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Utilizing the Theory of Planned Behavior to Explain Suicidal Intent

Pamela R. George

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Utilizing the Theory of Planned Behavior to Explain Suicidal Intent

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by

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Abstract

Utilizing the Theory of Planned Behavior to Explain Suicidal Intent

By Pamela R. George

Suicide has become a national and global problem, with the prevalence of suicide attempts increasing in recent years (Brown, Henriques, Sosdjan, & Beck, 2004; Kessler, Borges, & Walters, 1999). Even though research on suicide has identified risk factors and demographic characteristics to help aid in predicting who is at risk for attempting suicide, predictive models of intent of suicide have been unsuccessful in identifying particular individuals at risk of eventually dying by suicide (Cassells, Paterson, Dowding, & Morrison, 2005; Goldstein, Black, & Nasrallah, 1991; Powell, Geddes, Deeks, Goldacre, & Hawton, 2000). The purpose of this study is to propose an alternative framework to studying suicide by utilizing the theory of planned behavior to explain variables associated with suicidal ideation and intent. Differences in individual attitudes, beliefs, and social norms were also compared to levels of depression and hopelessness to help understand the components that contribute to suicidal ideation. The results revealed that the theory of planned behavior variables explained 49% of the variance in suicidal ideation, with perceived behavioral control accounting for the largest proportion of the variance. The theory of planned behavior variables was also found to explain more variance than depression and hopelessness in suicidal ideation.

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Chapter 1: Introduction

Understanding and predicting suicidal behavior is a critical public health concern. Approximately 30,000 individuals in the United States and over one million people worldwide take their own lives each year (Kochanek, Murphy, Anderson & Scott, 2004). Researchers estimate that for every person who completes suicide, twenty-five others attempt to end their own lives (Kochanek et al., 2004). Additionally, epidemiological studies suggest that the prevalence of suicide attempts is increasing (Brown, Henriques, Sosdjan, & Beck, 2004; Kessler, Borges, & Walters, 1999) and that suicide is the 11th cause of death in the United States (Kochanek et al., 2004). Research needs to be conducted to examine correlates related to suicidal ideation, intent, and the actual act of ending one's life. Such research would not only help understand suicidality, but potentially decrease these rates.

Past research on suicide has focused on identifying risk factors and demographic characteristics to help predict who is at risk for attempting suicide, developing interventions that are utilized as screening tools, and designing interventions to prevent suicide. While this research has provided clinicians and practitioners with information regarding who is most at risk for suicide, the research has low predictive value. Thus, research has targeted at-risk populations, but a gap exists in the literature regarding reliable assessments of predicting suicide. Since suicide is such a multidimensional phenomenon, more distinctive and integrative models of suicide risk are needed.

This paper proposes and tests a model of suicidal risk assessment that conceptualizes suicide from a social cognition prospective and utilizes Azen's (1991) theory of planned behavior. This theory states that an individual's intention to perform a

behavior is influenced by attitudes, social norms, and perceived behavioral control related to the behavior. The present study examines the interaction of attitudes, social norms, perceived behavioral control, depression, and hopelessness to self-reported levels of suicidal ideation and intent. Following presentation of the results, the clinical utility, limitations, and implications for future research of this study will also be discussed.

Chapter 2: Literature Review

Defining Suicide

Research suggests that individuals engage in self-harmful behaviors with and without the intent to end their lives. Therefore, researchers have distinguished these behaviors with the terms “suicidal act” and “instrumental-related suicide.” A suicidal act refers to “a potentially self-injurious behavior for which there is evidence that the person intended at some level to kill himself/herself and may result in death, injuries, or no injuries” (O’Carroll, Berman, Maris, Moscicki, Tanney, & Silverman, 1996, p.34). An instrumental-related suicide refers to “a potentially self-injurious behavior for which there is evidence that that person did not intend to die and the person wished to use the appearance of intending to kill himself or herself in order to attain some other end (e.g., to seek help, to punish others, to received attention)” (O’Carroll et al., 1996, p. 34). Research suggests that these behaviors are based on different forms of intent, and instrumental-related suicide is associated with either difficulty regulating emotions or attempting to gain attention through behaviors, but not with intending to die (Yen, Shea, Pagano, Sanislow, Grilos, McGlashan et al., 2003).

Distinguishing suicidal acts from instrumental-related suicides is important to help clarify and understand factors that contribute to suicidal ideation and intent. However, suicide researchers do not consistently operationally define their terms of suicide-related behaviors, differentiate between instrumental-related suicide and suicidal acts, or they use the terms interchangeably. The differing intents of behavior need to be separated so that research can be generalized to these distinct populations and establish specific treatment techniques and services. The lack of universal terms related to suicide has consequently

limited results and findings cannot be generalized to other populations. O'Carroll et al. (1996) provide a set of universal definitions for commonly used terms in suicide research and distinguished suicidal behaviors with and without an intention to die. For the purposes of this study, O'Carroll et al.'s (1996) definitions of suicide-related behaviors will be utilized.

Past Suicide Research

Past research has conceptualized suicide from an illness model and has focused on identifying risk factors, demographic characteristics, and determining at-risk populations of suicide. Predictive models of suicide have used case-control studies to quantify risk factors and determine what characteristics are specific to those who commit suicide by comparing completed suicides to living controls (Harriss, & Hawton, 2005). Research on groups of individuals who contemplate or engage in some type of suicidal behavior has concluded that numerous variables contribute to the decision to end one's life. The following sections will review psychological and social characteristics that have been linked to higher rates of suicidal acts and then discuss the need for integrated approaches to risk assessment.

Clinical Characteristics

Clinical research suggests that psychopathology is the most common risk factor for completed suicide (Joiner, Petit, Walker, Voelz, Cruz, Rudd, & Lester, 2002). Retrospective research suggests that approximately 90 percent of individuals who complete suicide meet criteria for a diagnosable psychiatric disorder at the time of their death (Connor, Duberstein, Conwell, Seidlitz, & Caine, 2001). In particular, psychiatric diagnoses of major depression, bipolar disorder, schizophrenia, substance abuse disorders, anxiety disorders, eating disorders, and personality disorders are consistently associated

with completed suicide (Conner et al., 2001; Joiner, Walker, Rudd, & Jobes, 1999; Van Order, Merrill, & Joiner, 2005). Psychopathology research has helped clinicians identify and develop specific treatment guidelines for at-risk populations of suicide.

Clinical research has also identified specific factors that are associated with suicidal ideation and behaviors. In a review of empirical literature on clinical influences, Conner et al. (2001) concluded that five constructs have been consistently associated with completed suicide: impulsivity/aggression, depression, anxiety, hopelessness, and self-consciousness. In terms of predicting who will attempt suicide, the literature consistently suggests that the best predictor of future suicide is prior attempt (Rudd, Joiner, & Rajab, 1996). Research also suggests that levels of depression, perfectionism, hopelessness, and degree of lethality are consistently found to be associated with greater levels of suicidal intent (Conner, 2004).

Depression and hopelessness have been documented to predict higher rates of suicidal acts throughout the literature since the early 1970's. Two studies in particular, Beck & Lester (1973) and Minkoff, Berman, Beck, & Beck (1973), first reported that hopelessness was a mediating factor between depression and suicidality. Since that time, multiple studies have replicated these results and found that hopelessness is correlated with high levels of suicidal ideation (Beck, Steer, & Beck, 1993; Cole, 1988; Petrie & Chamberlain, 1983; Weissman, Beck, & Kovacs, 1979), intent (Emery, Steer, & Beck, 1981; Lester & Beck, 1975; Petrie & Chamberlain, 1983; Weishaar & Beck, 1992; Wetzel, 1976; Wetzel, Margulies, Davis, & Karum, 1980), and completed suicides (Beck, Brown, Berchick, Stewart, & Steer, 1985; Brown, Beck, & Steer, 2000). In addition, hopelessness has been linked to increased suicidal behaviors in various populations, such as adolescent psychiatric patients (Cole, 1989; Steer, Kumar, & Beck, 1993), college students (Cole,

1988), and geriatric patients (Ron, 2002; Szanto, Reynolds, & Conwell, 1998). The results also suggest that increased suicide risk is related to suicidal ideation, severity of depression, and hopelessness (Brown et al., 2000), but that hopelessness is more predictive of suicidal behaviors than depression (Beck et al., 1993). In fact, hopelessness has been found to correlate with suicidal ideation independent of depression (Steer et al., 1993).

The consistent results of depression and hopelessness studies have influenced researchers to examine other cognitive characteristics associated to suicidal behaviors. Cognitive characteristics, such as depressive attributional style, perfectionism, cognitive rigidity, dichotomous thinking, and poor problem-solving skills have been found to correlate to suicidal ideation and intent (Ellis & Ratliff, 1986; Ellis & Rutherford, 2008; Weishaar & Beck; 1992). These results have also facilitated cognitive therapy research to demonstrate the role of measuring hopelessness in suicidal behavior (Weishaar & Beck; 1992) and the study of the interaction of hopelessness with other variables. For example, Abramson, Alloy, Hogan, Whitehouse, Gibb, Hankin, et al's. (2000) created a hopelessness theory of suicidality and Beevers & Miller's (2004) examined how perfectionism, cognitive bias, and hopelessness predicted suicidality. In addition, Smith (2006) researched the interaction of negative cognitive style, rumination, and hopelessness and Williams, Crane, Barnhofer, & Duggan's (2005) assessed the "cry of pain" model. Yang & Clum (1994) also evaluated a model of stress, problem-solving, hopelessness, social support, depression, and suicidality, and then included the addition of negative life events, stress, and social support (1996, 2000).

The results of the above studies suggest that various cognitive characteristics and levels of hopelessness have been found to correlate with suicidal behaviors. Throughout the

literature, hopelessness is the most documented and supported predictor of suicide, along with poor problem-solving skills and lethality of method (Brown et al., 2004; Pettit & Joiner, 2006). Additional research is needed to examine the interaction of multiple variables. Therefore, it appears that future research should examine the interaction of hopelessness, cognitive characteristics, and lethality of method to help improve understanding of suicidal behaviors.

Social Factors

Sociological approaches to studying suicide were first introduced by Durkheim in the late 1800's. Durkheim argued that social influences, such as religion, marriage, political and national crises, the degree to which the society has developed, military involvement, and economic crises better explain variability in suicide than previously cited factors (1951). Durkheim's studies provided a foundation for other researchers to examine social influences related to suicide. For example, Trout (1980) reviewed the literature between theories of suicide and social isolation. He concluded that social was related to suicidal behaviors and those individuals who completed suicide reported higher levels of social isolation and social withdrawal before their deaths. Bagley and Ramsay (1989) concluded that individuals with strong religious values tend to report less suicidal ideas. Diekstra and Kerkhof (1989) suggest that an approving societal attitude toward suicide influences the risk for attempted suicide. Neeleman (2002) contends that attitudinal rejection of suicide by peers may offer protection from the risk of suicide. The results of these studies found that various social influences were related to suicide, suggesting that the act of suicide is multi-faceted and not just a result of individual pathology.

Research also suggests that other social influences are related to suicidal behaviors. For example, prevalence rates suggests that more single individuals die by suicide than married people and that feelings of connectedness may protect people from suicidal behavior (McIntosh, 2002). The need to belong to groups and possess social relationships has been described as a basic human desire, and it is claimed that individuals must have frequent, positive interactions with others and feel cared about by others to satisfy the need to belong (Baumeister & Leary, 1995; Stellrecht, Gordon, Van Order, Witte, Wingate, Cukrowicz, et al., 2006). Brown, Comtois, and Linehan (2002) found that the reason “to make others better off” was more often endorsed as a reason for a suicide attempt versus a nonsuicidal self-injury (p.199). Holden, Mendonca, and Serin (1989) suggested that hopelessness and social desirability are significant predictors of suicidal behavior and that research needs to explore the link between these cognitions. The results of these studies suggest that suicidal behaviors are related to thoughts of hopelessness and being a burden to others, as well as social influences of social desirability, the need to feel cared for, and the desire to belong to a group.

Integrated Theories of Risk Assessment

Even though studies suggests that numerous variables contribute to the decision for one to end his or her life, research has typically been conducted from isolated perspectives, mostly clinical/psychological or sociological approaches (Matheson, 2002). Several authors suggest that we need to move beyond clinical and demographic factors to further our understanding of suicide (Cassells, et al., 2005). Michel and Valach (2001) propose that suicide and attempted suicide are actions that involve a conscious process and are not just simple signs of disease and pathology. Thus, researchers must combine approaches to

explaining suicidal intent, such as integrating past research of identified variables and pathology with social and cognitive influences. In this context, individual sources of stress and influences can be further researched to enhance understanding of suicide (Cassells et al., 2005)

Interpersonal-Psychological Theory of Suicide

In a review of the literature on integrated theories of risk assessment that includes cognitive characteristics, social factors, hopelessness, and lethality, only one was identified. Joiner (2005) and colleagues recently introduced an interpersonal-psychological theory of suicide that has been applied to risk assessment and treatment. According to the theory, three components are necessary for an individual to actually die by suicide: 1) the acquired capability to enact lethal self-injury, 2) a sense that one is a burden on others (burdensomeness), and 3) the sense that one does not belong to feel connected with a valued social group (thwarted belongingness) (Joiner, 2005). Feelings of burdensomeness and thwarted belongingness “arise from distorted cognitions about one’s significance to and integration with a valued social support network” (Stellrecht et al., 2006, p. 214). A thwarted sense of belongingness results from an unmet need to belong, while a sense of perceived burdensomeness results from an unmet need to contribute to the welfare of close others (Joiner, 2005). Individuals may develop more “normative” behaviors of self-injury and essentially develop competence to complete self-injury by engaging in suicidal attempts. An individual may desire to die by suicide, but will not engage in suicidal behavior unless he or she possesses the “acquired capability” to engage in lethal self-injury (Stellrecht et al., 2006, p. 212).

In addition, Joiner et al. (2002) concluded that perceived burdensomeness was associated with increased suicide risk when comparing suicide notes written by suicide attempters and suicide completers. Perceived burdensomeness was a significant predictor of the lethality of completed suicides and remained significant after controlling for hopelessness (Joiner et al., 2002). In this same study, Joiner et al., (2002) controlled for hopelessness and emotional pain in a second analysis. The results suggested that perceived burdensomeness was greater in the notes of individuals who died by suicide versus those who attempted but survived. The results also concluded that perceived burdensomeness was the only variable that predicted lethality and suggests that burdensomeness may be a specific characteristic of suicidality and a “stronger predictor of suicidal desire than variables commonly used (e.g., hopelessness)” (Van Orden et al., 2005, p. 189). According to the interpersonal-psychological theory, a prior suicide attempt would represent the most “immediate pathway to acquire the ability to completed suicide,” implying that previous attempts reduces fear and increases the ability for more lethal suicide attempts (Van Orden, Merrill, & Joiner, 2005, p. 190).

Implications for Future Research

Researchers have encouraged more precise and reliable assessments of intent to differentiate suicidal ideators, attempters, and multiple attempters (Rudd et al., 1996) and those who have attempted a planned versus unplanned suicide (Conner, 2004). Rather than focus on distinct interpersonal factors, including risk factors, demographic characteristics, and associated psychological symptoms and disorders, an approach integrating social and cognitive perspectives is needed to examine the degree of intent to commit suicide. One recent example is Joiner’s (2005) interpersonal-psychological theory of completed suicide.

The theory focuses on perceived social influences and capability to engage in suicidal behaviors. However, the theory does not examine individual attitudes and beliefs related to suicide. Past research suggests that a range of cognitions and beliefs are of central importance to understanding suicide.

Research needs to assess how attitudes and beliefs may influence suicidal risk and intent. A social cognition model will be utilized in the present study to examine components that may contribute to suicidal ideation. In particular, it is proposed that the theory of planned behavior (Ajzen, 1991) can be utilized to understand individuals' levels of suicidal ideation and intent. The following sections will present an overview of the theory of planned behavior and how the model has been applied to research in a number of disciplines. In addition, a review of the literature applying the theory of planned behavior to suicide research will be discussed.

Theory of Planned Behavior

Social cognitive models were created to predict and understand attitude and behavior relationships. In particular, social cognitive models examine and assess particular factors that might influence and mediate these relationships (Armitage & Christian, 2003). Social cognitive models suggest that we can identify predictive behavior patterns and design interventions to help modify targeted behaviors (O'Connor & Armitage, 2003). In addition, these models suggest that attitudes are not directly associated with behaviors, but influence intentions to engage in behaviors.

The most widely used social cognition model for predicting and explaining health behavior is the theory of planned behavior (Ogden, 2003). A considerable body of data supports the theory as providing consistent predictions of intentions and behavior across

the literature (Armitage & Connor, 2001). Additionally, the model is clearly specified in terms of components, and published recommendations suggest how to establish and evaluate the components (Ajzen, 2002).

The theory of planned behavior was first introduced as the theory of reasoned action (Fishbein & Ajzen, 1975). The theory of reasoned action proposed that behavioral intentions are determined by attitudes (overall positive and negative evaluations of behavior) and perceived social pressure from others (subjective norms). This model also proposed that both attitudes and subjective norms are determined by “salient” underlying beliefs consisting of an outcome belief and an outcome evaluation (Fishbein & Ajzen, 1975). The theory conceptualized that behavior is dependent on the formation of intent and that intentions are defined as measures of the probability that a person will engage in a specific behavior.

Ajzen (1991) expanded the theory of reasoned action to include perceived behavioral control as a determinant of both intention and behavior. This theory states that a person’s intention to perform a behavior is influenced by a) attitude towards the behavior, b) subjective norms related to perceived social pressure to engage in the behavior, and c) perceived behavior control related to one’s control over performing the behavior (Ajzen & Fishbein, 1980) (see Figure 1). Attitude is conceptually defined in terms of an individual’s perceived behavioral beliefs and outcome evaluations of engaging in a specified behavior. Subjective norms are related to normative beliefs in which the individual experiences pressure or expectations from others to engage or not engage in the behavior, thus influencing motivations to participate in the identified behavior. Perceived behavioral control is related to an individual’s perception of confidence in ability to complete the

behavior. This theory proposes that in order to change a behavior, changes must be made to behavioral, normative, and control beliefs to increase control over the behavior. In sum, the theory suggests that changing beliefs is necessary for behavioral change.

The theory of planned behavior has been applied in research in numerous disciplines including nursing, information technology, social policy, sociology, health, and psychology (Armitage & Christian, 2003). Even though the model began within social psychology, the theory is regarded as the dominant model in the field of health psychology (Armitage & Conner, 2001). Additionally, the model is currently being utilized in clinical psychology research (Hergenrather & Rhodes, 2004; Hobbis & Sutton, 2005). Recent meta-analyses provide empirical support that the theory of planned has great predictive utility (Armitage & Connor, 2001; Godkin & Kok, 1996). A meta-analysis conducted by Armitage and Connor (2001) found that the theory of planned behavior accounted for 27 percent of the variance in subsequent behavior and 39 percent of the variance in behavioral intentions. Additionally, perceived behavioral control increases variance in intentions by 5 to 12 percent (Armitage & Connor, 2001; Godin & Kok, 1996). Godin & Kok (1996) found that attitude and perceived behavioral control were the most significant variables related to the variation in intention.

Theory of Planned Behavior and Suicidal Intent

Utilizing the theory of planned behavior can help promote understanding of suicidal ideation and behavior in regard to attitudinal behavioral and outcome beliefs associated with engaging in suicidal behavior, pressure or influence of others to not engage in the behavior, and perceived control in ability to complete the behavior. Researchers have suggested that the theory of planned behavior does not focus on illness, but rather on a

general model of social behavior (O'Connor & Armitage, 2003). Integrating the theory with other research on identified biological and psychological variables would provide an overall general model of explaining suicidal intent. Identified factors, such as depression and hopelessness, may not be causes of suicide, but influence individual attitudes, social norms, and perceived control related to suicide as a coping option (Matheson, 2002).

Past Studies

In a review of the literature utilizing the theory of planned behavior to promote understanding of suicidal behavior, only two studies were identified (O'Connor & Armitage, 2003; Matheson, 2002). In the first study, O'Connor & Armitage (2003) expanded the theory of planned behavior to include measures of moral norms and anticipated affect to examine correlates related to parasuicidal behavior. In the second study, Matheson (2002) applied the theory of planned behavior to predict suicidal behavior.

Theory of Planned Behaviour and Parasuicide: An Exploratory Study

The purpose of O'Connor & Armitage's (2003) study was to apply a social cognition model to parasuicidal behavior. "Moral norms" were defined as feelings associated with personal norms rather than direct social pressure. "Anticipated affect" was conceptualized as how individuals rate they will feel after engaging in a target behavior. The study utilized Kreitman's (1977) definition of parasuicide, which is described as "any non-fatal act in which an individual deliberately causes self-injury or ingests a substance in excess of any prescribed or generally recognized dosage"(as cited in O'Connor & Armitage, 2003, p.196).

The study included eleven parasuicide patients, thirty-three hospital controls, and eleven non-hospital controls. Participants were classified into groups of individuals who had engaged in self-harm (N=21) and had never engaged in self harm (N=34). The researchers administered a series of likert-scale questionnaires exploring behavior intention, attitude, subjective norm, perceived behavioral control, moral norm, and anticipated affect. The analysis included 1) discriminating between cases of parasuicide, 2) discriminating between hospital and normal controls, and 3) examining the predictive validity to assess whether the extended theory of planned behavior would predict intention to self harm.

The results suggested that self-harmers felt more social pressure to engage in self-harmful behavior, perceived greater self-efficacy, reported that self-harming in the future would make them feel calmer, and that self-harm was less morally wrong. Moral norm was significantly negatively correlated with attitudes, subjective norm, and self-efficacy. The theory of planned behavior variables explained almost 50% of the variance, with moral norm and anticipated affect accounting for an additional 5 percent of the variance. Personal norms and anticipated affect exerted little influence on intent. Rather, attitudes and perceived behavioral control were the dominant predictors of behavioral intention.

Even though O'Connor & Armitage (2003) applied an integrated approach to suicidal research, there are some limitations to the study. The study's terminology of "parasuicide" is problematic because it does not assess intent to die and can include individuals who attempted suicide or engaged in an instrumental-related suicide. The terminology is not consistent with other research and the results cannot be generalized to studies that differentiate intent to die. The authors suggest that suicidal behaviors should be

considered along a continuum of risky behaviors to help improve understanding of suicidality. However, utilizing broad, vague definitions of suicidal behaviors does not clarify the intent of the behaviors or improve predictive power. Clear, consistent definitions are needed to clarify the intent associated with the actions and improve understanding of why individuals engage in suicidal behaviors.

Furthermore, the study did not accurately follow Ajzen's (2002) recommendations of incorporating descriptive norms with measures of subjective norms (i.e., whether important others themselves perform the behavior under investigation). Rather, O'Connor and Armitage (2003) measured subjective norm with one item stating "People who are important to me think I (should not deliberately harm myself-should deliberately harm myself)." The study's measure of subjective norms is not consistent with Ajzen's model and limits understanding of the function subjective norms play in explaining suicidal behavior and intent. Ajzen (2002) suggests that a social norms measure include an evaluative component of whether important others disagree or agree that a person should engage in a behavior and whether important others engage in the behavior under investigation. Thus, the authors should have included an item measuring whether important others to the participant engage in suicidal behaviors.

Does the Theory of Planned Behavior Predict Suicidal Intent?

Matheson (2002) hypothesized that attitude towards suicide, subjective norms associated with suicide, and a sense of perceived behavioral control would predict suicidal intent. The study provided a framework for understanding how suicide becomes an acceptable option for some and not others. The author utilized elements of Shneidman's (1985, 1996) conceptualization that general psychological features, including perturbation,

depression, and hopelessness, are necessary for a lethal suicidal event to occur in combination with Ajzen's theory of planned behavior (1991).

Participants of the study included 532 psychology students at the University of Windsor in Canada. The author developed specific measures to be used in the study that were designed to be consistent with past research on the constructs associated with the theory of planned behavior. Participants completed a series of surveys measuring various factors related to the theory of planned behavior and questionnaires assessing depression levels, degree of hopelessness, and self-reported suicidal intent. Intent was measured by asking participants how likely it is that the participant would commit suicide based on a described scenario. In addition, demographic information was collected on each participant, including questions assessing past suicidal behavior.

Of the participants, 39 percent reported that they had never considered attempting suicide, 68% reported they had never made a plan to commit suicide, and 68% stated they had never attempted suicide. Nineteen percent reported attempting suicide once, 5% reported attempting suicide twice, and 8% reported attempting suicide on three or more occasions. Of those who reported engaging in a suicide attempt, 65% endorsed an item stating that they did not intend to die.

The study found that attitudes toward suicide, subjective norm, and perceived behavioral control accounted for 72 percent of the variance related to suicidal intent. Although all three variables of the theory of planned behavior variables were statistically significant, the greatest proportion was associated with perceived behavioral control ($r^2 = .56$). Most significantly, the data suggested that the theory of planned behavior variables accounted for more of the variance than hopelessness ($r^2 = .005$) or depression ($r^2 = .005$).

This is significant since research has typically identified depression and hopelessness levels to account for the most variance in suicidal intent. Individuals with a reported history of one past suicide attempt displayed lower mean scores on a measure of attitude towards suicide than multiple attempts and multiple attempters of suicide demonstrated higher levels of perceived behavioral control. This data suggests that having a history of a suicide attempt is a risk factor for further suicide.

Similar to O'Connor and Armitage's (2003) research, there are several limitations of Matheson's (2002) study. Matheson (2002) discussed the importance of consistently defining suicide-related behaviors in research. However, the study did not identify a clear definition of suicide that was utilized to conceptualize the study or provide to participants when measuring and assessing variables related to suicide. The author asked participants about intent to die associated with past suicidal behaviors, but did not differentiate between suicidal acts and instrumental suicide-related behaviors within the findings of the study.

In addition, Matheson (2002) utilized a vignette to evoke beliefs, attitudes, and feelings towards suicide. Only a minority of the study's participants endorsed items reporting a history of suicidal behavior. It is difficult to generalize results based on a vignette to actual thoughts, feelings, and behaviors related to suicide. To have real world relevance, research should focus on utilizing a clinical population of individuals who report a history of suicidal behaviors or endorse current ideation and intent. Utilizing a clinical sample would also improve understanding of the link psychological constructs contribute to engaging in suicidal behaviors, such as depression and hopelessness levels. The results of hopelessness and depression levels evoked from a vignette cannot be generalized to actual clinical participants and clients. Research suggests that hypothetical vignettes do not

represent actual situations closely enough for a true assessment of cognitions and behaviors under investigation (Vellinga, Smit, Van Leeuwen, Van Tilburg, & Jonker, 2005). In addition, research suggests that what people believe they would do or feel in a hypothetical situation is not necessarily how they would behave or feel in actuality (Barter & Renold, 2000).

There are additional methodological concerns related to Matheson's (2002) study are also present. In particular, the reliability score for the attitude measure was poor (Cronbach's $\alpha = .56$). To remedy this problem, the author utilized the personal subscale of the Suicide Attitude Questionnaire (SUAITT: Diekstra & Kerkhof, 1989) to obtain a measure of attitude towards suicide. However, this questionnaire does not include an overall evaluation of the person actually engaging in suicide as suggested by Azjen's (2002) guidelines for measuring attitude toward identified behaviors. Furthermore, the reliability for the subjective norms was also low (Cronbach's $\alpha = .65$). Future research should focus on improving the reliability of these measures.

Results of Matheson's (2002) study suggest that one's attitude towards suicide, subjective norm, and perceived behavioral control may help promote understanding of suicidal intent. This study successfully proposed an integrated approach to understanding suicidal behaviors. However, because of its limitations, future studies need to employ consistent terminology of suicide-related behaviors, utilize a clinical sample, and improve reliability measures related to the theory of planned behavior.

Chapter 3: Present Study

The purpose of the present study was to examine if the theory of planned behavior variables predicted suicidal ideation (see Figure 2), to assess if suicidal ideation significantly predicted suicidal intent (see Figure 3), and evaluate if depression and hopelessness explained any additional variance in suicidal ideation than the theory of planned behavior variables (see Figure 4). Since suicidal behaviors have been documented to exist along a continuum (suicidal ideations, intent, plan, and attempt), the present study examined if the theory of planned behavior variables predicted suicidal ideation and is therefore related to suicidal intent. Research has shown that suicidal ideation is a risk factor for suicidal intent and suicidal acts. Suicidal acts were not measured in the current investigation, but future researchers could examine these behaviors by conducting a longitudinal study.

Research needs to examine the theory of planned behavior variables in relation to variables already evaluated in the existing literature, such as depression and hopelessness. Given that consistent research has shown that depression and hopelessness predict suicidality, these variables may more strongly predict suicidal ideation than the theory of planned behavior variables. This is particularly important since such little research on the topic has been conducted. Research suggests that all of these measures are individual correlates of suicidal behavior and the present study examined the interaction of these factors to help improve understanding of the suicidal process.

Hypotheses

1. Attitude towards suicide, subjective norms related to suicide, and perceived behavioral control of suicide will predict higher levels of suicidal ideation. Perceived

behavioral control will account for the greatest proportion of the variability in current suicidal ideation.

2. Higher levels of suicidal ideation will predict intent to engage in suicidal behaviors.

3. Based on the wealth of data that depression and hopelessness is correlated that suicidal behaviors, it is predicted that depression and hopelessness will account for a greater proportion of the variance in current suicidal ideation than the interaction of attitude towards suicide, subjective norms related to suicide, and perceived behavioral control of suicide.

Chapter 4: Method

Sample

Participants were recruited at a local community mental health center. To qualify for the study, participants were required to be age 18 or older and a client assigned to the adult outpatient program, intensive outpatient program, or crisis residential unit at a local community mental health center. Individuals who were actively psychotic, could not understand the consent form, or appeared to be under the influence of alcohol or drugs were dropped from the study. Participation was voluntary and those who participated received \$5 compensation for their time.

Procedures

Participants were recruited at a community mental health agency with outpatient, residential, and intensive outpatient centers located throughout the state of West Virginia. The participants learned of the opportunity to participate in the study up to two weeks before the research was scheduled to begin. Flyers were posted about the research in the community mental health center's lobby and in mental health workers' offices. The flyers included information on the subject of the study, how long the research would last, and where to sign up (the check-in desk located in the front lobby of the community mental health center). When potential participants queried about the study, staff members gave them a binder that included available time slots, reminder sheets to write down the date and time of the research, and a copy of the informed consent (see Appendix C) so that participants could learn more about the study.

Informed consent was obtained the day of the research by the researcher, and each participant signed an informed consent form. To obtain consent, participants were informed

about the purpose of the study, that their answers would be reviewed by the researcher to assess for suicidality, and that those individuals found to be at-risk for suicide would be required to meet with a member of the agency's crisis residential unit for evaluation immediately after completion of the study. Completion of the protocol took approximately 30-45 minutes. Questionnaires were numbered 1-100. The researcher assigned each participant a specific number when they completed their informed consent form (based on chronological order that the forms were given to the researcher). The researcher wrote each participant's name on a sheet of paper that coincided with their assigned battery number. No identifying information was included on the completed forms, only the assigned number. The researcher administered a series of self-report questionnaires (described below) to each participant.

After each participant completed the questionnaires, the researcher reviewed his/her responses to assess for suicidal risk. Any participant who endorsed the statement "I would kill myself if I had the chance" (BDI-II; number 9) or endorsed any two-point statements on the BSS (e.g., "My reasons for dying outweigh my reasons for living," "I have a moderate to strong wish to die," "I accept the idea of killing myself," etc.) was immediately referred to the crisis residential unit for evaluation. The researcher utilized the code sheet to identify participants' names and to inform the crisis residential unit of the individual's potential suicidal risk. Staff members were notified of suicidal risk for participants who are already admitted to the crisis residential unit.

The researcher made copies of completed questionnaires at the end of each data collection day. Copies of the original questionnaires and code sheets with the lists of participants' names and corresponding numbers were given to the outpatient clinical

coordinator at the community mental health center. The clinical coordinator securely stored the copies of questionnaires and code sheets for insurance and liability purposes. After the code form was filed, there was no way for the researcher to connect questionnaires with specific participants, since the questionnaires did not ask for names or any other identifying information. Original records were locked in a filing cabinet located at Marshall University's Psychology Department.

Measures

Demographics. Participants were asked to complete a brief demographic questionnaire that indicated their sex, age, ethnic background, and marital status (see Appendix B).

Theory of Planned behavior. Measures of attitude towards suicide, subjective norms regarding suicide, perceived behavioral control of suicide, and suicidal intent were obtained. These measures were created for the purpose of this study, and participants were asked to respond to various statements on a 7-point likert scale. The measures are modeled after O'Connor & Armitage's (2003) study and follow Azjen's (2002) recommendations for constructing a theory of planned behavior questionnaire.

Attitude. A measure of attitude towards suicide was obtained by participants responding to the statement, "I believe that suicidal behavior is..." on 7-point likert scales with the endpoints: bad-good, unnecessary-necessary, harmful-beneficial, unacceptable-acceptable, negative-positive, and useless-useful (see Appendix D-I). The present study's measure of attitudes towards suicide yielded a Cronbach's alpha of 0.86.

Subjective Norm. A measure of subjective norms related to suicide was obtained by participants responding to five statements, “People who are important to me think that suicide is (unacceptable-acceptable),” “My peers think that suicide is (unacceptable-acceptable),” “Members of my family think that suicide is (unacceptable-acceptable),” “At least one of my friends has engaged in suicidal behavior (completely false-completely true),” and “Members of my family have engaged in suicidal behavior (completely false-completely true)” on 7-point likert scales (see Appendix D-II). The present study’s measure of subjective norm yielded a Cronbach’s alpha of 0.56.

Perceived Behavioral Control. A measure of perceived behavioral control was obtained by participants completing the three statements “I believe I have the ability to kill myself in the future (disagree-agree),” “To what extent do you see yourself as being capable of killing yourself in the future? (not capable of killing myself-very capable of killing myself),” and “How confident are you that you will be able to deliberately harm yourself in the future? (not very confident-very confident)” on 7-point likert scales (see Appendix D-III). The present study’s measure of perceived behavioral control yielded a Cronbach’s alpha of 0.96.

Intent. Behavioral intention was measured by participants answering three items on 7-point likert scales: “I intend to engage in suicidal behavior in the future (disagree strongly – agree strongly),” “I expect I will engage in suicidal behavior in the future (disagree strongly – agree strongly),” and “I want to deliberately engage in suicidal behavior in the future (disagree strongly – agree strongly)” (see Appendix D-IV). The present study’s measure of suicidal intent yielded a Cronbach’s alpha of 0.91.

Depression. The *Beck Depression Inventory-II* (BDI-II; Beck, Steer, & Brown, 1996) is a 21-item self-report inventory which evaluates a range of depressive symptoms. Items are answered on a 0 to 3 response scale, with higher scores indicating increased severity of the symptom. The BDI-II is widely used and been shown to possess satisfactory psychometric properties (Brown, 1999). The scale contains a suicide item that has been found to be moderately correlated (r 's = .56 to .58) with the BSI for both inpatient and outpatient psychiatric samples (Beck & Steer, 1991). The item measures suicide ideation that is consistent with O'Carroll et al's (1996) definition. A Cronbach's alpha of 0.93 was yielded in the current study.

Suicidal Ideation. The *Beck Scale for Suicide Ideation* (BSI; Beck & Steer, 1991) is a 21-item self-report instrument for detecting and measuring the current intensity of patients' specific attitudes, behaviors, and plan to commit suicide during the past week. The BSI was developed as a self-report version of the interviewer-administered Scale for Suicide Ideation. The first 19 items consist of three options graded according to the intensity of the suicidality and rated on a 3-point scale ranging from 0 to 2. These ratings are then summed to yield a total score, which ranges from 0 to 38. The last two items assess the number of previous suicide attempts and the seriousness of the intent to die associated with the past attempts. The BSI consists of five screening items and if a respondent reports any active or passive desire to commit suicide, then an additional 14 items are administered. The BSI has high internal reliability with Cronbach alpha coefficients ranging from .87 to .97 (Beck, Steer, & Ranieri, 1988; Beck & Steer, 1991; Steer, Kumar, & Beck, 1993), moderate test-retest reliability ($r = .54$) over one week with psychiatric inpatients (Beck & Steer, 1988), and concurrent validity with correlation

coefficients ranging from .90 for psychiatric inpatients to .94 for outpatients (Beck et al., 1988). The BSI has also been found to be moderately correlated with the Beck Depression Inventory (.64 to .75) and the Beck Hopelessness Scale (.53 to .62; Beck et al., 1988). Brown (1999) concludes that the BSI conforms to the definition of suicidal ideation established by O'Carroll et al. (1996). A Cronbach's alpha of 0.96 was yielded in the current study.

Hopelessness. The Beck Hopelessness Scale (BHS; Beck & Steer, 1988) is a self-report instrument that consists of 20 true-false statements designed to assess the extent of positive and negative beliefs about the future experienced during the past week. Each of the 20 statements is scored 0 to 1. A total score is calculated by summing the pessimistic responses for each of the 20 items. The total BHS score ranges from 0 to 20. The BHS has been found to have high internal reliability across diverse clinical and nonclinical populations with Kuder-Richardson reliabilities ranging from .87 to .93 (Beck & Steer, 1988). It has adequate one week test-retest reliability in a psychiatric outpatient sample ($r = .69$; Beck & Steer, 1988), and moderate to high correlations (r 's = .62 to .74) with clinical ratings of hopelessness for patients in primary care practices and for patients who attempted suicide in hospital settings (Beck, Weissman, & Lester, 1974). The BHS is one of the most widely used instruments to measure hopelessness and has excellent internal consistency, test-retest reliability, concurrent validity, and research supports the predictive validity for suicide attempts and completed suicide (Brown, 1999). A Cronbach's alpha of 0.85 was yielded in the current study.

Data Analysis

Multiple regression analysis was used to determine the extent to which the predictor variables were associated and to test the predictive power of the theory of planned behavior. In particular, linear regressions were performed between 1) current suicidal ideation and attitudes towards suicide, subjective norm beliefs, and level of perceived behavioral control and 2) current levels of suicidal ideation and intent to engage in a suicidal act. Hierarchical multiple regression analysis was used to examine levels of suicidal ideation with attitudes towards suicide, subjective norm beliefs, perceived behavioral control, depression, and hopelessness.

Chapter 5: Results

Characteristics of the Sample

Eighty-eight participants completed the study. Of these participants, 60 were female (68.2%) and 28 were male (31.8%). Ages of participants ranged from 18 to 60, with a median age of 34 years ($SD = 9.94$). The majority of the participants were Caucasian (94.3%), with 2.3% African-American, 1.1 % Hispanic, and 2.3% identifying as other. The sample was well-distributed in terms of marital status between categories, with 39.7% of the participants identifying as single, 23.9% as divorced or separated, 20.5% as married, and 15.9% as in a current relationship.

Based on BDI-II scores, the participants endorsed a moderate amount of depressive symptoms ($M = 22.75$, $SD = 12.00$), with a possible score range from 0 to 63. The participants endorsed a mild-to-moderate amount of hopelessness ($M = 8.32$, $SD = 4.83$), with a possible score range from 0 to 20. Participants' BSI scores suggest that participants endorsed low levels of current suicidal ideation ($M = 4.88$, $SD = 7.81$), with a possible score range from 0 to 38 (please see Table 1 for descriptive statistics for all of the variables). Almost half of the participants reported that they had previously attempted suicide (54.5%), with 29.5% reporting one previous attempt and 15.9% indicating two or more past attempts to end their lives.

Analyses

An analysis was performed between current suicidal ideation and the interaction of attitudes toward suicide, social norms related to pressure to engage or not engage in suicidal behaviors, and perceived behavioral control of suicide. Another analysis was conducted to determine if suicidal ideation significantly predicted suicidal ideation, thereby

testing Azjen's model that the theory of planned behavior variables predict behavioral intention and the actual behavior itself. In addition, an analysis was performed between current suicidal ideation and the interaction of attitudes toward suicide, social norms related to pressure to engage or not engage in suicidal behaviors, perceived behavioral control of suicide, depression, and hopelessness.

Hypothesis One

It was hypothesized that attitude towards suicide, subjective norm related to suicide, and perceived behavioral control of suicide would significantly predict suicidal ideation. A standard regression was performed with suicidal ideation as the dependent variable and the attitudes towards suicide, subjective norm, and perceived behavioral control as the independent variables. Attitudes towards suicide, subjective norms, and perceived behavioral control accounted for 49% of the variance in current suicidal ideation [$R^2 = .491$, $F(3, 84) = 26.978$, $p = .000$]. It was also predicted that perceived behavioral control beliefs would account for the greatest proportion of the variability of individuals' current suicidal ideation when compared to attitude towards suicide and subjective norms. The hypothesis was supported since perceived behavioral control accounted for 43% of the variance [$R^2 = .430$, $F(1, 86) = 64.885$, $p = .000$]. Attitude towards suicide explained an additional 6% of the variance [$R^2 = .055$, $F(2, 85) = 40.033$, $p = .000$] and social norm regarding suicide accounted for less than 1% of the variance of an individual's current suicidal ideation ($R^2 = .006$, $F(3, 84) = 26.978$, $p = .000$).

Hypothesis Two

It was hypothesized that higher levels of suicidal ideation would predict intent to engage in suicidal behaviors. There was a significant correlation between suicidal ideation

and intent ($R = .745, p = .000$). A regression was performed between suicidal intent as the dependent variable and suicidal ideation as the independent variable. Current suicidal ideation accounted for 56% of the variance in current suicidal intent [$R^2 = .555, F(1, 86) = 107.158, p = .000$].

Hypothesis Three

It was predicted that depression and hopelessness would account for a greater proportion of the variance in current suicidal ideation than the theory of planned behavior variables of attitude towards suicide, subjective norms related to suicide, and perceived behavioral control of suicide. A hierarchical regression was performed with suicidal ideation as the criterion variable. Depression and hopelessness were entered as the initial predictor variables. These variables accounted for 33% of the variance of suicidal ideation [$R^2 = .333, F(2, 85) = 21.184, p = .000$]. Attitudes toward suicide, subjective norm, and perceived behavioral control levels were then added to the regression, accounting for an additional 24% of the variance in current suicidal ideation, [$R^2 = .575, F(5, 82) = 22.152, p = .000$] (see Table 2). Another multiple hierarchical regression was conducted with the theory of planned behavior variables entered as the initial predictor variables. Variables of attitudes toward suicide, subjective norm, and perceived behavioral control accounted for 49% of the variance of suicidal ideation [$R^2 = .491, F(3, 84) = 26.978, p = .000$].

Depression and hopelessness were then added to the regression and accounted for an additional 8% of variance in suicidal ideation [$R^2 = .575, F(5, 82) = 22.152, p = .000$] (see Table 3). An assessment of relationships between suicidal ideation, attitudes, social norms, perceived behavioral control, depression, and hopelessness revealed all significant correlations ($p < .01$), with the exception of hopelessness and social norms ($p = .163$) (see

Table 4). A review of the correlation matrix shows that perceived behavioral control exerted the largest influence on suicidal ideation, followed by depression, attitudes towards suicide, hopelessness, and then social norms regarding suicide.

Chapter 6: Discussion

The purpose of this study was to explore an alternative framework to studying suicide by integrating behavioral, social, and cognitive perspectives. This study utilized variables of the theory of planned behavior, including attitudes towards suicide, subjective norms regarding suicide, and perceived behavioral control related to suicidal behavior, to help promote understanding of the correlates of suicidal ideation and intent. The focus of the current study was modeled from both Matheson's (2001) and O'Connor & Armitage (2003) investigations, and utilized a clinical sample from a community mental health agency to help explain variables related to current suicidal ideation and intent. The study also incorporated measures of depression and hopelessness to help understand correlates of suicidality.

Overall, the results suggest that the variables of the theory of planned behavior were significant determinants of suicidal ideation. More specifically, measures of attitudes towards suicide, social norms regarding suicide, and perceived behavioral control of suicide explained almost half of the variance in current suicidal ideation in a clinical sample of individuals from a community mental health agency. In addition, suicidal ideation was significantly predictive of suicidal intent. This model suggest that individuals with current suicidal ideation and intent may have more accepting views of suicide, higher levels of perceived control, and are more likely to reject social influences against suicide. The finding is consistent with both Matheson's (2001) and O'Connor & Armitage's (2003) results.

In an analysis performed between current suicidal ideation and attitudes towards suicide, subjective norms, and perceived behavioral control, the greatest proportion of the

variability of suicidal ideation was perceived behavioral control. Attitudes toward suicide accounted for the next highest level of variation and social norms regarding suicide contributed a small amount of variance associated to current suicidal ideation. These findings are consistent with both Matheson's (2001) and O'Connor & Armitage's (2003) results and with the theory of planned behavior literature. Past research suggests that measures of perceived behavioral control have stronger relationships to intention of a specific behavior than attitudes or subjective norms (Armitage & Conner, 2001). Therefore, it is implied that a person who possess higher levels of confidence in ability to complete suicide may be more likely to experience suicidal ideation and intent.

The present study also examined the relationship between depression, hopelessness, the theory of planned behavior variables, and suicidal ideation. Even though Matheson (2001) found that the variables of the theory of planned behavior accounted for more of the variance related to suicidal ideation than hopelessness and depression, it was hypothesized that depression and hopelessness could account for a higher proportion of variance related to intent in a clinical sample. A review of the literature found that levels of depression and hopelessness are significant predictors of suicide and that a significant relationship exists between depression, hopelessness, and suicidal behaviors (Connor, 2004). Therefore, it was hypothesized that hopelessness and depression would more strongly predict suicidal ideation. The results of the present study found that attitudes toward suicide, social norms regarding suicide, and perceived behavioral control of suicide exerted more influence on suicidal ideation than depression and hopelessness. This finding suggests that the theory of planned behavior variables can better predict levels of suicidal ideation and intent than depression and hopelessness.

The finding that perceived behavioral control was the strongest factor related to suicidal intent was not surprising since perceived behavioral control is related to lethality. Past research suggests that higher levels of suicidal intent are associated with more lethal attempts in individuals who possess more accurate expectations about the likelihood of dying from an attempt (Brown et al., 2004). It may be that individuals who have more confidence in ability to complete suicide (perceived behavioral control) may choose more lethal means for completing their attempt (lethality). The finding that depression exerted more influence on suicidal ideation than hopelessness was unanticipated, given that higher levels of hopelessness are documented to correlate with completed suicides and have been identified as a mediating factor between depression and suicidality (Beck, Brown, & Steer, 1989). However, this could be related to the low levels of suicidal ideation and intent reported from participants. A sample with higher levels of suicidal ideation and intent may yield differing results.

Limitations and Implications for Future Research

Although the results of the present study suggest that the theory of planned behavior variables predict suicidal ideation, consequently predicted suicidal intent, and are a more powerful predictor than depression and hopelessness, several limitations are to be noted. The sample consisted of predominately adult Caucasian females that were engaged in treatment at a mental health agency (including outpatient, intensive outpatient, and crisis residential unit treatment). Replicating the study with more diverse participants and larger sample sizes is needed to help generalize the results.

The overall sample endorsed relatively low levels of suicidal ideation and intent. By screening for individuals reporting higher levels of suicidal ideation and intent and

including a larger sample size, the results may have explained additional proportions of variance and relationships between the variables. The results suggest that there was a significant correlation between suicidal ideation and intent, with current suicidal ideation accounting for 56% of the variance in current suicidal intent. While these results are noteworthy, other factors clearly influence the development of suicidal intent and then the behavior. Previous studies have increased understanding of at-risk populations, but this research has low predictive value and has not been successful at identifying specific at-risk individuals. The same is true for the present investigation and researchers and clinicians should not assume any relationships between the variables, particularly since suicidal acts were not examined in the study. However, the results yield important clinical findings and future research needs to examine the continuum of suicidal ideation, intent, and attempted and completed suicides.

In addition, the variable of subjective norm explained a relatively small amount of variance in the model examining suicidal ideation and intent. The results revealed that the measure of social norms related to suicide was found to have low internal consistency (Cronbach's alpha = .56). A pilot study was not conducted to examine the reliability of the measures prior to the actual investigation and therefore improve internal consistency. Thus, it is difficult to reach conclusions regarding the role of social norms in the theory of planned behavior as applied to suicidal ideation and intent. Future research needs to improve the reliability of the social norms measure and then replicate the study to examine correlates of suicidal ideation and intent. Ajzen (1988) stated that attitude regarding a behavior may be more related to behavioral intent than social norms in some cases, but not in others. Future research needs to examine the interaction of these variables and other

psychosocial factors, such as burdensomeness and belongingness as suggested by Joiner (2005), to better understand correlates of suicidal ideation and intent. In addition, longitudinal studies would provide valuable information on the continuum of suicidal behaviors and determine if the theory of planned behavior variables predict not only suicidal ideation and intent, but actual suicidal attempts and completed suicides over time.

With these limitations noted, it is important to discuss other implications for future research. The results of the present study provide significant clinical utility. With the theory of planned behavior variable successfully predicting suicidal ideation and suicidal ideation consequently predicting suicidal intent, it appears that these variables may be used for risk assessment purposes, particularly when combined with other validated factors in the literature. The finding that the theory of planned behaviors better predicting suicidal ideation than depression and hopelessness is very important. These factors are consistently documented throughout the literature and the results of the current study provides optimism that continued research with alternative models to examine suicide may improve low predictive rates of those who attempt and actually die by suicide.

In addition, the theory of planned behavior proposes that in order to change a behavior, changes must be made to behavioral, normative, and control beliefs to increase control over the behavior. Continued research and validation of the theory of planned behavior variables to suicidal behaviors could be utilized to further understand correlates that lead to suicidal behaviors. Similar studies could help influence the development of prevention programs, therapeutic guidelines, and treatment interventions to decrease suicide rates.

Conclusions

Suicide has become a national and global public health concern with rates increasing in the last few years. The purpose of the present study was to integrate psychological, social, and behavioral perspectives to examine correlates of suicidal ideation and intent by utilizing the theory of planned behavior. Measures of attitudes towards suicide, social norms regarding suicide, and perceived behavioral control of suicide explained almost half of the variance in current suicidal ideation in a clinical sample of individuals from a community mental health agency. The model proposed in this study suggests that individuals with current suicidal ideation and intent may have more accepting views of suicide, higher levels of perceived control, and are more likely to reject social influences to not commit suicide.

The results revealed that the theory of planned behavior was a more powerful predictor of suicidal ideation than measures of hopelessness and depression. With hopelessness and depression consistently shown to relate to increased risk for suicidal ideation, intent, and suicidal acts, further research and validation of the theory of planned behavior variables may improve low predictive rates of those who attempt and actually die by suicide. In addition, the model provides great clinical utility and further validation of the theory of planned behavior related to suicidal behaviors is needed to help develop prevention programs, therapeutic guidelines, and treatment interventions to decrease suicide rates.

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Appendix A

Figure Caption

Figure 3:1. The theory of planned behavior

Figure 3:2. Model of the theory of planned behavior and suicidal ideation

Figure 3:3. Model of the theory of planned behavior, suicidal ideation, and suicidal intent

Figure 3:4. Model of the theory of planned behavior, depression, hopelessness, suicidal ideation, and suicidal intent

Figure 3:1

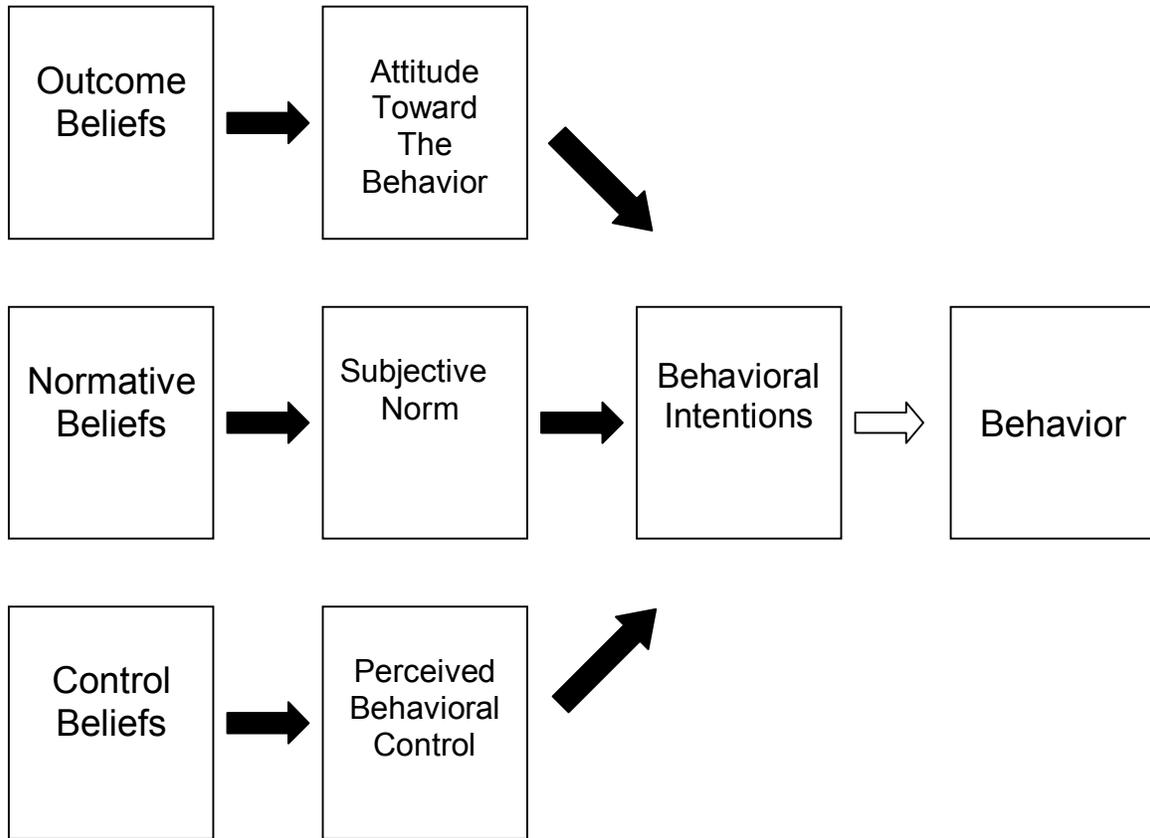


Figure 3:2

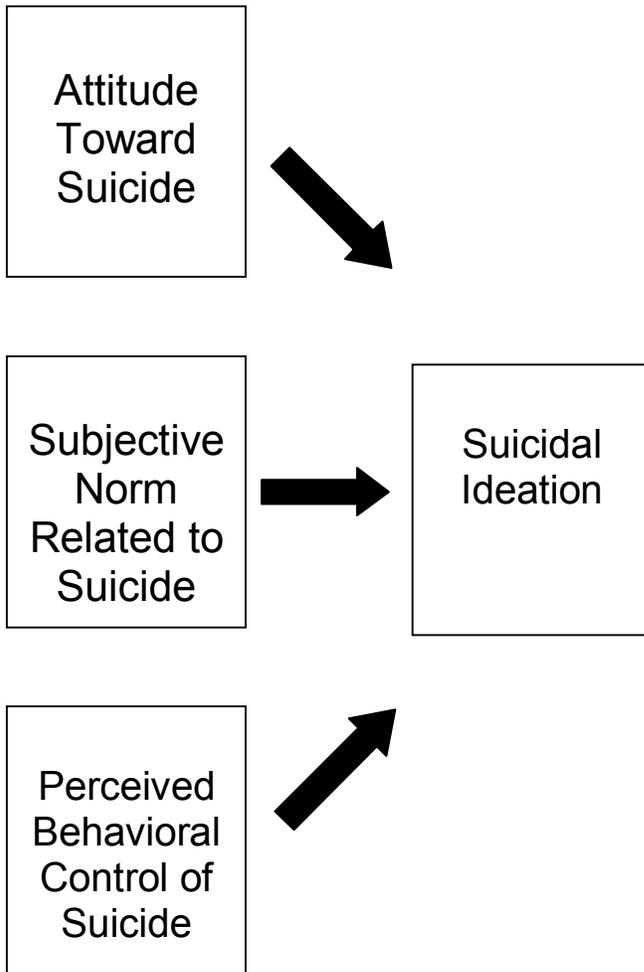


Figure 3:3

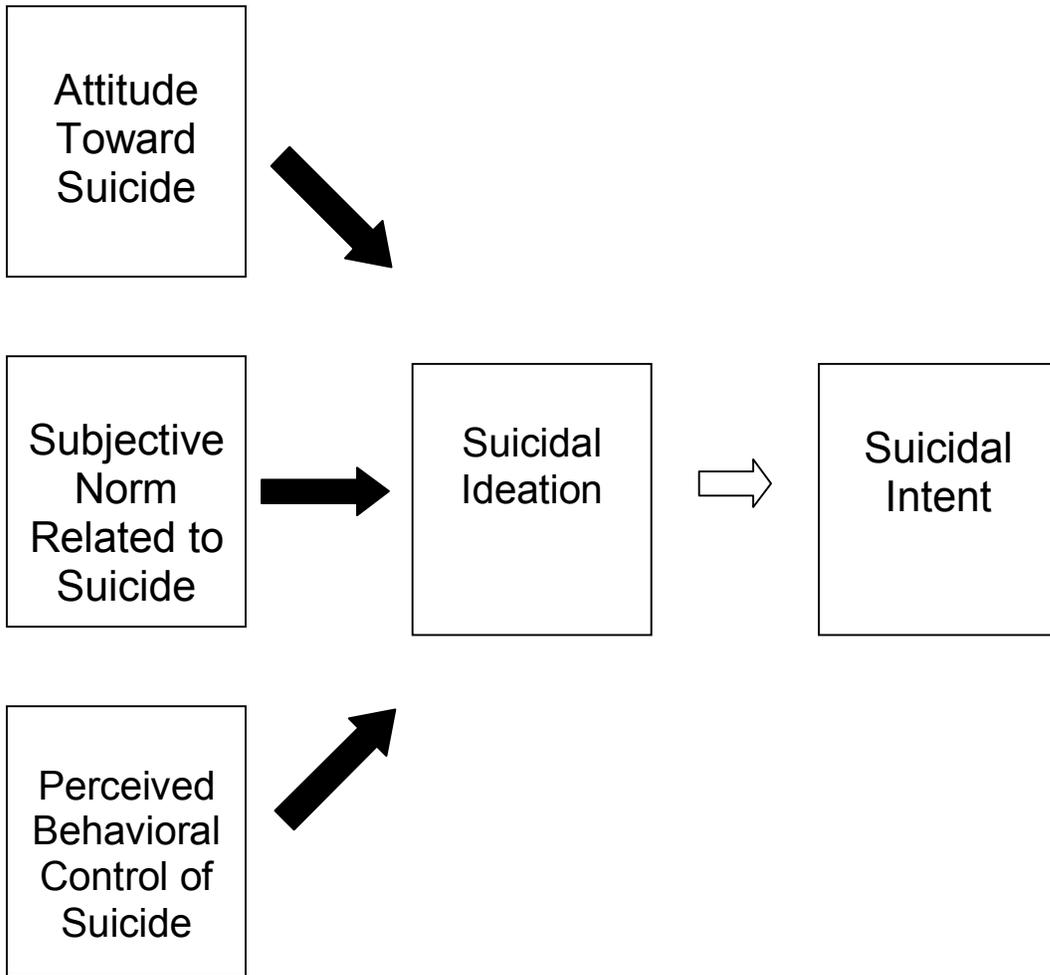
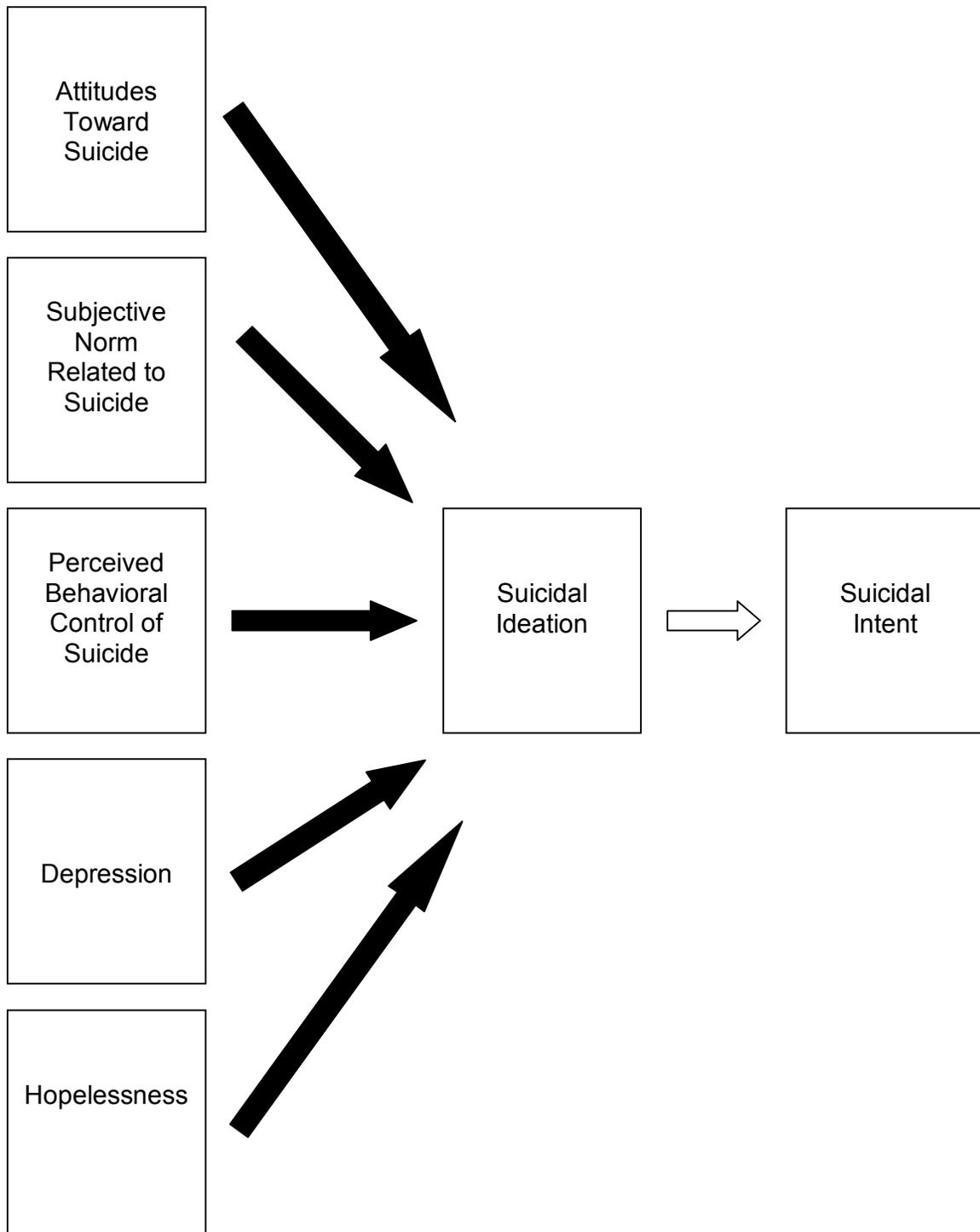


Figure 3:4



Appendix B

Table Caption

Table 5:1. Descriptive Statistics of Variables

Table 5:2. Model of Depression, Hopelessness, and TRB Variables

Table 5:3. Model of TRB Variables, Depression, and Hopelessness

Table 5:4. Correlations of Variables

Table 5:1

Variable	Mean	Std. Deviation	N
ideation	4.88	7.81	88
intent	4.08	3.05	88
attitudes	9.18	5.17	88
social norms	10.08	4.76	88
Perceived behavioral control	5.98	5.40	88
depression	22.75	12.01	88
hopelessness	8.32	4.83	88

Table 5:2

Correlations

	ideation	att	sn	pbcc	dep	hope	
Pearson Correlation	ideation	1.000	.558	.247	.656	.561	.452
	att	.558	1.000	.472	.553	.459	.515
	sn	.247	.472	1.000	.359	.333	.106
	pbcc	.656	.553	.359	1.000	.384	.263
	dep	.561	.459	.333	.384	1.000	.620
	hope	.452	.515	.106	.263	.620	1.000
Sig. (1-tailed)	ideation	.	.000	.010	.000	.000	.000
	att	.000	.	.000	.000	.000	.000
	sn	.010	.000	.	.000	.001	.163
	pbcc	.000	.000	.000	.	.000	.007
	dep	.000	.000	.001	.000	.	.000
	hope	.000	.000	.163	.007	.000	.
N	ideation	88	88	88	88	88	88
	att	88	88	88	88	88	88
	sn	88	88	88	88	88	88
	pbcc	88	88	88	88	88	88
	dep	88	88	88	88	88	88
	hope	88	88	88	88	88	88

Table 5:3

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.577 ^a	.333	.317	6.45534	.333	21.184	2	85	.000
2	.758 ^b	.575	.549	5.24735	.242	15.547	3	82	.000

a. Predictors: (Constant), hope, dep

b. Predictors: (Constant), hope, dep, sn, pbc, att

ANOVA^c

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1765.554	2	882.777	21.184	.000 ^a
	Residual	3542.071	85	41.671		
	Total	5307.625	87			
2	Regression	3049.782	5	609.956	22.152	.000 ^b
	Residual	2257.843	82	27.535		
	Total	5307.625	87			

a. Predictors: (Constant), hope, dep

b. Predictors: (Constant), hope, dep, sn, pbc, att

c. Dependent Variable: ideation

Table 5:4

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.701 ^a	.491	.473	5.67276	.491	26.978	3	84	.000
2	.758 ^b	.575	.549	5.24735	.084	8.086	2	82	.001

a. Predictors: (Constant), pbc, sn, att

b. Predictors: (Constant), pbc, sn, att, dep, hope

ANOVA^c

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2604.484	3	868.161	26.978	.000 ^a
	Residual	2703.141	84	32.180		
	Total	5307.625	87			
2	Regression	3049.782	5	609.956	22.152	.000 ^b
	Residual	2257.843	82	27.535		
	Total	5307.625	87			

a. Predictors: (Constant), pbc, sn, att

b. Predictors: (Constant), pbc, sn, att, dep, hope

c. Dependent Variable: ideation

Marshall University

Informed Consent to Participate in a Research Study

Utilizing the Theory of Planned Behavior to Explain Suicidal Intent

Thomas E. Ellis, Psy.D., ABPP, Principal Investigator

Pamela R. Tenney, M.A., Co-Investigator

Introduction

You are invited to be in a research study. Research studies are designed to gain scientific knowledge that may help other people in the future. You may or may not receive any benefit from being part of the study. Participation in research studies sometimes involve risk, although the risk in this particular study is minimal, as it involves only filling out questionnaires. Your participation is voluntary. Please take your time to make your decision, and ask your research investigator to explain any words or information that you do not understand.

Why Is This Study Being Done?

The purpose of this study is to gain knowledge that can be used in future treatment planning for individuals receiving mental health services, especially for those who may be at risk for ending their own lives. We are interested in obtaining information from both people who have had suicidal thoughts and those who have not.

How Many People Will Take Part In The Study?

About 100 people will take part in this study.

What Is Involved In This Research Study?

If you decide to participate in this study, you can expect to be in a room with up to four other participants. Ms. Tenney or a Presteria staff clinician will be in the room to give you instructions. You will be asked to answer several questions about your mood, beliefs, and behaviors. You will be given a pencil and directions on how to answer the questions. Ms. Tenney or a staff clinician will explain why the study is being done and answer any questions that you or any others may have. They will also discuss the privacy issues of your participation. Ms. Tenney or a staff clinician will then read the questions to you and you will decide which is the best answer in your opinion. After you finish answering all the

questions, Ms. Tenney or the staff clinician will review every person's questionnaires. Because some of the items ask about emotional distress, each participant's responses will be reviewed for indications of risk. If risk is apparent, Ms. Tenney or the staff clinician will contact a mental health worker to talk to the person about his/her answers and to get them help.

How Long Will I Be In The Study?

You can expect this testing situation to last around thirty minutes to an hour. You can decide to stop participating at any time. If you decide to stop participating in the study we encourage you to talk to Ms. Tenney or the staff clinician as soon as possible.

What Are The Risks Of The Study?

Risks from participating in this study are minimal. You may experience discomfort when answering personal questions about your beliefs, mood, and behaviors. Some of these questions bring up issues that are usually discussed with a counselor or therapist. There may also be other risks that we cannot predict. You should tell the researcher if you have questions about possible risks in this study.

Are There Benefits To Taking Part In The Study?

If you agree to take part in this study, there may or may not be direct benefit to you. We hope the information learned from this study will benefit other people in the future. The benefits of participating in this study may help you by letting you think more about the important questions being asked and to talk about them with your counselor or therapist after the study is over.

Will anyone find out the answers that I gave on the questionnaire?

We will take every possible precaution to make sure that your personal information is kept private. However, there are some limitations that you should know about.

Your name will not be on the answer sheet you are filling out. However, the researcher will write your name on a piece of paper along with your questionnaire number. This will allow the researcher to identify individuals who appear to be at-risk for harming themselves. The researcher will refer you to a mental health worker if you seem to be in severe distress and need assistance. The researcher will not tell anyone else your answers.

Federal law says we must keep your study records private. Nevertheless, under rare circumstances, we may be required by law to allow certain agencies to view your records. Those agencies would include the Marshall University IRB, Office of Research Integrity (ORI) and the federal Office of Human Research Protection (OHRP). This is to make sure that we are protecting your rights and your safety. If we publish the information we learn from this study, you will not be identified by name or in any other way.

What Are The Costs Of Taking Part In This Study?

There are no costs to you for taking part in this study. All the study costs, including any study tests, supplies and procedures related directly to the study, will be paid for by the study.

Will You Be Paid For Participating?

You will be paid \$5.00 if you complete the study.

Do I Have To Be In This Study?

Taking part in this study is voluntary. You may choose not to take part or you may leave the study at any time. If you do not want to be in this study or you want to leave the study early, there will not be any penalty or loss of benefits to you. If you decide to stop participating in the study we encourage you to talk to Ms. Tenney or the staff clinician first.

What If I Have Questions Or Problems?

If you do not understand something that you read on this form or while the study is going on, please ask Ms. Tenney or the clinician to explain it to you immediately. If you have questions or concerns after the research is done, you can ask your mental health worker or a staff member at Pretera. If necessary, they will get in touch with Dr. Ellis and Ms. Tenney.

If you have any questions concerning your rights, you can contact Marshall University. You can call Dr. Steven Cooper at (304) 696-7320. You may also call this number if:

- You have concerns or complaints about the research.
- The research staff cannot be reached.
- You want to talk to someone other than the research staff.

You will be given a signed and dated copy of this consent form.

SIGNATURES

You agree to take part in this study and confirm that you are 18 years of age or older. You have had a chance to ask questions about being in this study and have had those questions answered. By signing this consent form you are not giving up any legal rights to which you are entitled.

Subject Name (Printed)

Subject Signature

Date

Person Obtaining Consent (Printed)

Person Obtaining Consent Signature

Date

Appendix D

Demographics

Please indicate your gender by placing a checkmark next to the appropriate category:

Male Female

Please list your age: _____

Please identify your ethnicity by placing checkmark(s) next to the appropriate group(s):

African American/Black Asian/Pacific Islander
 Caucasian/White Hispanic/Latino
 Middle Eastern Native American
 Other

Please indicate your marital status by placing a checkmark by the appropriate category:

Single Married Separated/ Divorced

Appendix E

Please complete the following statements by circling the number that best represents your views. Please note that the use of **suicidal behavior** is defined as a potentially self-injurious behavior with the **intention to end one's own life**.

Attitudes

I. I believe that suicidal behavior is:

- | | | | | | | | |
|----|--------------|---|---|------------|---|---|---|
| a. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | Bad | | | Good | | | |
| b. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | Unnecessary | | | Necessary | | | |
| c. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | Harmful | | | Beneficial | | | |
| d. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | Unacceptable | | | Acceptable | | | |
| e. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | Negative | | | Positive | | | |
| f. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | Useless | | | Useful | | | |

Social Norms

II. People who are important to me think that suicide is:

1	2	3	4	5	6	7
Unacceptable						Acceptable

My peers think that suicide is:

1	2	3	4	5	6	7
Unacceptable						Acceptable

Members of my family think that suicide is:

1	2	3	4	5	6	7
Unacceptable						Acceptable

At least one close friend of mine has engaged in suicidal behavior:

1	2	3	4	5	6	7
Completely False						Completely True

Members of my family have engaged in suicidal behavior:

1	2	3	4	5	6	7
Completely False						Completely True

I want to deliberately engage in suicidal behavior in the future.

1

2

3

4

5

6

7

Disagree
Strongly

Agree
Strongly