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Positive Emotions and Suicide Intervention Response

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POSITIVE EMOTIONS AND SUICIDE INTERVENTION RESPONSE

A Thesis

by

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ABSTRACT

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This study investigated the role of positive emotions in suicide intervention response, in an effort to inform future directions in suicide intervention strategies. Participants were 381 Hispanic college students who completed a measure of suicide intervention skill and wrote written responses to a vignette of a peer in crisis. Results indicated that communication of positive emotions and suicide intervention response skill were not related. Possible explanations and future directions are discussed.

DEDICATION

The completion of my graduate studies would not have been possible without the love and support of my family. My mother, Lupita, my father, Jose, my sisters, Christina and Clarissa, and my niece, Christa, wholeheartedly inspired, motivated and supported me by all means to accomplish this degree. Thank you for your love and patience.

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CHAPTER I

INTRODUCTION

In 2004, almost 32,000 people committed suicide in the United States (Gibbs, 2009). One form of suicide intervention has been the implementation of gatekeeper programs, which are designed to train lay individuals how to appropriately respond to a person in suicidal crisis. Gatekeeper programs have been demonstrated to successfully increase the knowledge, skills, and attitudes among trainees in a variety of populations, including peer helpers, clinicians, and military personnel (Isaac, *et al.*, 2009). However, research on the effectiveness of gatekeeper training programs is limited, and additional studies are needed to investigate how to enhance and maintain skills promoted by these programs.

Most approaches to suicide intervention are built upon traditional counseling and clinical psychological approaches that often view functioning from a "deficit" perspective. In these approaches, clinical techniques are designed to remediate dysfunction and the assumption is that a person's functioning will improve to a "normal" level after such dysfunction. However, a more recent refocusing of the field on areas of strength and competence, as reflected in the emerging area Positive Psychology, offers new potential for improving suicide intervention training programs. Within Positive Psychology, the broaden-and-build theory of positive emotions holds that positive emotions broaden a person's mindset, which is opposite to the effect of negative emotions sparking specific action tendencies (such as fight or flight), and also build an

individual's personal resources, in which positive emotions elicit a greater amount of physical, intellectual, social and psychological resources (Fredrickson, 2004).

The purpose of this study is to investigate the role of positive emotions in college students' responses to a peer in crisis, in an effort to inform future directions in the implementation of suicide intervention strategies. This study provides a unique contribution to existing literature by extending the applicability of the broaden-and-build theory to suicide intervention by focusing on the response of suicide interventionists.

Suicide

Suicide is defined as "self-inflicted death, in which an individual makes an intentional, direct, and conscious effort to end his or her own life" (Wingate, *et al.,* 2011). Among the college-aged population (18-24 years of age), suicide is the third leading cause of death in the United States (Barrios, Everett, Simon, & Brener, 2000). Multiple factors have been identified that relate to suicidal behavior, such as psychiatric illness, mood disorders, help-seeking behavior, alcohol and drug abuse, physical illness, marital status, age, and sex (Mann, 2005).

Suicide is a complex psychological phenomenon that has been difficult to capture theoretically. Few comprehensive theories of suicide have been proposed that can account for the wide array of statistical findings that have been established, such as the finding that African American women are less likely to commit suicide than Asian American women although African American women possess a greater amount of suicide risk factors than Asian American women (Joiner, 2005). In recent years, the interpersonal-psychological theory of suicide (Joiner, 2005) has received much attention from the scientific community as a compelling approach to conceptualize the difficult nature of suicide. According to this theory, perceived burdensomeness and thwarted belongingness contribute to a desire for suicide, and when this desire for suicide is

combined with a capability to act on that desire, then suicide risk dramatically increases (Joiner, 2005). This theory is unique in its approach to not only explain what combination of factors lead to thoughts of suicide, but also what makes one likely to act on these suicidal thoughts. According to Ribeiro and Joiner in 2009, approximately 20 direct empirical tests have corroborated the basic tenets of this theory thus far.

Hopelessness is present within two constructs of Joiner's theory: perceived burdensomeness (i.e., the feeling that one is a burden to loved ones and is an ineffective member of the community) and thwarted belongingness (i.e., a sense of isolation and social disconnect). Referred to as negative expectations for the future, hopelessness has been found to be one of the strongest predictors of suicide (Troister & Holden, 2010). Moreover, hopelessness has been found to be a stronger predictor of suicide than depression (Beck *et al.,* 1993). It has been identified as an essential variable in suicidality among adults, and the college-aged population (Joiner, 2005; Williams, Galanter, Dermatis, & Schwartz, 2008; Furr, 2001). Furthermore, hopelessness has been extended beyond Western culture, in which hopelessness and a deficiency in problem solving ability was found to predict suicidality among Turkish college students (Zeyrek, *et al.,* 2008).

Gatekeeper Education Programs

In an effort to reduce the rate of suicide completions, a wide range of suicide intervention programs have been developed (Neimeyer & Pfeiffer, 1994). However, despite a long history of research and implementation of these programs, the suicide rate has not decreased as expected (Neimeyer & Pfeiffer, 1994; Isaac, *et al.,* 2009), indicating that additional research is needed to develop a greater understanding of suicide intervention efforts. Mann, et al. (2005) conducted a systematic review of suicide interventions and assessed their impact on national suicide rates.

Mann's study (2005) found the most promising suicide intervention strategies to be physician education, means restriction, and gatekeeper education.

Gatekeeper education programs train lay individuals how to appropriately respond to a person who exhibits suicidal ideation (Mann, 2005). Gatekeeper programs are modeled around two major findings: 1) most persons who are suicidal tend to turn to non-professional peers for assistance before seeking professional help, and 2) suicidal persons possess risk factors that are recognizable by others (Gould, 2001; Isaac, 2009). Given these findings, gatekeeper training is administered to groups of people who do not have formal mental health training but have the potential to come in contact with suicidal individuals. Gatekeeper education trains individuals how to recognize suicide risk factors and effectively refer potentially suicidal persons to professional resources (Isaac, 2009).

However, there is limited research that supports the effectiveness of these programs (Isaac, 2009). Additionally, disagreement exists on methods of assessment used to evaluate the effectiveness of gatekeeper programs, in which self-reported attitudes and knowledge often utilized as outcome measures have been regarded as inadequate assessments of actual suicide intervention ability (Stuart, Waalen & Haelstromm, 2003). Furthermore, because gatekeeper programs are multifaceted and usually exist within the implementation of broader suicide prevention programs, it is unclear which components within gatekeeper education produce desired outcomes (Mann, 2005; Isaac, 2009).

Positive Psychology

Most approaches to suicide intervention are built upon traditional counseling and clinical psychological approaches that often view human functioning from a "deficit" perspective. In these approaches, clinical techniques are designed to remediate dysfunction, and the assumption

is that a person's functioning will improve to a "normal" level after treatment of such dysfunction (Seligman, 1999). A more recent refocusing of the field on areas of strength and competence, as reflected in the emerging area Positive Psychology, has played a growing role within many areas of psychology, such as alleviating depression and anxiety (Fava *et al.,* 2005), improving workplace productivity (Salanova, *et al.*, 2006), and influencing social competence (Salliquist, 2009).

Psychological interventions derived from positive psychology are aimed at cultivating positive feelings, behaviors, and cognitions in an effort to decrease depressive symptoms and/or serve as a buffer against maladaptive responses (Sin & Lyubomirsky, 2009). Such interventions can be effectively integrated into existing treatments to maximize treatment and intervention outcomes (Sin & Lyubomirsky, 2009). Positive psychological interventions offer the potential for equipping individuals with skills and knowledge in a variety of areas, including suicide intervention skill.

Broaden-and-Build Theory of Positive Emotions

Within Positive Psychology, the broaden-and-build theory of positive emotions holds that positive emotions broaden a person's mindset, which is opposite to the effect of negative emotions sparking specific action tendencies (Fredrickson, 2001). Positive emotions also build an individual's personal resources, in which they elicit a greater amount of physical, intellectual, social and psychological resources (Fredrickson, 2001).

Specifically, the theory posits that the experience of positive emotions, such as joy, pride, and love, *broadens* people's momentary thought-action repertoires (Fredrickson, 2001). This is normally explained as the opposite of the effect of negative emotions – for example, the negative emotion fear narrows a person's thought-action repertoire to either fight or flight. This narrowed

thought-action tendency has strong adaptive value, in which individuals benefit from such narrowness in order to take helpful action in life-threatening situations. Conversely, the positive emotion joy broadens a person's thought-action repertoire, so when experiencing joy, an individual may experience an array of urges, including to be playful, investigative, productive, or social.

The theory further states that this increased mindset is adaptive as well due to its ability to *build* personal, intellectual, psychological, and interpersonal resources (Fredrickson, 2001). These accrued resources are enduring, in which they outlast the presence of positive emotions by serving as "reserves that can be drawn on in subsequent moments and in different emotional states" (Fredrickson, 2001).

The broaden-and-build theory has received much empirical support in recent years. Research has found that positive emotions improve one's coping ability (Fredrickson & Joiner, 2002), scope of attention (Fredrickson & Branigan, 2005), social support (Burns, *et al.,* 2008), cognitive flexibility (Wang & Guo, 2008), can reduce test anxiety (Nelson & Knight, 2010), and can counter balance symptoms of emotional dysfunctions (Garland, *et al.,* 2010).

Broaden-and-Build Theory and Suicide Intervention Response

The broaden-and-build theory of positive emotions has been linked to suicide by Wingate *et al.* (2011). They pose that positive psychology can strengthen understanding and treatment of suicidal behavior, and that a focus on human strengths can provide protective and resiliency factors. Specifically, they suggest that the broaden-and-build theory can be applied to suicidal clients during moments of natural or induced states of positive emotion, which would allow suicidal clients to broaden their mindset and build enduring personal resources that can serve as a

buffer against suicidality. However, the broaden-and-build theory has not yet been linked to characteristics of suicide interventionists.

Limited research has been conducted investigating characteristics of interventionists. Some studies have found that the implementation of intervention programs in workplace and school settings are affected by the interventionists' levels of extraversion, neuroticism, (Ehigie & Akpan, 2005), agreeableness, conscientious, and cynicism (Lochman, *et al*., 2009). Characteristics of interventionists have also been found to impact emotions associated with help-seeking (Yagil & Israelashvili, 2003), in which interventionists that were perceived as warm and as experts were associated with positive emotions and a strong likelihood to seek help among help-seekers. Furthermore, characteristics of suicide interventionists have been suggested to impact decisions to seek mental health treatment (Molock, *et al*., 2007). These results suggest that a better understanding of personal factors that affect how interventionists respond to a person in crisis may provide answers on how to improve such programs.

While research exists investigating therapist characteristics that have an effect of responding to clients, little research has examined the effect of a therapists' mood on therapy sessions. Feelings of competency experienced by therapists before a psychotherapy session have been found to be associated with good evaluation outcomes (Lietaer, G. & Lasuy, C., 2010). Duan & Kivlighan (2002) found that presession anxiety among therapists was positively correlated with intellectual empathy, and that presession positive affect was negatively related to empathic emotion. However, much research is needed to investigate the effect of therapists' emotions on their responses to clients.

There is little research investigating the nature of trained and untrained individuals' responses to a person in suicidal crisis (Mishara, *et al*., 2007a). One avenue that has investigated

responses of suicide interventionists comes from research evaluating crisis hotlines. Crisis hotlines are similar to gatekeeper education programs in that they include the training of lay individuals on how to appropriately respond to someone who is suicidal and refer these individuals to professional help. Mishara (2007a) surveyed fifty-nine crisis call centers associated with the 1-800-SUICIDE Hopeline Network and identified collaborative problem solving as one of two major theoretical models of telephone crisis intervention. Collaborative problem solving consists of exploration of the caller's problem, potential solutions, and referral to appropriate resources. This problem-solving approach, which included "asking fact questions on the problem, questioning about resources, suggesting ways to solve the problem, questions on precipitating events, proposing a no-harm contract, suggesting a plan of action, and offering referrals," was found to be associated with positive outcomes in telephone crisis intervention (Mishara, *et al.,* 2007b).

In another model of telephone crisis intervention, proposed by Echterling, Harsough, and Zarle in 1980, problem solving was identified as a crucial phase in suicide intervention. Echterling & Harsough (1989) found that a complex relationship existed between problem-solving behaviors of interventionists and telephone intervention outcome, in which successful calls were associated with low amounts of problem solving when initially speaking to a suicidal person and a higher proportion of problem solving towards the end of the conversation. Furthermore, some problem solving in the beginning of a crisis conversation resulted in a more desirable outcome than no problem solving. In addition, while nonprofessional volunteers did not differ from volunteers with professional training in most calls, professionally trained interventionists engaged in a greater amount of problem solving when the suicidal individual was a repeat caller, which was associated with a more successful outcome than non-professionals,

who used a lesser amount of problem solving. Because repeat callers may have problems that are more chronic than individuals who call to the crisis center only once, these findings suggest that problem solving is a characteristic that should be enhanced in nonprofessionals when dealing with chronically suicidal individuals.

While there is limited research investigating characteristics of interventionists in telephone crisis intervention, a similar lack of research exists for characteristics of interventionists who interact with clients face-to-face (McCarthy & Knapp, 1984). In a study investigating direct crisis interventions among crisis interveners, psychotherapists, and untrained individuals, it was found that untrained individuals utilized less problem-solving in their responses compared to psychotherapists and trained crisis interveners. In the same study, crisis interveners were found to be more goal-oriented and problem-solving focused than psychotherapists, who were described as more insight-oriented.

As described above, prior studies have identified problem solving as a characteristic of interventionists that is associated with desirable outcomes. Problem solving is one factor that potentially links the broaden-and-build theory of positive emotions with suicide intervention response. As noted previously, a deficiency in problem solving ability, along with hopelessness, was found to predict suicidality among Turkish college students (Zeyrek, *et al.,* 2008). Fredrickson (1998) noted that a broadened thought-action repertoire, greater cognitive flexibility, and the building of personal resources are likely to improve one's problem solving ability. For example, it was found that students who thought about a happy moment in their lives for less than one minute before learning or test taking procedures displayed significantly increased school performance and intellectual gains. Additionally, when a small bag of candy was provided to children right before a complex integrative bargaining task, children who

experienced positive emotions due to the gift of candy were better able to comprehend a complex task than those who were not given candy (Carnevale & Isen, 1986). Positive emotions were also found to ease information integration among medical doctors when solving a case of a patient with liver disease (Estrada, Isen & Young, 1997). Furthermore, Fitzpatrick & Stalikas (2008) have proposed that positive emotions in therapists may broaden a therapist's conceptualization of the therapy process, including: "to broaden insight into problem dynamics, to broaden the repertoire of available behaviors, and to broaden the ability to experience fully." However, research investigating positive emotions among therapists has yet to be empirically demonstrated.

While positive emotions have been linked to problem solving ability, and problem solving ability has been linked to suicide intervention response, a more direct link between positive emotions and suicide intervention response has not yet been investigated. The presence of positive emotions in a person's response to a suicidal individual may broaden an interventionist's mindset, in which they may more effectively engage in problem solving, and thus demonstrate a wider range of helpful responses, than an interventionist who utilizes a lesser amount of positive emotions.

As another factor that potentially links the broaden-and-build theory with suicide intervention response, positive emotions have been shown to increase empathic responding (Nelson, 2006). When college students were asked to respond to a vignette of a person experiencing distress from a different cultural population, the presence of positive emotions was associated with greater perspective taking and feelings of compassion and sympathy. Additionally, empathy combined with collaborative problem solving was significantly related to positive outcomes in telephone crisis intervention responses (Mishara, *et al*., 2007b).

Stuart & Haelstromm (2003) argue that general helping skills, including problem-solving ability and empathy, are not relevant in suicide intervention because such intervention training requires the implementation of specific skills. However, limited prior research exists in investigating characteristics of peer helpers (Lewis & Lewis, 1996), and there is a need to widen the investigation of crisis intervention competencies (Neimeyer, Fortner & Melby, 2001). It should be noted that this study views the association between positive emotions and suicide intervention response as one aspect of suicide intervention that, when combined with skill-specific training, may increase the effectiveness of intervention programs. It should also be noted that this study is not a direct test of the function of problem-solving and empathic responding in the application of the broaden-and-build theory of positive emotions on suicide intervention response, but is rather a preliminary investigation of how positive emotions may impact suicide intervention responses.

Purpose of this Study

Although research has been conducted on gatekeeper education programs, limited research exists examining how interventionists normally respond to suicidal individuals. Furthermore, while research has been conducted on the application of the broaden-and-build theory of positive emotions on suicidality, a connection has not been made between the broaden-and-build theory and suicide intervention response. This research aims to contribute to existing literature by better understanding how individuals normally respond to a peer in crisis without training, and the effect of positive emotions on suicide intervention response.

The purpose of this study is to investigate the role of positive emotions in college students' responses to a peer in crisis. It is anticipated that positive emotions may lead to a broadened mindset characterized by an increase in problem solving ability and a greater amount

of empathy and perspective taking, which may enhance how individuals respond to a suicidal peer.

Specifically, it is hypothesized that individuals who use a greater amount of positive emotion words in their responses to a suicidal peer will display a greater amount of total helpfulness and a higher suicide intervention skill compared to those who use a lesser amount of positive emotion words. It is also hypothesized that individuals who use a greater amount of the specific positive emotion hope when responding to a suicidal peer will also display a greater amount of total helpfulness and a higher suicide intervention skill compared to those who use a lesser amount of hope in their responses.

CHAPTER II

METHOD

Participants

Data for this project was collected as part of a larger study aimed at evaluating the effectiveness of a gatekeeper training program on a college campus. Participants were 381 undergraduate students at the University of Texas – Pan American (UTPA), a state university in extreme south Texas. Consistent with the composition of psychology undergraduate students at UTPA, 88% (*n*= 335) of participants were Hispanic, and 73% (*n*= 278) were female. The average age of participants was 22.35 (*s*= 3.74).

Measures

Participants completed the Suicide Intervention Response Inventory – 2 (SIRI-2; Neimeyer & MacInnes, 1981), a 25-item self-report questionnaire composed of a series of hypothetical statements made by a person in crisis on a crisis line or counseling phone call. Each statement suggests increased risk of suicide. Two contrasting hypothetical "helper" statements are listed for each crisis statement. One of the helper statements is considered beneficial for suicide prevention efforts while the other statement is considered neutral or damaging in terms of suicide prevention. The task for respondents is to rate each response on a 7-point scale in terms of "how appropriate or inappropriate" the respondent believes the response is. Respondents' ratings are compared to published criterion scores that were based on the mean scores of a panel of expert ratings (Neimeyer & Bonelle, 1997). Higher scores indicate a greater difference with

expert respondents, and thus less intervention skill. The SIRI-2 has strong reliability and validity (Cotton & Range, 1992; Neimeyer & Bonelle, 1997) and distinguishes between groups with expected differences in skill responding to suicidal statements (such as untrained undergraduate students versus trained graduate students). It has also been used pre- and post- as a measure of response to intervention training and as a measure of ability to provide helpful statements (Neimeyer & Macinnes, 1981; Cotton & Range, 1992; Abbey, Madsen, & Polland, 1989).

Participants were also given the Suicide Intervention Scenarios (SIS), vignettes of a peer in crisis that end with an ambiguous suicidal statement. Participants were asked to respond to these vignettes by writing what they would say or do to help the hypothetical person. Responses were coded along several dimensions, including: 1) Listening/Hope: responses that included empathic, hopeful, normalizing, validating, and active listening responses, 2) Non-Professional Interventions: responses characterized by suggestions of emotion- or problem-focused coping designed to improve the person's mood, that did not incorporate professional mental health referrals, 3) Suicide Questioning: responses that directly ask if the hypothetical peer is thinking about killing himself/herself 4) Referral: responses that included referral to a professional, 5) Commitment to Live: responses that solicited an agreement to not end their life or hurt self, 6) Inappropriate Response: responses that would increase suicidal risk, included clearly invalidating statements, or endorsed suicide "myths", and 7) Total Helpfulness: the summation of all response codes that reflected overall helpfulness and appropriateness of the response. A higher total score indicates greater overall helpfulness. Inappropriate responses were subtracted from the Total Helpfulness score.

In addition, participants were given a Demographic Information Form, which is a 14-item measure constructed for this study to gather basic demographic information including

respondents' sex, age, race, income, marital status, country of origin, and history of suicide/suicide attempts in family or friends.

The Linguistic Inquiry Word Count (LIWC) was used to determine the presence of positive emotion words and overall word count. The LIWC is a summarizing, quantitative analysis program that counts words in psychologically meaningful categories (Tausczik & Pennebaker, 2010). The LIWC determines the rate at which authors/speakers use positive and negative emotion words, self-references, big words, or words that refer to sex, eating, or religion. Empirical results demonstrate its ability to detect meaning in a wide variety of experimental settings, including emotionality, thinking styles, and individual differences.

Procedures

Students in psychology and rehabilitation services courses at The University of Texas – Pan American were asked to participate in the research, upon the approval of each course professor and agreement to provide extra-credit to participating students. They were given a brief description of the study, along with designated times and locations if they wished to participate. Upon their arrival at the designated time and location, a trained research assistant provided them with an informed consent form, along with assurance that their responses will be treated confidentially. Participants were then given a set of questionnaires, which included the Demographic Information Form, the SIRI-2, and the SIS. Because this project is part of a larger study, the questionnaire set also contained other measures that are not discussed here. As part of this larger study, respondents participated in data collection on two occasions. Questionnaires included in this project were all gathered at Time 1. Upon completion of the questionnaires, participants were given a sheet to sign to serve as proof of participation in order to be awarded

extra-credit and were thanked for their participation. Participant identity was never associated with data they provided.

CHAPTER III

RESULTS

Analysis

Pearson *r* correlation coefficients were computed to compare the presence of positive emotion words in SIS responses to: 1) SIS Total, and 2) Suicide Intervention Skill from the SIRI-2. Pearson *r* correlation coefficients were also used to compare the positive emotion of Hope (Listening/Hope subscore coded from the SIS) to: 1) SIS Total, and 2) Suicide Intervention Skill from the SIRI-2.

Findings

Participant scores on the SIRI-2 were within the range expected for students, given previously published literature (Brown & Range, 2005). Score means and standard deviations for the SIRI-2, SIS Total, Positive Emotion Words (measured by the LIWC), and Hope are listed below.

Table 1: SIRI-2, SIS Total, Positive Emotion Words, and Hope Scores

	Mean	Standard Deviation
SIRI-2		
Women (*n* = 289)	99.09	24.16
Men (*n* = 91)	103.76	23.26
Total (*n* =380)	100.21	23.99
SIS Total		
Women (*n* = 290)	2.28	1.34
Men (*n* = 91)	1.87	1.38
Total (*n* = 381)	2.18	1.36
Positive Emotion Words (measured by LIWC)		
Women (*n* = 290)	7.72	3.49
Men (*n* = 91)	6.81	3.76
Total (*n* = 381)	7.50	3.57
Hope (SIS Listening/Hope code)		
Women (*n* = 290)	2.89	0.97
Men (*n* = 91)	2.58	0.99
Total (*n* = 381)	2.82	0.98

Pearson correlation coefficients were computed to determine whether the use of positive emotions words in the SIS scenario responses were related to 1) SIS Total, and 2) Suicide Intervention Skill from the SIRI-2. Results indicated that the use of positive emotion words and SIS Total were not significantly correlated (r= .01, p= .89). The use of positive emotion words and suicide intervention skill were also not significantly correlated (r= .09, p= .08). Results are shown in the scatterplots below, including both individual level data and superimposed regression lines.

Figure 1: Correlation between Positive Emotion Words and SIS Total

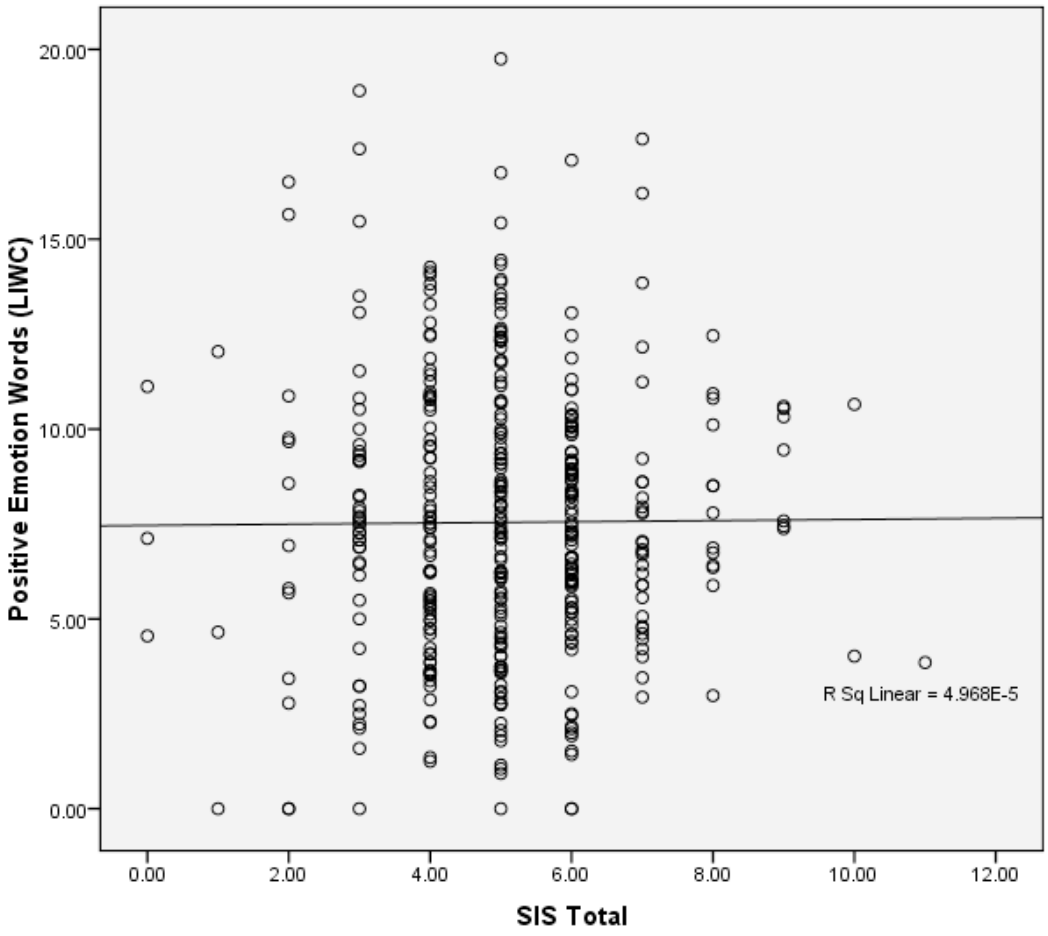
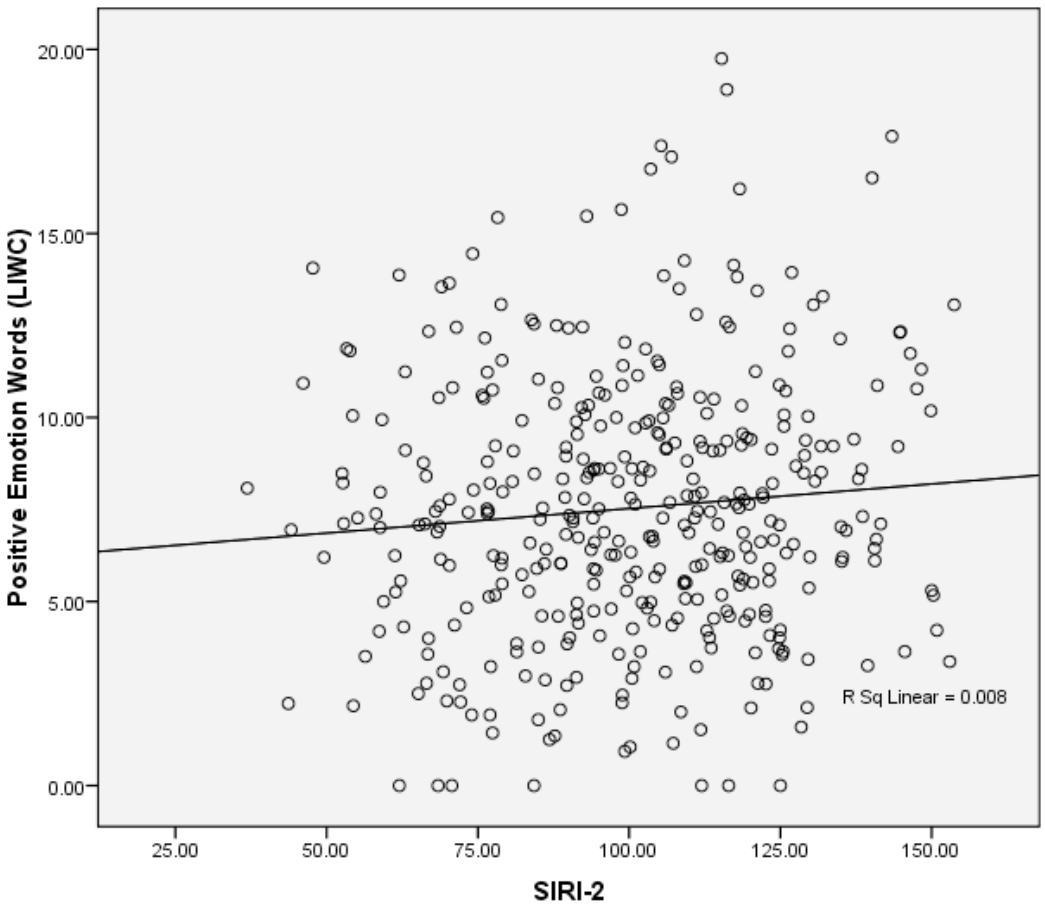


Figure 2: Correlation between Positive Emotion Words and SIRI-2



Because Hope was measured by the Listening/Hope code within the total score of the SIS, Hope was compared to the SIS Total minus the Listening/Hope subscore. The adjusted mean and standard deviation for SIS Total minus Hope is below.

Table 2: Adjusted SIS Total (Minus Hope)

	Mean	Standard Deviation
SIS Total Minus Hope (Listening/Hope subscore)		
Women (*n* = 290)	2.28	1.34
Men (*n* = 91)	1.87	1.38
Total (*n* = 381)	2.18	1.36

Results indicated that the use of the specific positive emotion Hope and SIS Total (minus Listening/Hope code) were slightly negatively correlated (r= -.10, p= .04). Results indicated that the use of Hope and suicide intervention skill were not significantly correlated (r= -0.26, p= .61). Results are shown in the scatterplots below, including both individual level data and a superimposed regression line.

Figure 3: Correlation between Hope and SIS Total (Minus Hope)

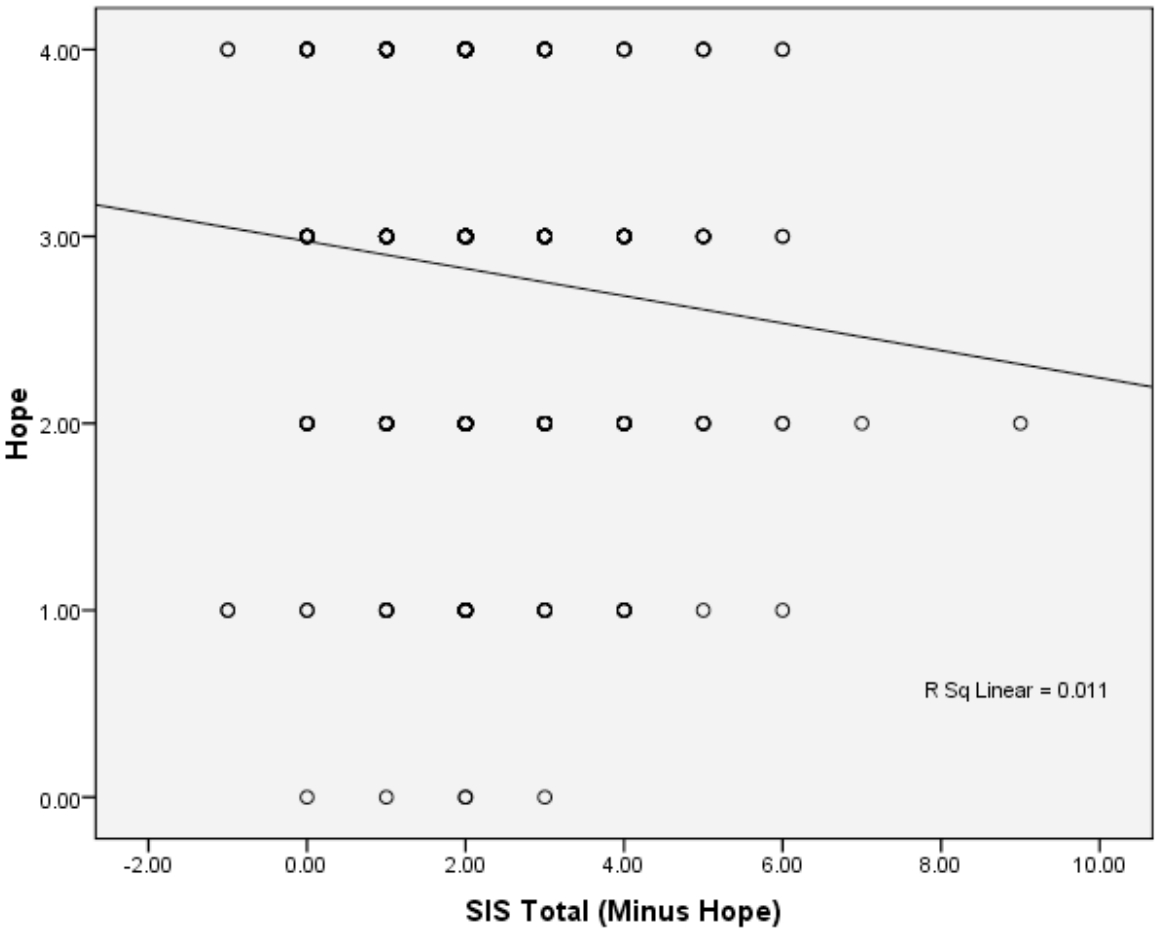
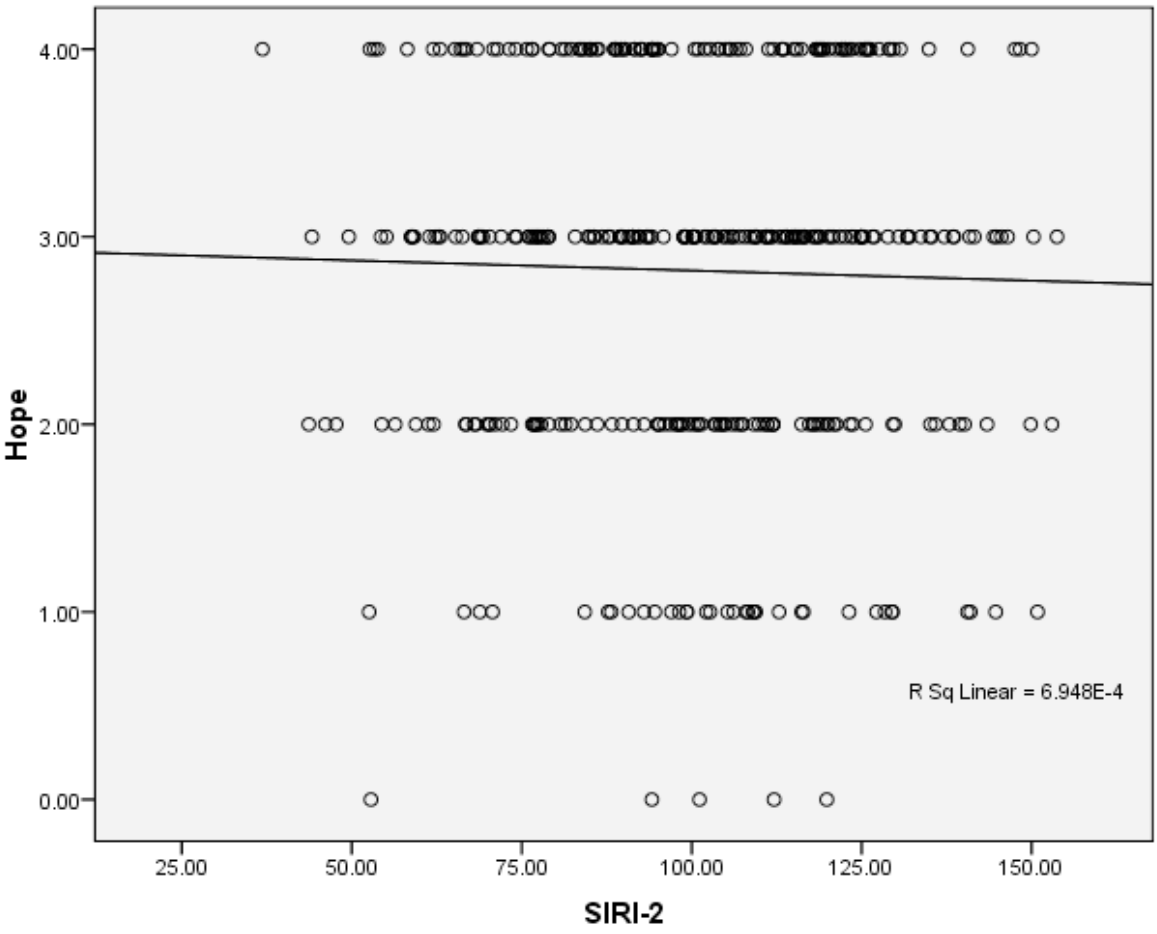


Figure 4: Correlation between Hope and SIRI-2



CHAPTER IV

DISCUSSION AND CONCLUSIONS

This research has contributed to existing literature by examining the relationship between communication of positive emotions and suicide intervention skill, thus potentially improving the design of suicide intervention training programs. Results indicated that communication of positive emotions and suicide intervention response were not related in this study. This is in contrast to what was hypothesized based on previous research that demonstrated that positive emotions enhance a person's problem-solving ability and empathic responding (Fredrickson, 1998; Nelson, 2006).

There are several possible explanations for the findings of this study. First, one explanation may be that experiencing positive emotion may be useful in encouraging effective problem solving in interventionists, but that talking about positive emotion when responding to a suicidal person is not. Because the SIS does not assess respondents' experience or emotional state, any connection between positive emotion experience and intervention skill would not have been observable in this study. It is also possible that positive emotions among interventionists may impact other helpful aspects of intervention that are not detected by scores on the SIRI-2 and SIS.

Another possible explanation for the findings of this study is that positive emotion experience may not be helpful in intervening in suicidality. For example, positive affect

has been found to be negatively correlated with empathic responding (Duan & Kivlighan, 2002). It is possible that crisis intervention may be similar to a life-threatening situation where a narrowed thought-action tendency is helpful in order to respond in an adaptive manner. Although Mowkowitz (2000; via Fredrickson, 2005) linked positive emotions to goal-directed problem-solving, suggesting that enhanced problem solving associated with positive emotions may facilitate intervention ability, positive emotions may be useful during the *acquisition* of intervention skills rather than the implementation of skills. Positive emotional experiences during suicide intervention training programs may build enduring personal resources that can be drawn upon during crisis intervention. This is similar to the suggestion made by Wingate *et al.* (2011) that suicidal individuals may build enduring personal resources during natural or induced states of positive emotions that can be drawn upon during an impending crisis.

A final possible explanation for the findings of this study is that the measures used here may not have adequately captured the communication of positive emotions. Two measures were used to assess positive emotion – the LIWC to assess positive emotion broadly and the SIS Hope score to assess the specific positive emotion hope. Both measures have advantages and disadvantages. In regard to the LIWC, it is likely that one would not utilize many positive emotion words when responding to someone who is suicidal, but may rather try to communicate hope-related cognitions in their response. Examples of hope-related cognitions in participants' responses that do not include positive emotion words are: "Things will get better," and "Before you think about ending your life, let's look at other options." LIWC scores would not capture these attempts to communicate and instill hope. In regard to the SIS, the coding scheme for the

SIS caps the Hope score at a "2" for each scenario representing two or more efforts to communicate/instill hope. This scoring system may not represent the entire range of hope communicated by participants (such as when participants make 3 or more hopeful statements), thus possibly truncating the observed relationship between positive emotion and suicide intervention response. Furthermore, the SIS Hope code was combined with listening and validating responses, which may have further obscured a relationship between positive emotion and suicide intervention response.

Limitations

This study had several limitations. Our sample population may serve as a limitation since participants were taken from only one university, indicating that results may not be adequately representative of the general population. Because this study consists mostly of Hispanic undergraduates, it is unclear how these findings apply to other ethnicities, age groups, and clinical groups. Future research on the relationship between positive emotions and suicide intervention response selection is needed on participants of other ages and ethnicities. Due to the fact that very little research has examined ethnic identity/acculturation and variables related to suicide, this study may be extended by taking into account the acculturative status of participants. Another possible limitation of this study could be the large percentage of women participants; however, although there are unequal numbers of men and women, the size of men sampled is still adequate.

Future Considerations

This study did not find a significant relationship between positive emotions and suicide intervention skill; however, previous research suggests that positive emotions

broaden a person's mindset, including enhanced problem-solving and empathic responding, which have been identified as helpful when responding to someone in crisis. While results of this study indicate that positive emotions may not affect suicide intervention, it is important to investigate this topic further in order to discover whether additional characteristics of interventionists may have an impact on ability to appropriately respond to a peer in crisis. Furthermore, given the scarcity of research of positive emotions and interventionists, future research should be conducted investigating the effect of positive emotions on other types of interventionists, such as therapists and health providers, when responding to individuals with different psychological conditions. Findings may shed light on how characteristics of interventionists impact intervention effectiveness and how to improve suicide intervention programs.

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BIOGRAPHICAL SKETCH

Crystal Rodriguez received her Bachelor of Science in Psychology on May 2009, at the University of Texas – Pan American. On August 2011, she received her Master of Arts in Clinical Psychology.

Crystal began gaining research experience as an undergraduate through both paid and volunteered positions. Crystal has presented her research at local and regional conferences. Crystal is a past President of UTPA's Psychology Club, a former Student Ambassador, a former student mentor through the Student Leadership Program, and is a graduate from the Guerra Honors Program. Crystal defended an honors thesis entitled "Investigating the Link between Self-Efficacy and the Selection of the Most Appropriate Suicide Intervention Strategy." Crystal has won various academic accolades, including the Dean's Award for the College of Social and Behavioral Sciences in 2009.

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