using path analysis. Results provided partial support for significant relationships between attitudes, PBC, subjective norms, and intentions (Hypothesis 1a). Implications of this research include advancing the training practices of clinical psychology doctoral programs so as to help increase the number of mental health practitioners competent in suicide risk assessment and management practices.

INTRODUCTION

In 2013, suicide represented the tenth leading cause of death for Americans of all ages (41,149 total suicides, Centers for Disease Control and Prevention [CDC], 2013). Even more pervasive were the number of adults (≥ 18) who attempted suicide (1.3 million; 0.6% of adult population) or reported thinking about suicide in the past year (9.3 million adults; 3.9% of adult population; CDC, 2013). Given these prevalence rates, it is somewhat unsurprising that researchers estimate as many as 99% of psychology graduate students will encounter a client who endorses suicide ideation at some point during their training (Dexter-Mazza & Freeman, 2003; Kleespies, Penk, & Forsyth, 1993). Further, roughly 25% of trainees are estimated to experience a client's suicide attempt, while approximately 11% are thought to endure a client's death by suicide during their graduate training (Kleespies et al., 1993). In regards to mental health practitioners (MHPs), surveys suggest between 22% and 29% have experienced a client's death by suicide (Chemtob, Hamada, Bauer, Torigoe, & Kinney, 1988; Pope & Tabachnick, 1993). Yet, research has shown that clinicians of varying backgrounds are ill-equipped to work effectively with suicidal clients and are especially lacking in the domains of: skill proficiency, essential knowledge, and positive attitudes necessary to work with this population (Chen, Wu, Yousuf, & Yip, 2011; USDVA/DOD, 2013; Jacobson, Ting, Sanders, & Harrington, 2004; Jobes, Rudd, Overholser, & Joiner, 2008; Palmieri et al., 2008; Pompili, Girardi, Ruberto, Kotzalidis, & Tatarelli, 2005; Ross, Darke, Kelly, & Hetherington, 2012; Saunders, Hawton, Fortune, & Farrell, 2012; Singer & Slovak, 2011).

The consequences of a lack of preparedness in suicide risk assessment and management (SRAM) skills are unfortunately abundant. A client's mere disclosure of suicidal thoughts can engender acute amounts of anxiety, distress, and discomfort on behalf of the treating MHP (Courtenay & Stephens, 2001; Kleespies, Smith, & Becker, 1990; McAdams & Foster, 2000; Paulson & Worth, 2002), regardless of years of experience working in the field (Neimeyer, 2000). Suicidal clients have reported being able to perceive MHP's negative affect, negative attitudes, and lack of empathy (Huband & Tantam, 2011; McAllister, Creedy, Moyle, & Farrugia, 2002; Patterson, Whittington, & Bogg, 2007), which has the potential to further invalidate the client and even become an iatrogenic risk factor for suicide (Horvath & Symonds, 1991; Jacobson, Osteen, Jones, & Berman, 2012; Pompili et al., 2005).

Therapists who display these negative reactions may be more likely to exhibit symptoms of burnout (e.g., emotional exhaustion and depersonalization) which may undermine their ability to convey prosocial emotions to clients (e.g., warmth, concern, and trustworthiness) and develop a strong therapeutic bond (Sánchez-Moreno, Roldán, Gallardo-Peralta, & de Roda, 2015) (Finlay-Jones, Rees, & Kane, 2015). Decreased levels of these factors have been linked to a reduction in the quality of care provided to clients and in turn, an exacerbation of symptoms on their behalf (Goldsmith, Lewis, Dunn, & Bentall, 2015; Rupert, Miller, & Dorociak, 2015). Unfortunately for clients struggling with suicide, an exacerbation of symptoms can lead to suicide attempts or even deaths. Indeed, an estimated 28% of those who die by suicide had contact with a mental health provider within a month before their suicide, and up to 46% had contact within the year of suicide (Luoma, Martin, & Pearson, 2002). It is not to say that deceased individuals killed themselves because of their encounter with a MHP, however, these findings represent potential missed opportunities to implement effective SRAM practices.

Additional consequences of a lack of preparedness in suicide risk assessment (SRA) practices include implementing ineffective and potentially harmful practices such as “No Suicide Contracts,” unnecessary hospitalization, or failing to assess suicidal risk at all (Blum, Beuhring, Wunderlich, & Resnick, 1996; Farrow & O’Brien, 2003; Garvey, Penn, Campbell, Esposito-Smythers, & Spirito, 2009; McMyler & Prymachuk, 2008; Miller, 1999; Qin & Nordentoft, 2005). Engaging in these types of practices without comprehensively addressing suicidal risk has the potential to lead to patient suicide attempts, deaths by suicide, and malpractice lawsuits on behalf of the deceased’s family (Bryan & Rudd, 2006; Jobes & Berman, 1993; Knapp & VandeCreek, 1983; Paris, 2002; Simon & Hales, 2012; Simpson & Stacy, 2004; Wingate, Joiner, Walker, Rudd, & Jobes, 2004). These potential negative consequences of inadequate SRA become even more consequential when examined in light of the frequency with which mental health professionals and graduate trainees come in contact with suicidal clients (Cramer, Johnson, McLaughlin, Rausch, & Conroy, 2013; Dexter-Mazza & Freeman, 2003; Kleespies et al., 1990; Mackelprang, Karle, Reihl, & Cash, 2014). Ultimately, there are several negative consequences that can result from inadequate SRA practices. Further, research suggests that it is nearly impossible for MHPs to completely avoid encountering suicidal clients throughout their career, making this unpreparedness a chronic and pervasive problem.

With all of these potential negative consequences coupled with the likelihood of encountering a suicidal client, it remains to be known why so many MHPs are lacking in SRA skills. Researchers, clinicians, and government agencies have pointed to the lack of training in SRAM available to MHPs as a critical factor obstructing the provision of effective care to suicidal clients and thus, have disseminated calls to improve the state of training in this field (Jacobson et al., 2004; Schmitz et al., 2012; Joint Commission, 2010; Kleespies, Penk, &

Forsyth, 1993; Knox et al., 2006; U.S. Department of Health and Human Services [USDHHS], 2012; USDVA/DOD, 2013; U.S. Public Health Service [USPHS], 1999; World Health Organization, 1996). It has also been suggested that this problem can be traced back to the lack of SRAM training provided in graduate training programs (Bongar and Harmatz, 1989; Cramer et al., 2013; Dexter-Mazza and Freeman 2003; Mackelprang et al., 2014; Rudd, Cuckrowicz, & Bryan, 2008), which has resulted in some researchers taking a closer look at graduate training practices.

While some investigations have examined the inadequate state of doctoral training in SRAM, there still remains much to be understood about this problem. Bongar and Harmatz conducted one of the first published investigations on this topic in 1989. While results revealed that only 35% of the 92 clinical psychology doctoral training programs surveyed provided students with formal training in SRA practices, this study was completed nearly 30 years ago and likely does not accurately reflect current training practices. A more recent investigation conducted by (Dexter-Mazza & Freeman, 2003) revealed that the rates of formal training increased to just half (50%) of the 121 programs surveyed. However, this study examined Ph.D. and Psy.D. students in clinical, counseling, and school psychology programs together, without taking into consideration the varying differences in training experiences and expectations across each program. Contrary to previous findings, (Liebling-Boccio & Jennings, 2013) found that 97.6% of the 75 programs surveyed offered formal SRA trainings. However, this study surveyed only training directors of school psychology programs, precluding an understanding of the student's perspective of SRA training availability. This presents a potential concern as research continues to document that individuals are subject to enhancement bias or describing oneself and one's accomplishments more positively than what would be reflective of reality (Krueger, 1998).

Thus, it is possible that the director's might be susceptible to this same bias by unintentionally reporting an increase in the extent to which SRA practices are covered in their training program, as these data could be viewed as a reflection of the ability of the program's curriculum to train their students. While (Mackelprang et al., 2014) study is an improvement in that it assesses the input of students who might have a better understanding of their content needs and the training that they received relative to those needs, all respondents were studying at the same doctoral program. Thus, the study's finding that 76.3% of 59 clinical psychology doctoral students received in-class training on SRA is of questionable generalizability.

In summary, a meager amount of studies over the last 30 years have investigated current SRA training practices in clinical psychology doctoral programs. Among the studies that do exist, several methodological flaws mar the results. In addition to the drawbacks discussed above, the aforementioned studies failed to incentivize participants to potentially improve response rates, assess the quality of trainings received (i.e., did these trainings address core competencies in SRA?), and utilize multilevel modeling statistics in order to account for nesting effects within each program. Thus, there remains a several major gaps in knowledge surrounding the extent to which clinical psychology doctoral programs are providing quality SRA trainings for their students. Given this dearth of knowledge, it is important to examine the larger training literature for potential insight into this problem.

Training

Training is defined as a discrete learning experience designed to engender change in an individual's knowledge, attitudes and/or skills and is typically provided by an individual(s) who is assumed to have requisite knowledge in said learning area (Campbell et al., 1970). Training can be formal (e.g., in-person workshop) or more informal (e.g., self-directed reading and

involve the use of active (e.g., role-playing skill use and receiving feedback) versus passive (e.g., listening to a lecture, participating in an on-line training) learning techniques (Beidas, Cross, & Dorsey, 2014; Bennett-Levy & Lee, 2014; Dabbagh & Kistantas, 2012). In addition to these different methods of training, there also exists a multitude of topics and audiences to which a training can be provided. Audiences include pilots, emergency room nurses, military personnel, business professionals, and graduate students among others, with topics ranging from professional development to risk minimization to new skill development (Salas et al., 2012). Given the wide variety of training topics, audiences, and modes of delivery, it is important to review the extant training literature in order to understand how trainings can be most effective and the factors that can influence training success.

Several meta-analyses within the training literature suggest that trainings in general are successful in delivering information to different groups of individuals (e.g., Colquitt, Le Pine, & Noe, 2000; Krieger & Cavanagh, 2015, Salas et al., 2012; Salas & Bowers 2001). Research has demonstrated that declarative knowledge (factual information) about a particular subject area can be improved via varying modes of training (in-person workshops, lectures, self-directed learning, online training, etc.; Arthur, Bennett, Edens & Bell, 2003; Collins & Holton, 2004; Jurkowski & Hanze, 2015). This same basic principle that a wide variety of training methods can increase declarative knowledge has been found to hold true when training MHPs and graduate students in topics ranging from computer programming to anxiety disorders to suicide risk assessment (Gega, Norman, & Marks, 2007; McVey et al., 2005; Oleson & Hora, 2014; Smith, Silva, Covington & Joiner, 2014). While a variety of training methods have been found to increase declarative knowledge the same cannot be said for other outcomes of interest such as behavioral competency (knowing how to perform a behavior), skill acquisition, and actual behavior.

Empirical data suggests that increases in trainee's behavioral competency, skill, and actual behavior regarding a desired behavior are more likely when training methods involve active learning approaches including role-play practice, adaptive guidance, and feedback on skill usage as compared to passive learning techniques (lecture, video, reading; Bard, Rench, & Kozlowski, 2014; Bell & Kozlowski, 2010; Keith, Richter, & Naumann, 2010). The idea is that trainees taking autonomy in their own development, by practicing skills, asking questions, seeking/ receiving feedback, and reflecting on their own performance, more effectively allows for adaptive transfer of knowledge (applying new skills in novel situations) which can result in later behavior change (Kraiger & Cavanagh, 2015). This same finding regarding active training methods and behavioral competency skill, and behavior has been found to hold true when training MHPs on a variety of new skills including providing newly learned therapies (e.g., Cognitive-Behavioral Therapy, Beidas et al., 2012; Dialectical Behavior Therapy, Dimeff et al., 2009) and conducting comprehensive suicide risk assessments (Beidas, Cross, & Dorsey, 2014; Cross et al., 2011; Fenwick, Vassilas, Carter, & Haque, 2004; Pisani et al., 2011; Oordt et al., 2009; Wyman et al., 2008). While one might expect that the same would hold true when training graduate students, little to no research exists on differences in training methods and outcomes for graduate students (Wiessman et al., 2006). It is essential to understand how different training methods might impact behavioral competency gain, skill acquisition, and actual behavior in graduate students. Such an understanding would allow for implementing effective trainings that would hopefully translate to improved suicide risk assessment and management practices, thereby improving the quality of care provided to suicidal individuals. It is essential to understand training practices during this critical juncture of professional development as graduate training is the only time when training content can be dictated. If future mental health

professionals do not receive this training during graduate school, evidence doesn't suggest that they would receive such training later in their career as suicide risk assessment practices are not a required course for continuing education credits in most states (the exceptions being Kentucky, Nevada, New Hampshire, Pennsylvania, Utah, and Washington; American Foundation For Suicide Prevention [AFSP], 2016).

To summarize, the literature suggests that increases in declarative knowledge have been found to occur with a wide variety of trainings including lectures, online training, and self-directed learning (reading a book) across varying professions and content areas. However, these same methods have not been found to effectively increase behavioral competency, skills, and behavior as these constructs are more likely to increase when active training methods are utilized. The differences in outcomes between active and passive training methods have also been found in audiences of MHPs learning about a variety of topics including SRA. What remains to be known is how might these training methods impact graduate student learning in SRA? Indeed, some training research has found it essential to tailor trainings and training methods to the audience of interest, or potentially run the risk of compromising training effectiveness (for a review see Salas et al., 2012). While more empirical support is needed, reviewing different training theories may provide insight on how trainings for specific populations, such as graduate students, can be most effective when taking into consideration utilizing different training methods (e.g., active versus passive) in different content areas (e.g., suicide risk assessment).

Theories of Training

Over the past 30 years, the training field has seen an expansion in the number of theoretical frameworks describing when and how training works (Salas et al., 2012). Theories including Baldwin and Ford's Transfer of Training Model (1988), Kozlowski and colleague's multilevel training model (2000), and Grossman and Salas' Transfer Process Model (2011) have helped immensely in understanding the multitude of factors that can influence training effectiveness. These theoretical developments have also helped to make the distinction between training effectiveness (examine what happens before, after and during training through a systems-perspective lens; more macro in nature) from training evaluation (examines what works within a particular training; more micro in scope; Krieger et al., 1993; Salas & Cannon-Bowers, 2001). One model that epitomizes training effectiveness is the Comprehensive Model of Training Effectiveness (MTE; Cannon-Bowers et al., 1995).

In addition to taking into consideration characteristics of trainees (attitudes, self-efficacy, abilities, and motivation), the MTE model considers how the role, that the organization trainees are a part of, influences training outcomes. Examples of organizational characteristics include amount of supervisor support for the trainee, resource availability, workload, organizational culture (e.g., openness to innovation), and opportunity to practice. Further, the model takes into consideration how these variables might change over time (before, during, and after the training.) While the theory is a comprehensive tool that can assist in understanding the multitude of factors that could potentially influence the success or failure of a training, it is comprehensive to the point of excess and thus is very difficult to put into practice. As such, discussion of a more practical theory is warranted.

Declarative, procedural, reflective model. Compared to the MTE model, the Declarative, Procedural, Reflective (DPR) model represents a more applied theory that would fall under the training evaluation umbrella. The model was developed and studied in populations of therapist trainees (Bennett-Levy, 2006) following the author's discovery of the overall paucity of research on training therapists and lack of theoretical frameworks to guide such investigations (Bennett-Levy, 2006). The DPR model suggests three information-processing systems (declarative, procedural, and reflective) work in synchrony to allow for therapist acquisition of new knowledge and/or skills through training (Bennett-Levy, 2006). Further, the interactions among these three systems change as a therapist acquires more experience and expertise. The first domain of the model, the declarative system, describes knowledge of factual information that may be abstract or concrete in nature. The second domain, procedural system, consists of "how to" knowledge which allows for the direct application of skills in varied contexts and settings. Finally, the reflective subsystem describes practices of more experienced therapists wherein he/she may encounter a difficult situation, reflect on the situation, and then apply existing knowledge and skills from other contexts to the new situation (Bennett-Levy, 2006).

Despite being a relatively new theory, the DPR model has amassed some empirical support. The model was supported in training therapists in skills and competencies related to cognitive-behavioral- therapy (Bennett-Levy, McManus, Westling, & Fennell, 2009), case conceptualization (Haarhoff, Gibson, & Flett, 2011), and dialectical behavior therapy (Akerlund, 2012). In addition, the theory has helped to guide the development of trainings for teaching therapists cognitive-behavioral techniques (e.g., self-practice/ self-reflection; Farrand et al., 2010; Friedberg, Gorman, & Beidal, 2009).

In addition to the developing support for the theory, literature also exists to indirectly support one key construct of the theory, behavioral competency. The author maintains that the most effective training method for acquiring behavioral competency is through the steps of behavioral skills training (learning information, modeling, role-play practice, and feedback; Miltenberger, 2016; Bennett-Levy, 2006). Indeed the use of modeling, role-play practice, and feedback has been found to effectively teach MHPs, undergraduate students, and medical students new and/or difficult skills, especially when compared to more passive training techniques (Beidas, Cross, & Dorsey, 2014; Beidas & Kendall, 2010; Clapper, 2010; Cross et al., 2011; Joyner & Young, 2006; Kemeny et al., 2006; Pisani, Cross, Watts, & Conner, 2012; Proude et al., 2006; Taylor et al., 2005). However, due to the uniquely challenging nature of SRA and management practices (Jobes et al., 2008) and the propensity for MHPs to exhibit more negative attitudes toward suicide and anxiety in working with suicidal clients (Jacobson, Ting, Sanders, & Harrington 2004; Paulson & Worth, 2002), it is unclear whether or not current support for the DPR model would replicate in this context. Further, it remains to be seen whether DPR-adherent trainings could engender adequate SRA skill development in graduate trainees, which could provide the foundation for reaching competency in this challenging area.

Competency

Competency remains a diffuse term whose meaning varies widely depending upon the discipline and/or scholar providing the definition. In 1985, Griffiths and King developed a definition which has been applied to different areas of research including librarian sciences, business management, and psychology (Buttler & Du Mont, 1996; Khan, Masrek, & Nadar, 2015; Koenig, 1993). They define competency as a set of knowledge (both procedural and

content), skills, and attitudes associated with effective behavior (Griffiths & King, 1985). Effective behavior is measured by comparing actual performance to a set of predetermined behaviors which are representative of being competent in a given area. However, this definition is far removed from current conceptualizations of competency and might be better considered as predictors of competency, which will be discussed later in the present paper. Current definitions of competency reflect testing a set of observable behaviors and skills (or behavioral competency), which are built upon internal components such as knowledge and attitudes (Albanese et al., 2008). Competency can be applied to the suicide field to set guidelines surrounding the skills necessary to produce effective risk assessment behaviors in MHPs and graduate students alike.

Competency in suicide risk assessment. In 2001 the National Strategy for Suicide Prevention was disseminated as a call to action to increase the number of MHPs who are competent in the assessment and management of suicide risk through graduate training (NSSP Objective 6.3) and continuing education of professionals (NSSP Objective 6.9; NSSP; USDHHS, 2001). While this call to action brought this issue much needed attention, it lacked a list of delineated behaviors and skills necessary for a MHP to be considered competent in suicide risk assessment practices. In an effort to address this gap, researchers and leading organizations in the field have developed lists of core competencies for suicide risk assessment (American Association of Suicidology [AAS], 2010; Cramer et al., 2014; Jacobs & Brewer, 2004; Joiner, 2005; Kleespies et al., 2009; Rudd, Cukrowicz, & Bryan, 2008; Suicide Prevention Resource Center [SPRC], 2009; Sullivan & Bongar, 2009). Across various lists of core competencies, one can derive cross-theoretical domains which get at the fundamental aspects of competent SRA practices. These aspects consist of the following: maintaining a collaborative, nonjudgmental

stance; eliciting evidence-based warning signs, risk, and protective factors; determining the client's acute and long-term level of risk of suicide; thorough documentation; and knowing the law concerning suicide.

Maintaining a collaborative, nonjudgmental stance. The first core competency domain, cultivate an empathetic, collaborative, and nonjudgmental stance towards suicidal clients, refers to the MHP's attitudes and approach in working with clients who are potentially at risk for suicide. While this approach is essential in any therapeutic relationship (Ackerman & Hilsenroth, 2003; Fitzpatrick et al., 2009; Hilsenroth, Cromer, Ackerman, 2012), it becomes even more salient when MHPs are faced with suicidal clients. MHPs working with suicidal clients have been found to have strong visceral reactions (e.g., anxiety, fear, anger, resentment, shock, inadequacy, aversion, etc.) to the topic of suicide due to lack of training, direct or indirect experience with client death or litigation, personal history (e.g., loss of a loved one to suicide), emotional exhaustion, workload, and/or religious/ moral beliefs (Jacobson, Ting, Sanders, & Harrington, 2004; Klepsies, Becker, & Smith, 1990; Paulson & Worth, 2002). These internal reactions can lead to negative affect in the presence of an at risk client, negative attitudes toward working with suicidal clients, lack of empathy toward the at risk client, failing to conduct or rushing through risk assessments, and casting judgments on the client, among others, all of which can be detrimental to rapport and client outcomes (Del Re, Fluckieger, Horvath, Symonds, & Wampold, 2012; Davidson, 2012; Jessiman, Hackett, & Carpenter, 2017; Schaufeli, Maslach, & Marek, 2017). Thus, it is critical that MHPs are aware of their own attitudes, are able to manage their reactions to clients' disclosure of suicidal thoughts and/or behavior, and respond in a nonjudgmental and empathetic manner so that they can foster a strong therapeutic relationship with suicidal clients.

Maintaining a collaborative and empathetic therapeutic relationship has been championed as an important factor in treating suicidal clients by suicidology researchers and organizations (AAS, 2010; Joiner, 2005; Jobes, 2016; Linehan, 1993; Ellis et al., 2012; Rudd, 2008). Further, successful theoretical frameworks and treatments for suicidal clients have been built on the ideology that collaborating with the suicidal client and “consistently being on [their] side” is essential (e.g., Jobes, 2016; Linehan, 1993). While component analysis studies highlighting the role of a collaborative, nonjudgmental, and empathetic relationship on suicidal client outcomes have not yet been conducted, DBT and CAMS, approaches aligned with this core competency, have amassed empirical support for their efficacy in treating suicide. Given what is currently known about this topic, maintaining a collaborative and empathetic relationship with suicidal clients, while being aware of and managing personal biases and attitudes towards suicide, is at the foundation of what it means to be competent in SRA.

Knowing and eliciting evidence-based factors associated with suicide, The second SRA competency domain is to know and be able to elicit factors at the core of thorough SRAs, which are, evidence-based warning signs, risk factors, and protective factors. Failure to ask a client if they are thinking about suicide and the factors associated with these thoughts can result in the client not disclosing this information (Blum et al., 1996; Feldman et al., 2007; Halpern-Felsher, 2000) thereby preventing effective mitigation of the client’s risk of suicide. Ultimately, if MHPs do not ask clients this information it likely won’t be disclosed, leaving the client to deal with their suicidality on their own which could prove to have dire consequences. Thus, it is important that MHPs working with suicidal clients understand the factors that constitute a persons’ risk of suicide and are able to elicit these factors from their clients (AAS, 2010; Fowler, 2012; Kleespies et al., 1993). Empirically and theoretically- supported risk factors for suicide include, but are not

limited to, prior suicide attempts, self-injurious behaviors, mental and/or physical illness, family history of suicide, family conflict, perceived burdensomeness, thwarted belongingness, acquired capability, hopelessness, and intent (Brown, Beck, Steer, & Grisham, 2000; Bryan, Cukrowicz, West, & Morrow, 2010; Cukrowicz, Cheavens, Van Orden, Ragain, & Cook, 2011; Fisher et al., 2015; Franklin et al., 2016; Hawton et al., 2005; Hunt et al., 2009; Jahn, Cukrowicz, Linton, & Prabhu, 2011; Joiner, 2005; Nock et al., 2008; Nock & Kessler, 2006; Ribeiro et al., 2013). Further, empirically supported warning signs, which suggest risk is more imminent, include marked changes in mood and/or behavior, withdrawal and social isolation, engaging in reckless behaviors, and persistent substance abuse (Britton, Ilgen, Rudd, & Conner, 2012; Mandrusiak et al., 2006; McSwain, Lester, & Gunn, 2012; Van orden et al., 2006; Rudd, Berman, et al., 2006). In addition to understanding factors putting one at long-term and imminent risk for suicide, it is important for MHPs to understand factors that might *protect* an individual from suicide (Joiner, 2005; Rudd, 2006; Sullivan & Bongar, 2009), such as social support, active engagement in treatment, and positive relationships with family members (AAS, 2010; Eisenberg & Resnick, 2006; Nock et al., 2013; Rudd, 2006).

While knowledge of these factors is important, experts in the field agree that it is not enough to simply know warning signs, risk, and protective factors against suicide, MHPs also need to know *how* to elicit these factors from a suicidal client (Chehill & Kutcher, 2012; Gutierrez, 2006; Jobes, 2011; Joiner, 2005; Rudd, 2006; Weeinberg et al., 2010; Wingate et al., 2004). Guidelines such as those found within Therapeutic Models of Assessment (Huband & Tantom, 2000) illustrate how to assess any psychological symptom or disorder in which the goal is improved client outcomes (Finn & Tonsager, 1997). TAM emphasizes building rapport to aid in information gathering by “developing and maintaining empathic connections with clients,

working collaboratively with clients to define individualized assessment goals, and sharing and exploring assessment results with clients” (Finn & Tonsager, 1997). Unsurprisingly, expert advice for conducting SRA reflects many of these same concepts. Techniques for eliciting these factors include using clearly defined terms (e.g., suicide attempt v. self-harm) to ensure client is on the same page, being validating rather than confrontational regarding a client’s suicidal ideation, using accurate and affirming reflections to assist the client in generating a sense of control, normalizing client feelings, remaining honest and forthright, observing non-verbal cues (e.g., client appearance, pressured speech, hesitation, etc.), maintaining a non-adversarial/nonjudgmental stance, and exhibiting patience, persistence, and comfort in discussing the client’s risk of suicide (Constantintino, Castonguay, Zack & DeGeorge, 2010; Jobes, 2016; Rudd, Joiner, & Rajab, 2001). Given that warning signs, protective factors, and risk factors have been associated with suicide and comprise a comprehensive SRA, it is imperative that MHPs are able to identify and elicit these factors from suicidal clients.

Determining client’s level of risk. Building on the second competency, the third competency is to be able to determine the client’s level of suicide risk. Making such a determination can have an immediate impact on clinical decision-making regarding what a MHP could or should do to maintain client safety. For example, if a client presents with a constellation of risk factors, warning signs, and protective factors (or lack thereof) that warrant a “high risk” designation, it likely would be important to consider hospitalizing the client in order to keep them safe (Fowler, 2012). Alternatively, if the client’s risk was much lower or passive in nature, it might be preferable to consider outpatient treatment options as opposed to unnecessary hospitalization which has been shown to be associated with increased risk of suicide post-discharge (Large, Sharma, Cannon, Ryan, & Nielssen, 2011; Line et al., 2008; Valenstein et al.,

2009). While determining immediate risk level is an important step of SRAs, considering a person's immediate *and* chronic levels of suicide risk represents a paradigm shift in the field of suicidology. Newly developed theories, expert opinion, and preliminary research suggest that there is an important distinction between acute and chronic risk (for a meta-analysis see May & Klonsky, 2016). Theories, including Klonsky & May's Three-Step Theory (2015), Rudd's Fluid Vulnerability Theory (2006), O'Connor's Integrated Motivational-Volitional Model of Suicidal Behavior (IMV, 2011), and Joiner's Interpersonal Theory of Suicide (2005) provide potential explanations for the specific acute and chronic risk factors that distinguish individuals who only think about suicide from those who attempt and/or die by suicide. Factors including motivational and volitional moderators and mediators (e.g., social support, planning, access to means; O'Connor, 2011), cognitive, affective, physiological, and behavioral vulnerabilities (Rudd, 2006), and capacity for attempting suicide (i.e., dispositional, acquired, and practical; Klonsky, May, & Saffer, 2016; Joiner, 2005) are thought to be the impetus behind an individual progressing from suicide ideation to attempts.

In order to help integrate a multitude of risk factors, protective factors, and warning signs into straightforward, easy to understand risk distinctions, researchers and experts in the field have developed categories of suicide risk that can be determined following a thorough SRA with a client (Bryan & Rudd, 2006; Joiner, et al., 1999; O'Carroll et al., 1996; Sommers-Flanagan & Sommers-Flanagan, 1995). Across various lists of risk distinctions, one can derive cross-cutting domains which get at the core aspects of suicidal risk which include anchors of nonexistent, mild, moderate, severe and extreme. Nonexistent indicates the client does not endorse any identifiable suicidal ideation and thus an attempt is considered extremely unlikely. Mild suggests ideation is of minimal frequency and intensity, without plan or intent, and the client has few risk

factors and several protective factors suggesting that an attempt is still quite unlikely, although not impossible. Moderate risk level indicates that suicide ideation might occur with more frequency but it is still not very intense, a plan might be developed but intent is absent, and the client has a fair amount of risk and protective factors; thus, a suicide attempt could reasonably occur, although it is not very likely.

Severe suggests ideation is frequent, intense, and enduring; specific plans have been made but there is absence of subjective intent (although objective intent such as choice of accessible means and limited preparatory behaviors); and that the client presents with several risk factors and warning signs, and few if any protective factors. Severe suggests that a suicide attempt is very likely to occur. Finally, the Extreme level indicates suicidal ideation is enduring, frequent, and intense in nature; specific plans along with clear intent are made; and the client exhibits many risk factors and warning signs along with no protective factors, all of which suggests an attempt and/or death by suicide is extremely likely. It is recommended that individuals at the severe and extreme levels should be evaluated for inpatient hospitalization (Bryan & Rudd, 2006; Joiner et al., 1999; O'Carroll et al., 1996; Somers-Flanagan & Somers-Flanagan, 1995).

According to various sources, determining an individual's level of suicide risk, by utilizing risk categories that are part of risk classification systems, is an important step in the process of conducting thorough SRAs (AAS, 2010; Joiner, 2005; Rudd, 2006; Van Orden et al., 2010). It is believed that these risk classification systems are vital for accurate and efficient organization of a client's wide array of possible risk and protective factors. While there currently exists hundreds of documented risk factors for suicide (e.g., Hawton, Sutton, Haw, Sinclair, & Deeks, 2005; Nock, Hwang, Sampson, & Kessler, 2010; Ribiero et al., 2016), the

average human's working memory capacity extends to 7 +/- 2 pieces of information (Miller, 1956). As a result, it would be unrealistic and impractical to expect that the average MHP is able to know every documented risk factor and simultaneously process every client's unique combination of risk and protective factors to derive a risk determination on their own. Thus, risk classification systems present a simplistic yet comprehensive way of balancing risk and protective factors in order to produce an easy to understand risk determination.

In addition to a streamlined approach, another advantage of risk classification systems is that they utilize empirical research to indicate which risk factors may be more salient to the client's current risk status. For example, research has shown that factors including history of suicide attempts and self-injury to be one of the most robust predictors of future suicide attempts and deaths (Borges et al., 2010; Glenn & Klonsky, 2009; Krysinska & Lester, 2010; Nock & Kesler, 2006; Prinstein et al., 2008; Rudd, 2006). As such, classification systems often highlight the presence of these historical suicide related behavior risk factors as warranting a minimum of a "moderate" risk determination, depending upon presence/ absence of other factors (Bryan & Rudd, 2006; Joiner et al., 1999). Taken together, risk classification systems help to organize a multitude of empirically-derived risk factors, protective factors, and warning signs to determine an individual's level of risk and to guide immediate treatment planning (e.g., hospitalization v. outpatient treatment). Thus, determining a client's level of suicidal risk constitutes an important, and evidence based component of comprehensive SRAs (AAS, 2010; Jobes, 2016; Joiner, 2005; Linehan, 1993; Rudd, 2006; Van Orden et al., 2010).

Thorough documentation. The fourth competency is thorough documentation of the risk assessment process including the measures used to assess risk, the client's responses (direct quotations where possible), the MHP's determination of the client's risk, factors impacting this

determination (risk, protective, warning signs), and immediate and long-term clinical decisions made based on risk determination (AAS, 2010; Fowler, 2012; Granello, 2010; Rudd et al., 2008). In addition, experts suggest that should the MHP engage in any contact with colleagues regarding the case, these discussions and consultations should also be documented in detail (Joiner, 2005; Gutierrez, 2006; Rudd, 2006; Wingate et al., 2004).

This competency serves three important functions with arguably the most important functions being maintaining client safety and monitoring treatment progress (Bryan, Corso, Neal-Walden, & Rudd, 2009; Jobes & Berman, 1993; Lee & Bartlett, 2005; McDowell, Lineberry, & Bostwick, 2011). Thorough documentation should be able to paint a clear picture of the factors driving a client's risk of suicide (i.e., warning signs, risk factors; Cukrowicz, Wingate, Driscoll, & Joiner, 2004; Fowler, 2012; Granello, 2010). This documentation essentially provides MHPs with a checklist of items that need to be followed up on in order to maintain client safety. We know from research that the average human's working memory capacity extends to 7 +/- 2 pieces of information (Miller, 1956), which would make it nearly impossible for MHP's to memorize every client's unique situation and catalogue of presenting problems. Thus, by writing this information down, MHPs will be able to make informed decisions about client safety (e.g., hospitalization, intensive outpatient treatment) based on a multitude of factors and intricacies that comprise the client's risk of suicide (Jobes, Rudd, Overholser, & Joiner 2008; Yeager et al., 2005). Research also supports expert opinion regarding documentation as studies have found that patient safety is often compromised when documentation is lacking in explicit detail (Aitken, Manias, & Dunning, 2006; Patterson, Cook, & Render, 2002; Wang, Hailey, & Yu, 2011). In addition to assisting with patient safety, thorough documentation can provide MHPs with a blueprint to guide treatment and monitor

treatment progress. Documenting the risk factors, warning signs, and protective factors encompassing a client's suicide risk can illuminate treatment targets and aspects of the client's situation that can be strengthened in order to further protect them from suicide (Jobes, 2016; Rudd, Joiner, & Rajab, 2004; Schmitz et al., 2012). Further, thorough documentation can be used for continued comparison of the client's suicidal risk over time, ultimately leading to improved client outcomes (Baerger, 2001; Berman, 2006; Chu et al., 2015). Indeed, research has found that poorly documented health information is related to lower quality of care (Carter et al., 2012; de Beurs et al., 2011; Kripalani, 2007). A third function of thorough documentation serves to assist with professional liability protection (Frierson, 2007; Jobes, 2016). An unfortunate reality of the current clinical landscape is that MHPs can be sued for malpractice when a client attempts and/or dies by suicide while in their care (Conner, 1994). Moreover, there has been a recent increase in the number of these lawsuits against MHPs (Bryan, 2010; Ho, 2014; Simpson & Stacy, 2004). Experts and organizations including the American Psychological Association (APA) hold to the recordkeeping philosophy that "if it wasn't written down, it didn't happen" (Gutheil, 1980), meaning that MHPs should maintain detailed notes and documentation regarding ongoing risk assessment, any clinical decisions made based on risk determination, as well as the rationale for doing so (APA, 2007; Gutheil, 1980; Rudd, 2006). Essentially, a MHP could argue that they routinely conducted thorough SRAs with a client and made clinical decisions that were in the client's best interest and based on their presentation of risk and protective factors, but if there is no written documentation corroborating these actions then it becomes much more difficult to prove in a court of law. Thus, various sources agree on the idea that thorough documentation of risk assessment and clinical decision making is the best defense in a malpractice lawsuit (AAS, 2010; Goodman, Roiff, Oakes, Paris, 2012; Jobes & Berman, 1993; McNeil et al., 2008; Soisson,

VandeCreek, & Knapp, 1987). Due to the fact that thorough documentation helps to protect the client's best interests (monitoring risk and treatment progress, making clinical decisions based on assessed risk and protective factors) and also the liability of the MHP in the event of a malpractice lawsuit, thorough documentation is an important competency in the SRA process.

Knowing and understanding the laws concerning suicide. The fifth and final competency is knowing and understanding the laws concerning suicide. Laws such as the criteria for involuntary civil commitment or instances where confidentiality can be breached vary from state to state (AAS, 2010). For example, persons who are deemed a threat to self can be mandated by the involuntary commitment law to attend outpatient treatment in North Carolina (Swartz & Swanson, 2002). However, in Connecticut, persons can only be involuntarily committed to inpatient treatment and not outpatient treatment if they are determined to be a threat to themselves (Player, 2015). In regards to confidentiality, Arkansas' state law suggests that psychologists are not required by law to breach confidentiality whereas in New York, mental health professionals are mandated reporters in instances wherein "a patient presents a serious and imminent danger to himself" (Soulier, Maislen, & Beck, 2009). As such, experts agree that MHPs should be well-versed in their state's particular laws and statutes surrounding these processes so as to be fully prepared in the event that such a situation arises (Joiner, 2005; Rudd et al., 2008; Schmitz et al., 2012; Simon et al., 2014).

In addition to individual state laws, MHPs are expected to know and comply with the American Psychological Association's standards of care and ethical obligations for MHPs working with suicidal clients (e.g., knowledge of suicide warning signs, risk factors, and protective factors; ability to conduct thorough suicide risk assessments; implement effective therapy approaches; Firestone, 2014). Such an understanding of these obligations can again help

to protect a MHP in malpractice lawsuits (Cramer et al., 2014; Joiner, 2005) as well as facilitate the provision of appropriate care to suicidal clients. Case law dictates that knowledge of ethical and legal obligations and acting in accordance with these obligations greatly reduces the probability that a mental health professional will be successfully sued following the death by suicide of a client (*Hofflander v. St. Catherine's Hospital*, 2003; Simon & Shuman, 2006; *Speer v. United States*, 1981). Thus, knowing and understanding the laws concerning suicide represents an important component of thorough SRAs which compliments the aforementioned competencies.

In summary, the five core competencies of SRAs presented in this paper are maintaining a collaborative, nonjudgmental stance; eliciting evidence-based warning signs, risk, and protective factors; determining the client's acute and long-term level of risk of suicide; thorough documentation; and knowing and understanding the laws concerning suicide. A combination of expert opinion and empirical literature supports these competencies as being vital to the implementation of comprehensive SRAs. While delineating which competencies are necessary to become proficient in SRA is an important first step in increasing the number of prepared MHPs, it is equally important to understand the factors that might influence one to develop such competencies. This is especially important to understand as it presents opportunities to foster such competencies through activities such as training.

Predictors of Competency

As the science of training continues to make empirical strides, it has become apparent that a multitude of factors can influence training outcomes including individual factors of trainees, organizational characteristics, as well as characteristics of the actual training. Training

characteristics such as organization of material (Krieger et al., 1993; Salas & Cannon-Bowers, 2001), trainer competency (i.e., possession of requisite knowledge and skill to conduct a training successfully; Barr, 2002; Cooke, 2000; Durlark & DuPre, 2008; Kallestad & Olweus, 2003), and training credibility (i.e., the belief that training will result in improved task performance; Burke & Hutchins, 2007; Clark, Dobbins, & Ladd, 1993) have been found to be related to improved training outcomes. Organizational characteristics related to training outcomes include amount of supervisor support for the trainee, resource availability, workload, organizational culture (e.g., openness to innovation), and opportunity to practice (Cannon-Bowers et al., 1995; Grossman & Salas, 2011; Kozlowski et al., 2000; Salas et al., 2012). Individual factors such as motivation (e.g., Bauer, Orvis, Ely, & Surface, 2016; Grohmann, Beller, & Kauffeld, 2014), self-efficacy (e.g., Beck & Schmidt, 2012; Heggstad & Kanfer, 2005), and attitudes (Bauer, et al., 2016; Nikandrou, Brinia, & Bereri, 2009; Schwoerer, May, Hallensbe, & Mencl, 2005) have all been found to be related to training efficacy. Due to the numerous permutations of possible variables related to training outcomes, theoretical frameworks can help guide a streamlined conceptualization of factors that might lead to effective trainings (e.g., skill acquisition of learned behaviors).

The Theory of Planned Behavior (TPB; Ajzen, 1991) is one particular theory which has gained empirical support in predicting the engagement of a wide variety of behaviors including physical exercise, healthy eating habits, smoking cessation, substance abuse, and breastfeeding (Armitage, 2005; Armitage & Conner, 2001; Conner, Norman, & Bell, 2002; Conner, Warren, Close & Sparks, 1999; Dick et al., 2002; Diep, Chen, Davies, Baranowski, & Baranowski, 2014; Topa, Moriano, & Morales, 2012; Rhodes & Dickau, 2012). Moreover, the theory has been found to be related to acquisition of skills related to suicide prevention (Capp, Dean, & Lambert, 2001;

Servaty-Seib et al., 2014; Smith, Silva, Covington, & Joiner, 2014; Wallack, Servaty-Seib, & Taub, 2013). Due to the theory's empirical support and applicability to suicide prevention behaviors, it was used in the present study to delineate individual-level factors that can predict competency in SRA skills. It is important to note that while the present study examined factors which can influence training outcomes and competency at the individual level, there exists a multitude of broader training and organizational variables which can influence the overall success of the training.

Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB) was developed by Ajzen in 1991 to conceptualize the factors which influenced an individual to engage in learned behaviors. The theory posits that at the individual level, executing a specific behavior is determined by an individual's intentions to engage in that behavior, which are in turn predicted by the individual's attitudes, subjective norms, and perceived behavioral control (PBC). The TPB suggests that engaging in a behavior and increasing intentions to engage in said behavior are contingent upon improving an individual's attitudes, subjective norms, and PBC. According to this theory, an effective training would seek to enhance trainee's reported levels of these variables so as to increase the likelihood that they would engage in the desired behavior (e.g., comprehensive suicide risk assessments). As such, the present paper describes each variable (i.e., attitudes, subjective norms, PBC, and intentions) and highlights evidence supporting its utility in predicting behavior change.

The TPB conceptualizes attitudes towards a behavior as being closely related to the perceived value of the behavior's outcome (Ajzen, 1971). In other words, an individual may be more likely to have favorable attitudes towards completing a certain behavior if he/or she

believes that the outcome associated with the behavior is of value. Using suicide prevention skills as an example, if a MHP strongly values conducting comprehensive SRAs due to the idea that assessing an individual's risk is associated with a lower risk of dying by suicide, then he/or she may be more likely to hold the attitude that conducting SRAs is an important part of clinical work. Indeed, many researchers in the field have noted the importance of studying MHP's attitudes toward suicide prevention behaviors and its association with engaging in these behaviors in the future. Researchers have documented an association between improved attitudes toward suicide prevention behaviors (e.g., suicide risk assessment, suicide interventions, encouraging an individual at risk to seek professional care) following a training and an increase in engaging in these behaviors (Pearce et al., 2003; Oordt et al., 2009; Wyman et al., 2008). Further, several studies have found an association between improved attitudes and behavioral competence in MHP populations (Gask, Dixon, Morriss, Appleby, & Green, 2006; McNiel, 2008). While attitudes towards a specific behavior has demonstrated its utility in predicting the frequency and quality of future behaviors, there are other important pieces to this puzzle including subjective norms.

Subjective norms, as defined by the TPB, are closely tied to social pressure (Ajzen, 1971). These norms are defined as an individual's perceptions that other salient individuals or groups approve of and value the identified behavior. Thus, the theory posits that when an individual perceives his/or her peers as strongly valuing and being highly motivated to engage in a particular behavior, the target individual will also be more likely to engage in said behavior. For example, if a graduate student perceives his/or her peers as strongly valuing comprehensive SRAs when working with at-risk clients, he/or she may be more likely to also value conducting comprehensive SRAs and thus, may be more likely to implement these practices with future

clients. While subjective norms has received arguably less empirical attention in the suicide prevention field than attitudes, the construct has begun to be examined by various researchers. Studies have found subjective norms relative to intervening with suicidal individuals (e.g., asking if the individual is okay, referring individuals to help) to be significantly related to actual intentions to engage in these behaviors among college students and adult populations (Aldrich, 2015; Hess & Tracey, 2013; Hyland et al., 2012). Further, brief suicide prevention trainings have been found to be associated with improvements in subjective norms (Capp, Deane, & Lambert, 2001; Pearce et al., 2003). These findings are important given that the TPB suggests individuals may be more likely to engage in behaviors they believe their peers are engaging in and participating in a training with one's peers could reasonably lead one to believe that others value the learned behavior(s). Taken together, subjective norms is clearly an important component in changing behavior. Still, the TPB suggests that intentions to engage in a behavior is guided by subjective norms, attitudes, *and* perceived behavioral control.

Perceived behavioral control (PBC) refers to the degree to which an individual believes that they have adequate control over a behavior (Ajzen, 1971). This construct is closely related to self-efficacy, in that if an individual believes that they are capable of performing a behavior, they will be more likely to engage in it. Thus, if a graduate student believes that he/or she is capable of conducting a SRA, he/or she will be more likely to conduct SRAs than if his/or her perceived capability was uncertain. Researchers have found a relationship between attending suicide prevention trainings and enhanced PBC related to suicide prevention behaviors among college students (Cross et al., 2010; Tompkins & Witt, 2009), hospital employees (Cross et al., 2007), VA staff (Matthieu et al., 2008), aboriginal communities (Capp, Dean, & Lambert, 2001), and high school teachers (Reis & Cornell, 2008). Moreover, these studies also found a relationship

between increased PBC and an increase in behavioral intentions. Cross and colleagues (2007; 2010) noted in their examinations of role-play practices in SRATs that actual practice of learned skills during the training was related to increases in PBC as well as intentions to implement these skills. In addition, another study also demonstrated a positive association between increased PBC and the quality of suicide risk assessments conducted (McNiel, 2008). With this documented relationship between PBC and behavior, it is important to note that the TPB states PBC, subjective norms, and attitudes work together to influence behavioral intentions, which then impacts actual behavior change.

Behavioral intentions are defined as the individual's plan to engage in a particular behavior (Ajzen, 1971). The TPB states that an individual with high intentions will be more likely to carry out the behavior as the opportunity arises, compared to an individual with low intentions. Thus, behavioral engagement is considered to be the direct consequence of exhibiting high intentions, while attitudes, PBC, and subjective norms are thought to influence an individual's behavioral intentions. For example, possessing high attitudes, PBC, and subjective norms related to conducting SRAs would theoretically influence an individual's intentions of conducting SRAs. In turn, high intentions to conduct SRAs are proposed to impact the likelihood that an individual will actually conduct SRAs in the real world. Research has uncovered an association between intentions and actual behavior as it relates to seeking psychological help (Costin et al., 2009; Griffiths et al., 2016; Li, 2016; Reynders, Kerkhof, Molengerghs, & Van Audenhove, 2014; Roy et al., 2012) and implementing suicide prevention skills with suicidal youth (Monahan et al., 2015). Thus, behavioral intentions have been found to be an important predictor of actual behaviors. Taken together, the TPB and its' individual tenets have amassed empirical support in predicting behavior, particularly as it relates to suicide prevention skills. For

these reasons, the present study used the TPB as a road map for understanding individual-level factors that can predict competency in SRA skills among graduate students.

Hypotheses

Extant literature suggests that MHPs are insufficiently trained to competently assess and manage suicide risk (USDVA, 2013; Mirick, McCauley, Bridger, & Berkowitz, 2015; Silverman & Berman, 2014) and that this problem may originate during graduate training (Feldman & Freedenthal, 2006; Mackelprang, Karle, Reighl, & Cash, 2014; Rudd, Cukrowicz, & Bryan, 2008; Schmitz et al., 2012). However, this area has been inadequately studied, particularly in the context of clinical psychology doctoral programs. Further, prior research has failed to assess theoretically-derived predictors of competent SRAs behaviors (e.g., theory of planned behavior variables) and/or take into consideration the hierarchical structure of this type of data (i.e., individual-observations nested within schools and are contingent upon the training the school provides). This dearth of research precludes a full understanding of the problem and in turn, methods of remediation. In order to address these concerns, the present student tested the following aims and hypotheses (see Figure 1):

- Aim 1: To understand the relationship between student-level competency and internal student-level factors.
 - Hypothesis 1a: Attitudes, PBC, and subjective norms towards engaging in competent SRA behavior, will significantly, positively predict student-level intentions towards engaging in competent SRA behavior.

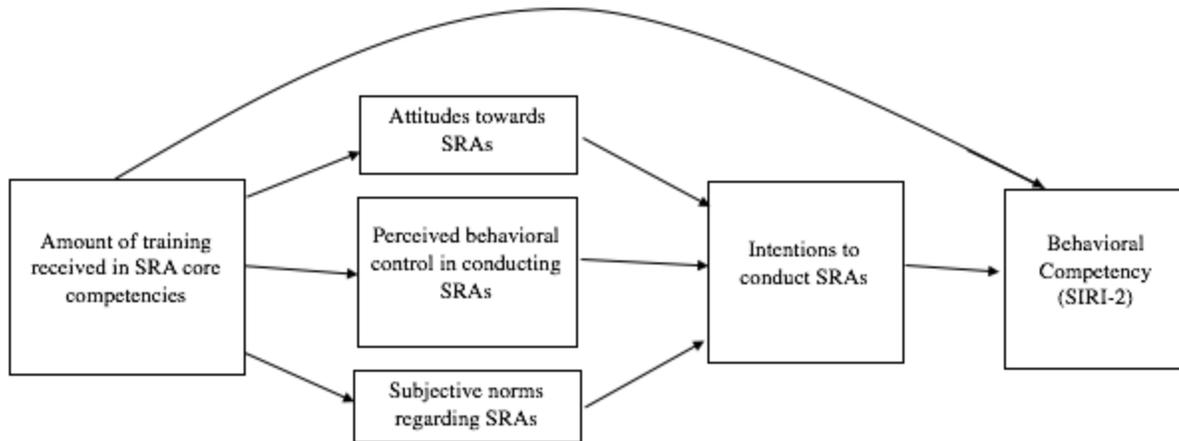


Figure 1. Proposed model. This figure represents hypothesized relationships between amount of training received in suicide risk assessment (SRA) core competencies, attitudes, perceived behavioral control, subjective norms, intentions to conduct SRAs and behavioral competency in responding to suicidal clients.

- Hypothesis 1b: Student-level intentions towards engaging in competent SRA behavior will significantly, positively predict student-level behavioral competency in responding to suicidal clients.
- Aim 2: To understand the relationship between graduate student-level competency and amount of training in SRA.
- Hypothesis 2a: The amount of training received in the core competencies of SRA will be significantly, positively related to student-level competency.
- Hypothesis 2b: The amount of training in the core competencies of SRA will be significantly, positively related to student-level variables of PBC, attitudes, subjective norms and intentions towards engaging in competent SRA behavior.

- Hypothesis 2c: After controlling for program-level factors (e.g., amount of SRA core competency training offered in a program), student-level variables (PBC, attitudes, and subjective norms will predict intentions towards engaging in competent SRA behavior.
- Hypothesis 2d: After controlling for program-level factors, student-level intentions towards engaging in competent SRA behavior) will positively predict student-level competency.

METHODS

Participants

Study participants were 167 students from 46 clinical psychology doctoral programs recruited via emails sent to clinical program training directors. The final sample size was determined to allow for detection of moderate fit for RMSEA based on power analyses (Preacher & Coffman, 2006). All participants were fluent in reading English and currently enrolled full-time in a clinical psychology doctoral training program, prior to internship. Clinical psychology students were chosen over social work students as a national survey of graduate programs found that clinical psychology doctoral programs were significantly more likely to require students to take more trainings as compared to MSW programs (Beck et al., 2014; Bellamy et al., 2013; Weissman et al., 2006). As such, if students are not required to take trainings they may be more inclined to forgo more trainings such as in suicide prevention in lieu of spending more time on the many other demands of graduate school (e.g., seeing clients, report writing, etc.) Further, clinical psychology doctoral students were selected over other types of graduate training programs (e.g., psychiatry, counseling, school psychology) as much of the current literature already focuses on these programs, while excluding clinical psychology doctoral programs (Cramer et al., 2013). In addition, the differences in training models/ practices across these different programs varies considerably (e.g., Bearman, Wadkins, Baillin, & Doctoroff, 2015; Mayne, Norcross, & Sayette, 1994; McFall, 2002; Norcross, Ellis, & Sayette, 2010; Parrish & Rubin, 2012; Sudak & Goldberg, 2012; Wike, Bledsoe, Bellamy, & Grady, 2013). Further, students in these programs differ significantly in terms of their GRE scores (Norcross, Ellis, &

Sayette, 2010) and in the severity of clients seen as professionals, such that clinical psychologists are found to be more likely to work with more severe clients (e.g., those presenting with thoughts of suicide; Benton, Robertson, Tseng, Newton, & Benton, 2003; Goodyear et al., 2016; Lichtenberg, Goodyear, Overland, Hutman, & Norcross, 2015). Furthermore, many of the studies examining SRA practices that do include clinical psychology doctoral programs have limited response rates (e.g., under 10 participants; Fenwick et al., 2004; McNiel et al., 2008) or only survey from one graduate program (Mackelprang et al., 2014).

A total of 267 participants were recruited. Data were screened for validity based on four criteria. A total of one hundred participants who 1) responded incorrectly or skipped the attention check items ($n = 25$), 2) completed less than 25% of the survey ($n = 59$), 3) endorsed being either currently on or just recently completing internship ($n = 22$), or 4) denied being enrolled in a clinical psychology doctoral program ($n = 9$) were removed from analyses. Because all criteria are not mutually exclusive, these numbers exceed the n of 100 that was excluded from analyses. Participants who were excluded from analyses based on these criteria did not statistically differ from those included in analyses based on whether or not they attended an APA-accredited program ($\chi^2 [df=1] = 3.14, p = .077$). However, participants did differ based on type of degree sought such that those who were excluded from analyses were significantly more likely to report seeking a PhD as opposed to a PsyD (62.7% v. 37.3%; $\chi^2 [df=1] = 4.10, p = .043$).

Demographics for the final sample of 167 participants can be found in Table 1. Participant age ranged from 20 to 40 ($M=27.13, SD=3.34$) and the majority of participants were female (83.8%) and Caucasian (83.2%). Most participants were in their second or third year (49.7%) of an APA-Accredited program clinical psychology program (98.8%), seeking their

Table 1. Sample Demographics

<u>Variable</u>	<u>Mean (SD)</u>	<u>Median</u>
Age	27.13 (3.34)	27.00
Hours of SRA Training	10.74	6.00
Suicidal Clients Worked With	(12.15)	2.00
SRAs conducted	6.72 (16.39)	5.00
	18.92	
	(40.10)	
Gender (Female)		
	<u>n (%)</u>	
<u>Race</u>	140 (83.8)	
Caucasian		
African American/Black		
Asian	139 (83.2)	
American Indian/Alaskan Native	4 (2.4)	
Native Hawaiian or Pacific	12 (7.2)	
Islander	2 (1.2)	
Other/Missing	1 (0.6)	
	9 (5.4)	
<u>Ethnicity</u>		
Hispanic/Latino	11	
	(6.6)	
<u>Sexual Orientation</u>		
Heterosexual	135	
Bisexual	(80.8)	
Homosexual	14	
Other	(8.4)	
	9	
Degree Seeking (PhD)	(5.4)	
	9	
<u>Year in Program</u>	(5.4)	
1 st		
2 nd	125 (74.9%)	
3 rd		
4 th		
5 th	32 (19.2)	
6 th or above	44 (26.3)	
	39 (23.4)	
	28 (16.8)	
	17 (10.2)	
	6 (3.6)	

Note. SRA= Suicide risk assessment

Ph.D. (74.9%; 25.1% seeking PsyD.) Further, the number of SRA training hours received by participants ranged from 0 to 70 ($M=10.74$, $SD=12.15$, Median = 6.00), the number of suicidal clients with whom participants have worked ranged from 0 to 120 ($M=6.72$, $SD=16.38$, Median = 2.00), and the number of suicide risk assessments conducted by participants ranged from 0 to 242 ($M=18.92$, $SD=40.10$, Median = 5.00). The median and mean for these three variables (i.e., hours of training, suicidal clients worked with, SRAs conducted) are considerably discrepant.

Measures

Demographics

Demographic variables were assessed via questions pertaining to gender, age, race/ethnicity, sexual orientation, year in program, name of institution, years and type of experience in working with suicidal clients, number of clients who have attempted and/or died by suicide, where they have received SRA trainings (e.g., self-study, program, externships), and the number of trainings taken at the students' program of study (see Appendix A).

Core Competencies

The core competencies training questionnaire (CCTQ) contains 10 items which are based on a reliable and valid measure of SRA core competency-assessment (Cramer et al., 2013; Hung et al., 2012). This measure has demonstrated sensitivity to change following a pilot test of suicide risk assessment training for graduate students (Cramer, Bryson, Stroud, & Ridge, 2016; Cramer, Bryson, Eichorst, Keyes, & Ridge, 2017) and convergent validity with other assessments of competency rating scales (Lund, Sxhultz, & Nadorff, 2016). The measure was adapted to assess the extent to which the doctoral programs' trainings addressed each core

competency (e.g., the percentage of time spent addressing each competency across all available trainings), as opposed to the extent to which the individual student perceives that he/or she has received competency in that area (e.g., “I have attained competence in this domain”). Further, the measure was slightly modified to be applicable to graduate students (e.g., “please indicate the extent to which you received training in each competency across all trainings attended”) and training directors (e.g., “please indicate the extent to which each competency is addressed across all available trainings”). Both graduate student and DCT-versions of the measure took about 5-10 minutes to complete (see Appendices B-C). In the present study, the core competencies training questionnaire demonstrated acceptable internal consistency ($\alpha = .82$).

Theory of Planned Behavior

The TPB measure consists of 12 items which were developed by following recommendations developed by Ajzen (2006) and based on the *QPRT Training Survey* (Gryglewicz et al., 2015) which assesses the attitudes, PBC, subjective norms (SN), and intentions of mental health professionals prior to and following attendance at a SRA training. The items across the four subscales are adapted to fit the graduate student population (e.g., changing “my coworkers” to “my peers”) and arranged randomly throughout the measure. All subscales included three items and utilized a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) with higher scores indicating stronger agreement with the construct assessed. Several items in each subscale are negatively worded to prevent response bias and thus were reverse scored to be consistent with scoring of the remaining items. The attitudes subscale is comprised of questions pertaining to participants’ attitudes towards suicide risk assessment and management skills (e.g., “engaging suicidal clients is an important part of clinical work”). The

intentions subscale consists of questions seeking to understand the extent to which participants intend on engaging in SRA behaviors (e.g., “I plan on asking about suicidal ideation with all my clients”). The PBC subscale is comprised of items related to perceptions of participant ability to engage in competent behavior related to assessing risk in suicidal clients (e.g., “I am confident in my ability to use the information I collect to judge suicide risk”). Finally, the subjective norms subscale assesses perceptions of how the individual’s peers value SRA behaviors (e.g., “my peers believe it’s important for me to conduct accurate suicide risk assessments”). The individual subscales have demonstrated adequate reliability (Cronbach’s alpha ranges from 0.77- 0.87), sensitivity to change, and predictive validity related to conducting suicide risk assessments (r values ranges from .28 to .32, $p < .05$; Gryglewicz et al., 2015; Gryglewicz et al., 2016). See Appendix D for further details on the measure and associated subscales. In the present study, the TPB measure demonstrated acceptable internal consistency ($\alpha = .75$).

Behavioral Competency

The *Suicide Intervention Response Inventory- Revised (SIRI-2*; Neimeyer & Pfeiffer, 1994) assesses competence in responding to suicidal clients. This measure consists of 25 hypothetical suicidal statements and participants are asked to rate on a seven-point Likert scale, the extent to which two different clinician responses are appropriate answers to each scenario. In order to better assess participants’ propensity to engage in competent behaviors, the scale of the measure was adapted from assessing appropriateness of responses (i.e., (-3) *highly inappropriate response* to (+3) *highly appropriate response*) to assessing the likelihood that participants would engage in each response (i.e., (-3) *highly unlikely response* to (+3) *highly likely response*). Total scores were calculated based on discrepancies from correct responses, with lower scores indicating higher competency. Reported measures of internal consistency and test-retest

reliability have been excellent (Cronbach's $\alpha = .90$ to $.93$) and the scale has demonstrated both construct and convergent validity (Bonnelle & Neimeyer, 1997; Mackelprang et al., 2014; Scheerder, Reynders, Andriessen, & Audenhove, 2010). Further, this measure has been found to be related to engaging in actual competent suicide risk assessment behavior as measured via objective performance in standardized role-plays (Cramer, Bryson, Stroud, & Ridge, 2016; Morriss, Gask, Battersby, Francheschini, & Robsin, 1999; Gask, Dixon, Morriss, Appleby, & Green, 2006; See Appendix E). In the present study, the SIRI-2 demonstrated acceptable internal consistency ($\alpha = .84$).

In addition to the above items, several attention check items (e.g., $1+1 = 2$) were used to confirm participant attentiveness.

Procedure

Email addresses of clinical psychology programs' directors of clinical training (DCTs) were gathered via each programs' websites. Training directors of clinical psychology doctoral programs were emailed invitations for students to participate in this voluntary research opportunity (see Appendices F-G for email invitations). Training directors were informed that doctoral programs with the top three highest participation rates (i.e., proportion of participating students to total number of enrolled students) would receive a monetary award to be applied to the program's student conference travel funds. The total number of enrolled students was identified by the programs' website and confirmed via a brief survey administered to the DCTs. In addition to assessing the number of enrolled students in their program not on internship, the brief 10-item survey assessed core competencies addressed in the programs' general and suicide risk assessment trainings.

Training directors who chose to forward the invitation email, provided students with the opportunity to click on the survey hyperlink and be redirected to an external survey website (e.g., Qualtrics). Participants then viewed the informed consent document outlining the study's description and ensuring voluntary participation and confidentiality of information. All individuals were aware of their right to voluntary participation, confidentiality of information, and to refuse participation and/or opt out of the study at any time. Interested individuals had the opportunity to agree to participate after reading an online informed consent outlining all study policies and procedures. Those who agreed to participate in the study were then asked to answer questions ensuring that they met inclusion criteria (at least 18 years of age, attending a clinical psychology doctoral program prior to internship) and complete the questionnaires described above (TPB measure, core competencies questionnaire, behavioral competency, and demographics, with attention check items dispersed throughout) which took approximately 35 minutes to complete.

As hierarchical linear modeling was originally proposed to test hypothesized relationships, targeted data collection was implemented in order to achieve a greater number of programs with at least 5 participating students. Specifically, DCTs of 12 programs with anywhere between 2-4 participating students from that school were contacted on one additional occasion in order to encourage other students to participate.

Following data collection, responses were then analyzed to determine the three programs with the highest participation rates. Then, training directors were contacted in order to determine the best way of transferring their participation awards to the programs' student conference travel funds. The program with the highest participation rate received \$750, the second highest received \$500, and the third highest received \$250.

Data Analysis

Preliminary Analyses

Prior to conducting primary analyses, descriptive statistics were used to evaluate normality assumptions (e.g., skewness, kurtosis). Measures with non-normal distributions (i.e., Attitudes subscale, Subjective Norms subscale, SIRI-2, and CCTQ) were first screened for outliers. Both the SN (subjective norms) subscale and the CCTQ were found to have data points that were 3 times the Interquartile Range away from the mean and as a result these data points were removed (3 data points from SN subscale and 5 data points from CCTQ; Tukey 1997). However, removal of these extreme outliers still resulted in non-normal distributions. As a result, these measures, in addition to the ATT subscale and the SIRI-2, were log transformed. This transformation was employed due to it being recommended as a way to correct non-normal distributions in order to meet underlying assumptions of path analyses (Cohen, Cohen, West, & Aiken, 2002; Keene, 1995). While the transformation did affect the distributions, all analyses were conducted both with and without transformed data and the results were comparable. As a result, analyses are reported with non-transformed values in order to assist with interpretation of results (Howell, 2007).

Primary Analyses

It is important to note that nesting effects within the data, meaning a lack of independence among observations based on program from which the participant was, were possible. As such, independence of observations was tested via calculating the design effect for each dependent variable. Results revealed that the design effects for all dependent variables were

below 2, indicating negligible effects of multilevel nesting on results (Muthen & Satorra, 1995). As a result, multilevel modeling was not utilized. Instead, path analysis was conducted using SAS statistical software (Version 9 of the SAS System, Copyright © 2013) in order to test hypothesized relationships in the present study. Model fit was assessed using the model-based chi-square value, with insignificant p-values suggesting good model fit (Joreskog, 1969), the Comparative Fit Index ($CFI \geq 0.95$; Bentler, 1990), the Bentler-Bonnett Normed Fit Index ($NFI \geq 0.95$; (Bentler & Bonett, 1980), the Standardized Root Mean Residual ($SRMR < 0.08$; Hu & Bentler, 1999) and the Root Mean Square Error of Approximation ($RMSEA < 0.08$; Browne & Cudeck, 1993).

In order to test hypothesis 1a-1b, that attitudes, PBC, and SN towards engaging in competent SRA behavior, will significantly, positively predict student-level intentions towards engaging in competent SRA behavior (hypothesis 1a); and that intentions towards engaging in competent SRA behavior will significantly, positively predict student-level behavioral competency in responding to suicidal clients (hypothesis 1b), a path analysis model was implemented. As such, direct paths were written between attitudes and intentions, PBC and intentions, as well as SN and intentions (hypothesis 1a). In addition to testing the aforementioned direct paths, a direct path between intentions and behavioral competency (as measured by the SIRS-2) was also described (hypotheses 1b). After assessing the direct effects in hypotheses 1a-1b, indirect effects were examined by implementing customized effect analysis. A stability coefficient less than one suggests sufficient convergence of the total and indirect effects that are valid for interpretation. Further, significant indirect effects ($p < .05$) and direct effects equal to zero, suggest that a predictor's effect on the outcome variable is indirect only. Conversely,

indirect effects that are equal to zero, coupled with significant direct effects suggest that the relationship between the predictor and outcome variable are direct only (Yung, 2008).

In regard to hypothesis 2a and hypothesis 2b, amount of SRA core competency training received (as measured by the CCTQ), the model used in hypotheses 1a-1b was expanded. The amount of SRA core competency training received was added as an exogenous variable, with direct paths predicting attitudes, PBC, and SN. This model was expanded in order to examine the relationship between amount of SRA core competency training received and attitudes, PBC, and SN, as well as how that would influence the relationship between attitudes, PBC, SN, and intentions in addition to the relationship between intentions and behavioral competency (as measured by the SIRI-2; hypothesis 2b). Due to poor fit, modification indices were run in order to determine how model fit could best be improved. Modification indices suggested that adding a direct path from subjective norms to attitudes (as opposed to only having a direct path from subjective norms to intentions) would help to improve model fit. As a result, this newly modified model was analyzed. Following this, the direct path between amount of SRA core competency training received and behavioral competency was also assessed (hypothesis 2a). Finally, the indirect effects of amount of SRA core competency training received on outcome variables was examined via the customized effect analysis procedures described above.

In order to test for hypotheses 2c-d, which were modeled off of hypotheses 2a-b but also controlled for program-level factors, descriptive statistics were first run on the amount of SRA core competency training offered in a program (e.g., mean, standard deviation, range). Following this, the design effect was calculated for dependent variables (i.e., attitudes, perceived behavioral control, subjective norms, intentions, and behavioral competency).

RESULTS

Preliminary Analyses

Descriptive statistics (i.e., means, standard deviations, range, skewness, and kurtosis) of study variables are presented in Table 2.

Table 2. Means, Standard Deviations, Range, Skewness, and Kurtosis of Study Variables

	Mean	SD	Range	Skewness	Kurtosis
1. Attitudes subscale	4.80	.37	3.33- 5.00	-1.95	2.98
2. PBC subscale	3.98	.60	1.67- 5.00	-0.52	1.11
3. SN subscale*	4.71	.43	2.67- 5.00	-1.61	2.32
4. Intentions subscale	4.23	.62	2.33- 5.00	-0.75	0.11
5. Behavioral Competency (SIRI-2)	41.03	9.83	20.54- 85.18	1.51	4.33
6. SRA Core Competency Training (CCTQ)*	44.62	22.07	0.00- 90.00	-0.94	-0.08

Note. PBC= Perceived Behavioral Control, SN= Subjective Norms, SIRI-2 = Suicide Intervention Response Inventory – Revised, CCTQ= Core Competency Training Questionnaire.

*Descriptives of SN subscale and the CCTQ are based on after removal of outliers.

While the Intentions and PBC subscales were normally distributed, all other variables were found to be skewed and/or kurtotic (Attitudes subscale, Skew = -1.95, Kurtosis = 2.98; Subjective Norms subscale, Skew = -1.92, Kurtosis = 4.27; SIRI-2, Skew = 1.51, Kurtosis = 4.33; and CCTQ, Skew = 4.98, Kurtosis = 18.33). All non-normally distributed measures were first screened for outliers. Both the SN (subjective norms) subscale and the CCTQ were found to have data points that were 3 times the Interquartile Range away from the mean and as a result

these data points were removed (3 data points from SN subscale and 5 data points from CCTQ; Tukey 1997). However, removal of these extreme outliers still resulted in one of these measures being non-normally distributed (SN subscale, Skew = -1.61, Kurtosis = 2.32). As a result, the SN subscale, in addition to the ATT subscale and the SIRI-2, were log transformed. Log transformation did affect the distributions (Attitudes subscale, Skew = 0.63, Kurtosis = 1.37; Subjective Norms subscale, Skew = 0.21, Kurtosis = 0.79; SIRI-2, Skew = 0.41, Kurtosis = 1.23). Due to comparable results with and without log transformed data, results will be reported with non-transformed values in order to assist with interpretation of results (Howell, 2007).

Of note, most participant scored in the 50th percentile on the SIRI-2 as lower scores indicate better performance and the worst possible score is a 247.28 (Sheerder, Reynders, Andriessen, & Audenhove, 2010). Further, the average percentage of SRA core competencies received across all trainings was 44.62 (SD= 22.07, Range= 0-90%). This score is similar to DCT's responses on the same measure which stated that the percentage of SRA core competencies addressed across all trainings available to students was 46.55 (SD= 19.42, Range= 3.10- 70%). In addition, DCT's reported that the average number of hours of SRA training available to any student over the course of his/or her training was 6.95 (SD= 4.91, Range = 1 - 20), whereas students reported an average of 10.74 (SD= 12.15, Range=0-100).

Intercorrelations among study variables are presented in Table 3. As expected, attitudes, perceived behavioral control, and subjective norms were found to be significantly related to intentions. In addition, subjective norms was found to be significantly related to attitudes and perceived behavioral control. It is important to note that PBC and the CCTQ were significantly correlated with the participant's year in the doctoral program (small to moderate effects), such that those who had been in the doctoral program for a longer period of time were more likely to

Table 3. Intercorrelations Between Study Variables

	1	2	3	4	5	6	7	8
1. Attitudes subscale	-							
2. PBC subscale	.02	-						
3. SN subscale	.40**	.23**	-					
4. Intentions subscale	.24**	.25**	.19*	-				
5. Behavioral Competency (SIRI-2)	-.05	-.04	-.03	-.04	-			
6. SRA Core Competency Training (CCTQ)	.13	.10	.12	.05	-.03	-		
7. Year in Program	.01	.30**	.07	.05	-.10	.18*	-	
8. Number of SRA's conducted	-.11	.25**	.10	.25**	.04	.04	.34**	-
9. Number of SRA training hours received	-.03	.29**	.09	.19*	.14	.04	.26**	.49**

Note. PBC= Perceived Behavioral Control, SN= Subjective Norms, SIRI-2 = Suicide Intervention Response Inventory – Revised, CCTQ= Core Competency Training Questionnaire, SRA= suicide risk assessment. ** $p < .001$, * $p < .05$.

report receiving more training in SRA core competencies and report higher levels of PBC.

However, the CCTQ measure was not related to any other study variables.

Additionally, behavioral competency as measured by the SIRI-2 was not related to any measured variables. Further, both the number of SRA's conducted and the number of SRA training hours received were positively correlated with PBC (moderate effect), intentions (small to moderate effects), and the participant's year in the doctoral program (moderate effect).

Aim 1

Hypothesis 1a

The goal of Aim 1 was to understand the relationship between student-level competency and internal student-level factors. Accordingly, hypotheses 1a and 1b within Aim 1 were tested using path analyses which proposed attitudes, PBC, and SN towards engaging in competent SRA behavior, will significantly, positively predict student-level intentions towards engaging in competent SRA behavior (hypothesis 1a); and that intentions towards engaging in competent SRA behavior will significantly, positively predict student-level behavioral competency (as measured by the SIRI-2) in responding to suicidal clients (hypothesis 1b). The overall model demonstrated good to excellent fit to the data $\chi^2 [df=3] = 0.39, p = .94, CFI = .98, NFI = 0.99, RMSEA = 0.02, SRMR = 0.01$ (Hu & Bentler, 1999; Kenny, 2015; MacCallum, Browne, Sugawara, 1996). The model explained 12 % of the variance in intentions. Although the overall model fit was good to excellent, hypothesis 1a was partially supported, such that the direct paths between attitudes and intentions (estimate= 0.22, standard error (SE) = 0.08, $p = .006$) as well as PBC and intentions (estimate= 0.23, SE= 0.08, $p = .002$) were significant. Attitudes accounted for 2% of the variance in intentions while PBC accounted for 0.6% of the variance. The path between SN and intentions (estimate= 0.07, SE= 0.11, $p = .43$) was non-significant and accounted for 2% of the variance in intentions.

Hypothesis 1b and Indirect Effects

In terms of hypothesis 1b, which proposed that intentions would be significantly related to behavioral competency, results did not support this hypothesis. The path between intentions

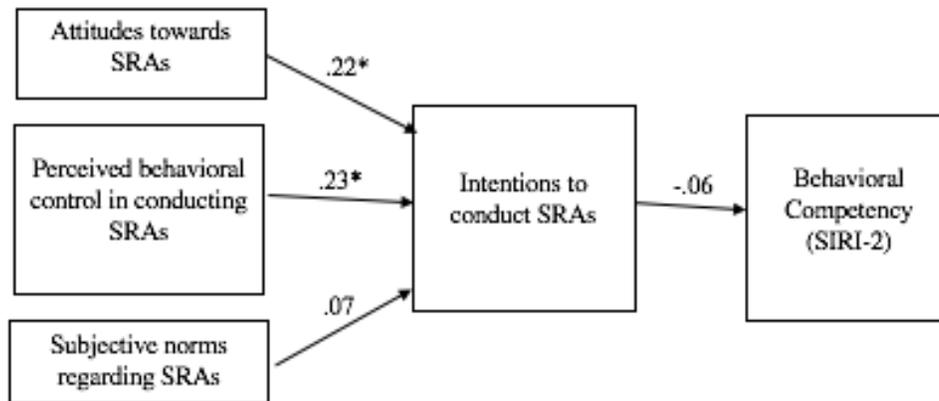


Figure 2. Standardized estimates of the path model for hypotheses 1a and b explaining attitudes, perceived behavioral control, subjective and intentions, predicting behavioral competency in suicide risk assessment.

and behavioral competency was non-significant (estimate= -0.06, SE= 0.08, $p = .49$). Further, 0.10% of the variance in behavioral competency was explained by the model. Following hypothesis testing, indirect effects were examined. Results indicated that the indirect effect of attitudes, PBC, and SN on behavioral competency through intentions was not significant (ATT: estimate = -0.01, SE = 0.02, $p = .60$; PBC: estimate = -0.01, SE = 0.02, $p = .59$; SN: estimate = -0.002, SE = 0.006, $p = .65$). Overall model results are described in Figure 2.

Aim 2

Hypothesis 2b and Modification Indices

Next, Aim 2 was tested, in order to understand the relationship between graduate student-level competency and amount of training in SRA, by expanding the model used to test hypotheses 1a and 1b. The amount of SRA core competency training received was added as an exogenous variable, with direct paths predicting attitudes, PBC, and SN. This model was expanded in order to examine the relationship between amount of SRA core competency training received and attitudes, PBC, and SN, as well as how that would influence the relationship between attitudes, PBC, SN, and intentions in addition to the relationship between intentions and behavioral competency (as measured by the SIRI-2; hypothesis 2b). The overall model demonstrated poor fit to the data $\chi^2 [df=7] = 31.75, p < .001, CFI = 0.45, NFI = 0.47, RMSEA = 0.16, SRMR = 0.10$. As a result, direct paths were not interpreted and modification indices were run in order to determine how model fit could be improved.

The LaGrange Multiplier (LM) Test revealed that adding a path from SN to attitudes would correspond to a 0.47 parameter change (LM stat= 22.93, $p < .001$). As a result, this path was added to the overall model and the modified path analysis was conducted. This modified model demonstrated good to excellent fit to the data $\chi^2 [df=7] = 7.54, p = .37, CFI = 0.98, NFI = 0.97, RMSEA = 0.02, SRMR = 0.04$ (Hu & Bentler, 1999; Kenny, 2015; MacCallum, Browne, Sugawara, 1996), and explained 0.7% of the variance in behavioral competency and 12.5% of the variance in intentions. Interpretation of direct paths did not reveal support for hypothesis 2b. However, paths between attitudes and subjective norms (estimate= 0.39, standard SE = 0.07, $p < .001$), attitudes and intentions (estimate= 0.23, SE= 0.08, $p = .006$), as well as PBC and

intentions (estimate= 0.23, SE= 0.08, $p = .002$) were found to be significant and these constructs explained 2.0%, 17%, and 0.6% of the variance in intentions, respectively. Conversely, the paths between amount of training received in SRA CCs and TPB variables were non-significant (Attitudes: estimate= 0.08, SE= 0.07, $p = .24$; PBC: estimate= 0.07, SE= 0.08, $p = .34$; SN: estimate= 0.13, SE= 0.08, $p = .09$) and the path between intentions and behavioral competency was also non-significant (estimate= -0.04, SE= 0.09, $p = .64$).

Hypothesis 2a and Indirect Effects

Next, hypothesis 2a was examined in the same model described in hypothesis 2b which proposed that the amount of training received in the core competencies of SRA will be significantly, positively related to behavioral competency. As this path was already described in the previous model, model fit was found to be good to excellent and thus direct paths were able to be interpreted, $\chi^2 [df=7] = 7.54$, $p = .37$, CFI = 0.98, NFI = 0.97, RMSEA = 0.02, SRMR = 0.04. However, the path described between amount of training and behavioral competency was found to be non-significant (estimate= -0.02, SE= 0.08, $p = .67$). Following hypothesis testing, indirect effects were examined. Results indicated that the indirect effect of training on intentions and behavioral competency was not significant (Intentions: estimate = 0.06, SE = 0.03, $p = .05$; SIRI: estimate = -0.003, SE = 0.005, $p = .51$). Overall model results are described in Figure 3. Taken together, these findings do not provide support to hypothesis 2b as training was not found to be significantly related to TPB variables or behavioral competency. However, running modification indices helped to better explain the relationship between attitudes and subjective norms.

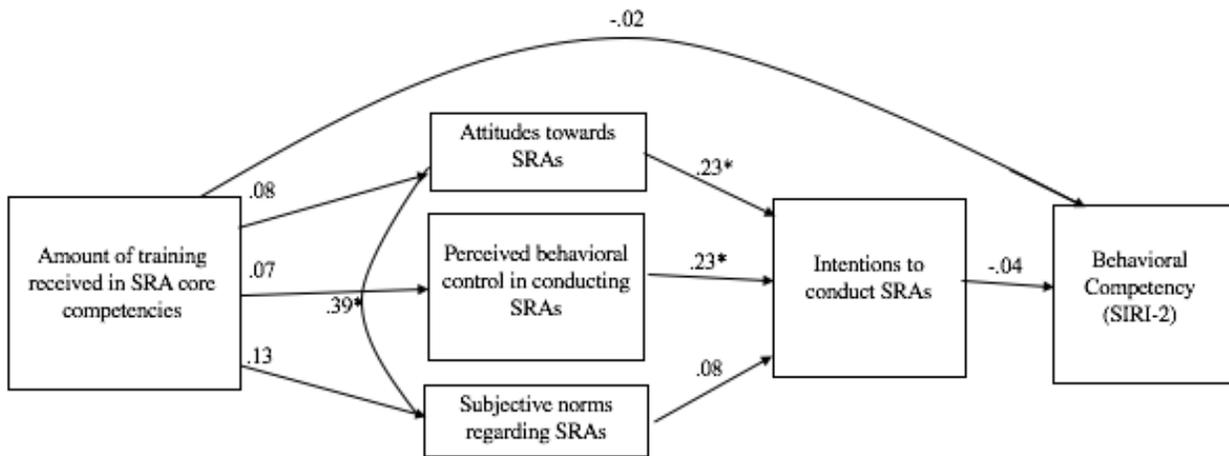


Figure 3. Standardized estimates of the path model for hypotheses 2a and b incorporating amount of training receiving in SRA core competencies as a predictor of the overall model with a direct path from amount of training to behavioral competency.

Although the modifications to the original model for Aim 2 did improve the fit for the data, the modifications made to the model resulted in a mere 0.5% increase in the amount of variance in intentions and a 0.6% increase in the amount of behavioral competency explained by the model, as compared to the Aim 1 model. As a result, the modified model is rejected for the more parsimonious Aim 1 model.

Hypotheses 2c-d

Following analysis of hypotheses 2a-b, hypotheses 2c-d (which controlled for amount of training offered) were examined. In term of descriptive statistics for the amount of training in SRA core competencies offered to students there was substantial variation in responses ($n = 22$). Percent of training in core competencies offered ranged from 3.10 to 70% of all SRA trainings offered by a program. Further, the average percent of SRA core competencies offered across all

trainings in a given program was 46.55% (SD= 19.42). In addition, the number of hours of SRA training offered to participants (regardless of whether or not core competencies were addressed) ranged from 1 to 20 hours ($M= 6.95$; $SD= 4.91$).

Following descriptive statistics, the design effect was examined in order to determine if dependent variables were systematically related to program, which would warrant the use of multilevel modeling techniques. The design effect formula takes into consideration the average cluster size (i.e., average number of student participants from each program) as well as the intraclass correlation of each dependent variables. Design effects that are below 2 suggest that there are negligible effects of multilevel nesting on results, indicating that multilevel modeling does not need to be conducted (Muthen & Satorra, 1995). Design effects ranged from 0.43 to 0.51 across dependent variables, with the average design effect totaling to 0.48. Due to the design effect being below two, multilevel modeling was not implemented in the present study and thus the hypotheses relevant to this particular analytic method (hypotheses 2c-d) were not addressed further.

DISCUSSION

The goals of the present study were to evaluate a model predicting clinical psychology doctoral students' attitudes, PBC, subjective norms, intentions, and behavioral competency in responding to suicidal clients; and the relationship of amount of graduate training in SRA core competencies to the aforementioned constructs. Research has found that MHPs are lacking the necessary SRA skills, knowledge, and attitudes to work with suicidal clients; a problem that may originate during graduate training (Jobes et al., 2008; Mackelprang et al., 2014). Unfortunately, this area has been inadequately studied which prevents a full understanding of the extent of this problem as well as effective methods of remediation. Thus, the present study sought to address major gaps in the literature surrounding the extent to which clinical psychology doctoral programs are providing quality SRA trainings for their students and how these trainings may relate to constructs central to behavior change (TPB; Ajzen, 1991).

Results from the present study provided partial support for the model describing attitudes, PBC, and SN positively predicting intentions and intentions predicting behavioral competency. The overall model demonstrated good fit and attitudes and PBC were found to be significantly related to intentions, while SN was not related to intentions. The second model which included amount of training in SRA core competencies did not demonstrate good fit, thus modifications were made to the model which consisted of adding an additional path between subjective norms to attitudes. While this modification did help to improve model fit, hypotheses for the second model were not supported.

Prediction of Intentions

As predicted, the overall model describing attitudes, PBC, and SN positively predicting intentions demonstrated good to excellent fit and explained a moderate amount of variance in intentions. The direct paths between attitudes and intentions as well as PBC and intentions were found to be significant, demonstrating small effects. These findings are consistent with the overall TPB literature which suggests attitudes toward engaging in a behavior and perceived behavioral control are related to one's intentions toward engaging in said behavior (Armitage & Conner, 2001; Dick et al., 2002; Conner, Warren, Close & Sparks, 1999). Further, these relationships have been found to hold true in the suicide prevention literature as well (Cross et al., 2010; Oordt et al., 2009; Pearce et al., 2003; Reis & Cornell, 2008; Tompkins & Witt, 2009; Wyman et al., 2008).

These results suggest that attitudes may be a key factor in influencing one's intentions to conduct SRAs. As such, it would be important to better understand the factors that influence these constructs so as to help increase the likelihood that an individual intends to conduct SRAs. Mental illness, and suicide-related behaviors in particular, can be associated with strong, negative attitudes and stigma (e.g., the individual is engaging in these behaviors simply for attention) which can influence the extent to which a MHP wants to work with and help an individual endorsing suicidal ideation (Rao, Mahadevappa, Pillay, Sessay, Abraham, & Luty, 2009; Schulze, 2007). Some research has found that providing information on facts and statistics on suicide can help to improve attitudes regarding suicidal clients (Beautrais, John, Fergusson, 2004; Gureje, et al., 2006; Morgan, Evans, Johnson, & Stanton, 1996). However, more research is needed to better understand the active ingredients in this relationship (e.g., providing

information on the causes of suicide) as well as how this might be applicable to graduate students. In addition, extant literature suggests that changing one's beliefs, particularly beliefs that are incorrect can help to improve one's attitudes surrounding a particular topic. For example, the widespread false belief that vaccinations cause autism led to many negative attitudes concerning vaccinations, an increase in the number of children being withheld from vaccinations and resultantly, an increase in vaccine-preventable disease, hospitalizations, and death (Larson et al., 2011; Poland & Spier, 2010; Ratzan, 2010). Public health experts advocate for debiasing and debunking misinformation by reducing dissemination of myths and instead promulgating correct information in a simple and brief manner (Lewandowsky et al., 2012). While some is known about suicide myths held by the general population (Arendt, Scherr, Niederkrotenthaler, Krallmann, & Till, 2017; Joiner, 2010), research is needed to determine misconceptions about suicide that are widely held by graduate students and if methods of changing false beliefs can also help improve attitudes in this population.

As expected, results also suggest that PBC may be an important predictor of intentions to conduct SRAs which is consistent with the larger TPB literature (Cestac, Peran, & Delhomme, 2011; Montano & Kasprzyk, 2015). Further, some literature also suggests that PBC has a direct relationship with behavior (Ajzen, 2011), bypassing the PBC and intentions relationship altogether. This relationship was also found in the present study wherein PBC was significantly related to the number of SRAs conducted, which represented a small to medium effect. This finding makes sense in that the more confident you are in your ability, the more likely you may be to seek out opportunities to engage in and subsequently partake in a particular behavior. Thus, uncovering efficacious methods of enhancing PBC in graduate students would likely prove to be important in increasing both intentions and behavior with regard to conducting SRAs. Still, it is

important to consider the inverse temporal relationship such that behavioral engagement might actually precede PBC. Indeed, research suggests that applied skill use is associated with the construct such that the more you practice a behavior, the more confident you become in your ability to engage in that behavior (Cross et al., 2011; Proude, Conigrave, & Haber, 2006; Wyman et al., 2008). Thus, graduate students who have more experience with conducting SRAs might exhibit enhanced PBC following more practice and behavioral engagement. This conceptualization further speaks to the importance of integrating role play practice when training graduate students in SRA skills as discussed earlier in the present paper. If skill use practice is associated with increased confidence, then it would follow that students should have more feedback on the positive and negative aspects of their practice in order to best hone their skills and improve levels of PBC. Accordingly, research continues to demonstrate the positive association between role-play practice and PBC as well as overall improved skills usage (Beidas, Cross, & Dorsey, 2014; Cross et al., 2011; Pisani et al., 2011; Oordt et al., 2009).

When considering the rest of the overall model describing attitudes, PBC, and SN positively predicting intentions, the path between SN and intentions was non-significant and accounted for a small percentage of the variance in intentions. This finding is actually consistent with the larger TPB literature (e.g., Sheppard et al., 1988, Van den Putte, 1991), as well as the application of the theory to the field of suicide prevention (e.g., Gryglewicz et al., 2016; Monahan et al., 2017), wherein attitudes and PBC are significantly related to intentions, but SN does not exhibit this same relationship. One particular reason for the lack of significant relationship between SN and intentions in the present study may stem from limited variability. The subjective norms construct exhibited a particularly high ceiling effect, which has been found to reduce power thus making it more difficult to uncover significant effects (Aguinis, 1995).

Similarly, the restricted range found in PBC and attitudes coupled with significant correlations between these variables and subjective norms may have led to the particularly weaker pathways than what is typically found in the literature. Indeed, research has demonstrated that variables which demonstrate weak correlations with the criterion as well as significant correlations with predictor variables, can suppress variance in the other predictor variables (Lancaster, 1999).

Another possible explanation for why subjective norms was not significantly related to intentions may be indicative of a larger conceptual incongruity. As mentioned previously, the suicide prevention literature has failed to establish subjective norms as a strong predictor of intentions. Perhaps subjective norms plays a different role in this field compared to what is postulated in the TPB. Given the well-documented finding that most MHPs lack the knowledge, skills, and positive attitudes necessary to work with suicidal clients, those MHPs who *do* work with suicidal clients may do so irrespective of how they perceive their peers value the importance of this behavior. Thus, MHPs who work with suicidal clients may instead do so in spite of their colleagues' values rather than because of their values. As a result, the TPB may need to be modified when applied to the suicide prevention field to exclude subjective norms as a predictor of intentions and behavior, and/or replace it with another construct that is a better predictor of these relationships. More research is needed to determine the best modification of this theory for this particular context.

In addition to these explanations, it is important to consider the role of sampling bias on SNs findings. All individuals who participated in the present study attended clinical psychology doctoral programs wherein one or more professors studied suicide prevention or a related topic (e.g., depression). As a result, it is likely that the DCTs who responded to my invitation and chose to forward my survey onto graduate students, were working in an environment where other

individual(s) perceive suicide risk assessment and management skills as an important topic. In turn, students who actually read the DCT's email and participated in the present study, likely had a stronger interest in SRA and/or strongly perceived peers and colleagues as highly valuing the importance of SRAs. Thus, this potential bias in sampling could help to explain the ceiling effects found in the subjective norms construct, which may have acted as a suppressor variable in the larger model.

Prediction of Behavioral Competency

The initial model describing attitudes, PBC, and SN positively predicting intentions also included intentions predicting behavioral competency. While the overall model demonstrated good to excellent fit, intentions was not found to be significantly related to behavioral competency. Ostensibly, this finding appears inconsistent with the larger Theory of Planned Behavior literature which suggests that intentions to engage in a behavior are related to actual behavioral engagement (Ajzen, 1991). However, an important consideration of why intentions was not related to behavioral competency stems from the fact that the SIRI-2 is measuring *competency* associated with SRA behavior as opposed to simply behavior. As a result, the non-significant relationship between intentions and the SIRI-2 may be reflective of the fact that it is not measuring the frequency of engaging in a behavior, which is more commonly tested in the TPB (Armitage, 2005). Indeed, intentions was found to be significantly related to the number of SRA's conducted. Thus, the number of SRA's conducted may have been a better outcome variable (in particular if this had been a longitudinal study) to use in the overall model tested in the present study. Still, it is important to note that this construct solely measured the frequency of the behavior, precluding an understanding of the actual quality of this behavior. Essentially,

while a student could be conducting numerous SRAs, it is unclear the extent to which these SRAs were conducted in a competent manner which is an important issue when working with high risk clients.

Interestingly, most participants scored in the 50th percentile or better on the behavioral competency measure (i.e., SIRI-2) which is similar to previous research using this measure (e.g., Fenwick et al., 2004; Mackelprang et al., 2014). Thus, the restricted range of this measure may have also reduced the variability in analyses, making it more difficult to uncover an effect. This restricted range and high scores on the SIRI-2 may be reflective of the sampling bias discussed in relation to subjective norms. Specifically, students who are more likely to respond to a survey concerning SRA skills, likely have a preexisting interest in SRA which could influence the extent to which students seek out opportunities to learn about, practice, and engage in SRA skills. This interest in SRAs, coupled with these resulting behaviors, are plausible explanations for why most participants performed well on the SIRI-2.

Another factor salient to the lack of significant relationship between intentions and behavioral competency is the fact that the SIRI-2 was not related to any other measured variable. This is in sharp contrast to the larger literature with MHPs that suggests the SIRI-2 is related to engaging in actual competent suicide risk assessment behavior (Cramer, Bryson, Stroud, & Ridge, 2016; Morriss, Gask, Battersby, Francheschini, & Robsin, 1999; Gask, Dixon, Morriss, Appleby, & Green, 2006). Thus, these findings beg the question of what predicts behavioral competency? Research has demonstrated that motivation is one variable related to competence and improved performance (Bauer, Orvis, Ely, & Surface, 2016; Colquitt, LePine, & Noe, 2000; Grohmann, Beller, & Kauffeld, 2014). Motivation, which can be defined as “the reason(s) behind one’s actions or behavior,” is thought to be synonymous with enthusiasm and passion and

can fluctuate overtime (Oroujilou & Vahedi, 2011). Motivation is different from attitudes in that attitudes are considered to be “a relatively enduring organization of beliefs around an object or a situation, predisposing one to respond in some preferential manner” (Oroujilou & Vahedi, 2011). With these definitions in mind, an individual might have positive attitudes and PBC related to conducting SRAs, but if he/or she does not have the necessary motivation, then he/or she may not feel motivated to work with this population. As a result, he/or she may not seek out adequate experience, practice, training, additional readings, etc. related to SRAs. Deficiencies in these areas would likely be reflected in a lack of competency in SRA.

In addition to motivation, expectations has also been found to be related to competency in varying workplaces and organizations (Bauer, et al., 2016; Nikandrou, Brinia, & Bereri, 2009; Schwoerer, May, Hallensbe, & Mencl, 2005). When applied to the context of graduate students conducting SRAs, one could imagine that if an individual has negative expectations surrounding SRAs (e.g., process is difficult, time consuming, may result in responsibility over client and potential lawsuit), then he/or she may also be less likely to want to work with suicidal clients. This relationship may also hold true, regardless of the individual’s attitudes towards SRAs. Similar to a lack of motivation, he/or she may also be less likely to also seek out and/or engage in behaviors that would be helpful in enhancing SRA competencies (e.g., experience, practice, trainings, etc.). Expectation and motivation are not the only variables that may better predictor competency as knowledge has also been found to relate to behavioral competency (Debski, Spadafore, Jacob, Poole, & Hixon, 2007; Inman, Bascue, Kahn, & Shaw, 1984; Trentacosta & Fine, 2010). Both declarative (factual information) and procedural (“how to” knowledge which allows for the direct application of skills in varied contexts and settings) knowledge have demonstrated correlations with therapist skill and competencies (Akerlund, 2012; Bennett-Levy,

McManus, Westling, & Fennell, 2009; Haarhoff, Gibson, & Flett, 2011). One could imagine how these alternative explanatory variables relate to one another wherein limited motivation and expectations decreases the chances that an individual will seek out important declarative and/or procedural knowledge as it relates to SRA, and vice versa. Thus, knowledge, motivation, and expectations represent other potential constructs that were not measured in the present study but may present as better predictors of behavioral competency. More research is needed to substantiate these speculations as well as to uncover if other variables may better impact behavioral competency.

Influence of SRA Training at the Individual Level

The next model included amount of training in SRA CCs (measured by the CCTQ) as (reported by students; RS) as a predictor of PBC, attitudes, subjective norms, intentions, and behavioral competency. Contrary to what was hypothesized, SRA training was not significantly related to any study variables. These findings are in contrast with literature that has found correlations between amount of training received and similar dependent variables such as attitudes and self-efficacy among mental health professionals (Gask et al., 2006; McNiel, et al., 2015; Oordt et al., 2009). However, a previous examination of graduate students on suicide prevention training found no significant relationship between the amount of formalized training received and scores on the SIRI-2 (Mackelprang et al., 2014). With these inconsistencies in supporting and contrasting literature, it is important to consider potential reasons for this lack of significant relationships.

The fact that training was not related to any study variables begs the question of whether the amount of training received actually matters in regard to teaching graduate students how to

conduct SRAs. Trainings might not make a difference in this context for several reasons, including the possibility that the trainings provided are not of high quality. Indeed, training science has long documented the relationships between variables indicative of training quality (e.g., training content) and improved training outcomes (For a review, see Salas, Tannenbaum, Kraiger, & Smith-Jentsch, 2012). Conversely, another possibility is that the training content is sufficient, but the method of training is not. For example, acquisition of new and difficult skills is more strongly related to role-play practice, when compared to more passive training techniques such as lectures (Clapper, 2010; Joyner & Young, 2006; Kemeny et al. 2006; Proude et al. 2006; Taylor et al. 2005). Another more effective method in transferring SRA knowledge than formalized trainings could be observing experts conducting SRAs so as to provide a model of exemplar behavior. Along with these explanations questioning the importance and effectiveness of current training practices, there are additional explanations that are important to consider.

Another potential explanation regarding why these relationships did not pan out could perhaps stem from a larger conceptual issue. Perhaps in the context of training graduate students on SRAs, more of the “bigger picture” needs to be taken into consideration, as opposed to just the amount of training received in CCs. One particularly theory, the Comprehensive Model of Training Effectiveness (MTE; Cannon-Bowers et al., 1995), presents a broader conceptualization of factors that influence the success of training (i.e., the trainee’s level of skill acquisition). For example, this model describes organizational characteristics as important influencers in the overall success of a training program. These characteristics consist of the overall organizational climate (e.g., participatory v. centralized), trainee selection (voluntary v. mandatory), purpose of training (e.g., maintenance v. advancement), task characteristics (e.g., complexity, type),

organization history, policies, and practices, amount of supervisor support for the trainee, resource availability, workload, organizational culture (e.g., openness to innovation), and opportunity to practice (Tannenbaum & Yukl, 1992). For example, in regard to organizational climate, perhaps clinical psychology programs do not emphasize training in SRAs because this is not a category required for APA (American Psychological Association) program accreditation. In addition, if graduate students' clinical supervisors are not aware of the SRA practices being taught by the program or do not hold positive attitudes towards these practices, then graduate students may be less likely to utilize these practices with actual clients. This limited real-world experience with SRAs may inhibit the trainee's behavioral competency in this area. In sum, the MTE model proposes that the actual training itself is only one piece of a dynamic, complex puzzle that determines the overall effectiveness of a training. The MTE highlights the numerous greater contextual factors that work in concert with training variables to ultimately influence training outcomes and presents as another avenue in which to study suicide prevention trainings in graduate programs.

Another potential reason for the absence of these significant relationships may relate to the fact that the measure of behavioral competency, the SIRI-2, is looking at suicide prevention skills more broadly (Duvivier, 2016), whereas the CCTQ assesses 5 specific core competencies or SRA training (Cramer et al., 2013). Thus, the measure used to assess training may not accurately map onto the skills that are being assessed by the SIRI-2. Perhaps, if a measure of behavioral competency that assessed all 5 core competencies of SRA measured in the CCTQ (i.e., maintaining a collaborative, nonjudgmental stance; eliciting evidence-based warning signs, risk, and protective factors; determining the client's acute and long-term level of risk of suicide;

thorough documentation; and knowing and understanding the laws concerning suicide) was utilized, then a significant relationship between these two variables would be uncovered.

In addition to the above explanations, another potential reason why this relationship didn't pan out also stems from potential measurement issues. The CCTQ (RS) measure asks students to indicate the extent to which they have received training in each competency across all trainings attended by writing in the appropriate percentage next to each core competency. Depending upon when the training(s) was received, this could be quite difficult for any individual to accurately remember and calculate the correct percentage. Research has documented inaccuracies in human being's ability to accurately remember long-term information (e.g., Pennebaker & Gonzales, 2009). Thus, participants could be unintentionally exaggerating or minimizing the actual amount of training received. Additionally, if participants had never been exposed to a competency (through trainings or otherwise), they might not have a complete understanding of what the competency entails when completing the CCTQ. Thus, participants could inaccurately assume that they have received training in core competencies and indicate so on the CCTQ, when in actuality they have not received adequate training in that area (e.g., complete discussion and explanation of a topic such as risk factors with examples, as opposed to a brief overview in this area). If this were true for many participants, then this would help to explain why responses on the CCTQ (RS) did not correlate to behavioral competency; perhaps an accurate assessment of training received was not provided. A more objective measure of the trainings received by students at doctoral programs (e.g., third party observers who code the training for fidelity), might derive a more accurate representation of the amount of core competencies addressed in each training (e.g., Dusenbury, Brannigan, Falco, & Hansen, 2003). While this would take a considerable amount of time to do for each participating doctoral

programs, perhaps it would yield a more accurate assessment of this construct, ultimately resulting in a significant relationship with behavioral competency.

Despite the lack of significant findings described above, significant relationships were found among other variables related to SRA training. The number of SRA training *hours* received (regardless of whether CCs were addressed) was correlated with the number of SRAs conducted as well as PBC. This finding is consistent with previous studies of mental health professionals and reported self-efficacy in being able to conduct suicide prevention behaviors (Aldrich, 2015; Aseltine, James, Schilling, & Glanovsky, 2007; Bean & Baber, 2011). However, PBC was also found to be related to the participants' year in the doctoral program. This finding intuitively make sense as more experienced clinicians would logically be more confident and this could be confounded by the fact that more experienced clinicians also had more training. Further, these results hint to the idea that perhaps experience with conducting SRA is the active ingredient in influencing TPB variables, as opposed to training. Component analysis research is needed to better understand these relationships.

Variability at the Program Level

Originally, it was believed that amount of training and hypothesized training-dependent variables (e.g., PBC, intentions, behavioral competency) would be contingent upon specific training program membership and that this would need to be accounted for in analyses. However, results indicated that none of the study variables varied at the program level, including amount of training received as reported by students, precluding a need to test these hypotheses via multilevel modeling. These findings were inconsistent with the larger training literature which suggests that among mental health professionals learning various treatment modalities and

therapy techniques (e.g., Baer et al., 2009, Carpenter et al., 2014; Hallgren et al., 2017; Lyon, Dorsey, Pullmann, Silbaugh-Cowdin, & Berliner, 2015; Meredith et al., 2000), dependent variables (e.g., perceived self-efficacy, attitudes, knowledge, willingness to learn), are found to vary at the site level. However, there is also literature in the MHP training field that has failed to uncover dependent variables varying at the site level (e.g., Aseltine et al., 2007; Cornuz et al., 2002; Cross et al., 2014). One caveat to the supporting literature is that there are several studies in the suicide prevention field that do not even assess for site-level effects (e.g., Bean and Baber, 2011; Fenwick et al., 2004; Pearce, Rickwood, & Beaton, 2003; Tompkins & Witt, 2009). Thus, more research that assesses design effects is needed to understand the consistency of these findings in relation to the suicide prevention training literature.

There are several reasons that could have influenced why study variables did not vary at the program level including limited variability in trainings offered across programs. Essentially, despite some reported differences among programs in the supposed number and types of SRA trainings available, it could be that most programs are actually offering very similar trainings that are yielding similar outcomes. Even when trainings appear to be different, they are actually quite similar in how they motivate/engage participants on the suicide prevention topics and they are similar in the material covered which results in comparable outcomes on variables including attitudes, knowledge, and perceived self-confidence in being able to implement suicide prevention skills (e.g., Isaac et al., 2009). In the context of graduate training, these similarities would also make sense given that the majority of participants came from programs wherein a suicide prevention (or related field such as depression) researcher was working. Thus, if these faculty are abreast of the latest research in the field, then it would make sense that much of the content of the trainings would be similar across programs.

In addition, perhaps trainings that address more SRA CCs are not effective (or not different enough from those that address fewer SRA CCS) in transferring knowledge to students due to factors specific to the training. Similar to those discussed previously, these factors include the way in which the material is being presented (e.g., lecture, online, self-directed learning, role-play practice), attendance requirement (e.g., mandatory versus optional training), duration (e.g., too short of a training wherein information is sped through making it difficult to retain any information versus too long of a training wherein its more difficult to sustain attention for a long period of time), style of presentation (e.g., engaging versus boring), which have been related to effective transfer of knowledge to trainees (e.g., Salas et al., 2009; 2012). Along those same lines, the MTE (Cannon-Bowers et al., 1995) posits another factor related to training success is training characteristics which include the overall utility of the training (based on the training needs of the organization); training content, method and process; and instructor characteristics. Training characteristics are thought to influence whether or not a trainee's pre-training expectations are fulfilled as well as the trainee's subsequent reactions to the training (e.g., relevance/ perceived value, affective response). These reactions and expectation fulfillment (based on training characteristics), are thought to directly influence the amount of learning that takes place, an individual's training performance, and the subsequent application of learned material in their job role (Tannenbaum & Yukl, 1992). Thus, a multitude of training factors could influence the effectiveness (or lack thereof) of trainings.

Another reason potentially accounting for the lack of variability at the program level may be the possibility of a wide range of variability in trainings within programs, as reported by each individual student. Wide range of variability in constructs has been found to influence the extent to which variables are dependent upon group/ site membership (Raudenbush, 1997). In addition,

prior studies have found that within a given graduate training program, there can be varying levels of participation in training activities by individual students especially depending upon whether or not training activities are mandatory or not (e.g., Coiro & Preis, 2018). Responses on the student version of the CCTQ ranged from 0 to 90%, with students at the same program reporting different percentages of SRA CCs received across all trainings. These differences in responses may be reflective of external or additional trainings sought out and received by different students depending upon their access to and interest level of additional trainings (e.g., Colquitt, LePine, & Noe, 2000). Further, these differences could be indicative of changes in each program's suicide risk assessment training curriculum that may occur after each year, or every couple of years due to new findings in the literature, changes to the course instructor, changes in the DCT, and so on (e.g., Schmitz et al., 2012). Thus, these factors have the potential to culminate in a lack of there being a program level representation of the amount of training received.

Implications

Results of the present study provide partial support for the application of the TPB model to constructs related to conducting SRAs. Contrary to what was expected, amount of training in SRAs was not found to be related to TPB variables, including behavioral competency in SRAs. One implication of these findings, as discussed earlier, is that perhaps formal trainings are not effective in transferring knowledge related to conducting SRAs (e.g., Kraiger & Cavanagh, 2015). It is possible that other means of transferring this knowledge, such as watching an expert conduct SRAs and/or gaining practical experience conducting SRAs, may be more effective means for training graduate students to utilize critical SRA skills. Alternatively, these findings

could imply that the SRA trainings being implemented in graduate training programs are not effective due to the content of the trainings, the manner and/or method in which the trainings are provided, instructor characteristics, and so on. For example, trainers who develop a strong alliance with trainees and are perceived as credible and knowledgeable in the field of suicide prevention, may be more likely to help engender positive training outcomes as opposed to trainers who do not exhibit these same characteristics.

Another set of implications relates to graduate training in clinical psychology as a whole. Arguably, the most widely implemented model of education revolves around providing information to students in lecture format and subsequently testing students on the knowledge provided (Wildman & Bedwell, 2013). Unfortunately, this format has been applied to clinical psychology training programs' formal coursework, with a focus of information provision and knowledge gain evaluation generally on declarative-type knowledge (factual statistics) as opposed to procedural knowledge (how to implement a behavior; Fouad et al., 2009). Procedural knowledge gain is more closely tied to behavior implementation when compared to declarative knowledge (Bennet-Levy, 2006; Keith, Richter, & Naumann, 2010). Trainees having/demonstrating correct procedural knowledge should be very salient to a field that is concerned with fidelity in the provision of assessment and treatment to individuals (Onken et al., 2014). Nonetheless, although evaluation of procedural knowledge is believed to be important in clinical psychology as evidenced by several calls to action (e.g., Kaslow et al., 2004; Rodolfa et al., 2005), very few programs actually apply these training and evaluation practices (Ready & Veague, 2014). In addition to these calls to action, the board responsible for licensing psychologists (known as the Association of State and Provincial Psychology Boards) will be requiring that those seeking licensure in 2019 and beyond must pass a procedural skills

component of the licensing exam (known as the Examination for Professional Practice of Psychology) in addition to the written portion of the exam (Rosenbaum & Weatherford, 2017). Due to the field's increased interest in evaluation of clinical skills from a procedural standpoint, in addition to the licensing board's newly instituted requirement in contrast to what is actually happening in graduate training, it is time that clinical psychology training programs follow suit. Clinical skills, particularly suicide prevention skills, should be taught and assessed in a procedural manner (demonstrating a skill and then evaluating trainees actually engaging in this behavior) at the time of training so as to ensure students' skill acquisition, as well as the overall quality and efficacy of the training. This procedural skills focused approach to knowledge acquisition can help to more quickly identify and remediate any deficient areas in the training itself as well as within the student's learning.

Another implication of the present findings is that the TPB model can be applied to understanding intentions related to SRA behavior among graduate students. Although the full model was not supported, several variables were found to be related to intentions, including attitudes and perceived behavioral control. These results imply that one's attitudes towards SRA as well as their confidence in being able to work with suicidal clients may be more salient than social norms in terms of intending to conduct comprehensive SRAs (e.g., Gryglewicz, 2016). As a result, trainings should focus on enhancing attitudes and PBC, particularly among graduate students who attend programs wherein suicide prevention is researched. Due to the fact that many of the participants attended programs wherein a suicide prevention faculty member worked, it would be important to examine these constructs in schools absent of these faculty members. Elucidating any differences between these types of programs would help to tailor SRA trainings to the audience's needs.

Limitations

The present study has some limitations that should be noted. First, the study examined students enrolled in only clinical psychology doctoral programs. This precludes an understanding of what SRA trainings might look like in social work and counseling programs across masters and doctoral-level training. Clinical psychology students were chosen over social work students as a national survey of graduate programs found that clinical psychology doctoral programs were significantly more likely to require students to take additional trainings as compared to MSW programs (Beck et al., 2014; Bellamy et al., 2013; Weissman et al., 2006). As such, if students are not required to take additional trainings, they may be more inclined to forgo advanced training in more challenging areas such as in suicide prevention in lieu of spending more time on the many other demands of graduate school (e.g., seeing clients, report writing, etc.) Further, clinical psychology doctoral students were selected over students from other types of graduate training programs (e.g., psychiatry, counseling, school psychology) as much of the current literature already focuses on these programs, while excluding clinical psychology doctoral programs (Cramer et al., 2013). In addition, training models/ practices across these different programs vary considerably (e.g., Bearman, Wadkins, Baillin, & Doctoroff, 2015; Mayne, Norcross, & Sayette, 1994; McFall, 2002; Norcross, Ellis, & Sayette, 2010; Parrish & Rubin, 2012; Sudak & Goldberg, 2012; Wike, Bledsoe, Bellamy, & Grady, 2013) which suggests that combined samples from different types of training programs would not provide coherent findings. Further, students in these programs differ significantly in terms of their GRE scores (Norcross, Ellis, & Sayette, 2010), which would also speak to difficulty in uncovering coherent findings after combining disparate samples in analyses. In addition, students in these programs tend to differ based on the severity of clients seen as professionals, such that clinical

psychologists are found to be more likely to work with more severe clients (e.g., those presenting with thoughts of suicide; Benton, Robertson, Tseng, Newton, & Benton, 2003; Goodyear et al., 2016; Lichtenberg, Goodyear, Overland, Hutman, & Norcross, 2015), ultimately, making clinical students an ideal population for the present study. Furthermore, given that many of the studies examining SRA practices that do include clinical psychology doctoral programs have had limited response rates (e.g., under 10 participants; Fenwick et al., 2004; McNiel et al., 2008) or had only surveyed from one graduate program (Mackelprang et al., 2014), a focus on clinical training programs was seen as a way to garner a greater understanding of a relatively understudied population in this area.

Another limitation also relates to the sample population such that those participating in the present study were largely Caucasian females which greatly limits the generalizability of these findings to those who identify with other genders and/or racial and ethnic groups. However, the demographic makeup of participants in the present study is actually quite similar to APA's summary reports of the student demographics found in psychology doctoral programs across the country (Cope, Michalski, & Fowler, 2016). A second limitation stems from the fact that a measure of behavioral competency was used in the TPB model, as opposed to the frequency of engaging in a behavior. The reason for using behavioral competency instead of behavior was due to the fact that suicide ideation occurs at a very low base rate in the general population (Casey et al., 2008) and the number of programs that allow graduate students to work with suicidal clients occurs at an even lesser frequency. Indeed, the median number of SRAs conducted in the present study was 5. As such, it was determined that the reduced variability and low frequency of conducting SRAs among graduate training would limit power as well as model fit acceptability.

Two additional limitations relate to the fact that the present study utilized self-report data and a cross-sectional design. Self-report methodology is known to be susceptible to inaccuracies due to issues of response bias, memory issues of respondents, and the like. While third party observational coding of SRA trainings might lead to a more objective assessment, it is not highly practical in a study of this nature which tracks trainings across multiple years that occur both within a program and as ancillary resources to a program. Thus, self-report is still the most comprehensive manner at assessing the wide range of training settings to which participants could have been exposed. An additional limitation relates to the cross-sectional design of the study which limits our understanding of temporal causality. However, a longitudinal design which would track each training experience from the start of graduate school and continue throughout their entire 5-7 (or more) years of graduate training would prove to be quite difficult to implement in practice. As a result, a cross-sectional design is necessary to gain an understanding of the various SRA training experiences had throughout graduate training .

With these limitations, the present study does have several strengths. This was the first known study to apply the TPB to understanding SRA training among clinical psychology graduate students. Further, unlike many other studies in this field that only assess training practices in one or a couple programs, the present study assessed students from over 45 different programs. In addition, this was the first known study in this area to assess the extent to which trainings addressed core competencies in suicide risk assessment. Further, this is the first study in this area to date that has attempted to utilize structural equation modeling in order to examine the process of SRA training.

Future Directions

Future research could examine a more diverse population of graduate students; both in terms of demographic characteristics (e.g., gender, race, ethnicity, sexual orientation) as well as academic characteristics (e.g., counseling, social work, psychiatry, programs that do not have suicide prevention researchers or are not as interested in suicide). Conducting this type of research with demographically and academically diverse populations can help to understand how these results might generalize to other individuals and/or if major modifications to SRA training practices need to be made depending upon the audience receiving the training.

Additional areas for future research relates to the method of training. Due to the noted benefit of utilizing the steps of behavioral skills training (i.e., information, modeling, role-play practice, feedback) compared to utilizing more passive methods of training (e.g., lectures), future research could examine if these findings hold true for graduate students learning SRA assessment skills. As mentioned previously, it would also be important to identify any other alternative methods of training (e.g., watching an expert conduct SRAs) that might be more effective in transferring knowledge as compared to standard lecture-based trainings. Additionally, comparing these different methods of training via more advanced research designs (e.g., randomized control trials) could help in determining which mode is most effective in transferring knowledge to graduate students. Further, collecting client-level data to determine if certain methods are associated with improved outcomes with suicidal clients would aid in understanding the applied efficacy of these trainings. Uncovering the most effective methods of training can hopefully help to improve the quality of trainings in graduate programs. Utilizing empirical evidence to substantiate claims that certain methods of training are superior in terms of helping graduate students to conduct comprehensive SRAs could help in encouraging other

programs to adopt such practices. In other words, if programs directors were aware of methods of training that are empirically more efficacious than others, hopefully they would be more inclined to utilize these methods. More programs that adopt effective methods of training could ultimately lead to an increase in the number of MHPs that are competent and skilled in conducting SRAs.

Along the same lines of utilizing the most efficacious methods of training and improving the quality of trainings, it is important that future research have a clear understanding of what exactly is being provided in these trainings. The present study implemented self-report which can be subject to bias and thus may not be the most accurate representation of training content. In an effort to reduce bias, future research could assess training practices and content by having third party observers objectively code for adherence (or lack thereof) to core competencies. Third party observers could be incorporated in various ways including physically attending and observing trainings in person, viewing video recordings of trainings, reading and coding typed summaries of training content, and so on. Implementing third party observers would help to identify the specific differences in trainings that correlate with improved outcomes for trainees. In addition, future research could examine a wide array of variables that may have a major impact on the degree to which trainees acquire SRA skills. Variables of interest include those presented in the MTE model (organizational climate, perceived task characteristics, amount of supervisor support for the trainee, resource availability, workload, opportunity to practice, among others). Gaining an understanding of additional variables that may influence trainee outcomes can help to maximize the extent to which trainees become competent in SRA practices.

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APPENDICES

Appendix A: Demographics Questionnaire

You must be at least 18 years of age and currently enrolled in a doctoral program in clinical psychology to participate in the study. Your answers are confidential and will only be seen by evaluation staff. Your responses will not be shared with anyone not affiliated with this study.

1. Are you currently enrolled in a doctoral program in clinical psychology?

Yes

No—if no, end of survey

2. What is your age?

3. What is your gender?

Male

Female

Transgender

Prefer not to answer

Other

4. Which Race best describes you? Please circle all that apply.

American Indian or Alaskan Native – Specify: _____

Asian – Specify: _____ (e.g., Chinese, Korean)

Black or African American

Native Hawaiian or Pacific Islander

White or Caucasian

Other – Specify: _____

5. Which Ethnic group best describes you?

Hispanic – Specify: _____ (e.g., Mexican, Cuban)

Non-Hispanic

6. How would you classify your sexual orientation?

Heterosexual or straight

Gay or lesbian

Bisexual

Other

7. Do you identify as being a member of any of the following groups?

Please choose all that apply.

Military family

Veteran

Survivor (lost someone to suicide)

Close to someone who has attempted suicide

Survivor of personal suicide attempt

Other – Specify: _____

8. Please select all prior degrees and licensures you currently hold (check all that apply):

- BA/BS
- MA/MS
- MEd
- MSW
- MD
- PhD
- EdD
- RN
- MFCC
- MFT
- LMFT
- LPC
- LCSW
- LSSP
- Other: _____

9. Outside of your graduate program, have you ever worked as a mental health service provider?

- Yes
- No

10. For how many years? (please count all jobs as a mental health service provider, except for graduate school).

11. What year are you in your current clinical psychology doctoral program?

- 1st
- 2nd
- 3rd
- 4th
- 5th
- 6th
- Other (please specify)

12. Is your program APA-Accredited?

- Yes
- No
- Unsure

13. Are you currently completing a full time clinical internship?

- Yes
- Not yet

I have already completed one

14. Have you engaged in or are you currently engaged in supervised practicum experience as part of your doctoral program?

Yes

No

Unsure

15. How many semesters of clinical practicum have you had? Count the current semester if you are currently enrolled in practicum. Do not count full time clinical internships in this question.

None yet

1

2

3

4

5

6

7

8

9

10

More than 10 (how many?): _____

16. Think of the clients you have you ever worked with (assessed or treated). How many were you concerned were at risk for suicide?

N/A - I have not begun seeing clients yet

None

1-2

2-5

6-10

more than 10 (roughly how many?) _____

17. Please indicate how many clients with whom you have conducted a suicide risk assessment?

N/A - I have not begun seeing clients yet

None

1

2

3

4

5

6

More than 6- how many? _____

18. How many clients, with whom you have worked, have endorsed a prior history of suicide ideation? (this includes “passive” thoughts such as, “things would be better if I didn’t wake up tomorrow” as well as more “active” thoughts such as, “I want to kill myself.”)

N/A - I have not begun seeing clients yet

None

1

2

3

4

5

6

More than 6- how many? _____

19. How many clients, with whom you have worked, have endorsed a prior history of suicide-related behaviors? (please include all suicidal behavior including suicide attempts and non-suicidal self-injury)

N/A - I have not begun seeing clients yet

None

1

2

3

4

5

6

More than 6- how many? _____

20. How many clients, with whom you have worked, have endorsed suicidal ideation while you were working with them? (this includes “passive” thoughts such as, “things would be better if I didn’t wake up tomorrow” as well as more “active” thoughts such as, “I want to kill myself.”)

N/A - I have not begun seeing clients yet

None

1

2

3

4

5

6

More than 6- how many? _____

21. How many clients, with whom you have worked, have attempted suicide while you were working with them?

N/A - I have not begun seeing clients yet

None

1

2

3

4
5
6

More than 6- how many? _____

22. How many clients, with whom you have worked, have died by suicide?

N/A - I have not begun seeing clients yet

None

1
2
3
4
5
6

More than 6- how many? _____

Appendix B: DCT Core Competencies Questionnaire

1. In what way does your clinical training program offer training in suicide risk assessment and management practices? (please indicate all that apply)
 - a. Part of a lecture in an optional course
 - b. An entire class lecture in an optional course
 - c. Part of a lecture in a core curriculum course
 - d. An entire class lecture in a core curriculum course
 - e. Clinic Tea/ Presentation
 - f. Colloquium/ Brown bag
 - g. Full course
 - h. Workshop
 - i. Other: Please describe
 - j. All of the above
2. Did any of the training involve role-play scenarios (e.g., students practice use of skills and trainer provides feedback)?
 - a. Yes
 - b. No
3. On average how many hours of suicide risk assessment and management training are available to any student over the course of his/or her training? (Please answer in an estimate of hours of training; if what is available is part of a 1-hour course this could be 0.5 hours; if what is available is a full 2-hour course over an entire semester (15 weeks) this could be 30 hours)
4. For each of the following areas of potential suicide risk assessment and management competencies, please indicate the extent to which each competency is addressed across all available trainings. (e.g., If a competency is addressed in 10 minutes across 3 different 1-hour trainings available in a program (total = 3 hours), then the competency would be addressed in 6% of all trainings).
 - a. Know and manage attitudes and reactions toward suicide ____%
 - b. Maintain a collaborative, empathetic stance toward client ____%
 - c. Know and elicit evidence-based risk and protective factors ____%
 - d. Focus on current plan and intent of suicidal ideation ____%
 - e. Determine level of risk ____%
 - f. Develop and enact collaborative evidence-based treatment plan ____%
 - g. Notify and involve other persons ____%
 - h. Document risk, plan, and reasoning for clinical decisions ____%
 - i. Know the law concerning suicide ____%
 - j. Engage in debriefing and self-care ____%
5. What is the total number of graduate students in your doctoral program not on internship?

Appendix C: Graduate Student Core Competencies Questionnaire

1. Throughout your time in your clinical training program, please indicate how you have received training in suicide risk assessment and management practices? (please indicate all that apply)
 - a. Part of a lecture in an optional course
 - b. An entire class lecture in an optional course
 - c. Part of a lecture in a core curriculum course
 - d. An entire class lecture in a core curriculum course
 - e. Clinic Tea/ Presentation
 - f. Colloquium/ Brown bag
 - g. Full course
 - h. Workshop
 - i. Other: Please describe
 - j. All of the above
2. Did any of the training involve role-play scenarios (e.g., students practice use of skills and trainer provides feedback)?
 - a. Yes
 - b. No
3. How many hours of suicide risk assessment and management training have you received over the course of your training? (Please answer in an estimate of hours of training; if what you had was part of a 1-hour course this could be 0.5 hours; if what you had a full 2-hour course over an entire semester (15 weeks) this could be 30 hours).
4. For each of the following areas of potential suicide risk assessment and management competencies, please indicate the extent to which you received training in each competency across all trainings attended. (e.g., If a competency was addressed in 10 minutes across 3 different 1-hour trainings (total = 3 hours), then the competency would be addressed in 6% of all trainings).
 - a. Know and manage attitudes and reactions toward suicide _____%
 - b. Maintain a collaborative, empathetic stance toward client _____%
 - c. Know and elicit evidence-based risk and protective factors _____%
 - d. Focus on current plan and intent of suicidal ideation _____%
 - e. Determine level of risk _____%
 - f. Develop and enact collaborative evidence-based treatment plan _____%
 - g. Notify and involve other persons _____%
 - h. Document risk, plan, and reasoning for clinical decisions _____%
 - i. Know the law concerning suicide _____%
 - j. Engage in debriefing and self-care _____%

Appendix D: Theory of Planned Behavior Measure

1. Conducting accurate suicide risk assessments are an important part of my responsibilities as a doctoral student in clinical psychology.
2. Engaging suicidal clients is not an important part of clinical work.
3. I believe that conducting comprehensive suicide risk assessments with suicidal clients is important.
4. My peers believe it is important for me to conduct accurate suicide risk assessments.
5. Most of my peers believe it's important to be able to conduct suicide risk assessments.
6. My program does not value the ability to conduct accurate suicide risk assessments.
7. I am not confident in my ability to use the information I collect to judge suicide risk.
8. I believe I can accurately elicit risk factors from my client.
9. I am capable of conducting comprehensive suicide risk assessments.
10. I intend to conduct suicide risk assessments with all of my clients.
11. I plan to ask about suicidal ideation with all of my clients.
12. I intend to work with suicidal clients in the future.

Appendix E: Suicide Intervention Response Inventory- Revised (SIRI-2)

The following items represent a series of excerpts from therapy sessions. Each excerpt begins with an expression by the client concerning some aspect of the situation he/she faces, followed by two possible therapist responses to the client's remark.

You are to rate each response in terms of how you likely/ unlikely you would be to make the response to the client's comment. In the blank, you should record a rating from - 3 to + 3, corresponding to the chart below. Be sure to respond to each item, and try not to leave any blanks.

- + 3 -- Highly likely response
- + 2 -- Likely response
- + 1 -- Somewhat likely response
- 0 -- Neither likely response
- 1 -- Marginally unlikely response
- 2 -- Unlikely response
- 3 -- Highly unlikely response

1. Client: I decided to call in tonight because I really feel like I might do something to myself... I've been thinking about suicide.
----- Therapist A: You say you're suicidal, but what is it that's really bothering you?
----- Therapist B: Can you tell me more about your suicidal feelings?
2. Client: And now my health is going downhill too, on top of all the rest. Without my husband, around to care for me anymore, it just seems like the end of the world.
----- Therapist A: Try not to worry so much about it. Everything will be all right.
----- Therapist B: You must feel pretty lonely and afraid of what might happen.
3. Client: But my thoughts have been so terrible... I could never tell them to anybody.
----- Therapist A: You can tell me. I'm a paraprofessional and have been trained to be objective about these things.
----- Therapist B: So, some of your ideas seem so frightening to you, that you imagine other people would be shocked to know you are thinking such things.
4. Client: No one can understand the kind of pain I've been going through. Sometimes I just feel like I have to hurt myself, so I cut my wrists.
----- Therapist A: It seems like you've been suffering so much that cutting your wrists is the only way you can make the pain go away.
----- Therapist B: But you're so young, you have so much to live for. How can you think of killing yourself?
5. Client: What are you anyway? Are you a doctor? How do you know what I've been going through? You've probably always had it pretty soft.
----- Therapist A: So, you're wondering if I can understand how you feel.
----- Therapist B: You're not even giving me a chance. I've had a pretty rough life too; you're not the only one who's seen some hard times.
6. Client: My life has been worthless ever since my wife, Emma died four years ago. The kids are grown and married now, and I've been retired from my job at the railroad for some time. It just seems that I'd be better off dead.

- Therapist A: But try to think of what Emma would want for you. She'd want you to continue leading a productive life, wouldn't she?
- Therapist B: It sounds like everything just collapsed around you when Emma died But what has happened recently to make things even worse, to make you that dying is the only way out?
7. Client: I really need help... It's just... [voice breaks: silence]
- Therapist A: It must be hard for you to talk about what's bothering you.
- Therapist B: Go on, I'm here to listen to you talk.
8. Client: When you sum up my problem like that, it makes it seem less confusing and not so scary.
- Therapist A: See, it really isn't so bad after all. It certainly isn't anything you would think of killing yourself over, is it?
- Therapist B: Sometimes talking about problems does make them a bit clearer. I think you realize how dangerous your suicidal feelings were, and that's why you decided to contact me.
9. Client: You were supposed to help me, but you've only made things worse.
- Therapist A: I'm sorry. I was only trying to help.
- Therapist B: You sound pretty angry.
10. Client: How could you ever help me? Have you ever wanted to kill yourself?
- Therapist A: It sounds like you're concerned about whether I can understand and help you.
- Therapist B: Sure, I've thought about suicide sometimes. But I always found more realistic solutions to my problems.
11. Client: I don't know, this whole thing with my wife really gets to me [sobs]. I try so hard to keep from crying...
- Therapist A: Do you think that the reason it's hard for you to cry is because you're a man?
- Therapist B: With all the hurt you're feeling, it must be impossible to hold those tears in.
12. Client: How can I believe in God anymore? No God would ever let this happen to me; I've never done anything to deserve what's happened.
- Therapist A: Things have gotten so bad, that it's difficult to see any meaning in the things that have happened to you.
- Therapist B: Well, God works in mysterious ways. Maybe this is His way of testing your faith.
13. Client: I don't know why I'm calling you. My family is financially well off, and my husband spends plenty of time with me, even though he has a successful law career. Even my kids have been doing well. They get good marks at school and have lots of free time activities with their friends. But nothing seems to interest me. Life is just a bore
- Therapist A: Considering all you have going for you, your problems can't be all that serious. Try to focus more on the positive aspects of your situation.
- Therapist B: So even though things seem to be going well at one level, life still seems pretty depressing, even if it's hard to say exactly why.
14. Client: I have to hang up now. My mother's coming home soon and I don't want her to know I've been talking to you.

- Therapist A: Okay, but if you keep feeling suicidal, remember you can always call back.
- Therapist B: All right, but first I want you to promise me you won't do anything to hurt yourself, until you call and talk to me. Will you repeat that promise?
15. Client: Is it really true that many people feel this way? I thought I was the only one who had such dreadful, sinful ideas.
- Therapist A: No, there are many people who suffer from mental illness. But with appropriate treatment by a qualified physician, some of these patients can be cured.
- Therapist B: It is true. You're not the only one who has suicidal thoughts. And you can be helped to get through this crisis, just as others have been.
16. Client: I'm so lonely, so tired [crying]. There just isn't anywhere left to turn.
- Therapist A: You seem so alone, so miserable. Have you been feeling suicidal?
- Therapist B: Come on now. Things can't be all that bad.
17. Client: [Over telephone] It's hard to talk here, with all these people...
- Therapist A: Would it help if I asked questions?
- Therapist B: Why don't you call back some other time when you can talk more easily?
18. Client: I have a gun pointed at my head right now, and if you don't help me, I'm going to pull the trigger!
- Therapist A: You seem to be somewhat upset.
- Therapist B: I want you to put down the gun so we can talk.
19. Client: Why should you care about me, anyway?
- Therapist A: I've been trained to care about people. That's my job.
- Therapist B: Because I think your death would be a terrible waste, and it concerns me that things are so that you are considering suicide. You need help to get through this critical period.
20. Client: I really hate my father! He's never shown any love for me, just complete disregard.
- Therapist A: You must really be angry at him for not being there when you need him most.
- Therapist B: You shouldn't feel that way. After all, he is your father, and he deserves some respect.
21. Client: I don't think there's really anyone who cares whether I'm alive or dead.
- Therapist A: It sounds like you're feeling pretty isolated.
- Therapist B: Why do you think that no one cares about you anymore?
22. Client: I tried going to a therapist once before, but it didn't help Nothing I do now will change anything.
- Therapist A: You've got to look on the bright side! There must be something you can do to make things better, isn't there?
- Therapist B: Okay, so you're feeling hopeless, like even a therapist couldn't help you. But has anyone else been helpful before-maybe a friend, relative, teacher, or clergyman?
23. Client: My psychiatrist tells me I have an anxiety neurosis. Do you think that's what's wrong with me?
- Therapist A: I'd like to know what this means to you, in this present situation. How do you feel about your problem?
- Therapist B: I'm not sure I agree with that diagnosis. Maybe you should seek out some psychological testing, just to be certain.
24. Client: I can't talk to anybody about my situation. Everyone is against me.

----- Therapist A: That isn't true. There are probably lots of people who care about you if you'd only give them a chance.

----- Therapist B: It must be difficult to find help when it's so hard to trust people.

25. Client: [Voice slurred, unclear over telephone]

----- Therapist A: You sound so tired. Why don't you get some sleep and call back in the morning?

----- Therapist B: Your voice sounds so sleepy. Have you taken anything?

Appendix F: Email to Directors of Clinical Training

Dear Dr. XXX,

My name is Maureen Monahan and I am a clinical psychology doctoral candidate at the University of South Florida. I work under the direction of Dr. Marc Karver, who has been working on suicide prevention throughout the state of Florida as well as nation-wide for over 15 years. During this time, he and his colleagues have partnered with a number of organizations to train and survey mental health professionals in suicide risk assessment and management behaviors.

I am contacting you to inquire about the possibility of gaining some assistance on a research project (my dissertation). The main goal of this project is to gain a better understanding of suicide risk assessment and management training that occurs during graduate training of clinical psychology doctoral students. This is a very important but relatively unknown issue that was highlighted at the recent American Association of Suicidology conference. My dissertation will be examining how extent of training is related to various Theory of Planned Behavior variables as well as behavioral competency in suicide risk assessment and management. Information derived from this study can potentially be used to assist with prioritizing funding for graduate programs.

Assuming that I have hopefully convinced you of the importance of this work, I would like to request that you forward the invitation below to the graduate students in your doctoral program in clinical psychology.

Just so you know, programs with the highest response rates (number of participating students v. number of students in the program pre-internship) will have the opportunity to receive up to \$750 to be awarded to the programs' student conference travel funds.

I truly appreciate your help in distributing the survey.

Thank you,

Maureen Monahan, M.A.
Doctoral Candidate
Clinical Psychology
University of South Florida

Appendix G : Email to Graduate Students

Dear Esteemed Colleagues!

My name is Maureen Monahan and I am a clinical psychology doctoral candidate at the University of South Florida. I work under the direction of Dr. Marc Karver, who has been working on suicide prevention throughout the state of Florida as well as nation-wide for over 15 years. During this time, he and his colleagues have partnered with a number of organizations to train and survey mental health professionals in suicide risk assessment and management behaviors.

I am contacting you to inquire about the possibility of gaining some assistance on a research project (my dissertation). The main goal of this project is to gain a better understanding of suicide risk assessment and management training that occurs during graduate training of clinical psychology doctoral students. This is a very important but relatively unknown issue that was highlighted at the recent American Association of Suicidology conference. My dissertation will be examining how extent of training is related to various Theory of Planned Behavior variables as well as behavioral competency in suicide risk assessment and management. Information derived from this study can potentially be used to assist with prioritizing funding for graduate programs.

Assuming that I have hopefully convinced you of the importance of this work (and appealed to your desire to help a fellow graduate student), I invite you to complete an anonymous survey of your perceptions and experiences of graduate training in suicide risk assessment. Programs with the highest response rates (number of participating students v. number of students in the program pre-internship) will have the opportunity to receive up to \$750 to be awarded to the programs' student conference travel funds.

The survey takes about 35 minutes to complete. Your participation in this study is voluntary. If you choose to participate, please click on the link below and complete the survey.

I greatly value your time and input, which will be used to generate recommendations for improving graduate level training.

If you have any questions please contact:

Maureen Monahan, M.A.
maureen11@mail.usf.edu

Thank you!

Maureen Monahan, M.A.
Doctoral Candidate
Clinical Psychology
University of South Florida

Appendix H : IRB Approval



RESEARCH INTEGRITY AND COMPLIANCE
Institutional Review Boards, FWA No. 00001669
12901 Bruce B. Downs Blvd., MDC035 • Tampa, FL 33612-4799
(813) 974-5638 • FAX (813) 974-7091

October 23, 2017

Maureen Monahan Psychology Tampa, FL 33612

RE: **Exempt Certification**

IRB#: Pro00032677

Title: An Evaluation of Suicide Risk Assessment and Management Trainings in Clinical Psychology Doctoral Programs

Dear Ms. Monahan:

On 10/23/2017, the Institutional Review Board (IRB) determined that your research meets criteria for exemption from the federal regulations as outlined by 45CFR46.101(b):

(2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless:
(i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

As the principal investigator for this study, it is your responsibility to ensure that this research is conducted as outlined in your application and consistent with the ethical principles outlined in the Belmont Report and with USF HRPP policies and procedures.

Please note, as per USF HRPP Policy, once the Exempt determination is made, the application is closed in ARC. Any proposed or anticipated changes to the study design that was previously declared exempt from IRB review must be submitted to the IRB as a new study prior to initiation of the change. However, administrative changes, including changes in research personnel, do not warrant an amendment or new application.

Given the determination of exemption, this application is being closed in ARC. This does not limit your ability to conduct your research project.

We appreciate your dedication to the ethical conduct of human subject research at the University of South Florida and your continued commitment to human research protections. If you have any questions regarding this matter, please call 813-974-5638.

Sincerely,

A handwritten signature in black ink, appearing to read "Kristen Salomon", followed by a horizontal line.

Kristen Salomon, Ph.D., Vice Chairperson USF Institutional Review Board