CLINICIAN TRAINEES PHYSIOLOGICAL REACTIVITY, PERCEIVED STRESS, AND SELF-EFFICACY IN RESPONSE TO CLIENT SUICIDALITY

A Dissertation

Presented to

The Graduate Faculty of The University of Akron

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Philosophy

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December, 2014
CLINICIAN TRAINEES PHYSIOLOGICAL REACTIVITY, PERCEIVED STRESS, 
AND SELF-EFFICACY IN RESPONSE TO CLIENT SUICIDALITY

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ABSTRACT

With the high prevalence of suicidality and suicidal ideation, mental health clinicians are likely throughout their careers to interact with clients experiencing these concerns (Kleespies & Dettmer, 2000a; Kleespies, Penk Forsythe, 1993; SAMHSA, 2010; Schmitz et al., 2012). Many studies have examined the stressors placed on clinicians in their work with clients. Several sources (e.g. Farber & Heifetz, 1981; Hellman, Morrison, & Abramowitz, 1986; Kleespies, Penk, & Forsythe, 1993) have identified suicidal ideation or suicidality as one of the most stressful occupational situations clinicians report experiencing. In spite of this, few studies have examined this clinician experience in formats other than self-report. The purpose of this study was to explore the physiological response clinician trainees have to clients expressing suicidality. This study also examined the relationship between self-reported stress and physiological arousal variables. A total of 52 graduate students enrolled in mental health training programs participated in the study. Participants were randomly assigned to either the control or experimental condition. The experimental group viewed a video of a fictional client discussing his concerns including suicidal ideation, while the control group viewed the same fictional client discussing similar concerns without direct suicidal statement. All participants completed the State-Trait Anxiety Inventory (STAI; Spielberger et al., 1983) and Counselor Self-Estimate Inventory (COSE; Larson et al., 1992), in addition to having their blood pressure, galvanic skin response, and heart rate monitored while viewing the video stimulus. The present data failed to show that client
suicidality produced a significantly more stressful experience, perceived or physiological, than did other client concerns. Overall the data was inconsistent with previous research that indicated mental health clinicians experience client suicidality as a highly stressful event (e.g. Farber & Heifetz, 1981; Hellman, Morrison, & Abramowitz, 1986; Kleespies, Penk, & Forsythe, 1993).
ACKNOWLEDGEMENTS

I would like to dedicate this dissertation to Dr. Jim Rogers, who was the inspiration behind it. Dr. Rogers was a strong model of determination, compassion, and kindness. He changed the course of my career and research interests, and I am forever grateful for having been mentored by him. He continues to be greatly missed, and I hope this work serves his legacy well.

I would like to thank my advisor Dr. Dawn Johnson, for her immense support, willingness to jump into this project when it was already underway, and invaluable encouragement along the way. Also, I would like to thank Dr. Ronald Otterstetter for his assistance with the physiological components of the study including equipment and training, in addition to serving on the committee. A big thank you to my committee members, Dr. Loreto Prieto, Dr. John Queener, and Dr. David Tokar for your feedback, guidance and support with this project.

I appreciate the faculty and students at The University of Akron, Youngstown State University, Kent State University, and John Carroll University for your assistance with recruitment and willingness to participate in this research.

My parents Ken and Linda Brown deserve so many more thanks than I can possibly capture here. Thank you for your support during this process, but also for instilling a love of learning. You both have inspired me and I hope to make you as proud of me as I am of you.
Finally, I would like to thank my husband Max. You have been my biggest supporter during this journey, and I will be eternally appreciative of your patience, love, and unwavering support. You’ve shown me how wonderful life can be. My gratefulness for you is endless.
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CHAPTER I

INTRODUCTION

Introduction

There has been considerable attention to suicide as a national health issue in the United States over the past few decades (SAMHSA, 2010). Different lines of research have emerged examining facets of the topic from identification of risk to treatment options. Little research exists though on the role of the clinician in the therapeutic context when client suicidality is present. Many have stated that client suicidality is one of the most stressful occupational occurrences for mental health clinicians (e.g., Deutsch, 1984; Farber & Heifetz, 1981; Hellman, Morrison, & Abramowitz, 1986; Rabin, Feldman, & Kaplan, 1999; Shea, 1999). In spite of this, few studies have examined this arousal response in formats other than self-report. Thus, there is a need for research to move beyond a reliance on self-report towards investigating the physiological reactivity of clinicians to client suicidality, and how this reactivity may impact treatment via clinician performance.

The purpose of this study was to explore the physiological response clinician trainees have to clients expressing suicidality. Self-awareness of reactions, self-efficacy for counseling skills as a measure of performance, and training will be explored as they relate to these physiological reactions. The remainder of this chapter provides an overview of the literature on suicide and suicidal behavior, therapist stress, previous self-
report research on client suicidality, and establishes the Yerkes-Dodson Law as a model that may help explain the impact of heightened arousal on the clinician.

Suicidality and Suicidal Behavior

Suicidality and suicidal behavior are prevalent in the United States (SAMHSA, 2010). It was estimated that suicide accounts for 11.6 deaths annually for every 100,000 people in the United States (Miniño, Xu, & Kochanek, 2010). This makes it the fourth leading cause of death for individuals between the ages of 25-44 years in this country (Miniño, Xu, & Kochanek, 2010). In addition to the high rate of deaths by suicide in the U.S. there are many individuals who experience suicidal ideation or some form of suicidality. The Substance Abuse and Mental Health Services Administration (SAMHSA) determined that in the years 2008 and 2009 approximately 8.4 million adults experienced suicidal ideation (SAMHSA, 2010). This number is in comparison to the approximately 34,000 that died by suicide each of those years.

With the high prevalence of suicidality and suicidal ideation, mental health clinicians are likely throughout their careers to interact with clients experiencing these concerns (Kleespies & Dettmer, 2000a; Kleespies, Penk Forsythe, 1993; SAMHSA, 2010; Schmitz et al., 2012). According to the American Association of Suicidology (2010), research suggests that approximately 90% of individuals who died by suicide had a mental health disorder. Some estimates indicate that up to twenty-five percent of clinical psychologists have lost a patient during their career (Kleespies & Dettmer, 2000), and in one study nearly 97% of graduate trainees surveyed indicated they treated a client
for whom suicidality was a concern during their training years (Kleespies, Penk, & Forsythe, 1993).

Schmitz and colleagues (2012) noted that clinicians need to be trained to effectively deal with these concerns due to the likelihood of encountering them professionally. Often times in order to deal effectively with client suicidality, clinicians are called on to predict behavior and to determine the appropriate course of action. However, Kleespies and Dettmer (2000a) noted that predictability of suicidal behavior is difficult due to the low base rate of death by suicide in the population. This low base-rate (Kleespies & Dettmer, 2000a) and the seriousness of the consequences may contribute to the stress many mental health clinicians report experiencing due to client suicidality (Shea, 1999).

Therapist Stress Associated With Suicidal Clients

Research has consistently shown that mental health clinicians experience stress responses when faced with client suicidality (Deutsch, 1984; Farber & Heifetz, 1981; Hellman, Morrison, & Abramowitz, 1986; Rabin, Feldman, & Kaplan, 1999; Shea, 1999). For example, in a study by Deutsch (1984) sixty-one percent of clinicians rated client suicidality as at least moderately stressful or more. This ranking made client suicidality the most highly rated stress-producing experience for clinicians in the study. Another interesting finding was the frequency of suicidality reported, with clinicians in the study estimating that 11% of their client contact hours included client suicidality (Deutsch, 1984). Kleespies, Penk, and Forsythe (1993) surveyed graduate level trainees
about their experience with client suicidality. Participants in their study reported a significant negative emotional impact from their work with suicidal clients.

Beyond emotional impact, Shea (1999) suggested that stress responses in clinicians can have a number of different influences on the therapeutic process. He further suggested that there is danger when these arousal responses are not adequately understood by clinicians in that they can impact clinicians’ work in ways they are unaware. This information exchange then may lead to a different approach to managing suicidality than what would be most helpful to the client. For example, un-modulated clinicians’ distress and stress responses may be more visible to clients than clinicians realize and may lead clients to be less forthcoming with concerns (Shea, 1999). These communications may unknowingly discourage clients from being forthcoming with their suicidal thoughts, or be aware of the emotional impact of feelings on clinicians. If clients do not feel they should express suicidal concerns it may lead to them not getting the appropriate care. Although stressors exist in most fields, responses to stress may be especially impactful on mental health clinicians as it can lead to burnout (e.g., Rabin, Feldman, & Kaplan, 1999). Understanding the way these stressors impact clinicians’ functioning is needed in the literature.

However, although this is an important area, most research on clinicians to date has relied on self-report measures to collect information. For example, research conducted by Deutsch (1984), Farber and Heifetz (1981) and Hellman, Morrison and Abramowitz (1986) showed that clinicians cognitively report client suicidality to be a stressful occupational event as compared to other typical client concerns. Although self-reported stress is likely an indicator of experienced arousal, it may not effectively
demonstrate the entire spectrum of stress experienced, and can be biased by lack of self-awareness.

Clinician Self-Awareness and Impact

Understanding and acknowledging the stress inducing nature of client suicidality on clinicians is a first step in moving towards a way to effectively deal with these concerns. Fauth and Williams (2005) examined the impact of self-awareness of reactivity on the therapeutic relationship. Through both self and client ratings, they determined that higher levels of self-awareness were viewed as helpful by both clinicians and clients. On the other hand energy expended to manage self-awareness, to keep it from being hindering, took away from building a therapeutic alliance per client report. Clients were not necessarily aware of the strategies trainees utilized to manage their self-awareness, although they were aware of an impact on the therapeutic alliance. While self-awareness was helpful to the clinicians in the study, it became detrimental if too much effort was required to manage it.

Research by Schlesinger and Wolitsky (2002) indicated that self-awareness and self-analysis may be helpful in how clinicians view client concerns. The researchers asked clinicians to rate their reactions throughout a recorded client session. They found that clinicians in the group asked to engage in a self-analytic exercise reported more positive feelings towards clients than clinicians in a control group. While research has shown that self-awareness may be helpful in working with clients, this research relies on what clinicians are consciously aware of and able to report, providing only a limited understanding of the stress reaction. Thus the stress response experienced when facing
client suicidality needs to be more inclusive of automatic and often unconscious physiological arousal responses. These automatic responses may be responsible for shaping the way clinicians respond to suicidal clients.

Szasz (1980) discussed the impact of suicidality on clinicians in a theoretical sense. He stated that the discomfort for many clinicians may arise from the nature of suicidality putting the clinician and client in a struggle for power over the situation. Theoretically this may be tempered by better understanding the reactions and stress responses clinicians have in the moment in order to keep them from unduly influencing the therapeutic alliance and treatment choices. Similar to Szasz, Thomas and Leitner (2005) argued that clinicians often respond to suicidal clients with “fight or flight” response style interventions. A flight style response is one where the clinician avoids the topic, or moves away from it quickly. A fight style response alternatively is when a clinician dictates the course of action from an expert role and with less input from the client. These authors surveyed clinicians and clients, and found differences in the ratings of what each group found helpful in intervention styles. Clinicians most often chose a “fight” style intervention, while clients reported preferring a response style without fight or flight responses, that is, an approach that was more collaborative.

The differences between clients’ preferred intervention style and clinicians preferred style highlights the need for further research on working with suicidal clients. There is evidence in the literature that clinicians experience client suicidality as stress inducing and have different methods for handling suicide-related events. However, little research to date has examined these issues applying methodologies beyond self-report. Although what we know is valuable, there is a need to explore the physiological arousal
responses clinicians may have to client suicidality, and how these responses might impact therapeutic variables such as clinician performance, or belief they can be effective in their work with suicidal clients. Clinicians may not be fully aware of the reactions they have to stressful events, thus making them unable to fully report the depth of their reactions and experiences. Although self-reported stress reactions are likely related to physiological responses, we may more effectively understand the fullness of clinician responses by also examining those responses that are automatic and may not enter full conscious awareness. One conceptual model explaining the way physiological processes may impact clinician reactions to suicidal clients is the Yerkes-Dodson Law.

Yerkes-Dodson Law

By its nature, self-report research may not pick up on automatic responses as effectively as physiological research and be biased by what individuals know about themselves or are willing to report. Improving understanding of clinicians’ automatic responses may help to better prepare clinicians in training, and be more effective in clinical work (Thomas & Leitner 2005; Miller, et al., 2010). One major body of research that has looked at links between stress responses and performance on different tasks is research related to the Yerkes-Dodson Law (YDL). The origin of the YDL is from the work by Yerkes and Dodson (1908) on stimulus strength and habit formation in mice. This seminal study has been credited with development of the well-known inverted U-shape curve between performance and arousal (Hanoch & Vitouch, 2004). The main principle of the YDL is that as arousal increases performance improves, until a critical level of arousal is reached at which point performance begins to be hindered. When
represented graphically this relationship creates an inverted-U shape (see Figure 1). The YDL curve has been applied to many different stress/arousal cues and performance variables such as test performance, memory, and problem-solving. The impact of stress responses on clinician self-efficacy for effective intervention with suicidal clients may similarly follow the inverted U pattern, where self-efficacy is used as a measure of performance.

The theory suggests that clinicians’ self-efficacy when working with suicidal clients would be positively impacted at moderate levels of physiological arousal, but negatively impacted if that arousal response becomes too strong (following the inverted U-shape YDL curve). One way that performance problems can arise when an arousal reaction is strong is through the concept of attentional narrowing. Mendl (1999) discussed how attentional narrowing (reaching an arousal threshold and focus narrowing to certain contextual factors) in the face of a stressor can keep an individual from being able to process all contextual factors, and focus in only on some. Attentional narrowing has some biologically driven benefits such as allowing for quicker appraisal of a situation and focus on threatening stimuli (Hanoch & Vitouch, 2004). The concept of attentional narrowing in a clinical setting could include focus on the assessment of risk forensic issues to the exclusion of connecting with the client. Further research is needed to better understand how stress responses help or hinder clinicians’ ability to respond to suicidal clients most effectively.

Although both self-report and physiological research is likely to show that clinicians experience client suicidality as stressful, the degree to which this occurs is unknown. There has been only a small body of research conducted that has examined
physiological processes in clinicians. One such study, by Miller and colleagues (2010) showed that a preemptive stress (shown through salivary cortisol measurements) response occurred in clinician trainees prior to sessions with one of their established and recently suicidal clients. This research was one of the first to look at physiological processes in clinician trainees, and how this was impacted by client suicidality. All participants in their study were trainees who were working with clients diagnosed with Borderline Personality Disorder and who reported recent suicidal ideation. They asked participants to collect salivary samples before and after sessions, as well as complete rating forms of therapeutic alliance and session difficulty. Their results indicated that there was a noticeable preparatory anxiety (salivary cortisol was high) that occurred for clinician trainees who were entering a session with a client they knew to have recently experienced suicidal ideation, that diminished by post-session (Miller et al., 2010). Although informative, results from this study are limited by the small sample (N = 6 clinicians), and future research should aim to examine a wider range of clinical trainees. Additionally, this study was the first to examine the physiological processes experienced by clinicians responding to client suicidality, and although it began groundwork in this area, there are still many avenues to explore. There is a need to understand the difference in physiological responses in clinicians for differing client concerns. Looking at comparisons will help us to better understand the unique impact of suicidality on stress arousal responses in clinicians.
Summary

Research has shown that the reactions of clinicians to suicidal clients is an important area of study and that in particular, little is known about the impact of clinician physiological arousal responses on encounters with suicidal clients. Expanding on the existing literature and beginning to better understand clinician responses to client suicidality is needed. The better clinician responses are understood the more effectively they can be dealt with, both in the therapeutic context and in the formation of clinical protocols. There is evidence to suggest that clinicians are impacted by the stressfulness of client suicidality (e.g. Bonner, 1990; Kleespies, Penk & Forsythe, 1993; Shea, 1999). The present study aims to explore the physiological stress responses of clinicians encountering suicidal clients.

Purpose of the Study

The purpose of this study is to investigate the physiological responses of clinicians to suicidal statements by clients. Suicidality has been reported to be a stressful, and frequently experienced, occurrence for mental health professionals. A fictional client will be utilized in this study to convey suicidal concerns and non-suicidal concerns. Participants will be asked to wear physiological monitoring equipment while viewing either the experimental or control video. Responses to the content they view will be recorded and compared across groups. A purpose of this study is to examine the physiological response of clinicians to suicidality that is different than response to other non-suicidality based concerns.
A second purpose to the study is to examine the relationship between both self-reported stress and physiological reactivity, with performance (self-efficacy) for intervention effectiveness with a suicidal client. The relationship between how well clinicians understand and identify their own stress level, will be explored by comparing self-reported stress with physiological measures of arousal response. Prior research has focused on collecting self-report data, and this study seeks to further expand the knowledge base around suicidality in clients by examining clinician responses through physiological reactivity as well.
CHAPTER II
LITERATURE REVIEW

The purpose of this chapter is to provide a literature review examining the stressful impact of client suicidality on clinicians through self-report, and a model for understanding the physiological impact of client suicidality on clinicians. These research areas help to inform formalized training and current trends in suicide intervention in the mental health field. As such, the better our understanding of how clinician reactions impact therapy, the more effectively we can train future therapists to attend to client concerns related to suicidality. Throughout the published literature the term stress has been used to identify both the stimulus and the reaction. For the purposes of this literature review, the term “stress” will be utilized to connote the reaction of the individual to a stimulus, rather than the stimulus itself.

Suicidality and Suicidal Behavior

According to the Substance Abuse and Mental Health Services Administration (SAMHSA), suicide is a national health concern. In 2007, it was estimated that “suicide was the 11th leading cause of death in the United States, with more than 34,000 Americans committing suicide…” (SAMHSA, 2010). The National Vital Statistics Reports (NVSR) indicated that in 2008 there were 11.6 deaths by suicide for every 100,000 people in the country (Miniño, Xu, &
Kochanek, 2010). SAMHSA also reported that in 2008 and 2009, 8.4 million adults annually in the United States had considered a suicidal act (SAMHSA, 2010).

For every individual who dies by suicide in the United States there are numerous others that engage in non-lethal suicidal behaviors, or contemplate suicide. The Office of Applied Studies (OAS, a division of SAMHSA) estimated that for every individual who dies by suicide there are likely 8 to 25 individuals who engage in non-lethal suicidal behavior (OAS, 2006). SAMHSA reported that in 2008 and 2009 approximately 2.3 million individuals in the U.S. had formulated a suicidal plan and 1.1 million of those had engaged in suicidal behavior (SAMHSA, 2010). This is a staggering number of individuals across the country exhibiting suicidal behavior annually. Research has indicated that there are differences between sexes, with males dying by suicide more often than females, although females are more frequently engaging in non-lethal suicidal behavior (AAS, 2009). Additionally, research has shown rate variation across age, with the highest rate of suicidal ideation in the 2010 National Survey on Drug Use and Health (NSDUH) report occurring for individuals between the ages of 18 and 25 years (SAMHSA, 2010). The NVSR reported that suicide was the third leading cause of death in individuals 15-24 years of age nationally, and fourth leading cause of death in individuals 25-44 years of age nationally in 2008 (Miniño et al., 2010).

Mental health therapists, including counseling psychologists are likely to encounter client’s experiencing suicidal ideation throughout their practice and career (Kleespies & Dettmer, 2000a). Reports of 8.4 million adults in the U.S. experiencing suicidality every year (SAMHSA, 2010), brings to light how prevalent suicidal ideation is in the population. The American Association of Suicidology (2010) reported that 90% of
individuals who died by suicide had at least one mental health disorder in a recent study. These various mental health disorders may be the stimulus that brings an individual into therapy, and increases the likelihood of clinicians encountering suicidality in clients. Kleespies, Penk, and Forsythe (1993) studied graduate trainees, and found that 97% of the participants in their sample experienced suicidality in a client during their training years. Mackelprang and colleagues (2014) reported that 50% of graduate students in their research sample had worked with a client who expressed suicidal ideation, and 45% of those who had practicum experience had worked with a client that had a previous attempt. The probability of clinicians working with clients experiencing suicidal ideation during the course of their practice is significant, and therapists should be adequately trained in dealing with these concerns (Schmitz et al., 2012). It’s been estimated that one in four psychologists and one in two psychiatrists have lost a client to suicide (Kleespies & Dettmer, 2000b), and that clinical psychologists are likely to work with at least five individuals each month that experience suicidal ideation (Sullivan, 2004).

As something that is commonly experienced in practice, dealing effectively with clients’ suicidality is a critical area for training and preparation for all mental health clinicians. Much research has indicated that the expression of suicidality in clients in a stressful event for clinicians (e.g. Farber & Heifetz, 1981; Hellman, Morrison, & Abramowitz, 1986; Kleespies, Penk, & Forsythe, 1993). This may be in part due to the difficulty of balancing a need to assess the clients’ risk of harm level while still encouraging autonomy (Shea, 1999). The impact of this stressful event on clinicians has been researched mostly through retrospective self-report thus far (e.g. Deutsch, 1984; Farber & Heifetz, 1981; Hellman, Morrison, & Abramowitz, 1986). Future research
aimed at empirical measurement of therapist reactions is called for to better understand the impact this has on clinical processes.

Therapist Stress Associated with Suicidal Clients

Many studies have examined the stressors placed on clinicians in their work with clients. Several sources (e.g. Farber & Heifetz, 1981; Hellman, Morrison, & Abramowitz, 1986; Kleespies, Penk, & Forsythe, 1993) have identified suicidal ideation or suicidality as one of the most stressful occupational situations clinicians report experiencing. This could be for any number of reasons, including the low base rate of suicidality (Kleespies & Dettmer, 2000), a lack of formal training in suicidality issues (Bongar & Harmatz, 1989; 1991), or the inherent seriousness/consequences of a life-and-death cognitive struggle (Rabin, Feldman, & Kaplan, 1999; Shea, 1999). The more in depth sources of stress for clinicians are understood, the better they can be dealt with effectively and kept from influencing clinical work unintentionally.

In spite of high prevalence rates, there is an inherent difficulty with predicting and assessing suicidal risk. For example, Maris, Berman, and Maltsberger (1992) discussed how challenging predicting an individual suicide is due to the low base rate. Many “false positives” and “false negatives” are produced when clinicians attempt to predict someone’s risk to self. These false predictions carry consequences, whether missing an opportunity to help effectively or limiting freedoms based on variables only “related” to suicidality. If clinicians predict suicide will “never” occur, they will be correct “almost all the time” (p. 641). Instead, therapists are faced with the task of determining what risk factors an individual has for suicidal behavior and applying judgment as to whether or not
those risk factors pose threat of harm to the individual at that time. The lack of strong prediction tools may lead many if not most clinicians to experience stress, worry or anxiety when working with clients experiencing suicidal ideation (Maris, Berman & Maltzberger, 1992).

The lack of strong prediction tools may lead many if not most clinicians to experience stress, worry or anxiety when working with clients experiencing suicidal ideation (Maris, Berman & Maltzberger, 1992).

The low predictability of suicide is an important component to understand when studying suicidality. This difficulty with prediction may be part of what leads to stress in clinicians faced with client suicidality. Kleespies and Dettmer (2000a) explained:

The problem has to do with the sensitivity and specificity of clinical judgment and existing assessment instruments when base rates are low. For example, let us assume that there is a clinician with such exceptional acumen that he or she could discern who would and who would not commit suicide with 99% sensitivity and 99% specificity, respectively. Out of 100,000 psychiatric patients, this skilled clinician would identify 99,000 who would not commit suicide, and would view the remaining 1000 as at high risk for suicide. Only 59 of the 1000 high-risk patients, however, actually would commit suicide, and the 941 others would be false positives. Thus, even with a level of precision that is well beyond our current capabilities, the rate of false positives still would make suicide unpredictable. (p. 1110)

Being held responsible for accurate forecasting could heighten the stress arousal reactions clinicians have when suicidal ideation is present in clients. Current training in suicide risk assessment in the mental health fields focuses on the identification of risk factors (e.g., previous attempts, hopelessness, age, race, gender), although the absence of these risk factors does not mean someone is not at risk for suicidal behavior (Kleespies & Dettmer, 2000a; Maris et al., 1992). Improving training, and providing clinicians with better resources may improve response to suicidal clients (Schmitz et al., 2012).

Although many different concerns can create significant stress reactions in clinicians, suicidality is often rated high on the list (Farber & Heifetz, 1981; Hellman, Morrison, et al., 1986). This particular event is of interest, and will be the focus of
examination of clinician stress responses in this literature review. There are a number of factors that may contribute to the stress felt by clinicians when facing suicidality in clients, including the significant emotional interaction with others that typically occurs in one direction (Rabin, Feldman, & Kaplan, 1999). Rabin, Feldman, and Kaplan (1999) wrote, the implicit stress associated with conducting psychotherapy at times centers around the intensity of emotions involved. According to these authors, the need to be vigilant in attention to the clients’ concerns is heightened when the potential outcome is death by suicide. At these times the affective pain a suicidal individual experiences can be extremely taxing on the clinician and the therapeutic interactions (Rabin, Feldman, & Kaplan, 1999; Shea, 1999).

Previous literature provides some insight into the ways that physiological arousal may negatively impact clinical processes with suicidal individuals. Shea (1999) asserted that a feeling of anxiety when faced with suicidal ideation in a client may cause a therapist to retreat from the topic rather than approach it. For example a clinician may phrase questions in a certain manner or give subtle clues about discomfort, which may lead the client to minimize or downplay distress level. This automatic feeling of anxiety (or stress) may actually shape the way in which the therapist interacts with a client, impact the effectiveness of the subsequent interventions, as well as impact the way the client interacts with the clinician. Experiencing significant stress responses around a particular client concern, may make clinicians feel less confident they are able to, or have the skills to, intervene effectively. According to Shea, both clinician judgment and client welfare may be impacted by this automatic response, thus strengthening the need for a clearer understanding of these processes. If a clinician’s self-efficacy around being able
to effectively intervene with a client is diminished due to stress responses, they may make choices based on that stress response, rather than solely client welfare.

Stein and Mold (1988) asserted that clinicians within medical professions likely experience “clinical cascades” in which their clinical decision-making processes are significantly influenced by a need to limit or reduce their anxiety. They state that this may at times come in the form of institutionalized procedures or policies aimed at patient care that actually encourage a de-individualization of treatment protocol. The authors asserted that these protocols may come about through a need to reduce clinician’s anxiety, both those performing procedures and making policies. This potentially leads to a cycle by which patients are treated through rigid protocols that reduce clinician anxiety, but may not be the most effective form of individualized care for the patients, thereby undermining patient care. The authors conjected that this type of response may arise from stressful, anxiety producing events, where there is complexity and little feeling of control. Mental health clinicians faced with client suicidality experience a level of stress and anxiety that may produce a “cascade effect,” which causes them to act in a way to gain control over the situation to minimize their arousal response. In therapy this may occur through forced hospitalization, breaking confidentiality, or taking over decision-making processes for the client. All of these options undermine the autonomy of the client, and may better serve to reduce clinician anxiety than to reduce suicidality (Shea, 1999; Thomas & Leitner, 2005).

Having a better understanding of those events that most frequently produce a stress reaction in clinicians may help to reduce the impact of these reactions on the therapeutic process (Shea, 1999). Kleespies and Dettmer (2000a) discussed how
clinician anxiety can affect intervention style through “defensive practices,” (pg. 1122). This means that clinicians may attempt to minimize their own uncomfortable stress reactions to suicidal clients by either jumping to reduce the risk through removal of autonomy, or by avoiding the subject of suicidality altogether (Kleespies & Dettmer, 2000a). When this occurs clinical work may focusing on the needs of the clinician rather than the client.

Deeper awareness of stress responses may help clinicians to be more effective working with clients. Shea (1999) asserted that those stress responses can drive a wedge between therapists and clients, when clients are able to sense the therapist’s discomfort. Shea points out that “When a clinician begins to understand his or her own attitudes, biases, and responses to suicide, he or she can become more psychologically and emotionally available to a suicidal client,” (p. 4). Additionally, he stated that, in his experience, those therapists who are most successful in working well with suicidal patients are those that manage their own emotional reactions to this “maelstrom” (Shea, 1999, p. 18). It is for this reason that the study of clinicians’ automatic reactions to suicidal ideation is warranted. By improving research into stress responses of clinicians, this potentially important area of bias for many clinicians can be highlighted.

Summary

There has been considerable research to indicate that therapists have a stressful occupation. The expression of suicidal ideation has been cited as one of the most stress producing situations therapists face. This occurs on a regular basis throughout most therapists’ professional life. Successful work with suicidal clients is dependent on a good working relationship between client and therapist. The affective response of therapists to
various client concerns greatly impacts this relationship and the working alliance depending on how it is used in context. The better aware therapists can be of, and predict, their own reactions, the more successful they can be in utilizing those reactions to benefit the client. A significant amount of research has been conducted examining this experience of stress through a self-report format as reviewed next.

Self-Report Research on Clinician Stress

Research on the stressors associated with conducting psychotherapy has been mostly self-report to date. This investigation has lent support to the notion that psychotherapy can be a stressful experience for clinicians, as well as helped to delineate areas that are more likely to produce a stress response. The experience of stress in conducting psychotherapy, sources of stress, and the impact of this stress response on the therapeutic process will be explored further.

Deutsch (1984) conducted a study of psychotherapists’ (N = 264) sources of stress and experiences with clients. The author was interested in expanding previous research to include more mental health therapists, rather than exclusively psychiatrist samples as much previous research had done. Deutsch (1984) utilized the Therapist Stress Scale (adapted from Farber, 1979; Farber & Heifetz, 1981; 1982 and pilot tested for this study) to measure stress responses to “client behaviors” and “therapist experiences.” Deutsch (1984) found that the most highly rated “stressful work-related occurrence” was the expression of suicidal ideation by clients (61% rated as “moderately stressful” or higher). Participants in this sample reported that suicidal ideation was expressed to them in approximately 11% of their client contact hours, indicating that
many psychotherapists had regular exposure to a situation they found to be highly stressful. An interesting finding was the effect of age in Deutsch’s sample. Older therapists self-reported significantly less stress than younger therapists (p < .05), across the factors determined in the study. The author posited two explanations for these differences with age: (1) increased experience or (2) differences between the clinicians that exit their careers in mental health early due to stress, versus those who persist. Results from this study highlight both the frequency with which clinicians encounter suicidal ideation in clients, but also alludes to the impact it has on the clinician.

Similarly, Hellman, Morrison, and Abramowitz (1986) conducted research on psychologists looking at stressful work events and stressful client behaviors as a replication and extension of the work by Farber and Heifetz (1981). Of those completing the study (N = 227), 93% held a doctorate, and all were licensed psychologists in the state of California. Participants were asked to complete measures (expanded versions of the Therapeutic Stresses Rating Scale, and the Stressful Patient Behavior Rating Scale; Farber & Heifetz, 1981, 1982) rating how stressful different client behaviors felt to them. In order to expand further and re-test the factor loadings reported by Farber and Heifetz (1981) the same measures were utilized. In regards to stressful patient behaviors, the researchers found a five factor solution (Negative Affect, Resistance, Psychopathological Symptoms, Suicidal Threats, and Passive-Aggressive Behaviors) that included suicidality as a significant source of stress, accounting for 6.1% of the variance. Both client behaviors and work-related variables contributed to self-reported stress responses in psychologists, though suicidal threats alone accounted for 6.1%. These stressful situations are multifaceted, going beyond just the client’s report of experiencing suicidal
ideation, to include the therapists’ interventions and management of the information. The experience of client suicidality is stressful for clinicians (Hellman, Morrison, & Abramowitz, 1986), and occurs frequently in therapy (Deutsch, 1984; Schmitz, et al., 2012). How this stress response may impact the therapeutic process through the therapists’ interventions, actions, and efficacy will be explored.

A struggle for power (Szasz, 1980) may arise when clinicians attempt to intervene with suicidal clients, in a way that pits clinician against client. This struggle for power, and the subsequent worry about preventing suicide, may lead to differing approaches to suicidal clients. This struggle for power was the focus for Thomas and Leitner (2005) who posited there were two main “negative” ways to work with a suicidal individual: fight or flight. After discussing and defining these styles further, research examining them within the therapeutic context from both the clinician and client perspective will be discussed.

Commonly used, this language refers to the way an individual reacts when physiologically aroused, like in the case of fear and an adrenaline response in the body. Applying this language to clinical intervention style, “fight” refers to attempts by the clinician to argue against the client’s suicidal thoughts. The clinician may unilaterally use power and authority to make decisions and choices for the client that minimizes their suicidal risk. The “flight” response then, is when the clinician moves away from the suicidal crisis, or flees. According to Thomas and Leitner (2005), in the flight response, the clinician may avoid suicide-related topics, not ask follow-up questions, or minimize the client’s suicidal ideation in an attempt to evade it. When this response style is utilized the client may feel that the clinician is distant or lacks interest in their concerns.
Additionally, the client may sense that the clinician is uncomfortable with the topic area, and avoid discussing or initiating discussion of it again. Thomas and Leitner (2005) point out that the fight and flight responses are defined by the style in which they are delivered, rather than specifically the language used. Thus the interpretation of the message given by the clinician may rely heavily on other communicative cues as well.

Alternatively, Thomas and Leitner (2005) proposed that the “ideal” response style is one that includes client collaboration, treating the client with respect, and taking a “nonjudgmental and empathic stance” (p. 151). The goal of this response style is to empower the client, through genuineness and empathy, to move toward individual wellness and understands suicidal ideation as a valid response to psychological stressors. The authors explored the validity of the hypothesis that suicidal clients would perceive the “ideal” response as the most helpful. They conducted a two part study, in the first phase interviewing 39 mental health professionals, and 20 clients. Clinician participants rated the “fight” response as the most frequently chosen style (55%) of intervention used by professionals, with “ideal” next (28%) and “flight” (17%) the least frequent. Not surprisingly, 80% of the clients interviewed rated the “ideal” response style as their preference for intervention. This result implies that clients may often not receive the style of intervention that they would consider to be most helpful.

The results are somewhat limited though, as 66% of those sampled highest degree held was a bachelor’s degree. Thomas and Leitner (2005) discussed this limitation to their research as more indicative of the community mental health system from which participants were widely selected, rather than other settings. These results regarding response style may differ when looking at clinicians with training at the graduate level.
Additionally, their research was retrospective in nature, and thus subject to bias. Both the clinicians and clients included in the study were asked to recall events that had occurred in the past. Participant recollections may have been distorted by time, or other events that had occurred more recently. There is a need for further research on both client and clinician perceptions of intervention with suicidality to better document these therapeutic interactions.

Most studies of clinicians rely on self-report measures. This method of data collection may elicit biased responses, depending on what information individuals feel comfortable or uncomfortable sharing. Studies of therapists working with suicidal clients have indicated that many report increased stress and pressure, when compared to other client concerns (e.g., Deutsch, 1984; Farber & Heifetz, 1981; Hellman, Morrison, & Abramowitz, 1986). Determining triggers for heightened stress responses may help clinicians to work more effectively with clients and programs to train clinicians to be aware of the impact. Little research has been conducted on clinician stress responses using alternative methods to self-report. The danger in this is missing information about responses that clinicians may lack awareness of. Although we can expect that client suicidality is stressful for clinicians from self-report methodologies, exploring alternatives to self-report may more effectively illuminate the effect it has on clinicians and the therapeutic process.

The significance of conducting research using alternative methods is both unique, and needed. There is potential to raise the awareness level of clinicians, both to their own automatic reactions to client suicidality and the ways in which they deal with those reactions effectively or ineffectively. Focusing on the individual client’s needs rather than...
the therapists own anxiety reduction may help therapists to more effectively empower clients (Thomas & Leitner, 2005). Doing so requires an increased understanding and awareness of one’s own affective responses when approaching client suicidality. Heightened understanding of one’s own reactions may help to improve the therapeutic relationship (Schlesinger & Wolitsky, 2002). The danger in relying on self-report data is the potential to miss information of which subjects may not be consciously aware.

Clinician Self-Awareness

Previous research has shown that therapists experience client suicidality as stressful, and many encounter suicidality regularly in their clinical practice. Thomas and Leitner (2005) provided further insight into how this stress response may shape a clinician’s reaction to clients in negative ways. Other areas of research have looked at the impact of self-awareness on clinician effectiveness and the therapeutic relationship (e.g. Fauth & Williams, 2005; Schlesinger & Wolitzky, 2002; Smith et al, 2007). Research in this area will be further discussed, as well as the implications for suicidal clients, and different clinician populations.

The balancing act of therapy requires acute awareness on therapist’s part to attend to their own reactions, as well as those of the other individual at multiple levels. Smith, Kleijn and Hutsemaekers (2007) highlighted the inherent difficulty in balancing roles as an active participant in the therapeutic relationship with being the professional expert. The authors suggest that this demand on therapists requires “continuous reflection on the therapist’s own contribution to the therapeutic relation…” in order to facilitate successful treatment, (pg. 34). The authors interviewed therapists about situations they found to be
“difficult” in their professional lives, and ways they dealt with stress, through two different participant sample pools. The researchers interviewed 15 therapists who worked in a trauma-specific organization, and 11 therapists considered to be “experts,” who worked across a variety of settings. Each group of interviews were collected under separate research protocols, and re-analyzed for this particular study. The researchers found that when recalling “traumatic” client stories, there was no difference reported between the groups of therapists, in terms of the effect they believed it had on them. Smith and colleagues did note though, that the trauma-institute therapists were more likely to engage in “active” interventions than the expert sample. In this case “active” referred to in-session reactions and intervention strategies that were more directed and more active (rather than passive, i.e. “‘Intrusions’, ‘Shock’, ‘Ruminating’ and ‘Anxiety’”) as strategies (p. 38). Additionally, they found that across the groups, therapists reported they experienced situation-specific reactions that included somatic and affective responses in their work. Some evidence of a spectrum ranging from active intervention with the client to awareness of personal affective responses, emerged in this research. If those therapists who were more active in interventions with clients were less aware of their own emotional responses, they may have been making decisions without conscious regard to their own emotional state. The authors concluded recognizing these reactions may help therapists’ better deal with them, and the stress around providing mental health treatment.

Self-awareness of reactions, stress responses, and emotions has been suggested as a way to combat the unintentional impact of these factors on the therapeutic process (e.g. Smith et al, 2007; Shea, 1999). Fauth and Williams (2005) conducted research aimed at
determining whether the level of “in-session self-awareness” and types of management strategies clinicians used was influential on the therapeutic process, as measured by client and self-ratings. The researchers utilized an exclusively clinician trainees sample. They asked participants to rate self-awareness and ways they managed that self-awareness, following a session with a volunteer client. Management strategies were measured using a version of the Self-Awareness and Management Strategies Survey (SAMS; Williams, Hurley, et al., 2003) adapted for their specific research purposes. Management strategies were defined as ways that the trainees intervened with themselves in session, when they were preoccupied by their own reactions, thoughts, or emotions. The sample consisted of 17 dyads of participants, and utilized individual speaking turns as data points. The researchers found that for participants in their study, the higher the rated level of self-awareness, the more likely trainees were to rate that awareness as “helpful” to them during the session (N = 377, pr = .25, p < .01). Self-awareness was measured with a 2-item self-report assessment, the In-Session Self-Awareness Scale (ISSA; adapted from the Therapist Momentary Self-Awareness Scale, Williams, 2003). This result implies that increased awareness of one’s own reactions during a session may be helpful to clinical trainees’. At the same time, the reported helpfulness of such awareness could also be due to participants wanting their awareness to be helpful.

The researchers also had the client participants complete rating scales (Helpfulness Rating Scale, HRS, Elliott, 1985; an author modified version of The Client Reactions System, CRS, Hill, Helms, Spiegel, & Tichenor, 1988) about the helpfulness of the clinician and progress made within the session. The researchers performed a hierarchical multiple regression and client-participants rated clinicians with higher ISSA
scores as more “helpful” during the session, with 6% of the variance in helpfulness scores accounted for by the ISSA ratings made by clinicians about themselves. In contrast to this, findings also indicated that the more effortful the trainees were in dealing with their self-awareness (i.e. utilizing self-management strategies) during the session the lower the rapport ratings by client participants. Overall, the findings of the study indicate that having increased self-awareness during sessions was positive for clinician trainees and clients, except when clinician trainees’ required more effort to deal with and control self-awareness. This suggests that it may be beneficial to help trainees increase their self-awareness during sessions as to their own reactions to suicidal communications, becoming more fully aware of their responses. The more predictable the therapists reactions are to themselves the less distraction through managing those responses may be present. Clients in this particular research study found the effort put into “management” of therapist reactions to be the detrimental element on the therapeutic alliance. Having a stress response to a client verbalization may not hinder the therapeutic process directly, but rather attempts to minimize that physiological response may.

There were limitations associated with this study that bear attention. In this experiment, a small sample size was used, consisting of only 17 clinician-client dyads. The interactions between each dyad were analyzed on a turn-by-turn basis. Although the researchers controlled for partial correlations, this research could be improved by a larger sample size, and fewer repeated measure effects. Additionally, out of their group of 17 clinicians, only 7 had graduate level training. The differences in the possible approaches and interventions utilized by each of the clinicians could be a factor of their prior
training. This needs to be addressed in the future looking at larger samples of different types of clinicians to determine if training makes a difference.

While this research reported self-awareness may be beneficial to clinicians, it also evidenced some drawbacks. The effort it took trainees to manage their awareness had a negative impact on the client experience of alliance. Another line of research into self-awareness is the impact of preparatory techniques on the therapeutic process. Schlesinger and Wolitzky (2002) conducted research aimed at uncovering the impact of self-analytic exercises on clinical trainees’ experiences. The basis of the experiment was to determine whether heightened self-awareness of affective responses would have an impact on therapeutic process variables, including the therapeutic alliance. Schlesinger and Wolitzky (2002) asked participants (clinical psychology graduate students. N = 43) to rate a client based on segments of a videotaped fictional session. Individuals in the experimental group were then asked to engage in a “self-analytic” exercise, calling attention to their own feelings and impressions of the client, while participants in the control group were asked to reflect on client characteristics instead. Following this, both groups viewed additional segments of a session with the same client and were asked to rate the client and their own reactions on several dimensions, three separate times as the session progressed (referred to as Q1, Q2, and Q3). Schlesinger and Wolitzky compared the responses of the two groups, using Q1 as a covariate for the other two measurements. The major findings included increased “positive feelings” towards the client in the experimental group as compared to the control group (Q2: $F = 14.68, p < .001$; Q3: $F = 6.92, p < .01$), and increased empathy in the experimental group as compared to the control group (Q2: $F = 8.40, p < .007$; Q3: $F = 4.29, p < .05$). These findings point to the
importance of clinician affective reactions in the therapeutic process. In this case, these affective reactions had an impact on the way in the therapists conceptualized the client concerns. Those individuals who were asked to pay more attention to their own feelings reported higher positivity towards the client.

One potential take-away message is that regardless of the nature of affective responses, increased awareness of them may be helpful to therapists in better relating to their client’s unique concerns. There are significant limitations to this study though, that warrant discussion and expansion in future research. The information about emotional responses and the effect of those responses were gathered through self-report. There is inherent difficulty in generalizing these findings to real-world clinical settings. What we do know from this research is that those trainees who were asked to be self-analytic were more likely to report positive feelings towards a videotaped client. Whether or not this result was produced because this group of participants was more aware of demand characteristics of the study is unclear. Still, little research exists that has aimed to understand how stress responses of clinicians shape therapeutic process variables, and additional research in this area is needed. Research to date has relied mainly on self-report to determine the experiences of clinicians. In addition to affective stress responses, examining physiological arousal responses may help to better inform a true understanding of the varied experiences clinicians have, and the impact of these on their clinical work.
Physiological Responses

Despite the acknowledgement that suicidality represents a high stress situation for clinicians’, little research exists that has looked at the stress related reaction of clinicians working with suicidal clients beyond self-report. While it is expected that there is a relationship between self-report and other methods (e.g. physiological measurement), it is important to determine whether other methods may add additional unique information about this response in clinicians. Determining whether suicidality elicits a heightened physiological response compared to other presenting concerns may influence the way in which we prepare for working with individual expressing suicidal thoughts. Currently needed in the literature on suicidality are non-self-report indices of stress and affective responses in therapists. The lack of attention in this area leaves a gap in the current knowledge base, and may be a detriment to the way we train our clinicians, or how we put together crisis protocols. With additional knowledge of both the type and magnitude of physiological reactions produced in clinicians when faced with suicidal clients, we can begin to better understand the immediate reactive experience. Clinicians are trained to be attentive to their own thoughts, feelings, and reactions so they do not unknowingly influence the therapeutic relationship, and as a tool for treatment. How this experience shapes decision-making, influences treatment choices and implementation, and affects therapeutic rapport are areas to further study this phenomenon. The Yerkes Dodson Law will be reviewed as a theoretical explanation for the effect heightened physiological arousal may have on the clinician when faced with client suicidality, as well as studies that have investigated this response in clinicians.
Yerkes Dodson Law

Significant research has been conducted on the Yerkes Dodson Law (YDL). The Law is based off of the seminal research conducted by Yerkes and Dodson in 1908 on mice examining stimulus strength and habit formation (Hanoch & Vitouch, 2004). This work has been translated and adapted into the well-known inverted U-shaped performance and motivation curve widely used today (Figure 1). The x-axis denotes the arousal variable, often a “stress” response for the individual. The y-axis denotes the performance variable, often a measure of ability to fulfill a needed task. Arousal equates to stress-response (confronted with suicidal client), and performance as clinician self-efficacy, or belief in oneself to be effective in the clinical process. Hanoch and Vitouch (2004) pointed out that the variables commonly utilized in YDL research today are different than those originally studied by Yerkes and Dodson. Stimulus strength has been replaced by emotional arousal, and habit formation by performance in modern explanations and application of the YDL. Some argue that the redefinition and extension of these variables carries over well and does not impact the utility or validity of the YDL (Hanoch & Vitouch, 2004). Although the law may miss some of the intricacies associated with varying stimuli, it is still helpful as a general approach to examining these relationships. The impact of this law on psychological research and theory has been widespread and acknowledged throughout the literature (see for a review: Hanoch & Vitouch, 2004).

The variable “performance” has ranged throughout experiments, though less research has been conducted on decision-making as an indicator of performance. An area to expand our current understanding is to apply the YDL to clinicians and their self-
efficacy for working with particular client concerns. In what way is self-efficacy for effective intervention impacted by physiological arousal? Are there varying degrees of stress or arousal clinicians experience when faced with client experiences? If so, the implications are abundant for research and training of clinicians. First, we need evidence that an automatic state of arousal does occur when clinicians are faced with client suicidality. Many clinicians assert that they are adequately trained to deal with suicidality in their clients, and are not impacted in decision making by affective responses.

Figure 1. Representation of YDL curve, where horizontal axis is arousal, and vertical axis depicts performance. (Adapted from Mendl, 1999)
Theoretical Application of Yerkes Dodson Law

Hanoch and Vitouch (2004) noted that there have been discrepancies within the literature regarding the definition of arousal and performance in YDL research. They asserted that researchers should aim to move towards performance variables that measure “arousal-congruent performance” or ACP. The concept of ACP attends to the need to evaluate the performance of an organism on a variable that relates to the type of arousal state they are experiencing. In other words, it is not helpful to study a performance based variable that does not naturally relate to the arousal variable. Measuring performance should be based on what the type of arousal or stimuli is presented and what performance would naturally occur following (i.e. scanning for threats, versus fleeing, versus mate selection) (Hanoch & Vitouch, 2004). Investigating how a stress response to a suicidal client influences performance in the form of clinician self-efficacy beliefs about their ability to intervene effectively is consistent with ACP, as good decision-making comes from gathering significant information about a situation before acting.

Tied in with the concept of “attentional narrowing” (Mendl, 1999, p. 228) measuring performance based on variables that relate to the arousal stimulus is a more accurate way to direct performance. At the same time, research examining the reduction in scope of performance capability helps us to better understand how attentional processes may be shifted to a narrower set of cues when a stimulus is strong. This undoubtedly may cause unforeseen consequences for individuals, when arousal or stress is elicited and they are unable to attend to additional information in the environment. It is plausible that the strongest stimulus faced by an individual dictates their course of action, through attentional narrowing. This occurs even when a certain behavior may only help
to reduce that specific stressor, at the cost of attending to other portions of the environment. When heightened arousal occurs due to client suicidality, the clinician may be at risk of making premature decisions, or a lack of attention to client needs.

In contrast, there are benefits to the narrowing of attention including the speed with which information can be processed (Hanoch & Vitouch, 2004). On one hand stress may make an individual more capable of attending to stimuli. The stress, or arousal, placed on an organism can alert them to threat, danger, or changes within the environment. Ability to scan the environment for information quickly may be improved under a heightened arousal state. Hanoch & Vitouch (2004) summarized the research of Easterbrook’s “cue-utilization theory.” This theory provides an explanation for the inverted U-shaped curve seen in the relationship between arousal and performance, such as in the YDL. Cue-utilization theory posits that when an animal has a certain amount of stress placed on it (likely from an external threat) it can better take in information (quantity). Whereas when there is too great a stress (arousal) placed on the animal, it must devote attentional capacities to fewer things, thus performing less well on other items (Hanoch & Vitouch, 2004). This “narrowing” of attentional processes makes sense from a survival perspective, although it may be detrimental at times as well.

One question that remains is what processes are involved in deciding when the individual has collected sufficient information about the environment/stimulus, and is able to make an effective decision or proceed to action (Hanoch & Vitouch, 2004). It has been suggested that there are thresholds, which when surpassed automatically cause action or change in course. How then are we as clinicians impacted within the therapeutic setting by these same “stopping rules” (Hanoch & Vitouch, 2004)? When a
client reports thoughts of suicide, is a threshold crossed for many clinicians that encourages them to function out of anxiety-reduction? There is a likelihood that the experience of a stress response could impact a clinicians decision making rules. In this case, it may cause them to discontinue exploration for information, and begin to problem-solve or intervene prematurely therapeutically.

Another way that stress or arousal can impact cognitive processes in individuals is through limiting the person’s ability to incorporate new information in the moment. Mendl (1999) discussed previous literature addressing the impact of stress on habitual performance. When an individual encounters stimuli that are “novel and threatening” they may revert to “habitual or automatic processes” that have been appropriate behaviors in previous situations (Mendl, 1999; pg 227). That is, if an organism has enough stress or arousal they may revert to a previous behavior rather than incorporating the new information. People at times find themselves completing tasks in an automatic fashion that may come from previous learning experiences. This phenomenon relates to clinicians in terms of decision-making heuristics. When faced with suicidality in a client, a clinician may have a heightened “fear” based response, and be drawn to act (decide) based on previous knowledge rather than attending to contextual or individual factors that influence and affect the current situation. A lack of individualized attention may lead a clinician to be less effective therapeutically with a client by applying widespread interventions aimed at decreasing risk and clinician anxiety.
Application to Clinicians with Suicidal Clients

Since Yerkes and Dodson’s original work in 1908, researchers have added to the YDL research base, and utilized the infamous inverted-U shape curve to explain results. YDL based hypotheses have been tested in both animals and humans. The principles of this law can and have been applied to a variety of situations. This review will focus on YDL application to human populations, and how it may serve as a model for the relationship between clinician stress response and performance.

Bregman and McAllister (1982) investigated the YDL with biofeedback success as the dependent variable. The researchers were interested in determining whether the classic U-shape would be maintained when looking at hand temperature data. The authors had two experimental groups and a control group. Participants were asked to raise their hand temperature in order to receive compensation (no compensation given in control group.) The results indicated that an inverted U-shaped distribution existed within the sample, where those participants offered an intermediate amount of money were more successful with the biofeedback technique as compared to the control group or high compensation groups. This research effectively demonstrated that YDL curve in a human population, and lent credibility to the argument that performance may be differentially affected by arousal level.

Keeley, Zayac, and Correia (2008) studied the impact of “statistics anxiety” on performance in an introductory college-level statistics course. All of the participants in their study were undergraduates, and the study took place over the semester-length class. The researchers determined that a curvilinear relationship was a better predictor than a linear relationship when looking at anxiety and test performance. The curvilinear
relationship either explained more variance than the linear model, or incrementally improved prediction as the researchers studied each examination (performance variable) taken by the class over the course of the semester.

Another study of note, conducted by Miller and colleagues (2010) examined the physiological reactivity of clinician trainees before and after actual sessions with individuals who recently expressed suicidal ideation. Inclusion criteria for clients in the study were meeting at least three criteria for borderline personality disorder (rated on the SCID-II), have history of either a suicide attempt or self-harm behavior, and express current suicidal ideation. The data collected for the study was part of a larger protocol examining the differences between dialectical behavior therapy and a psychodynamic approach. Of the six therapists included in the study, half utilized each approach. The authors asked therapist trainees participating in the study to collect salivary samples directly before and following sessions with designated clients, as well as complete a self-report measure of working alliance and session “difficulty.” Results indicated that the pre-session levels of salivary cortisol \( F(1, 21.75) = 4.91, p = .038 \) and alpha-amylase \( (F(1, 27.86) = 4.40, p = .045) \) were higher than post session. Based on this data, the authors suggested that the clinicians experienced an “anticipatory anxiety” and that this stress reaction subsided over the course of the session. The authors suggested that awareness of this trend may help “normalize” the feeling of stress before sessions for clinicians in training. This result also bolsters the argument that awareness of physiological activity for clinicians may be a helpful area to call attention to, as this can affect work with clients. Additionally, clinicians may benefit from knowledge of their own stress reactions, so that they can better manage them for their own well-being. Lack
of awareness that one is having a physiological reaction may lead to developing patterns of therapeutic intervention unduly influenced by those reactions. The results from this study are based on data for six therapists though. With a small sample size and limited physiological data, it is difficult to generalize these findings to the experience of all therapists. Additional research in this area is indicated and justified.

Miller and colleagues (2010) study documented that the physiological reactions occurring in therapists are a valuable area for further study. While little research outside that study has been conducted to date attending to the physiological side of clinician reactions, theories and models exist that may guide future research. The intersection of physiological and psychological processes has been researched (e.g. the Yerkes-Dodson Law; YDL), and applied to a variety of situations. Most research to date on clinicians has utilized self-report measures of affective and physical responses. Physiological data though, are quantifiable and not subject to the same set of biases associated with self-report data. These biases have likely influenced the way we understand reactions that occur in clinicians, and the subsequent impact it has on clinical work. As such, it is important to move in the direction of examining physiological, and other quantifiable data, regarding clinician reactions to various clinical contexts. Specifically the need to attend to arousal producing situations, such as suicidality, to determine what type of reaction clinicians actually experience is warranted.

Much research has provided information on clinicians’ perceived affective responses and reactions to client’ suicidality, rather than direct observation of those responses. When reviewing previous research on affective responses, though, it can inform the physiological processes that may accompany or co-occur with such reactions.
Hanoch and Vitouch (2004) reviewed previous research that attended to the various physiological reactions that occurred with different mood states. They reported that changes in “…heart rate, finger temperature, skin conductance and muscle activity…” have been found to be associated with different affective states (p. 434). Looking further at these physiological changes provides a direct way of observing reactions to different stimuli that may or may not be in the conscious awareness of an individual. An area for future research is attending to these potential reactions to determine what types of situations bring about different reactions in clinicians. If measuring at the physiological level we may be able to identify reactions and responses that are unconscious or below a threshold of awareness. As such, these reactions would be difficult to report via self-report or observation.

Smith, Kleijn and Hutschemaekers (2007) asserted that for clinicians to be successful, they need to have skills to monitor both their own reactions (and how they influence the therapeutic process) as well as understand the association between themselves and the client. They assert that awareness of one’s own reactions and learning skills to deal with those reactions is important in the process of training future clinicians. Similarly, Bonner (1990) noted that past research has shown the harmful effects on decision making and clinician “judgment” when faced with crisis work due to a stress response. Suicidal clients have an emotional impact on the therapist, and this affective arousal (stress response) can disrupt the decision-making process. Clinicians being able to more effectively monitor their own affective responses and anxiety may help them to listen more effectively and understand the unique circumstances of their client. Engaging the client in the treatment process has been suggested to improve
treatment success (Jobes, et al., 2007). By doing so, one would presume that treatment will better fit the needs of the client, and be more effective in minimizing suicidal risk.

Repeated exposure to others’ suicidal ideation can elicit various reactions in therapists. Undoubtedly, these reactions are influential on therapeutic interventions, treatment choices, and therapeutic rapport. Shea (1999) discussed the varied emotional responses clinicians can have to reported suicidal ideation, asserting that those responses can drive a wedge between therapists and their clients when clients are able to sense the therapist feels uncomfortable discussing suicide, due to a negative-affect reaction. Shea pointed out that “When a clinician begins to understand his or her own attitudes, biases, and responses to suicide, he or she can become more psychologically and emotionally available to a suicidal client,” (pg. 4). It is for this very reason that the study of clinicians’ automatic arousal responses to suicidal ideation in their clients is important to research. By doing so, highlight can be brought to a potential area of bias for many clinicians, that may influence their clinical decision-making and self-efficacy for intervention.

Hypotheses

The current study examines the impact of suicidal ideation in a client on the physiological stress arousal response of clinician trainees by investigating the following hypotheses:

Hypothesis One: The experimental group (suicidal client video) will exhibit heightened physiological responses as compared to the control group (non-suicidal client), as evidenced by greater change in physiological measures.
Hypothesis Two: There will be a significant relationship between self-reported stress and physiological reactions such that clinician ratings of perceived stress and physiological reactivity will be positively correlated.

Hypothesis Three: There will be a curvilinear relationship between physiological reactivity and performance measures through self-efficacy such that participants with low or high physiological reactivity, as evidenced by greater change in physiological measures, will report lower levels of self-efficacy, while participants with mid-range physiological reactivity will report higher levels of self-efficacy.

Hypothesis Four: Clinician experience will be negatively related to stress/arousal variables after controlling for baseline. Experience will be defined as number of hours reported in direct clinical work, years of graduate training, and previous experience with suicidality in clients.
CHAPTER III

METHODOLOGY

This chapter provides information on the study procedures, participants, variables, and recruitment procedures. The measures utilized in this study are discussed in depth, including available psychometric data for each. Last, the hypotheses of this research and planned analyses are presented.

A power analysis based on requirements for ANCOVA with two groups and one dependent variable was conducted using G*Power 3 software (Faul, Erdfelder, Lang, & Buchner, 2007). Extrapolating from previous research, a large effect size is hypothesized (f = .04) at p<.05 with power of .80, a total sample size of 52, or 26 per group, was required.

Participants

Participants in this study included 52 graduate level clinicians in training. Each of the participants was currently enrolled in a master’s or doctoral level program in the field of mental health. To be eligible for participation, individuals needed to have practical experience in the field, whether currently enrolled in practicum coursework or engaged in current or past clinical work. Additionally, participants were excluded from this research if they were currently taking medication that effected or controlled their blood pressure, as blood pressure and change in blood pressure was a variable of interest in this study.
Participants were given information about the physiological data collection and exclusion criteria in the recruitment materials and during the informed consent process.

The sample was comprised of 43 women (82.7%), and nine men (17.3%). Participants ranged in age from 23 to 39 years old ($M = 28.37$, $SD = 4.46$). The sample was made up of trainees from four different types of training programs in the field of mental health. The sample was comprised of 24 Clinical Mental Health Counseling trainees (46.1%), four Counselor Education trainees (7.7%), 23 Counseling Psychology trainees (44.2%), and one Marriage and Family Therapy trainee (1.9%). The majority of the sample reported having previous experience working directly with a client experiencing suicidal ideation (86.5%). Previous experience measured in direct client contact hours ranged from 7 to 4000 hours ($M = 649.31$, $SD = 870.12$). Previous experience in number of years of graduate training completed ranged from one to nine years ($M = 3.31$, $SD = 1.81$). A summary of demographic characteristics is presented in Table 1.

Table 1. Demographic Characteristics of the Sample

<table>
<thead>
<tr>
<th>Variable</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
</tr>
<tr>
<td>23-24</td>
<td>25</td>
</tr>
<tr>
<td>25-27</td>
<td>26.9</td>
</tr>
<tr>
<td>28-31</td>
<td>28.9</td>
</tr>
<tr>
<td>31-39</td>
<td>19.2</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
</tr>
<tr>
<td>African American/ Black/ African</td>
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</tr>
<tr>
<td>Latino-a/ Hispanic</td>
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</tr>
<tr>
<td>European Origin/ White</td>
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</tr>
<tr>
<td>Not Reported</td>
<td>1.9</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
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</tr>
<tr>
<td>Male</td>
<td>17.3</td>
</tr>
<tr>
<td>Female</td>
<td>82.7</td>
</tr>
<tr>
<td>Variable</td>
<td>%</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>----</td>
</tr>
<tr>
<td>Clinical Mental Health Counseling</td>
<td>46.1</td>
</tr>
<tr>
<td>Counselor Education</td>
<td>7.7</td>
</tr>
<tr>
<td>Counseling Psychology</td>
<td>44.2</td>
</tr>
<tr>
<td>Marriage &amp; Family Therapy</td>
<td>1.9</td>
</tr>
</tbody>
</table>

**Previous Experience with Suicidality**

| Yes   | 86.5 |
| No    | 13.5 |

**Measures**

*Demographic Information and Previous Experience Questionnaire (Appendix B).*

Participants were asked to complete a demographic questionnaire that included information regarding age, sex, degree program, and years of training. Additionally, participants were asked to provide information about their experience working directly with clients including approximate hours spent in direct therapeutic work, types of client concerns they had experience working with including suicidality, current and previous work settings. Participants were asked via primary contact (phone or email address) to respond to a question about their race/ethnicity following data collection. This is also presented in Appendix B.

*State Trait Anxiety Inventory (STAI: Appendix C)*

This instrument was utilized as a measure of each participant’s self-reported stress. Data on participants’ stress level and their experience of anxiety during the study enabled comparisons to previous research on stress related to clinical situations. The instrument was administered as presented in the appendix, with the heading “Self Evaluation Questionnaire,” as recommended by the test developer. The STAI was first
published in 1970 (Form X), by C. D. Spielberger. It underwent revisions and the current version was published in 1983. There are two scales on the STAI, one measuring “state” anxiety, the other measuring “trait” anxiety. State anxiety (S-Anxiety) is a construct defined as situational influences in present level of “apprehension, tension, nervousness and worry”) (Spielberger et al., 1983; pg. 6). The trait-anxiety (T-Anxiety) scale is meant to measure an individual’s personality or long term level of anxious tendency. For this research, only the State anxiety (S-Anxiety) form was utilized. The scale is comprised of twenty statements that are rated by participants on a 4-point Likert scale from “Almost Never” to “Almost Always.” The instrument takes less than six minutes to be completed by college graduates and is typically self-administered. Normative data were collected on 5,081 individuals ranging from working adults, to college students, high school students, and military recruits. Internal reliability estimates ranged from .86 to .95 on the S-Anxiety scale across all groups and .89 to .91 on the T-Anxiety scale across all groups (Spielberger et al., 1983).

Barnes, Harp and Jung (2002) conducted a reliability generalization meta-analysis on the STAI. The authors collected articles published in the year 1990 through 2000 that utilized the STAI. Inclusion criteria included at least one of the scales (state or trait) being administered in the original format without modification, resulting in 816 articles. Barnes et al. (2002) analyzed 75 of these articles based on reported reliability estimates and descriptive statistics. The authors found average internal consistency estimates of .91 for the State, and .89 for the Trait forms. Test-retest reliability estimates for their sample were .70 for the State form, and .88 for the Trait form (Barnes et al., 2002). Spielberger and colleagues (1983) also computed validity estimates with concurrent validity between
the T-Anxiety scale and the IPAT Anxiety Scale (Institute for Personality and Ability Testing, Inc.; Cattell & Scheier, 1963) and Taylor Manifest Anxiety Scale (TMAS). These estimates ranged from .73 to .85.

Counselor Self-Estimate Inventory (COSE; Appendix D)

The Counselor Self-Estimate Inventory (COSE) was designed to measure self-efficacy for counseling skills in mental health practitioners. Perceived self-efficacy was included in this study as a measure of clinical performance. The responses mental health clinician participants have physiologically to client suicidality were expected to impact their self-efficacy estimates. This instrument defines self-efficacy in the context of “counselor’s counseling self-efficacy (CSE)” as the belief a clinician has that they will be able to “effectively work with a client in the near future” (pp 180, Larson & Daniels, 1998). In this case self-efficacy was an indicator of estimated future performance, although COSE scores have been shown to relate moderately to actual counseling performance in previous research (Larson, Suzuki, Gillespie, Bechtel, & Toulouse, 1992). The COSE has been shown to have a negative relationship with anxiety (Larson et al., 1992) and positive relationship with increased counseling experience (Larson et al., 1992).

The COSE measure includes 37 items that a participant rates on a scale of 1 (strongly disagree) to 6 (strongly agree). Nineteen of these items are then coded in the reverse direction, allowing for a total score range between 37 and 222. There are five factors on the COSE: Microskills, Counseling Process, Dealing with Difficult Client Behaviors, Cultural Competence, and Values. The instrument’s author recommends
utilizing the total score from the COSE for research purposes, to give the best estimate of self-efficacy. Larson and colleagues (1992) conducted a series of five studies to validate the COSE and investigate its usefulness. The authors reported that internal consistency estimates of the COSE were .93. A short version of the original (30 of the 37 items) had a test-retest reliability of .83. The short form was shown to correlate highly with the full form ($r = .99$). The COSE has been used in numerous studies in the mental health field to assess self-efficacy of practitioners and trainees (e.g. Daniels & Larson, 2001; Larson, Clark, Wesely, Koralesski, Daniels, & Smith, 1999).

**Stimulus videos. (Appendix E)**

As outlined below, participants were asked to view one of two videos. Each of the videos showed a mock counseling session, lasting approximately 12 minutes, in which a male “client” discussed his current concerns. Both videos included the same actor portraying the role of the client, and discussing a similar set of experiences. In the control group video, the client discussed experiencing a mild level of depressive symptoms. In the experimental group video, the client expressed more severe depressive symptoms than those reported in the control video. Included in the client’s dialog in the second video is expression of suicidal ideation. The portion of each video being viewed by the participant during the physiological data capture points was noted within the transcripts in Appendix E.
Physiological measures.

Physiological data was captured while participants viewed the experimental stimulus in order to assess their stress-related reactions to the videos. Measures included galvanic skin response (resistance), blood pressure, and heart rate. All physiological data was recorded utilizing the data recorder from iWorx©, and the “Physiology Suite” software manufactured by Thought Technology Ltd. The data recorder has different input channels for the varied physiological information and was designed specifically for use with humans. Blood pressure was recorded via a cuff worn on the upper arm, similar to those used in medical offices. To record GSR activity, participants wore sensor equipment on the fingers of one hand.

Heart Rate. Heart rate information was collected for each participant via the monitoring device installed within the blood pressure cuff. Data was measured in beats per minute, and measured every three minutes throughout the study. Participants pulse served as an indicator of their physiological response to the videos. Significant differences in mean heart-rate per group were examined. An increase in heart-rate was interpreted as indicative of a stress response based on the notion that when individuals experience stress their autonomic nervous system responds. This response includes a faster heart-rate in order to prepare to deal with the stress evoking stimuli. A review of the literature by Zajonc and McIntosh (1992) aimed at determining specific physiological responses to displays of emotion, indicated that heart rate was one of the best differentiators of emotional states.
**Galvanic Skin Response.** Galvanic Skin Response (GSR) is a measure of resistance to a weak electrical signal that is passed over the skin. When individuals experience stress or physiological arousal, their bodies emit more sweat, causing increased resistance to the electrical signal (Andreassi, 2000). In a more relaxed state, one’s fingers are dryer and an electrical signal is passed more easily due to less resistance. Monitoring changes in the electrical signal passed over the skin surface allows a direct measure of skin resistance. Collection of these data was included in the current study in order to determine participants’ experience of stress while viewing the experimental stimuli as compared to baseline. GSR information was also utilized to investigate whether a difference in GSR existed between the control and experimental groups during the session. Participants were asked to wear electrodes on two fingers of the same hand, through which a weak electrical signal passed and measurement of skin resistance was recorded. This electrical signal was weak and undetectable to the individual. Data was collected in intervals, occurring once every three minutes throughout the video stimulus. Zajonc and McIntosh’s (1992) review of physiological indicators of emotions also noted that skin conductance had been utilized in previous research and exhibited emotional state differentiating ability.

**Blood Pressure.** Blood pressure increases when an individual experiences stress due to the release of chemicals that narrow vessels and increase
heart rate, controlled by the sympathetic nervous system (Palmer, 2000). Both of these physiological reactions cause blood pressure to elevate temporarily. Participants in this study were asked to wear a blood pressure monitoring cuff while engaged in the experiment. Data were collected during the same intervals as outlined for GSR. Blood pressure readings from baseline through the experimental phase were collected and compared to look for differences. Systolic and diastolic blood pressure readings were both recorded. Comparisons made across participants and across groups were examined separately for Systolic Blood Pressure readings (SBP) and Mean Arterial Pressure (MAP) readings (ratio between systolic and diastolic blood pressure) at each interval.

Procedures

Recruitment occurred at five Midwestern universities (The University of Akron, Youngstown State University, Kent State University, Cleveland State University and John Carroll University). Directors of mental health graduate programs at each institution were contacted with information about the study and were asked to pass along study materials and participation information to eligible students at their institutions. Students who were interested in participating contacted the principle investigator directly to set-up a research appointment.

Participants were provided with informed consent documents (Appendix A) prior to beginning the study. The researcher was available to answer questions and discuss the consent form with each participant. Participants were then asked to complete the Health
History Questionnaire (Appendix F) that requests a list of medications that had been taken by the participant in the past eight weeks. This form was utilized to determine whether a participant met exclusion criteria for participation due to medication that could impact physiological measures being assessed in this research.

Following the informed consent procedure and questions regarding exclusion criteria, all eligible participants were administered the STAI and COSE questionnaires. Following completion of the questionnaires, each participant was given verbal information about the equipment, and then the various monitors and instruments were connected. Participants were randomly assigned to one of two conditions: suicidal client (experimental group) or non-suicidal client (control group). After a participant was wearing the physiological monitoring equipment, they were asked to relax over the course of five minutes, in an attempt to establish an accurate baseline measurement, using a standard script read aloud by the researcher, (see Script for Baseline Measurement Relaxation Phase, Appendix G). Following the initial waiting period, baseline physiological information was collected for one minute before the video stimulus was presented. Participants were then asked to watch the video corresponding to their assigned group. The physiological monitoring equipment was utilized to record participant blood pressure information over the course of one minute, at intervals of three minutes throughout the video viewing. Heart rate and galvanic skin response readings were read continuously throughout the 12 minute video. This information was then averaged for each segment for comparisons and analysis. Each video was approximately twelve minutes in length, resulting in four physiological data captures during the viewing in addition to the baseline measurement. Following the baseline collection of
physiological data the video began. After two and a half minutes, the first experimental phase data collection occurred for one minute (Time 1). The video continued, and the physiological data was recorded again beginning at 5.5 minutes (Time 2), 8.5 minutes (Time 3), and 11.5 minutes (Time 4) into the video. Each phase of data collection is notated within the video transcripts in Appendix E for reference.

Following completion of the randomly assigned video, questionnaires were presented to each participant. To control for possible interference effects, the presentation order of questionnaires remained the same for all participants. For example, priming effects could occur if participants were given specific information about the research question before watching their group’s video. Questions regarding previous experience with suicidal clients may have lead participants to anticipate the manipulation prior to viewing the video and their responses could have been influenced by them.

The demographic and training experience questionnaire included questions about previous experience including: having worked with suicidal clients, ever losing a client to suicide, years in the mental health field, types of previous/current work settings, type of training, and formal education. Each participant was asked to respond to a question regarding the videos to determine whether the manipulation was effective, and participants had been attentive to the video stimuli. Following the demographic questionnaire, participants were asked to respond to the STAI for a second time to assess self-reported state anxiety. Finally, participants were asked complete the COSE for a second time to evaluate self-efficacy of counseling skill abilities with regard to the specific client viewed in the video.
At the completion of the study, participants were provided a standardized debriefing form (Appendix H) explaining the nature of the study. The debriefing form included information about the two experimental groups and differences between the videos they viewed. Additional information was provided about the main hypotheses of the study. Contact information for the investigator was given to all participants to follow-up with additional questions. Participants were contacted via email to ask them to complete an additional question about their race/ethnicity due to an inadvertent omission on the original demographic information form.

Hypotheses

The present study investigated the physiological stress responses in clinician trainees to suicidal and non-suicidal clients through the following hypotheses:

Hypothesis One:

The experimental group (suicidal client video) will exhibit heightened physiological responses as compared to the control group (non-suicidal client), as evidenced by greater change in physiological measures.

Hypothesis 1-A: After controlling for the baseline measurement, the average Systolic Blood Pressure (SBP) and Mean Arterial Pressure (MAP) for the experimental group will be significantly ($p < .05$) higher than that of the control group at each of the measurements Time 1, Time 2, Time 3, and Time 4 as shown through a mixed Analysis of Covariance (ANCOVA) for each SBP and MAP.
Hypothesis 1-B: After controlling for the baseline measurement, the average Heart Rate (HR) for the experimental group will be significantly ($p < .05$) higher than that of the control group at each of the measurements Time 1, Time 2, Time 3, and Time 4 as shown through a mixed Analysis of Covariance (ANCOVA).

Hypothesis 1-C: After controlling for the baseline measurement, the average Galvanic Skin Response (GSR) for the experimental group will be significantly ($p < .05$) higher than that of the control group at each of the measurements Time 1, Time 2, Time 3, and Time 4 as shown through a mixed Analysis of Covariance (ANCOVA).

Hypothesis Two

There will be a significant relationship between self-reported stress and physiological reactions such that clinician ratings of perceived stress and physiological reactivity will be positively correlated.

Hypothesis 2-A: There will be a positive correlation between STAI-State scores, and Time 4 Blood Pressure (SBP and MAP) measures between groups.

Hypothesis 2-B: There will be a positive correlation between STAI-State scores, and Time 4 Heart Rate (HR) measurement between groups.
**Hypothesis 2-C:** There will be a positive correlation between STAI-State scores, and Time 4 Galvanic Skin Response (GSR) measurement between groups.

**Hypothesis Three**

There will be a curvilinear relationship between physiological reactivity and performance measured through self-efficacy such that participants with lower and greater physiological reactivity will report significantly \((p < .05)\) lower ratings of self-efficacy on the Counselor Self-Estimate Inventory (COSE), while participants in the middle range of physiological reactivity will report significantly \((p < .05)\) higher ratings of self-efficacy. The relationship between these variables will be tested through a set of hierarchical regression analyses. The first analysis will include only a linear term. This will be followed by an analysis with both a linear and quadratic term. The difference in prediction improvement will then be examined.

**Hypothesis Four**

Clinician experience will be negatively related to stress variables after controlling for baseline. Experience will be defined as number of hours reported in direct clinical work, years of graduate training, and previous experience with suicidality in clients.

**Hypothesis 4-A:** After controlling for the baseline measurement, there will be a negative relationship between reported hours of clinical experience and Time 4 SBP, MAP, HR and GSR measurements, as analyzed through a hierarchical regression analysis.
**Hypothesis 4-B:** After controlling for the baseline measurement, there will be a negative relationship between reported years of graduate training completed and Time 4 SBP, MAP, HR and GSR measurements, as analyzed through a hierarchical regression analysis.

**Hypothesis 4-C:** There will be a difference in mean Time 4 SBP, MAP, HR, and GSR measurements between groups when comparing those participants who have had previous experience working with client suicidality and those who have not. An independent samples t-test will be conducted for each of the physiological variables to identify differences between the groups.

**Hypothesis 4-D:** There will be a negative correlation between STAI-state ratings and reported hours of clinical experience, as analyzed through a hierarchical regression analysis.
CHAPTER IV
RESULTS

Introduction

This chapter discusses preliminary and exploratory analyses as well as the planned analyses outlined previously. Exploratory analyses included screening of the collected data, examination of randomization of group assignment, and demographic characteristics of the sample. Following the preliminary analyses, each of the hypotheses is explored and results presented.

Preliminary Analyses

The experimental (suicidal client) and control (non-suicidal client) groups were compared for differences in previous experience working with suicidality in their clinical practice. A Chi-Square analysis revealed no significant difference between the experimental and control groups on previous experience with client suicidality ($\chi^2 = 1.486, df = 1, p < .223$). Table 2 provides information about each group and rate of previous experience with client suicidality in their clinical work. Outliers were identified through the use of box plots and histograms (Tabachnick & Fidell, 2004). After examining each variable independently two outliers were identified in the survey data (STAI and COSE scores), and two outliers in the physiological data. Analyses were run
with and without the outliers identified through this method and no significant differences were noted in the results. As such, the results presented include the full data set.

Table 2 Rates of Experience with Client Suicidality by Experimental and Control Group

<table>
<thead>
<tr>
<th>Group</th>
<th>Previous Experience</th>
<th>No Prev. Experience</th>
<th>(\chi^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>N=21</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% within condition</td>
<td>80.8%</td>
<td>19.2%</td>
</tr>
<tr>
<td>Control</td>
<td>N=24</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% within condition</td>
<td>92.3%</td>
<td>7.7%</td>
</tr>
</tbody>
</table>

\[\text{Note: There were no significant differences at the } p < .05 \text{ level}\]

Exploratory analyses were also conducted to determine whether any differences existed between initial Self-Efficacy (COSE) ratings, Anxiety (STAI) ratings, years of graduate training, and hours of clinical experience between the experimental and control groups to allow control for any differences if necessary. An independent samples t-test did not reveal a significant difference between the experimental and control groups on a pre-testing measure of self-efficacy (COSE) \( (t = -.400, df = 50, p < .691) \). An independent samples t-test also did not reveal a significant difference between the experimental and control groups on pre-testing measure of anxiety (STAI) \( (t = -.523, df = 50, p < .603) \). An independent samples t-test did not reveal a significant difference between the experimental and control groups in regard to the years of graduate training completed \( (t = -.705, df = 50, p < .484) \). An independent samples t-test did not reveal a significant difference between the experimental and control groups in regard to the hours of clinical experience completed (COSE) \( (t = -.333, df = 50, p < .740) \). Table 3 provides detailed results of the group mean comparison of COSE and STAI scores, hours of clinical experience, and years of graduate training between groups.
Table 3. Descriptive Statistics Between Groups on Pretest Self-Efficacy, State-Anxiety self-ratings, Hours of Clinical Experience and Years of Graduate Training

<table>
<thead>
<tr>
<th>Condition #</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
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</thead>
<tbody>
<tr>
<td>COSE(pre)</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>26</td>
<td>169.115</td>
<td>21.9296</td>
<td>4.3007</td>
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<tr>
<td>experimental</td>
<td>26</td>
<td>171.462</td>
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<tr>
<td>STAI(pre)</td>
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<td>26</td>
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<td>26</td>
<td>32.423</td>
<td>8.5378</td>
<td>1.6744</td>
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<td>Years of Grad Train.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>control</td>
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<td>1.718</td>
<td>.337</td>
</tr>
<tr>
<td>experimental</td>
<td>26</td>
<td>3.135</td>
<td>1.916</td>
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<tr>
<td>Hrs. of Clinical Experience</td>
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<tr>
<td>control</td>
<td>26</td>
<td>608.731</td>
<td>799.055</td>
<td>156.708</td>
</tr>
<tr>
<td>experimental</td>
<td>26</td>
<td>689.885</td>
<td>950.044</td>
<td>186.319</td>
</tr>
</tbody>
</table>

COSE = Counselor Self-Estimate Inventory; STAI = State-Trait Anxiety Inventory, State Form; Note: There were no significant differences at the p < .05 level

A manipulation check was included to assess whether the intended differences in conditions were successful through the use of two video stimuli. Participants were asked to rate the likelihood that the client they viewed in the video was thinking about suicide on a 7-point Likert scale ranging from “not at all” to “definitely.” An independent samples t-test revealed a significant difference between the experimental and control groups on manipulation check ratings \( t(50) = -6.993, p < .001. \) The experimental group rated the likelihood of the fictional client having thought about suicide significantly higher on the scale than the control group. These results indicate the manipulation of conditions was successful. See Table 4 for descriptive statistics for each group.
Table 4. Manipulation Check Question Ratings for Both Control and Experimental Groups

<table>
<thead>
<tr>
<th>Condition</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>26</td>
<td>4.962*</td>
<td>.8709</td>
</tr>
<tr>
<td>Experimental</td>
<td>26</td>
<td>6.500*</td>
<td>.7071</td>
</tr>
</tbody>
</table>

Note: * = significant at p < .001

Hypothesis One: Physiological Measures Compared Between Groups

The first hypothesis was that the experimental group, who viewed a video of a client expressing suicidal ideation, would exhibit heightened physiological responses as compared to the control group, who viewed a video of the same client without direct expression of suicidal ideation. Heightened physiological responses were defined as greater change in physiological data from baseline to measurement. As such, a mixed Analysis of Covariance with baseline measurement as a covariate was used to explore this hypothesis. There were four different physiological measures analyzed, which will each be discussed separately: Systolic Blood Pressure (SBP), Mean Arterial Pressure (MAP), Heart Rate (HR), and Galvanic Skin Response (GSR).

In order to examine the relationships between Systolic Blood Pressure (SBP) and experimental group, a 2 (experimental vs. control group) by 4 (SBP Time 1, SBP Time 2, SBP Time 3, SBP Time 4) mixed model Analysis of Covariance was conducted. The ANCOVA did not reveal any significant main effect for Systolic Blood Pressure \((F =1.645, p < .182)\), and no significant interaction effect between SBP and group assignment \((F = .005, p < .999)\). The ANCOVA results also indicated that there was not a significant difference between the two groups on measures of Systolic Blood Pressure \((F = .019, p < .891)\).
In order to examine the relationships between Mean Arterial Pressure (MAP) and experimental group, a 2 (experimental vs. control group) by 4 (MAP Time 1, MAP Time 2, MAP Time 3, MAP Time 4) mixed model Analysis of Covariance was conducted. The formula used to calculate MAP was, Mean Arterial Pressure = 2/3 Diastolic Blood Pressure + 1/3 Systolic Blood Pressure. The ANCOVA did not reveal any significant main effect for Mean Pressure ($F = .903, p < .441$), and no significant interaction effect between MAP and group assignment ($F = .302, p < .824$). The ANCOVA results also indicated that there was not a significant difference between the two groups on measures of Mean Arterial Pressure ($F = .995, p < .323$).

In order to examine the relationships between Heart Rate (HR) and experimental group, a 2 (experimental vs. control group) by 4 (HR Time 1, HR Time 2, HR Time 3, HR Time 4) mixed model Analysis of Covariance was conducted. The ANCOVA did not reveal any significant main effect for Heart Rate ($F = .327, p < .806$), and no significant interaction effect between HR across measurements and group assignment ($F = .214, p < .886$). The ANCOVA results also indicated that there was not a significant difference between the two groups on measures of Heart Rate ($F = 1.256, p < .268$).

A 2 (experimental vs. control group) by 4 (GSR Time 1, GSR Time 2, GSR Time 3, GSR Time 4) mixed model Analysis of Covariance was conducted (ANCOVA) to examined the differences between experimental and control groups on changes in their Galvanic Skin Response (GSR). The ANCOVA did not reveal any significant main effect for GSR measurements over time ($F = 1.158, p < .328$), and no significant interaction effect between GSR over time and group assignment ($F = .173, p < .915$). The ANCOVA results also indicated that there was not a significant difference between
the two groups on measures of Galvanic Skin Response \((F = 1.601, p < .212)\). Presented in Table 5 are the means and standard deviations for each of the physiological measures by group status.

Table 5. Descriptive Statistics for Physiological Measures in Control and Experimental Conditions

<table>
<thead>
<tr>
<th>Physiological Measure</th>
<th>Control Mean</th>
<th>Control SD</th>
<th>Experimental Mean</th>
<th>Experimental SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systolic BP (1)</td>
<td>108.538</td>
<td>12.507</td>
<td>108.038</td>
<td>8.335</td>
</tr>
<tr>
<td>Systolic BP (2)</td>
<td>108.885</td>
<td>11.701</td>
<td>108.231</td>
<td>9.271</td>
</tr>
<tr>
<td>Systolic BP (3)</td>
<td>107.308</td>
<td>11.828</td>
<td>106.654</td>
<td>10.755</td>
</tr>
<tr>
<td>Systolic BP (4)</td>
<td>107.038</td>
<td>10.010</td>
<td>106.654</td>
<td>10.484</td>
</tr>
<tr>
<td>Mean Arterial Pressure (1)</td>
<td>87.103</td>
<td>11.288</td>
<td>86.526</td>
<td>8.624</td>
</tr>
<tr>
<td>Mean Arterial Pressure (2)</td>
<td>86.679</td>
<td>10.773</td>
<td>85.846</td>
<td>8.797</td>
</tr>
<tr>
<td>Mean Arterial Pressure (3)</td>
<td>86.513</td>
<td>10.695</td>
<td>85.115</td>
<td>9.338</td>
</tr>
<tr>
<td>Mean Arterial Pressure (4)</td>
<td>85.705</td>
<td>9.900</td>
<td>84.808</td>
<td>8.820</td>
</tr>
<tr>
<td>Heart Rate (1)</td>
<td>74.731</td>
<td>14.718</td>
<td>74.731</td>
<td>9.544</td>
</tr>
<tr>
<td>Heart Rate (2)</td>
<td>75.808</td>
<td>14.538</td>
<td>76.154</td>
<td>9.923</td>
</tr>
<tr>
<td>Heart Rate (3)</td>
<td>76.462</td>
<td>14.300</td>
<td>76.462</td>
<td>9.940</td>
</tr>
<tr>
<td>Heart Rate (4)</td>
<td>76.346</td>
<td>14.302</td>
<td>77.154</td>
<td>11.030</td>
</tr>
<tr>
<td>Galvanic Skin Response (1)</td>
<td>3.365</td>
<td>3.304</td>
<td>2.747</td>
<td>2.751</td>
</tr>
<tr>
<td>Galvanic Skin Response (2)</td>
<td>3.165</td>
<td>3.330</td>
<td>2.480</td>
<td>2.669</td>
</tr>
<tr>
<td>Galvanic Skin Response (3)</td>
<td>3.236</td>
<td>3.288</td>
<td>2.648</td>
<td>3.054</td>
</tr>
<tr>
<td>Galvanic Skin Response (4)</td>
<td>3.148</td>
<td>3.305</td>
<td>2.389</td>
<td>2.682</td>
</tr>
</tbody>
</table>

Note: There were no significant differences at the \(p < .05\) level
Hypothesis Two: Relationship Between Physiological and Self-Reported Responses

The second hypothesis stated that there would be a positive relationship between self-reported stress and measured physiological responses. This hypothesis was analyzed through a series of correlations between State-Trait Anxiety Inventory (STAI, State Form) scores and each of the different measures of physiological reactivity at Time 4: Systolic Blood Pressure, Mean Arterial Pressure, Heart Rate, and Galvanic Skin Response. See Table 6 for correlations between the STAI and each physiological measure for both the experimental and control groups. A moderate positive correlation was found between STAI scores and heart rate for the experimental group \( (r = .334; p < .095) \) although it was not statistically significant. No other significant relationships were found between physiological measures and STAI scores for the experimental group. In the control group there was a weak negative correlation between STAI scores and Mean Arterial Pressure \( (r = -.229; p < .260) \), Systolic Blood Pressure \( (r = -.296; p < .143) \), and Heart Rate \( (r = -.229; p < .260) \).

<table>
<thead>
<tr>
<th>Physiological Measure</th>
<th>Control</th>
<th>Experimental</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAP</td>
<td>-.229</td>
<td>.121</td>
</tr>
<tr>
<td>SBP</td>
<td>-.296</td>
<td>.018</td>
</tr>
<tr>
<td>HR</td>
<td>-.229</td>
<td>.334</td>
</tr>
<tr>
<td>GSR</td>
<td>-.011</td>
<td>-.110</td>
</tr>
</tbody>
</table>

Note: no correlations found statistically significant at \( p < .05 \) level.
Hypothesis Three: Relationship Between Physiological Reactions and Self-Efficacy

The third hypothesis stated that there would be relationships between physiological stress variables and self-efficacy for counseling skills. It was hypothesized that there would be a curvilinear relationship between each of the physiological measures (Systolic Blood Pressure, Mean Arterial Pressure, Heart Rate, and Galvanic Skin Response) and self-efficacy as measured by scores on the Counselor Self-Estimate Inventory (COSE). This hypothesis was tested through a hierarchical regression analysis. In the first step the baseline physiological measure was entered to control for individual variation, in the second step the physiological data from Time 4 measurement was entered, and in the third step the Time 4 measurement score was squared and entered. It was hypothesized that the squared term would add significantly to the prediction of self-efficacy scores beyond the linear term, thus indicating a curvilinear relationship between the variables.

Systolic Blood Pressure (SBP) did not significantly predict COSE scores $R^2 = 0.059$, $F(2, 49) = 1.531, p < .227$. The Systolic Blood Pressure squared-term solution ($SBP^2$) also did not significantly predict COSE scores $R^2 = .060$, $F(3, 48) = 1.014, p < .395$. When examining Mean Arterial Pressure (MAP), MAP did not significantly predict COSE scores $R^2 = 0.082$, $F(2, 49) = 2.196, p < .122$. The Mean Arterial Pressure squared-term solution ($MAP^2$) also did not significantly predict COSE scores $R^2 = .084$, $F(3, 48) = 1.459, p < .237$. Heart Rate (HR) did not significantly predict COSE scores $R^2 = 0.035$, $F(2, 49) = 0.897, p < .414$. Entering the squared Heart Rate term ($HR^2$) did not significantly predict COSE scores $R^2 = .038$, $F(3, 48) = 0.635, p < .596$. Galvanic Skin Response (GSR) did not significantly predict COSE scores $R^2 =$
0.023, $F(2, 49) = 0.570, p < .596$. Entering the squared Galvanic Skin Response term (GSR²) did not significantly predict COSE scores $R^2 = 0.035, F(3, 48) = 0.578, p < .632$.

See Table 7 for collection of all regression results.

Table 7. Hierarchical Regression Analyses of Physiological Variables and COSE scores

<table>
<thead>
<tr>
<th>Physiological Variable</th>
<th>$R^2$</th>
<th>$R^2$ change</th>
<th>$\beta$</th>
<th>$F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systolic Blood Pressure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Linear Model</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SBP baseline</td>
<td>0.059</td>
<td>.002</td>
<td>.055</td>
<td>1.531</td>
</tr>
<tr>
<td>SBP Time 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Curvilinear Model</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SBP baseline</td>
<td>0.060</td>
<td>.001</td>
<td>.456</td>
<td>1.014</td>
</tr>
<tr>
<td>SBP Time 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Curvilinear Model</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SBP baseline</td>
<td>0.060</td>
<td>.001</td>
<td>.456</td>
<td>1.014</td>
</tr>
<tr>
<td>SBP Time 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Arterial Pressure</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Linear Model</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAP baseline</td>
<td>0.083</td>
<td>.003</td>
<td>.087</td>
<td>2.196</td>
</tr>
<tr>
<td>MAP Time 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Curvilinear Model</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAP baseline</td>
<td>0.084</td>
<td>.001</td>
<td>-.507</td>
<td>1.459</td>
</tr>
<tr>
<td>MAP Time 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Curvilinear Model</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAP baseline</td>
<td>0.084</td>
<td>.001</td>
<td>-.507</td>
<td>1.459</td>
</tr>
<tr>
<td>MAP Time 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heart Rate</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Linear Model</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HR baseline</td>
<td>0.035</td>
<td>.034</td>
<td>.368</td>
<td>0.897</td>
</tr>
<tr>
<td>HR Time 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Curvilinear Model</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HR baseline</td>
<td>0.038</td>
<td>.003</td>
<td>.388</td>
<td>0.635</td>
</tr>
<tr>
<td>HR Time 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Galvanic Skin Response</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Linear Model</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GSR baseline</td>
<td>0.023</td>
<td>.008</td>
<td>.133</td>
<td>0.570</td>
</tr>
<tr>
<td>GSR Time 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Curvilinear Model</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GSR baseline</td>
<td>0.035</td>
<td>.012</td>
<td>.306</td>
<td>0.578</td>
</tr>
<tr>
<td>GSR Time 4</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>GSR Time 4²</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: no findings were significant at the $p < .05$ level
Hypothesis Four: Previous Experience and Impact on Stress and Physiological Reactions

The fourth hypothesis stated that there would be a relationship between physiological stress variables and trainee experience. It was hypothesized that there would be a negative relationship between both number of hours of clinical experience and years of graduate training completed and each of the physiological measures (Systolic Blood Pressure, Mean Arterial Pressure, Heart Rate, and Galvanic Skin Response). Both of these measures of previous experience were analyzed through hierarchical regression analyses.

When examining the relationship between hours of direct clinical experience and the physiological variables, a difference score was utilized for each of the physiological data points in order to control for individual differences. The difference score was obtained by finding the difference between the Time 4 measurement of the variable and the baseline (Time 0) measurement. Hours of clinical experience completed did not significantly predict Mean Arterial Pressure (MAP) readings, $R^2 = .037, F(1, 50) = 1.918, p < .172$. Hours of clinical experience did not significantly predict Systolic Blood Pressure (SBP) readings, $R^2 = .014, F(1, 50) = .691, p < .410$. Hours completed was also not a significant predictor of Heart Rate readings, $R^2 = .001, F(1, 50) = .043, p < .836$. Finally, hours of clinical experience did not significantly predict Galvanic Skin Response (GSR) readings, $R^2 = .009, F(1, 50) = .438, p < .511$. See Table 8 for results of each regression analysis examining the relationship between hours of direct clinical client experience and physiological variables.
Table 8. Hierarchical Regression Analyses of Physiological Variables and Experience Defined as Hours of Direct Clinical Work.

<table>
<thead>
<tr>
<th>Physiological Variable</th>
<th>$R^2$</th>
<th>F</th>
<th>β</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Arterial Pressure</td>
<td>.037</td>
<td>1.918</td>
<td>.192</td>
</tr>
<tr>
<td>Systolic Blood Pressure</td>
<td>.014</td>
<td>.691</td>
<td>.117</td>
</tr>
<tr>
<td>Heart Rate</td>
<td>.001</td>
<td>.043</td>
<td>.029</td>
</tr>
<tr>
<td>Galvanic Skin Response</td>
<td>.009</td>
<td>.438</td>
<td>.093</td>
</tr>
</tbody>
</table>

*Note: no findings were significant at the p < .05 level*

When examining the relationship between years of graduate training and the physiological variables, a difference score was utilized for each of the physiological data points in order to control for individual differences. The difference score was obtained by finding the difference between the Time 4 measurement of the variable and the baseline (Time 0) measurement. Years of graduate training completed significantly predicted Mean Arterial Pressure (MAP) readings, $R^2 = .077, F(1, 50) = 4.155, p < .047$. Years of graduate training did not significantly predict any other physiological measures including Systolic Blood Pressure (SBP) readings, $R^2 = .016, F(1, 50) = .822, p < .369$; Heart Rate readings, $R^2 = .003, F(1, 50) = .143, p < .707$; or Galvanic Skin Response (GSR) readings, $R^2 = .062, F(1, 50) = 3.323, p < .074$. See Table 9 for results of each regression analysis examining the relationship between years of graduate training and physiological variables.
The impact of previous experience was also analyzed by looking at differences in physiological responses of participants who had previous experience working with client suicidality versus those who had no experience in this area. It was hypothesized that participants without previous client suicidality experience would exhibit a different level of physiological reactivity than those participants who had previous client suicidality experience. A series of independent samples t-tests were conducted to look for differences on physiological measures between the groups (previous experience with client suicidality versus no previous experience).

Forty-five participants (86.5%) reported having some previous experience with client suicidality in their clinical work. There were no significant differences on the t-test revealed between the groups on measures of Systolic Blood Pressure, $t(50) = .037, p < .971$; Mean Arterial Pressure, $t(50) = .280, p < .781$; Heart Rate $t(50) = 1.235, p < .223$; or Galvanic Skin Response $t(50) = .847, p < .401$. Group means for each of the physiological variables are presented in Table 10.
Table 10. Physiological Responses of Participants With and Without Previous Client Suicidality Experience

<table>
<thead>
<tr>
<th>Physiological Measure</th>
<th>Client Suicidality Experience</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Systolic Blood Pressure</em></td>
<td>yes</td>
<td>106.867</td>
<td>9.734</td>
</tr>
<tr>
<td></td>
<td>no</td>
<td>106.714</td>
<td>13.450</td>
</tr>
<tr>
<td><em>Mean Arterial Pressure</em></td>
<td>yes</td>
<td>85.400</td>
<td>8.687</td>
</tr>
<tr>
<td></td>
<td>no</td>
<td>84.333</td>
<td>13.407</td>
</tr>
<tr>
<td><em>Heart Rate</em></td>
<td>yes</td>
<td>77.600</td>
<td>12.945</td>
</tr>
<tr>
<td></td>
<td>no</td>
<td>71.286</td>
<td>9.569</td>
</tr>
<tr>
<td><em>Galvanic Skin Response</em></td>
<td>yes</td>
<td>2.908</td>
<td>3.155</td>
</tr>
<tr>
<td></td>
<td>no</td>
<td>1.871</td>
<td>1.626</td>
</tr>
</tbody>
</table>

*Note: no findings were significant at the p < .05 level*

Previous experience was also hypothesized to relate to anxiety self-report ratings. It was posited that there would be a negative correlation between STAI (state form) scores and previous experience, defined as hours of direct clinical work and years of graduate training completed. This hypothesis was tested using a hierarchical regression procedure. Years of graduate training completed was not a significant predictor of STAI scores, $R^2 = .004, F(1, 50) = .182, p < .671$. Hours of direct clinical experience was also not a significant predictor of STAI scores, $R^2 = .000, F(1, 50) = .024, p < .878$.

Post-Hoc Analyses: Relation of Perception to Physiological Reactions

Post-hoc analyses were conducted to explore potential relationships within the collected data in addition to the original hypotheses. It was hypothesized that physiological reactivity would significantly predict self-efficacy scores. This finding was
not supported for any of the individual physiological measures. There were minimal correlations found between the physiological measures and self-reported stress (STAI scores), thus further analyses were not replications of already analyzed relationships. In order to consider whether perception of stress, rather than physiological manifestation of it, predicted or influenced feelings of self-efficacy, post-hoc analyses were conducted to examine this relationship.

Similar to hypothesis 3, analyses were conducted to determine whether a linear or curvilinear relationship existed between perception of stress and self-efficacy. This was tested through a hierarchical regression analysis. Similar to the hierarchical regression analysis procedure utilized for Hypothesis 3, pre-video STAI-state scores were entered in the first step of the equation to control for individual differences. This was followed by post-video STAI scores in the second step, and STAI score squared in the third step. This procedure allowed for examination of difference in prediction between a linear (original measurement) and curvilinear solution (the squared measurement term) to determine if a relationship existed between the variables. The control and experimental conditions were analyzed as groups to examine for differences between the conditions.

In the control group STAI scores significantly predicted COSE scores in a linear solution, $R^2 = .311, F(2, 23) = 5.201, p < .014$, as well as in a curvilinear solution, $R^2 = .342, F(3, 22) = 3.810, p < .024$. The linear solution was significant, but adding the squared STAI score, added to the prediction of self-efficacy. In the experimental group, perceived stress (STAI score) did not significantly predict self-efficacy (COSE score) either in the linear solution, $R^2 = .082, F(2, 23) = 1.028, p < .374$, or curvilinear solution, $R^2 = .153, F(3, 22) = 1.324, p < .292$. A relationship was not found between perceived
stress and self-efficacy for those participants that viewed the client video with the suicidal ideation component.

Table 11. Hierarchical Regression Analyses of Perceived Stress (STAI scores) and Self-efficacy (COSE scores)

<table>
<thead>
<tr>
<th>Group</th>
<th>$R^2$</th>
<th>$R^2$ change</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Linear Model</td>
<td>.311</td>
<td>.004</td>
<td>5.201*</td>
</tr>
<tr>
<td></td>
<td>STAI pretest</td>
<td></td>
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*Note: * significant at the $p < .05$ level
CHAPTER V
DISCUSSION

Introduction

Previous research has indicated that mental health clinicians rate client suicidality as a stressful experience (Deutsch, 1984; Farber & Heifetz, 1981; Hellman, Morrison, & Abramowitz, 1986; Rabin, Feldman, & Kaplan, 1999; Shea, 1999). However, previous studies have been mainly self-report in nature with few examining clinician stress through other means. The purpose of this study was to assess the impact of client suicidality on physiological reactions in mental health clinicians in training, as well as the relationship between self-reported stress experiences and physiological reactions. Additionally, the impact of previous experience and training on stress experienced and counselor performance measured through self-efficacy for clinical skills in relation to client suicidality was explored.

The present study failed to support the hypothesis that subjects in the experimental group would experience heightened physiological reactions as compared to those in the control group. Additionally, the current data did not support hypothesis that self-reported stress (STAI scores) would correlate with measured physiological responses. There was a significant relationship between two of the physiological
measures (MAP; GSR) and number of years of graduate training the participant had completed.

Hypothesis One: Physiological Measures in Control Versus Experimental Conditions

The first hypothesis stated that subjects viewing a video including client suicidality would exhibit heightened physiological reactions as compared to participants who viewed a video of a client without direct expression of client suicidality. This hypothesis tested reactions in Systolic Blood Pressure, Mean Arterial Pressure, Heart Rate and Galvanic Skin Response. This hypothesis was not supported, and no differences were found in physiological reactivity between the two groups. Previous research has indicated that mental health clinicians experience client suicidality as stressful, often beyond other client concerns (e.g. Farber & Heifetz, 1981; Hellman, Morrison, & Abramowitz, 1986; Kleespies, Penk, & Forsythe, 1993).

A reason for the lack of support for this hypothesis is unclear, although there are several possible explanations for the findings. Miller and colleagues (2010) examined salivary cortisol levels in clinicians prior to sessions with clients who had expressed suicidal ideation in the past, and found an anticipatory stress response in their sample. Participants had higher levels of salivary cortisol prior to sessions with specific clients than afterwards, indicating that physiological indicators of stress had reduced over the course of the session. Similar to this finding, it is possible in the current study that participants may not have exhibited changes in their physiological responses because they were unaware of the type of client concerns they were going to see and did not spend time anticipating how they would assist a client in working through such concerns.
Alternatively, participants in the current study may have already been experiencing some level of physiological arousal from the outset of the study by being in the research setting. This “baseline” reading then would have indicated an elevated response rather than a neutral or relaxed physiological state, to which other data measurements were compared.

Another explanation is that the nature of watching the client describe his concerns on a video did not elicit a similar reaction to what would be experienced in a face-to-face counseling setting. Participants may have felt removed from the situation or disconnected, thus reactions they exhibited may be less generalizable to actual counseling performance and experiences. The study was conducted utilizing videos in order to control accurately for identical stimuli across a large sample size.

**Hypothesis Two: Relationship Between Physiological and Self-Reported Responses**

The second hypothesis was that there would be a relationship between the stress level participants reported and physiological measures of their arousal responses. Previous research has shown that client suicidality is experienced frequently by clinicians (Kleespies & Dettmer, 2000b; Sullivan, 2004), and that this experience is stressful for clinicians (Deutsch, 1984; Farber & Heifetz, 1981; Hellman, Morrison, & Abramowitz, 1986; Rabin, Feldman, & Kaplan, 1999; Shea, 1999). Previous research has relied mainly on self-report measures to assess the reactions clinicians have to client suicidality. Kleespies, Penk, and Forsythe (1993) surveyed graduate level trainees about their experience with client suicidality, and their sample reported a significant negative emotional impact from their work with suicidal clients. Drawing from the established
literature around self-reported stress experienced around client suicidality it was hypothesized that the relationship between self-reported stress (STAI-state scores) and physiological measures would correlate moderately in a positive direction. Previous research has indicated that self-awareness may be helpful in work with clients, and reactions in stressful situations may influence clinician decision-making and response choices to different levels depending on their awareness. Thomas and Leitner (2005) argued that clinicians often respond to suicidal clients with “fight or flight” response style interventions.

In the current sample, there were minimal weak correlations that were not significant between STAI-state scores and physiological measures of Systolic Blood Pressure, Mean Arterial Pressure, Heart Rate, and Galvanic Skin Response. These results did not support the hypothesis that there would be a positive correlation between self-reported stress and physiological measured arousal to the same stimuli. This finding was consistent across groups, with no difference between the control and experimental conditions. While it unclear the exact explanation underlying this result, there are some possible reasons. The client stimulus was a video, and may not have been relatable to participants. This may have resulted in differences in felt and measured stress from what would be expected to reasonably occur in a counseling setting. Alternatively, participants may have been unaware of the responses they were experiencing, or these assessments may not have been evaluating the same phenomenon, thus the lack of relationship observed.
Hypothesis Three: Relationship Between Physiological Reactions and Self-Efficacy

A major body of research that has looked at links between stress (arousal) responses and performance on different tasks is research related to the Yerkes-Dodson Law (YDL). The origin of the YDL is from the work by Yerkes and Dodson (1908) on stimulus strength and habit formation in mice. This seminal study has been credited with development of the well-known inverted U-shape curve between performance and arousal. The main principle of the YDL is that as arousal increases performance improves, until a critical level of arousal is reached at which point performance begins to be hindered. When represented graphically this relationship creates an inverted-U shape. The YDL was applied to the current research, and it was hypothesized that participant’s self-efficacy for counseling skills (performance) with a client expressing suicidal ideation would be positively impacted at moderate levels of physiological arousal, but negatively impacted if that arousal response became too strong, following the inverted U-shape YDL curve.

This hypothesis was examined using hierarchical regression analyses with a linear followed by quadratic term to assess for improvement in prediction of self-efficacy from each of the individual physiological measures. Self-efficacy was defined as scores on the Counselor Self-Estimate Inventory (COSE) which has been shown previously to relate to actual counseling performance moderately (Larson, Suzuki, Gillespie, Bechtel, & Toulouse, 1992). This hypothesis was not supported in the current sample. The hypothesized curvilinear relationship, similar to that of the Yerkes-Dodson Law was not descriptive of the relationships in the current sample. None of the physiological measures significantly predicted counseling self-efficacy scores, either with the linear term or the quadratic term. In this sample ratings of self-efficacy were not significantly
related to physiological variables. It was hypothesized that stress due to client concerns would influence both physiological responses and feelings of ability to effectively work with a suicidal client in therapeutic context. There was not a common influence on the data shown through these analyses.

One possible explanation for the lack of support for this hypothesis is that the data is made up of both observed and self-reported measurements. While the physiological data were collected and presumably not influenced by conscious processing, the scores on self-efficacy ratings were self-reported. It would be beneficial for future research to examine whether direct measures of stress are related to other types of measures of performance, other than self-report as was done in this study. It is possible that the lack of relationship seen had to do with differences between what clinicians were aware they were experiencing and what they were unaware they were experiencing.

Another explanation for the lack of support for this hypothesis is that the testing protocol influenced changes in physiological responses that were unrelated to the video stimulus. Participants may have been physiologically “heightened” due to awareness they were being recorded and monitored. Or conversely, they may not have been engaged enough with the client video stimulus for it to produce internal physiological reactions. Further research is needed to better understand how stress responses help or hinder clinicians’ ability to respond to suicidal clients most effectively.

Hypothesis Four: Previous Experience and Impact on Stress and Physiological Reactions

The fourth hypothesis in the current study was that clinician experience would be negatively related to stress measurements in the sample. Experience was defined several
ways: hours of clinical experience, years of graduate training, and previous experience with client suicidality. Stress measurements included each of the physiological measurements as well as STAI-state scores. The hypothesis that hours of direct clinical experience completed would predict physiological measures was not supported for any of the measurements.

Years of graduate training completed was a significant predictor of Mean Arterial Pressure change, but not of other physiological variables (Systolic Blood Pressure, Heart Rate, Galvanic Skin Response). This hypothesis was partially supported by these results. Experience was then examined by looking for differences between those participants who had previous experience with client suicidality and those who did not. There were no differences found in any of the physiological measures between the groups, which did not support the hypothesis that those individuals without prior experience would have heightened physiological reactivity. Finally, experience variables and self-reported stress were analyzed through a regression analyses. Neither years of graduate training completed nor hours of clinical experience were significant predictors of STAI-state scores. The hypothesis that experience would relate significantly to self-reported stress was not supported.

While one measure of physiological reactivity was significantly related to years of graduate training completed, other measures of experience did not support the hypothesis that experience would be related to arousal variables in this sample. There are several possible explanations for these results. When looking at previous experience with client suicidality, the majority of the sample (86.5%) had worked with a client experiencing suicidal ideation in the past. The current sample’s experience may have been too similar
to pick up on group differences in these variables. It would be helpful to explore this same hypothesis with a larger sample size of clinicians in training that had no previous experience working with client suicidality.

Another factor to consider is that all participants were currently enrolled in graduate level training programs. Many of them may have provided answers about their previous hours of clinical experience based in part on work experiences they had accumulated prior to their current program if they were already working in the mental health field. This would be compared to the variable of years of graduate training experience, which related significantly to Mean Arterial Pressure readings. There may have been some difference in what variable was being assessed between these two ways of asking about previous experience that would be valuable to explore further in the future.

Additional Analyses

Post-hoc analyses were conducted to explore for relationships within the collected data in addition to what was originally hypothesized. It was hypothesized that physiological reactivity would significantly predict self-efficacy scores as a proxy of counselor performance. This finding was not supported for any of the individual physiological measures. In order to consider whether perception of stress, rather than physiological manifestation of it, could predict or influence feelings of self-efficacy, post-hoc analyses were conducted to examine this relationship. There were minimal correlations found between the physiological measures and self-reported stress (STAI scores), thus further analyses were not replications of already analyzed relationships. It
was hypothesized that self-reported stress scores (STAI-state) would significantly predict self-efficacy ratings (COSE).

The experimental and control groups were examined separately to explore for differences in the relationships of the variables for each of them. The hypothesis was not supported for the experimental group, with anxiety scores not significantly predicting self-efficacy with either a linear or quadratic solution. In the control group however, STAI scores did significantly predict COSE scores. Both the linear and quadratic solutions were significant, with the quadratic solution improving prediction of self-efficacy scores. This finding indicates that for participants in the control group as their STAI ratings increased so did their COSE ratings, until a critical point of arousal at which COSE scores started to decrease again. A curvilinear relationship exists in the current sample. The same finding did not hold true for participants in the experimental group. There was no significant relationship between STAI scores and COSE scores. The groups were randomly selected, and no significant differences were found in group scores on the COSE or STAI-state prior to the experimental video.

Implications for Research

The current study methodologically improved in the area of the research on clinicians in training, and impact of client suicidality on clinicians. Results pointed to several additional ways future research could further investigate this area in the most effective manner. First, a manipulation check was utilized to ensure the groups responded to the difference in the video stimuli (suicidal ideation vs. no stated suicidal ideation). Although there was a statistically significant difference in the groups ratings of
the fictional client’s likelihood to be experiencing suicidal ideation, the control groups rating (M = 4.962) was still above the halfway point on the 7-point Likert scale in contrast to the experimental group’s rating (M = 6.500). This shows that the groups did effectively rate the fictional client differently, although both groups rated the client as more likely thinking about suicide than not. The stimuli may not have given enough of a separation in treatment conditions as necessary to detect significant group differences in other areas.

The Likert scale participants used to rate the likelihood of the fictional client having suicidal ideation was a 7 point scale that ranged from “not at all” to “definitely.” There were not qualitative anchors included for any of the intermediate numbers on the scale. It is possible that anchoring each of the scale points with a qualitative label may influence the ratings by participants. Future research should include more in depth description of perceived differences in order to more effectively determine separation of treatment conditions and subsequent comparison of groups.

Future research should aim to improve separation of experimental conditions to better illuminate differences that may exist based on these stimuli. In the current study, the stimuli videos utilized were similar to one another with the exception of spoken suicidal ideation only. This difference was an attempt to offer interpretive strength of relationships found, but may have served to elicit similar responses from both groups of participants. Some participants may have reacted to statements in the control video in a heightened way, thus making the groups responses appear similar. Previous research has indicated that clinicians with more experience report less stress in working with client suicidality (Deutsch, 1984). It is possible that statements made by the client in the
fictional control video (e.g. “But it just kind of stinks, because I don’t know when things are going to change,” “But it’s tough, it’s tough out there. I mean, I don’t know. I’m just not sure what’s going to change this,” “It’s kind of this cycle I’m stuck in. I don’t know how to get out of it”) elicited a response from novice clinicians similar to the experimental video. And likewise, possibly that statements in the experimental video (e.g. “I mean, yeah do I think about if I wasn’t around? Yeah. If I wasn’t around, I don’t think a whole lot would be different. I wouldn’t be dragging everybody down,” “I mean, if I was gone, my parents, you know they might care for a little bit, maybe, but in the end it’s not really going to make a difference. You know if I wasn’t here, everyone else is living their life,” “I’m just like, what if I wasn’t even here? What if in the morning I was gone? I don’t know…I’ve thought about it. I’ve thought about killing myself. I really just don’t think it would matter. I don’t think,” “And maybe that’s the way to do it. Maybe that’s the way to go... And it’s just not worth it... So it might be better if I was just not here at all”) were not direct and specific enough to illicit arousal responses from clinicians that did not interrupt them as an imminent threat of suicidality.

There has been little previous research on the impact of client suicidality on clinicians from framework other than self-report. This study attempted to improve upon previous knowledge by approaching these questions utilizing methodology that included physiological measures. Methodologically to ensure consistency in stimuli between the groups, a video stimulus was utilized. These videos may not have been an effective way to introduce a stimulus that elicited a response similar to real-world scenarios. Larson and colleagues (1993) examined the differences in self-efficacy ratings using the same instrument as the current study, and looking at mock session versus video training for
counseling skills. They found that when students perceived their mock sessions as having gone well they had the largest improvement in self-efficacy ratings compared to other groups. Video stimuli did produce some improvement in ratings, although it was smaller than the successful rating video group. Future research should explore whether utilizing a different methodology would allow for more accurate detection of change and greater generalizability of findings.

Participants were asked to provide information about their previous experience, both clinical hours conducted and years of graduate training completed. Some individuals in the study had accumulated clinical work hours prior to entering their current graduate placement, and may have included these in their assessment of previous experience they had accumulated. As such, the “experience” questions may have measured additional variables than those intended. Future research should aim to delineate these experiences further to better understand the impact of the variety of training experiences on clinician responses and stressors. Additionally, previous experience with client suicidality was asked as a dichotomous yes/no question. The inclusion of additional questions about the quantity and extent of previous experience would likely enhance the results and interpretation of findings. Also, future research should assess whether participants have lost a client to suicide in their past. This is an area of need for further study to determine the impact that previous loss of a client may have on future stress responses and intervention style.

As discussed earlier, the lack of diversity in the sample limits the generalizability of the results. Future research should be conducted with a more diverse sample population across a wider geographic region. In addition it may be beneficial to use a
matched group approach where participants are matched based on demographic features across groups to compare more effectively different levels of training experience, previous experience with client suicidality or trainees as compared to licensed clinicians.

Implications for Clinical Practice and Training

The current research adds to the existing literature with the finding that years of graduate training was related to a physiological measure of arousal response (Mean Arterial Pressure). Unlike previous research, there was mixed result in the relationship found. Mean Arterial Pressure (MAP Time 4) correlated positively with years of graduate training ($r = .318, p < .05$). Previous research has shown that clinicians regularly work with client suicidality throughout their careers (Kleespies & Dettmer, 2000a; Kleespies, Penk Forsythe, 1993; SAMHSA, 2010; Schmitz et al., 2012). The frequency of this client concern was estimated to occur in up to 11% of client contact hours in one particular study (Deutsch, 1984). In the same research sample it was found that older therapists reported significantly less stress than younger therapists (Deutsch, 1984). The author posited two explanations for these differences with age: (1) increased experience or (2) differences between the clinicians that exit their careers in mental health early due to stress, versus those who persist.

Other measures of experience evaluated in the current research failed to reveal relationships between training (e.g. previous experience with client suicidality, clinical hours completed) and measures of stress. Mackelprang and colleagues (2014) surveyed graduate students and found a relationship between their clinical experience and intervention abilities with suicidal clients. Their research did not produce evidence of
differences between those students who had received formal training versus those who had not in their self-ratings of intervention abilities though. The researchers reported that 50% of their sample reported working with clients that had expressed suicidal ideation during their training, and in the current study 86.5% of participants reported they had previous experience with client suicidality. These figures point to the importance of providing adequate training for students in the mental health fields as their chances of working with client suicidality is high. Training in the classroom alone may not be sufficient, as evidenced by Mackelprang and colleagues (2014) findings. Moving towards role-play (Larson, et al., 1993) may more effectively improve the current training landscape.

There was a lack of agreement between physiological measures and self-report measures in the current study. One possible explanation is that participants in the current study self-reported lower levels of state anxiety than the normative sample. Normative data for the STAI-state (Spielberger, et al., 1983) indicate that the mean score on the State scale for working adults is $M = 35.72, SD = 10.40$ for men, and $M = 35.20, SD = 10.61$ for women. For college students the normative sample produced scores of $M = 36.47, SD = 38.76$ for men and $M = 38.76, SD = 11.95$ for women. This is compared to the current sample where pre-test STAI State scores were $M = 31.85, SD = 7.89$, and post-test scores were $M = 32.44, SD = 8.62$. The sample may not have experienced as much State-anxiety as the normative sample for many reasons including familiarity with the instrument, familiarity with research protocols, or desirability bias.
Strengths and Limitations

There were several strengths to the current research. First, the experimental design expanded on previous literature of which the majority was self-report in nature. Attempting to measure stress responses and clinician experience in the therapeutic context has not been widely studied, and this research expanded on what methods have been utilized previously. Self-report research on the impact of client suicidality has relied on memory of events. The current study attempted to examine these responses in real-time, furthering our understanding of clinician experience. One previous study, Miller and colleagues (2010) that examined physiological reactivity of clinicians did so with a much smaller sample size (N = 6), making another strength the larger participant pool in the current research.

All of the participants in the current study had some graduate level training, while previous research has varied on types of clinician training included in sample pools. This aids in understanding the impact of increasing levels of education on training quality and impact on clinician and client well-being. The majority of participants in the current study had previous experience working with a client that expressed suicidal ideation. Previous research has shown that many graduate students experience client suicidality during their training years, and the current sample is representative of previous reports. Due to the experimental nature, sample size, and subject pool characteristics this study adds to the literature and has generalizable findings for graduate level trainees in the mental health field.

While the study has its strengths, there are limitations to this research. Firstly, the sample was collected in a limited geographic region, making generalizability to other
areas somewhat difficult. This was done due to the nature of the research, and need for
participants to meet in person with the researcher for physiological monitoring. Future
research should aim to sample graduate student trainees from a variety of geographic
locations. Additionally, the sample was not diverse on many demographic characteristics
(race, age, sex). This may have limited the variety of responses, as well as the
generalizability of findings to other groups. The majority of trainees had previous
experience with client suicidality, and it may be worthwhile to examine a subject pool
with a more equal split of previous experience in order to determine what role it may
play.

The lack of authenticity in watching a video of a client session may have
influenced the results of the current study. It is recommended that future research aim to
examine similar questions within a setting where more direct client contact experience
can occur. Participants may not have been engaged well with the video stimulus, and as
such did not respond similarly to real-life situations. In future research it could be
beneficial to utilize a cross-sectional design that would allow for comparison of
individual differences across various client scenarios to compare what impact different
concerns have on clinician reactions. Larson and colleagues (1999) looked at differences
in training effectiveness through viewing a session video or participating in a mock
session. Using self-efficacy as the measurable outcome variable, the researchers
determined that participating in mock sessions or viewing session videotapes were both
helpful in improving self-efficacy. There was a difference in the amount self-efficacy
ratings improved depending on how students viewed their success in the mock session.
While most participants who viewed the video had a minor improvement in their self-
efficacy score, those students who participated in a mock session and felt it had gone well had the most change in their self-efficacy ratings. Actively participating in a mock session had the opportunity to produce a more influential training experience.

Participants in the current study, although engaged to some degree in the viewed video may not have found it to be a potent enough stimulus to produce an observable change in physiological reactivity.

Summary

Some estimates indicate that up to twenty-five percent of clinical psychologists have lost a patient during their career (Kleespies & Dettmer, 2000), and in one study nearly 97% of graduate trainees surveyed indicated they treated a client for whom suicidality was a concern during their training years (Kleespies, Penk, & Forsythe, 1993). The purpose of this study was to explore the physiological responses clinician trainees experience around client suicidality and how this relates to their self-efficacy for counseling skills and self-awareness. This research attempted to more effectively illuminate the effect that client suicidality has on the clinician by exploring alternative methodologies to self-report, which has been widely used to this point. Although several of the tested hypotheses were not supported in the current sample, there were some significant findings that can add to the literature and guide future research. Years of graduate training completed was a significant predictor of Mean Arterial Pressure readings across groups. This indicates some relationship between these variables that should be explored further in future research. Additionally, self-perceived stress scores significantly predicted self-efficacy ratings in the control group, but not in the
experimental group. Further exploring the source of these differences and nature of this relationship could provide important information for practice and training clinicians to deal with various client concerns.
REFERENCES


APPENDICES
APPENDIX A

INFORMED CONSENT DOCUMENT

Physiological Reactivity of Clinician Trainees to Client Concerns
Informed Consent
University of Akron

You are invited to participate in a research project being conducted by Liesl L. Glover, M. S., a doctoral student in the Department of Counseling, at The University of Akron.

**Purpose:** The purpose of this study is to investigate the physiological reactions mental health clinician trainees have to various client concerns. There will be approximately fifty clinician trainees participating in this research study.

**Procedures:** Participation in this study will require a one-time in person meeting with the principle investigator. The length of this research meeting will be less than one hour, including informed consent, preparation of physiological monitoring equipment, data collection and debriefing. Participants will be asked to wear equipment to monitor pulse, blood pressure, and galvanic skin response for a length of approximately 20 minutes. During this time participants will be asked to watch a video of a client discussing their concerns. At the conclusion of the video, participants will be asked to complete three questionnaires about their experiences.

**Exclusion:** To participate in this study, you must be enrolled in a graduate program in the mental health field. Additionally, participants must have had direct clinical experience in the mental health field. An individual without prior experience working in a therapeutic setting with mental health clients will not be eligible to participate.

**Risks and Discomforts:** Participants will be asked to watch a video in which a client discusses concerns of an emotional nature. These concerns are considered consistent with those frequently experienced in the counseling relationship. There are no known risks in regards to study materials when participating in this study that are more significant than a typical emotional reaction experienced during a therapy session. Participants will be asked to wear a blood pressure and pulse monitoring cuff over the bicep region of one arm, and place two fingers on a skin response monitor. There is a risk of minor discomfort associated with wearing these devices, such as pressure on the arm as the cuff inflates. These risks are not considered to be substantially different than
what would be experienced during a routine physician visit. If you do experience any psychological or emotional distress following participation in this study, you may seek counseling services at the UA Department of Psychology Counseling Clinic, 330-972-6714, or at Greenleaf Family Center (580 Grant Ave., Akron, Ohio) 330-376-9494.

**Benefits:** You will receive no direct benefit from your participation in this study, but your participation may help us better understand the reactions and experiences clinicians have to client concerns.

**Right to refuse or withdraw:** Participation in this study is voluntary. You are able to withdraw from the study at any time, and there will be no penalty or loss of benefits due to withdrawal from the study at any time.

**Compensation:** Participants will be given the opportunity to provide their contact information to be entered into a drawing at the conclusion of the study to receive one of two $50 amazon.com gift cards as compensation for participation in the research. Any participant that withdraws prior to completion of the study will still be eligible to enter the drawing for compensation. Two individuals will be drawn at random to receive the giftcards at the conclusion of the research study. If you are selected you will be contacted either by phone or email (whichever you indicate as your preference). Contact information for participants will be stored in a separate and secure location from study data.

**Confidential Data Collection:** Any identifying information collected will be kept in a secure location and only the researchers will have access to the data. Participants will not be individually identified in any publication or presentation of the research results. Only aggregate data will be used. Your signed consent form will be kept separate from your data, and nobody will be able to link your responses to you.

**Confidentiality of Records:** Records will be maintained by the principle investigator in a confidential manner. The informed consent document will be stored in a separate location from other data. The information gathered through survey forms and physiological monitoring equipment will not include your name, and will be categorized only by a number that cannot be tied back to you.

**Who to Contact with Questions:** If you have any questions about this study, you may call Liesl Glover at (330) 972-7777 in the Department of Counseling, or Dr. Dawn Johnson at (330) 972-7280 in the Department of Psychology. This project has been reviewed and approved by the University of Akron Institutional Review Board. If you have any questions about your rights as a research participant, you may call the IRB at (330) 972-7666.
I have read the information provided above and all of my questions have been answered. I voluntarily agree to participate in this study. I will receive a copy of this consent form for my information.

________________________________ ____________________
Participant Signature          Date
APPENDIX B

DEMOGRAPHIC INFORMATION, PREVIOUS EXPERIENCE, AND
MANIPULATION CHECK

What is the probability that the client you just viewed is thinking about suicide?

1  2  3  4  5  6

7

Not at All
Definitely

Participant Information

Age: _____________  Sex: _____________

Degree Program: ________________________________

Years of training completed: ____________________

Are you currently enrolled in practicum or engaged in clinical work (i.e. work with clients)?

(circle)  YES -or-  NO

If NO, have you been enrolled in practicum or engaged in clinical work in the past (i.e. work with clients)?

(circle)  YES -or-  NO

What types of work settings do you have experience in?

(check all that apply)

- College or University counseling center
- Other high education affiliated counseling center (i.e. Departmental)
- Departmental counseling center
- Community mental health center
Private practice
Schools (primary or secondary)
Hospital
Residential
Forensic setting
Other, please specify____________________________

Approximately how many direct service client hours have you completed? ___________

What client concerns or issues have you had direct experience dealing with?
(check all that apply)

Mood Disorders
Personality Disorders
Autism
Grief issues
Suicidal ideation
Aging
Adjustment disorders
Identity issues
AD/HD
Educational concerns
Schizophrenia
Chronic pain management
Other: __________________

Question asked as follow-up via email following conclusion of data collection

What is your ethnicity/race?

African American/ Black/ African Origin
Asian American/ Asian Origin/ Pacific Islander
Latino-a/ Hispanic
American Indian/ Alaska Native/ Aboriginal Canadian
European Origin/ White
Bi-racial/ Multiracial
Other, specify________________________
APPENDIX C
STATE-TRAIT ANXIETY INVENTORY (STAI; STATE SCALE)

Reproduced below is a sample of items from the STAI, printed with permission of the publisher. The full length form includes twenty statements, of similar style to those presented below.

SELF-EVALUATION QUESTIONNAIRE (STAI Form Y-1)
DIRECTIONS:

A number of statements which people have used to describe themselves are given below. Read each statement and then blacken the appropriate circle to the right of the statement to indicate how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

<table>
<thead>
<tr>
<th></th>
<th>Not At All</th>
<th>Somewhat</th>
<th>Moderately</th>
<th>Much So</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I feel calm</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I feel secure</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I am tense</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. I feel strained</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. I feel at ease</td>
<td>1 2 3 4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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APPENDIX D

SAMPLE ITEMS FROM THE COUNSELOR SELF-ESTIMATE INVENTORY

(COSE)

Instructions

This is not a test. There are no right or wrong answers. Rather – it is an inventory that attempts to measure how you feel you will behave as a counselor in a counseling situation. Please response to the items as honestly as you can so as to most accurately portray how you think you will behave as a counselor. Do not respond with how you wish you could perform each item – rather answer in a way that reflects your actual estimate of how you will perform as a counselor at the present time. Please rate how you feel you would work with the client in the video you just observed in the future.

Below is a list of 37 statements. Read each statement, and then indicate the extent to which you agree or disagree with that statement, using the following alternatives:

1 = Strongly Disagree
2 = Moderately Disagree
3 = Slightly Disagree
4 = Slightly Agree
5 = Moderately Agree
6 = Strongly Agree

(Below are sample items reflective of the five factors on this instrument and typical question wording. Two sample items are presented for each of the five factors, with factor loading indicated for demonstrative purposes here only. Sample items are presented here rather than the instrument in entirety at the request of the author.)
Sample Items

1. When using response like reflection of feeling, active listening, clarification, probing, I am confident I will be concise and to the point. (Factor 1)

7. I feel that I will not be able to respond to the client in a non-judgmental way with respect to the client’s values, beliefs, etc. (Factor 5)

9. I am worried that the type of response I use at a particular time, i.e., reflection of feeling, interpretation, etc., may not be the appropriate response. (Factor 2)

13. I feel confident that I have resolved conflicts in my personal life so that they will not interfere with my counseling abilities. (Factor 5).

17. I am confident that the wording of my interpretation and confrontation responses will be clear and easy to understand. (Factor 1)

24. I do not feel that I possess a large enough repertoire of techniques to deal with the different problems my clients may present. (Factor 3)

28. I am unsure as to how to deal with client who appear noncommittal and indecisive. (Factor 3).

30. I will be an effective counselor with clients of a different social class. (Factor 4).

33. I am unsure as to how I will lead my client towards the development and selection of concrete goals to work towards. (Factor 2)

36. In working with culturally different client I may have a difficult time viewing situations from their perspective. (Factor 4).

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APPENDIX E

TRANSCRIPTS OF CONTROL AND EXPERIMENTAL VIDEOS OF MOCK
CLIENT SESSIONS WITH MARKINGS INCLUDED CORRESPONDING TO
PHYSIOLOGICAL DATA CAPTURES

Non-Suicidal Client Video, “control”, (running time 11:51)

I don’t know, it’s going ok I guess. You know work is kind of a pain. But, I go.
I’m working a lot more second shifts now, in the evenings. And, you know. At the airport
it’s kind of slow. But it’s ok. There’s a lot more turnover now, so people I’ve been
working with there, there’s not as many people there anymore. It’s a lot quieter. And
I’ve been spending a lot more time by myself and it’s a little slower. So. Um. You know
one thing, it’s strange….cause I’m working more in the evenings, I’m coming home later,
you know, like midnight. It’s almost like I’m in high school again. Because you know,
getting home late, and my parents are asleep and I’m trying to be quiet when I get in.
And, uh, you know. It’s just weird. It’s strange because they, uh…they’re ok with it I
guess. But it’s tough because I shouldn’t have to be coming home to my parent’s house,
my bedroom, like I was in high school again.

I’m working, I should feel like I should be able to come home and relax and not
feel like I have to tiptoe around the house and be quiet and not wake anybody up. But
you know, it’s just not a reality. That’s where I’m at. Would I love to have my own
place? Yeah. Not really a possibility at this point in time. I’m not really sure when it
will be. But you know, you gotta keep going to work. [Time 1 measurement start] And, then I just try to stay out of their way as much as possible. I mean, try not to be at my parent’s house. It’s not my house, it’s their house. So it’s work. It’s kinda just a lot of limbo back and forth. Just going through the motions. But. I mean, their, my parents are as good to me as I would think they would be given the circumstances. But it just kind of stinks, because I don’t when things are going to change. I don’t know, ya know. I’m going to work, going to make my car payment, going to try to pay off my loans. But it seems like it’s just going to be the same thing over and over again [Time 1 measurement stop], which it’s tough. Because I can’t tell them, ‘hey, end of the month I can move out’. End of the month I can go really start my life. It’s just not a reality at this point. It’d be great if I was working towards something. You know. If I had a goal. But it’s go to work, come home, go to work, come home. And even work now is a little tougher, because you know like I said, a lot of people, a lot of turnover, I don’t know as many people as I used to. So it’s not as fun as it was. Um. I guess that’s, that’s the reality of retail. Hopefully I can do that sometime. I’ve been looking a little bit. But it’s tough, it’s tough out there. I mean, I don’t know. I’m just not sure what’s going to change this. So, I’ll go to work, come home. I’ve got my bedroom, just like in high school. Um, I don’t know. This year’s really flying by though. For better or worse, it’s really going quick. I guess that’s what happens when you get in a routine.

[Time 2 measurement start] Um. I don’t know, I go to work. Not much really happens. Just kind of do my thing. Pack up, get the store closed. Come home, it’s like 12:30. I don’t know. I watch t.v. because I can’t really come home from work and fall asleep….my minds going a little too fast, thinking about things. Not even anything in
particular, just, can’t sleep. I don’t know, sometimes, it used to be that my parents would make breakfast [Time 2 measurement stop], sometimes my mom would leave me something. Just set it out, maybe some cereal or whatever. I feel bad because they go out of their way, but I don’t want it. Throw it in the garbage, cover it up. I don’t want to come off as ungrateful. But my schedule, I don’t know, I’m always tired, and I’m never hungry. And just trying to go through the motions. And then I’ve got to go to work again, 4 o’clock. Same thing, doesn’t really change much. I don’t know, sometimes, it used to be, now it’s hardly ever. I used to go meet up with my friends, just to catch up. But I haven’t done that in months. I don’t even know when the last time was. But you know, they’re all, living their lives, doing their thing. And there’s a part of me that’s like, nothing’s changed so why bother? It sucks. [Time 3 measurement start] I mean I’m sure they’re living great lives. But I’m the guy that just does the same thing over and over. It’s tough after a while…you can’t do that. Hold your head up and do that for too long. So I don’t even bother.

But maybe that’s just what adulthood is like. Maybe this is it. I’m trying to be more social. Partially because I’ve got to get out of my parent’s house, you know. I can’t be there all the time. The longer I do this thing, um, the more I kind of drift away from some of my old friends [Time 3 measurement stop]. And I’m not really making any new ones. Sometimes I’m like, Ok, let’s make an effort, let’s, let’s just put myself out there. But, you know, it’s tough. I don’t really even think it’s going to matter that much. It’s just ‘hey’. And I can tell my parents are kind of getting a little bit annoyed. Guess I can’t blame them. They probably want to be done with having kids in the house. Sometimes we get in arguments, and it’s not bad, it’s stupid stuff. Clean up. Do your dishes. Put
your stuff away. I mean its stuff from when I was a kid. I don’t know. I just don’t see it changing anytime soon. I mean I can’t really do one without the other. I can’t really move out without figuring out a way to pay for rent, or get a good roommate, or get a better situation. I can’t necessarily find a better situation. [Time 4 measurement start] It’s kind of this cycle I’m stuck in. I don’t know how to get out of it. But it stinks. It could be two years, it could be five years of this. And you just, I mean. I don’t know. I don’t know what’s going to change. [Time 4 measurement stop].

_Suicidal Client Video, “experimental”; (running time 12:00)_

So it’s been like, it’s been about two weeks since I started working second shift at the store. It’s ok, same thing, just later in the day I guess. And I volunteered for it, because what else am I going to do. Before I would come home, I would do nothing, I wouldn’t really do anything anyways so might as well work at night. There’s a few more hours. The only thing that’s bad is I come home at night and I have to be careful not to wake my parents up. You know, they’ve got to work in the morning too. But, you know. Even though I work second shift, I get done at about 11:45, I come home, like 12:30…still not really getting any rest. I mean, I come home, and turn on the tv in my room. I’m not sleeping, I’m not really watching anything either. It’s just on.

You know. Thinking a lot about whatever. But, it just keeps me up. It kind of stinks because…it’s like the world is ending, but it really isn’t. It’s just, get caught in my own thoughts. Then before you know it’s like, its four am. I don’t have to be up. I mean my parents are up, they get up, they go to work, they’re gone. [Time 1 measurement start] So I’m home. Most of the day. I’m working just about every day. So it just kinda,
going through the motions. But works tough. I mean a lot of the people I used to work with I don’t work with anymore. I don’t see them. I don’t think they care a whole lot that I’m not around. But, you know, I do my job. I go through the motions. It’s a lot quieter second shift there’s not as much traffic through the store. Which is good and bad. It’s more time that I get lost, thinking about stuff [Time 1 measurement stop]. I don’t know. It’s, it’s tough because, it’s just kind of this cycle. I don’t really know how to break out of it. I mean, my job sucks. It’s just a job. I’m not really doing anything useful. I’m not saving lives, I’m not doing what I wanted to do. But it’s tough, you’ve gotta work. Got stuff to pay off. I’ve got loans to pay off. Loans that didn’t really help my anyways.

But I can’t leave. I can’t leave my parent’s house, I mean, where am I going to go. I don’t know. Sign a lease, go get an apartment. That’s what you’re supposed to do. But I can’t afford it. Who am I going to live with? I mean my friends are all off doing other things. Cool things. Accomplishing things. And, you know, whatever. So I’m stuck. I’m with my parents. And you know, I think they pretend it doesn’t bother them. But I’m sure it bothers them. [Time 2 measurement start] I’m just sucking the life out of that place. They don’t want me around. I mean. I’m just dragging them down. They should be, like in their golden retirement years, not dealing with their son who can’t be successful. I’m just dragging them down. Its’ just like, ok well, I’m just dragging them down. But what am I doing? What am I accomplishing? Nothing. I mean, if I wasn’t here, they would find some other person to work at the store. My parents could do what they’ve always wanted to do [Time 2 measurement stop]. I just, I don’t see what’s in it for me anymore. I don’t see what I’m supposed to be doing, where I should be going. I mean, yeah do I think about if I wasn’t around? Yeah. If I wasn’t around, I don’t think a
whole lot would be different. I wouldn’t be dragging everybody down. I don’t know. I think about it at night the most. I come home, just waiting for the sun to come up. Got lots of time. Can’t sleep. That’s when it’s usually the worst. I don’t know. I just don’t see it changing. I think it’s…a lot of people would be better off without me. I don’t know.

I don’t know. It’s just, the same thing every day. No sleep. [Time 3 measurement start] I don’t do anything in the day. I don’t even know where the day goes. I’m just kind of listless. Then I go to work. Then I come home again, and…it’s just the way it is. And, I don’t see a way that that’s going to change. I mean, it’s not. Then that’s all there is. I mean, if I was gone, my parents, you know they might care for a little bit [Time 3 measurement stop], maybe, but in the end it’s not really going to make a difference. You know if I wasn’t here, everyone else is living their life. At night I’m sitting there, I can’t sleep. I’m just like, what if I wasn’t even here? What if in the morning I was gone? I don’t know…I’ve thought about it. I’ve thought about killing myself. I really just don’t think it would matter. I don’t think. I don’t know. That way I’m going to be dragging anybody down. I’m not going to be a burden to my parents. I’m not going to have to pay off these stupid debts. I don’t know. I don’t know. I think about it sometimes. And maybe that’s the way to do it. Maybe that’s the way to go. Otherwise it’s going to be more of this, more of nothing. More of just floating along. [Time 4 measurement start] Not really accomplishing anything, not really getting anywhere, and sucking the life out of people the whole way through. And it’s just not worth it. I’m not going to get anywhere, not like this. So it might be better if I was just not here at all. [Time 4 measurement stop]
APPENDIX F
MEDICATION EXCLUSION CRITERIA QUESTIONNAIRE

Health History Questionnaire

The University of Akron

Participant ID#________________ Date:________________

Thank you for volunteering to be a participant for a study to be conducted in the Department of Counseling. It is important that we have an accurate assessment of your present health status to assure that you have no medical conditions that would influence the results of this study. Please complete the health history as accurately as you can.

This medical information is confidential and will be seen only by the principle investigators.

Please list all medications that you have taken within the past 8 weeks: (Include prescriptions, vitamins, over-the-counter drugs, nasal sprays, aspirins, birth control pills, etc.)

Check this box [     ] if you have not taken any medication.

Medications taken in the past 8 weeks:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

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APPENDIX G

SCRIPT FOR BASELINE MEASUREMENT RELAXATION PHASE

You are going to be asked to remain seated for the next five minutes, and focus on relaxing both your mind and body. Please get comfortable in your seat and try to refrain from moving around unnecessarily. During this time you may notice the blood pressure cuff inflating, or other equipment making noise. Do your best to remain relaxed and comfortable. After five minutes has passed I will start a short video for you to watch. Do you have any questions before we begin?
APPENDIX H

DEBRIEFING FORM

**Investigator:** Liesl L. Glover, M.S.

**Advisor:** Dawn Johnson, Ph.D.

This research is being conducted by Liesl L. Glover, M.S., a doctoral student at the University of Akron in the Collaborative Program in Counseling Psychology. This study is being conducted to fulfill requirements of a Dissertation being prepared as part of this degree.

The purpose of the study you just took part in is to investigate the feelings and reactions of graduate level clinicians when they experience different client concerns. In this experiment, there were two possible videos you may have been shown, with differing client symptoms. The determination of which video each participant saw was randomly assigned, and not influenced by any personal factors.

If you have any questions about your participation in this project, you are welcome to contact the Liesl Glover at (330) 972-7777 in the Department of Counseling, or Dr. Dawn Johnson at (330) 972-7280 in the Department of Psychology.

If you do experience any psychological or emotional distress following participation in this study, you may seek counseling services at the UA Department of Psychology Counseling Clinic, 330-972-6714, or at Greenleaf Family Center (580 Grant Ave., Akron, Ohio) 330-376-9494.

Thank you for your participation in this project.
APPENDIX I

INSTITUTIONAL REVIEW BOARD APPROVAL FOR PROTOCOL INVOLVING HUMAN SUBJECTS

GLOVER IRB APPROVAL OF CHANGE TO PROTOCOL 20130333-2

Samartgedes, Mary <mary6@uakron.edu> Fri, May 24, 2013 at 2:48 PM
To: "lieslb@gmail.com" <lieslb@gmail.com>
Cc: "Johnson, Dawn M" <johnson2@uakron.edu>

Ms. Glover:

Your IRB protocol entitled "Physiological Reactivity in Clinician Trainees to Client Suicidality" (#20130333-2) has been approved and the approval letter is in the mail to you.* THIS APPROVAL WILL EXPIRE MAY 2, 2014

If at that time you intend to renew the project, an application for continuing review must be in our office and approved by the expiration date. ** There is no grace period.
- If changes are made to the protocol before the expiration date, you must submit an application for continuing review for IRB approval of the modifications. (Present only the form which is in current use. * Old forms will not be accepted.)
- When the project is completed, you must submit a final report form to complete the IRB file.
(Present only the form which is current use. Old forms will not be accepted.)

*Please see:
http://www.uakron.edu/research/orssp/compliance/IRBAppForms.php

*NOTICE: Any further continuation of this protocol or approval for new research, is contingent upon maintaining a current CITI certification. Please check the expiration date for your certification and complete the CITI Refresher course, if needed. CITI certification is valid for three years.

Go to the CITI website at http://www.citiprogram.org

From the Main Menu select the following:
- Add a Course or Update Learner Groups for The University of Akron
- Human Subjects
- Group 4: Social and Behavioral Research Refresher Course

Please call if you have questions (So that we may maintain contact with you, forward change of mailing address, phone number or e-mail address to this office.)

Mary Samartgedes, IRB Secretary
Research Services & Sponsored Programs
The University of Akron
Akron, Ohio 44325-2102
NOTICE OF APPROVAL

October 8, 2013

Leslie Glazer
10300 Frazier Drive
Rougy River, Ohio 44116

From: Sharon M. Wolter, IRB Administrator

Re: IRB Number 20130333-4 "Physiological Reactivity in Clinician Trainees to Client Suicidality"

Thank you for submitting your Request for Change to a Previously Approved Protocol, for the referenced project. Your protocol has received expedited approval under Section 46.110(b)(2) – minor changes in previously approved research.

Approval Date: October 8, 2013
Expiration Date: May 2, 2014
Continuation Application Due: April 18, 2014

In addition, the following is/are approved:

☐ Waiver of documentation of consent
☐ Waiver of alteration of consent
☐ Research involving children
☐ Research involving prisoners

Please adhere to the following IRB policies:

- IRB approval is given for not more than 12 months. If your project will be active for longer than one year, it is your responsibility to submit a continuation application prior to the expiration date. We request submission two weeks prior to expiration to ensure sufficient time for review.
- A copy of the approved consent form must be submitted with any continuation application.
- If you plan to make any changes to the approved protocol you must submit a continuation application for change and it must be approved by the IRB before being implemented.
- Any adverse reactions/Incidents must be reported immediately to the IRB.
- If this research is being conducted for a master’s thesis or doctoral dissertation, you must file a copy of this letter with the thesis or dissertation.
- When your project terminates you must submit a Final Report Form in order to close your IRB file.

Additional information and all IRB forms can be accessed on the IRB web site at: http://www.uofc.edu/research/ersap/compliance/IRBHome.php

Co: Dawn M. Johnson - Advisor
Co: Valerie Callanan - IRB Chair

☑ Approved consent form/s enclosed

The University of Akron is an Equal Education and Employment Institution.