January 2019

Eating Disorders, Suicidality, and Interpersonal Theory of Suicide

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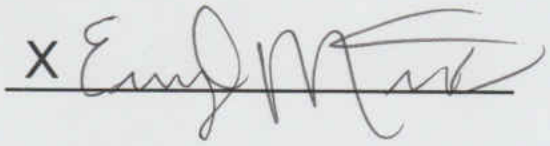
X 

Date: 11-08-19

EATING DISORDERS, SUICIDALITY, AND INTERPERSONAL THEORY OF SUICIDE

BY

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Bachelor's of Science

Eastern Kentucky University

Richmond, Kentucky

Submitted to the Faculty of the Graduate School of

Eastern Kentucky University

in partial fulfillment of the requirements for the degree of

MASTER OF ARTS

2019

DEDICATION

This thesis is dedicated to my family Tracy, Jeff, & Melanie Mink; it is also dedicated to my significant other, Gavin Boggs, for their endless love and support.

ACKNOWLEDGEMENTS

First, I want to thank my advisor, Dr. Richard Osbaldiston, who has not only saw my interest and passion for eating disorders but has been my mentor for over six years. I would also like to thank the rest of my thesis committee, Dr. Michael McClellan and Dr. Theresa Botts, for their amazing support and help during my time in the graduate program. I also want to thank the members of my cohort, Bailey McGuffin and Farshad Sadr, for being my second family and for making graduate school the amazing experience it was. I want to thank the members of my family Tracy Mink, Jeff Mink, and Melanie Mink, along with my significant other Gavin Boggs, for being the best support system I could have during this experience and showing me endless love. Lastly, I would like to thank my dog Sprinkles. She has been my best friend and constant companion for 10 years and has shown me unconditional love through every hardship I have faced with no judgment.

ABSTRACT

The purpose of this study was to look at how eating disorders and the intrapersonal factors underlying ED are related to acquired capability for suicide and thwarted belongingness. More specifically, the present study wants to assess intra-personal factors that could have a correlation to the main components of IPTS. This study wants to assess five factors that could be associated with perceived burdensomeness, thwarted belongingness, and acquired capability. This includes perfectionism, body dissatisfaction, anxiety, depression, and self-esteem. I hypothesize that the higher the score of intrapersonal factors the higher they predict acquired capability and thwarted belongingness. Secondly, I hypothesize that the higher the score of acquired capability and the higher the score of thwarted belongingness the higher they predict eating disorder behaviors. The results of this study found that anxiety and depression significantly predicted acquired capability for suicide. The results also indicated that depression and perfectionism significantly predicted thwarted belongingness. Lastly, the results found that thwarted belongingness significantly predicted eating disorder behavior.

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CHAPTER I

INTRODUCTION

People with eating disorders (ED) across the spectrum, including anorexia nervosa (AN), bulimia nervosa (BN), binge eating disorder (BED), and eating disorder not otherwise specified (EDNOS), are experiencing a life-threatening illness. Eating Disorders have the highest mortality rate of all diagnosed psychiatric disorders (Eating Disorder HOPE, 2019).

ED is often accompanied with suicidal thoughts and suicide attempts, not including the amount of non-suicidal self-injurious behavior (Peterson, Freedenthal, Shedon, & Anderson, 2008). According to Eating Disorder HOPE (2019) suicide is the most common cause of death among those diagnosed with an eating disorder. A review of 50 years of research has shown that within eating disorders, AN has the highest number of completed suicides, while BN has the greatest number of attempted suicide (Arcelus, Mitchell, Wales, & Nielson, 2011).

In 2003, Keel et al. found that eating disorder patients with AN are more than 50 times at risk of completed suicide when compared to the general population. When looking at standard mortality rates (SMR) between the many different eating disorder diagnoses, AN was found to be higher than any other psychiatric disorder with an SMR of 32.4 (Harris & Barraclough, 1997). Likewise, BN was also found to have an increased SMR of 7.5, while BED did not have an increased SMR (Preti et al., 2011). Lastly, Crow et al. (2009) found a mortality rate of 8-25 years in patients diagnosed with EDNOS. The

increased risk of suicide associated with EDNOS was found to be significant for a disorder that is often viewed as less severe.

Selby et al. (2010) found that two specific pathways in patients with AN were related to increased suicidality. The researchers looked at the relationships between AN subtype (AN binge-purge subtype and AN restricting subtype), painful and provocative behaviors, and suicidality. Overall, the researchers found that pain-inducing behaviors linked the binge-purge subtype to suicidal behavior. They also found that restrictive subtype behaviors were also linked to suicidal behavior.

Few studies have been done looking at the lifetime prevalence of suicide in different ED patients. This is oftentimes due to the cost and time that it takes to conduct longitudinal studies. However, with the few studies that have been conducted, a lifetime prevalence of attempted suicide in those diagnosed with AN and BN was found to range from 13% to 33% (Fedorowicz et al., 2007). There are even fewer studies done looking at BED and EDNOS patients, but the results have shown a lifetime prevalence ranging from as low as 7% to 46% (Carano et al., 2012).

Pompili et. al. (2004) conducted a meta-analysis looking at nine studies with a total of 1,538 eating disordered patients. The researchers used Medicus, a database of life science and biomedical science journal articles, up until the year 2002 using the search terms anorexia nervosa, eating disorders, and suicide. The researchers only included articles that were published in peer-review journals. The researchers then looked at the World Health Organization (WHO) and referenced the year of publication for each study and the suicide rate for the country the study was conducted in. A

comparison between the average number of suicide in patients diagnosed with AN and the general population allowed the researchers to have significant results. The data from this meta-analysis showed that suicide was found to be the major cause of death in patients with AN, contradicting the belief that starvation was the primary cause of death in those with AN. The results from this study also showed that comorbidity was frequent among the AN patients and concluded that suicide in AN patients may be from their psychopathology (Pompili et al., 2004).

There have been several studies throughout history that support the idea that ED can be associated with increased rates of suicidal ideation and suicide attempts. When looking through the statistics as a whole, there are several statistics that can be examined. However, the majority of studies examining suicidal behavior in ED patients are performed in clinical samples and not the general population. Portzky, Van Heering, and Vervaet (2014) looked at 1,436 patients from the Centre for Eating Disorders at Ghent University Hospital. The participants of the study completed several different questionnaires upon their arrival to the hospital including the Eating Disorder Inventory-II, Beck Depression Inventory-II, Beck Hopelessness Scale, and the Spielberger State-Trait anxiety inventory. The results from this study found that the rate of attempted suicide in a large sample size of ED patients was found to be 11.8%, while 43% of ED patients report lifetime suicidal thoughts (Portzky et al., 2004). Milos et al. (2004) found a history of attempted suicide in 26% of their participants. Other research has found a history of attempted suicide in patients with ED to be as high as 35.6% (Fedorowicz et

al., 2007). Franko et al. (2004) found a 15% prevalence of attempted suicide in ED patients.

CHAPTER II

LITERATURE REVIEW

The interpersonal theory of suicide (IPTS, Joiner, 2005) has recently been conceptualized as a way to explain why some individuals are susceptible to suicide while others are not (Van Orden et al., 2010). IPTS aims to identify factors to suicidal behavior through previous research. The IPTS predicts that for suicidal behavior to occur there must be a suicidal desire and fearlessness of death or capability of suicide. It is thought that suicidal ideation occurs when perceived burdensomeness and thwarted belongingness are experienced (Joiner, 2005). The IPTS theory believes that interaction between perceived burdensomeness and thwarted belongingness will have a stronger impact on suicidal ideation than each of the factors separately (Joiner, 2005) (See Figure 1). Epidemiological studies have found that 13.5% of the general population report lifetime suicidal ideation while 4.6% of the general population report having made at least one suicide attempt (Kessler, Borges, & Walters, 1999). However, more than 90% of individuals who die by suicide suffered from a mental disorder (Cavanagh et al., 2003).

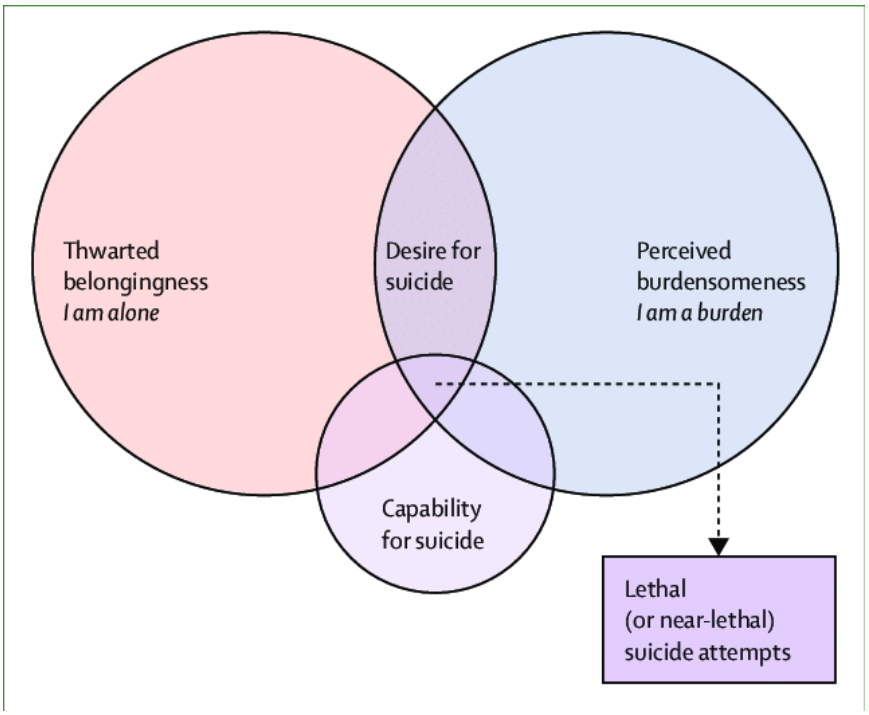

Figure 1: Interpersonal Theory of Suicide. Van Orden et al. (2012)

Interpersonal Theory of Suicide

Variables involved in IPTS

To better understand the IPTS (Joiner, 2005) model, it is important to know what the three factors of this model are. Thwarted belongingness refers to the feeling of alienation from others or the unmet need for social connectedness. Perceived burdensomeness is the idea that one is a burden to family or friends. It can also be said that perceived burdensomeness is the belief that one's death is worth more than one's life in terms of family, friends, and society. It is important to emphasize the word *perceived* as this theory states that individuals with suicidal ideation translate their personal feelings of self-hatred into feelings of others hating them (Van Orden et al., 2010). In works done by Joiner, Hom, Hagan, and Silva (2016) he states that perceived

burdensomeness could be a fatal miscalculation of suicidal thoughts regarding this eusocial theory to sacrifice themselves.

Capability for suicide is having a low fear of death and the ability to withstand high levels of pain (Smith et al., 2013). Joiner states that an individual acquires the capability and fearlessness of death through repeated exposure and habituating to painful experiences. This occurs when individuals possess the ability to overcome the innate self-preservation instincts that humans possess. Smith et al. (2012) found empirical evidence that suggests the capability for suicide may have a genetic component.

Mixed support for IPTS

The support for IPTS is not unequivocal. Some studies have found evidence of relationships among the variables, while others have not. For example, Levi- Belz, and Gamliel (2016) found support for the IPTS. They examined the perceptions and evaluations of mental health professionals to perceived suicidal indicators in a hypothetical situation. The study consisted of 379 trained mental health professionals who were randomly given a vignette that manipulated high vs. low perceived burdensomeness and high vs. low thwarted belongingness, resulting in a total of four different vignette types. This study found that perceived burdensomeness ($F(1,375) = 89.48$, $p < .001$; $\eta 2 = .193$), and thwarted belongingness ($F(1, 375) = 17.11$, $p < .001$; $\eta 2 = .044$) had two significant main effects for predicting suicidal ideation.

In contrast, Teismann et al. (2017) did not find support for the IPTS. Teismann et al. (2017) examined perceived burdensomeness and thwarted belongingness as risk

factors for suicide ideation. The researchers examined a total of 231 outpatients undergoing cognitive behavioral therapy. Each participant took part in a pretreatment and mid-treatment assessment. The assessment included a battery of self-report measures: (a) Interpersonal Needs Questionnaire to assess perceived burdensomeness (Van Orden, Cukrowicz, Witte, & Jioner, 2011), (b) Depressive Symptom Inventory Suicidality Subscale (Joiner, Pfaff, & Acres, 2002) to measure the frequency and intensity of suicide ideation symptoms, (c) Beck Depression Inventory-II (Beck, Steer, & Brown, 1996) to assess depressive symptoms, (d) Beck Hopelessness Scale (Beck, 1988) to assess pessimistic and hopelessness cognitions, and (e) the Impulsivity Scale 27 (Patton et al., 1995) to assess the intensity of impulsive behaviors. The researchers used hierarchical linear regression to evaluate the relationship between pretreatment perceived burdensomeness and thwarted belongingness and suicidal ideation. However, the researchers did not find any results that were above a correlation of .07 and therefore ruled that thwarted belongingness and perceived burdensomeness did not add significantly to the prediction of mid-treatment suicidal ideation (Teismann et al., 2017).

Research on IPTS and ED

The IPTS model posits that suicidal ideation has two main causes: (a) thwarted belongingness and (b) perceived burdensomeness. However, it is unknown what parts of ED are associated with suicidal ideation and more so whether thwarted belongingness and perceived burdensomeness could explain any of these associations (Forrest et al., 2016)

Forrest et al. (2016) examined whether lifetime ED symptoms were positively associated with suicidal ideation in ED patients (N= 98) through perceived burdensomeness and thwarted belongingness. The researchers found that perceived burdensomeness is associated with binge eating, laxative use, and fasting. And thwarted belongingness is associated with body dissatisfaction (ab=0.04, 95% CI [0.01, 0.06] (Forrest et al., 2016). Studies have suggested that those with an eating disorder have a higher pain tolerance than the general population (Kwan et al., 2017).

Kwan et al. (2017) looked at the role of perceived burdensomeness and thwarted belongingness as a way to explain the association between eating disorder symptomology and suicide. This paper was broken up into two different studies. In the first study, the researchers had 574 participants from a university with 315 of them being women. The participants took a series of questionnaires including the Eating Disorder Examination Questionnaire (EDE-Q) to assess eating pathology; the Interpersonal Needs Questionnaire (INQ) to measure perceived burdensomeness and thwarted belongingness, and the Beck Scale for Suicide Ideation (BSS) to assess ideation and intent. The results of this study found that the greater the eating disorder symptoms the greater the thwarted belongingness and perceived burdensomeness (Kwan et al., 2017).

In the second study, Kwan et al. (2017) had 1,791 participants use the same measures as the first study, but it also included the EDI to assess behavioral symptoms and eating psychopathology and the Suicide Behaviors Questionnaire-Revised (SBQ-R) to assess suicide attempts. The results of the second study found eating disorder

symptoms, drive for thinness, BN, and body dissatisfaction had an indirect effect on increased suicide risk through perceived burdensomeness and thwarted belongingness. It was also found that both greater perceived burdensomeness and thwarted belongingness were associated with greater suicide risk. (Kwan et al., 2017)

Smith et al. (2016) compared 278 women in total from an ED treatment facility (N=100), general psychiatric treatment facility (N=85), and a public university (N=93). All of the participants completed questionnaires that assessed thwarted belongingness, perceived burdensomeness, acquired capability, and suicidal ideation. To measure thwarted belongingness and perceived burdensomeness, the participants completed the Interpersonal Needs Questionnaire consisting of 15 items in total. To measure acquired capability, the researchers used fearlessness about death subscale from the Acquired Capability for Suicide Scale, which consisted of 7 question items. Lastly, to measure suicidal ideation, Smith et al. (2016) used the Depressive Symptom Index-Suicidality Subscale that consisted of four items.

The results of this study found that the ED participants and the psychiatric participants had significantly greater thwarted belongingness, perceived burdensomeness, and suicidal ideation that the non-clinical comparison group. When looking at the eating disorder participant group, there was a significant association of perceived burdensomeness with suicidal ideation, $t(3,96) = 6.48$, $P<0.001$, $sr = 0.54$, 95% CI [0.11,0.21]. The results of this study also found that in the ED group there was a significant relationship between fearlessness about death and suicide attempts $b = 0.09$, SE = 0.05, IRR = 1.10, 95% CI [0.002, 0.18], $P = 0.04$. They found a significant relationship

between perceived burdensomeness and suicide attempts b = 0.07, SE = 0.03, IRR = 1.08, 95% CI [0.02, 0.13], P = 0.01.

Pisetsky et al. (2017) studied 114 participants that had been diagnosed with an eating disorder. The participants' eating disorders were reported as 46.5% having EDNOS, 23.7% BED, 21.1% BN, and 8.8% AN. The participants completed a series of questionnaires addressing thwarted belongingness, perceived burdensomeness, acquired capability, and lifetime suicidal ideation. For assessing IPTS, the participants filled out the Interpersonal Needs Questionnaire (Van Orden, Cukrowicz, Witte, & Joiner, 2011) consists of 15 items assessing thwarted belongingness and perceived burdensomeness. The researchers used the Acquired Capability for Suicide Scale-Fearlessness About Death (ACSS-FAD) (Ribeiro et al., 2014) along with the Painful and Provocative Events Scale (PPES) (Bender, Gordon, Bresin, & Joiner, 2011), to assess the patient acquired capability. Eating disorders were assessed using the Eating Disorder Examination Questionnaire (Fairburn, & Beglin, 1994). Lastly, participants were asked two questions regarding lifetime suicidal ideation and suicide attempts. The results of this study found that perceived burdensomeness and PPES were higher in participants with a lifetime suicide attempt than those without $P < 0.006$ and thwarted belongingness was higher in participants with both lifetime suicidal ideation and suicide attempt $P < 0.001$. The study also found that lifetime engagement in painful and provocative events was significantly positively related to a lifetime of suicide attempts (Pisetsky et al.,2017).

Intrapersonal Factors

The presence of psychopathology represents a strong risk factor for suicide. Cavanaugh et al. (2003) found that 90% of individuals who die by suicide suffer from a mental illness. The etiology of eating disorders involves complex interactions among genetic, biological, psychological, familial, and social variables (Keel & Forney, 2013). Perfectionism and body dissatisfaction are two common intrapersonal variables that are commonly associated with eating disorder symptomology. Other intrapersonal factors that are present in either suicidality or eating disorders include depression, hopelessness, anxiety, and self-esteem (National Eating Disorder Association, 2018).

Evidence to support the role of these factors comes from Portzky et al. (2014). They examined the trait dependent and state-dependent characteristics in 1,811 patients diagnosed with eating disorders. To be considered for this study each participant had to take the Eating Disorder Inventory-II (Garner, 1991) which is a 91 item self-reporting scale with 11 subscales measuring symptomatology or psychological features related to ED. To assess different traits that could possibly be related to the correlation between ED and suicide the participants also had to complete the beck Depression Inventory-II (Beck, Brown, & Gregory, 1996), the Beck Hopelessness Scale (Beck, 1988), Spielberg State-Trait Anxiety Inventory (Spielberg, 1983), the Rosenberg Self Esteem Scale (Rosenberg, 1965), and the Frost Multidimensional Perfectionism Scale (Stober, 1998). The results of this study found that lower self-esteem and higher scores for anxiety, depression, hopelessness and perfectionism were associated with an increased risk of suicide attempts in those with ED. The results of this study have also

shown that the rate of attempted suicide in a large sample size of ED patients was found to be 11.8% while 43% of ED patients report lifetime suicidal thoughts.

Perfectionism and Body Dissatisfaction

Many studies have linked perfectionism to a variety of disorders, including affective disorders, anxiety disorders, compulsive disorders, and eating disorders (Mangweth et al., 2003). Perfectionism is a particularly strong risk factor in eating disorders. Perfectionism is also one of the core-maintaining mechanisms in the transdiagnostic model of eating disorders (Fairburn et al., 2003). Perfectionism has also been found to be a central variable in the cognitive-interpersonal model of AN (Schmidt & Treasure, 2006) and a central variable in the three-factor model of BN (Bardone-Cone et al., 2006).

There is a consensus that perfectionism is a multidimensional concept with various ideas of personal standards of perfectionism and evaluative concerns (Stairs, Smith, Zapolski, Combs, & Settles, 2011). The two most widely used measures for perfectionism include the Frost Multidimensional Perfectionism Scale (Frost, Marten, Lahart, & Rosenblate, 1990) and the Hewitt Multidimensional Perfectionism Scale (Hewitt & Flett, 1991). These scales typically result in two factors: perfectionist strivings and perfectionist concerns.

Previous research suggests that perfectionistic concerns are strongly related to maladaptive outcomes, including negative affect, depression, stress, and anxiety; however, perfectionistic strivings are associated with adaptive outcomes like positive effect (Frost et al. 1993). Perfectionist strivings are thought to involve setting and

pursuing high personal standards, while evaluative concern perfectionism is the overly critical evaluation of one's behavior and concerns about others criticism or disapproval (Frost et al., 1993). Both perfectionistic concerns and perfectionistic strivings are significantly related to BN, while only perfectionistic strivings are related to AN (Limburg et al., 2017). Kwan et al. (2017) found that perfectionism was associated with greater perceived burdensomeness and thwarted belongingness, which then is associated with greater suicide risk.

Hewitt and Flett (2002) proposed the perfectionism diathesis-stress model. According to this model, perfectionism is a vulnerability factor in depression and suicidality through the aversiveness of extant stress. The potential for suicide increases as the levels of socially prescribed perfectionism increase (Hewitt et al., 2014). Hewitt & Flett (2002) have found that perfectionism could increase the potential for suicide by lowering the amount of stress that is detrimental.

Roxborough et al. (2012) examined links between socially prescribed perfectionism (SPP) and perfectionistic self-presentation (PSP) and suicide outcomes that could be mediated through experiences of social disconnection and social hopelessness. The study consisted of 152 psychiatric outpatients from the Anxiety and Depression Disorders Clinic at the British Columbia Children's Hospital. The researchers used (a) the Child Adolescent Perfectionism Scale (Flett et al., 2016), that measures an adolescent's motivation to be perfect using two subscales: SOP and SPP (b) PSP scale Junior Form (Kawata & Revicki, 2008), and (c) Child Adolescent Suicidal Potential Index (Peric, 2003), which measured anxious impulsive depression, suicidal ideation, and

family distress. Lastly, the researchers used Suicide Ratings to assess the likelihood of attempting suicide in the future, and Ratings of Social Disconnection to assess being bullied and social hopelessness. SPP and PSP were associated with suicidal outcomes, and interpersonal perfectionism was significantly associated with social hopelessness. The relationship between interpersonal perfectionism and suicide risk was mediated by social hopelessness. SOP and SPP accounted for 13% of the variance in suicide risk $F(2, 149) = 11.12$, $p < .001$, and SPP was uniquely related to suicide risk, $b = .36$, $t(151) = 4.51$, $p < .001$.

Body dissatisfaction is a negative evaluation of one's body (Joseph & Shiffrar, 2011). Johnson and Wardle (2005) found that body dissatisfaction predicts both restrained eating symptoms and bulimic symptoms. Personal standards perfectionism (PSP) and evaluative concerns perfectionism are positively associated with body dissatisfaction. In theory, perfectionism leads to an increase in body dissatisfaction, which ultimately leads to an increase in disordered eating pathology (Wade & Tiggemann, 2013). There is a common thought that the combination of both perfectionism and body dissatisfaction could result in an increased evaluation of weight and shape, binge eating symptoms and a stronger drive for thinness. Brausch and Muehlenkamp (2007) found that negative body attitudes were predictive of suicidal ideation beyond previous effects of depression and hopelessness.

Depression and Hopelessness

There are several comorbid disorders associated with eating disorders, and one of the most common is lifetime history of major depression. Bulik et al. (2008) found

that over 80% of individuals diagnosed with AN reported attempting suicide during an active episode of major depressive disorder. Previous literature has documented depressive syndromes coexisting in those diagnosed with eating disorders. Hinz and Williamson (1987) found a prevalence of depression in 24% to 33% of women diagnosed with BN. Depression is viewed as a central variable of eating disorders with studies showing that depression affects 25% to 52% of those diagnosed with AN or BN (Apter et al., 1995). Results from a study conducted by Braun et al. (1994) suggest that depression could be a psychiatric co-morbidity of eating disorders.

Depression is a risk factor that has consistently been found to predict suicidal ideation and suicidal attempts in both psychiatric and community groups (Mazza & Reynolds, 1998). Studies have shown it to be significantly associated with suicidal behavior in those diagnosed with a psychiatric disorder (Arcleus et al., 2011). While several studies have shown that comorbid disorders, specifically depression, are a risk factor for suicidal behavior in those diagnosed with AN and BN (Van Orden et al., 2012). A study conducted by Lautenbacher (1991) reported that suicidal patients with ED had a higher lifetime prevalence of depressive disorders. Fennig et al. (2009) found that depression increased the risk of suicidal attempts by 319% for each 1 unit increase in the DBI score. The same study also found that most of the participants were clinically depressed regardless of their specific eating disorder (Fennig et al., 2009).

The hopelessness theory of depression suggests that the attributional style for negative events is seen as a cause of depression in those who attribute negative outcomes to internal factors. (Abramson et al., 1989). According to Goebel et al. (1989),

the depressive attributional style has been found to be more prevalent in women that are diagnosed with BN along with increased depressive symptoms. A recent study done by Mansfield et al. (2000) found that women diagnosed with eating disorders experience significantly higher levels of depression than the general population. Likewise, those diagnosed with an eating disorder were more likely to generalize negative events to internal, personal factors giving a sense of hopelessness (Mansfield et al., 2000). A clinical study looking at patients with ED in treatment centers found that the longer the amount of time patients spent in treatment or saw no change resulted in an increased feeling of hopelessness (Hannon et al., 2017).

Dixon, Heppner, and Anderson (1991) examined 382 students enrolled in introductory psychology courses at a mid-western university. The students completed self-report measures including the Problem Solving Inventory (Heppner & Peterson, 19982) that measured participants appraisal of their own problem-solving ability; Life Experience Survey (Sarason, Johnson, & Siegel, 1978) which measured life stress; Scale for Suicidal Ideation (beck, Kovacs, & Weissman, 1979) which assessed intensity, pervasiveness, and characteristics of suicidal intent; and lastly the Hopelessness Scale (Beck, 1988) which assessed individuals' pessimistic expectations. The results were analyzed using a hierarchical multiple regression and used Beck's Hopelessness Scale (Beck, 1988) as the dependent measure. The regression was found to be significant $F(l, 380) = 69.56$, $p < .0001$, and indicated that 15.22% of the variance in hopelessness was accounted for (Dixon, Heppner, & Anderson, 1991).

Anxiety

Anxiety disorder and a broad diagnosis of "any anxiety disorder" has been associated with increased suicide attempts in both AN and BN (Bulik et al., 2008). Previous studies have shown that individuals with anxiety disorders are more likely to contemplate and attempt suicide than those with non-anxiety disorders (Bentley et al., 2016). Fink et al. (2012) found that anxiety physical concerns have been associated with acquired capability. The study also found that anxiety physical concerns can moderate the relationship between disordered eating behaviors and suicidality (Fink et al., 2012). Recent findings support Joiners IPTS, specifically the lack of belongingness (Katz et al., 2011). A study conducted by Katz et al. (2011) suggests that anxiety, and more specifically, social phobias are associated with suicide attempts. Anxiety may cause people to withdraw from social situations which can lead to a decrease in belongingness. Sareen et al. (2005) found that there is an association between anxiety disorders and suicidality even when accounting for depression and stressors.

Herres et al. (2019) conducted a study that consisted of 115 participants that were entering a clinical trial for suicidal ideation and depressive symptoms. The participants completed the Suicidal Ideation Questionnaire (Reynolds, 1988) and the Beck Depression Inventory-II. A trained interviewer then administered a phone interview to each of the participants using the Computerized-Diagnostic Interview Schedule for Children; this measure assesses the past year's diagnoses of generalized anxiety disorder, panic disorder, separation anxiety disorder, and social anxiety disorder (SAD). The researchers then administered the Suicidal Ideation Questionnaire JR to

assess suicidal thoughts in the past month. Lastly, the researchers administered the Columbia suicide Severity Rating Scale (Posner, 2011) which assess suicidal ideation and behavior. The results found that participants who met social anxiety disorder criteria reported more severe suicidal ideation (M = 55.68, SD = 15.08, F = 3.99, p = .048). However, logistic regression showed no significant difference between other anxiety disorders and suicide ideation (Herres et al., 2019).

Gallagher et al. (2014) looked at explaining the association between SAD and suicidality. The increased risk of suicidal ideation is consistent with Joiners IPTS (Joiner, 2005). This association is thought to be linked to the two main factors of thwarted belongingness and perceived burdensomeness since those diagnosed with SAD are likely to have problems forming and maintaining interpersonal relationships that could lead to feelings of loneliness and lack of sense of belonging. Gallagher et al. (2014) found that socially anxious individuals experience higher rates of thwarted belongingness which predicted higher levels of suicidal ideation than those who are not socially anxious.

Self-Esteem

Self-esteem is defined as an individual's global appraisal of their own value and competence and has been identified as an important factor in an individual's life (Mann, Hosman, Schaalma, & de Vries, 2004). Rosenberg (1965) identified explicit self-esteem as a person's conscious feeling of self-worth and acceptance. Harter & Marold (1994) suggested that low self-esteem can contribute to vulnerability in developing suicidal behaviors. Low self-esteem has been found in participants who have attempted suicide and has been found to be related to an increase in suicidal tendencies and the

seriousness of suicidal intent (Robbins & Alessi, 1985). Overholser et al. (1995) found in both clinical and non-clinical samples low self-esteem has been linked to increased previous suicide attempts and suicidal ideation. Likewise, having a positive self-esteem contrasts with the feeling of burdensomeness and indicates stronger feelings of self-worth and acceptance (Overholser et al., 1995). McGee et al. (2001) found that low self-esteem predicted the onset of suicide ideation over a three-year time span.

One criticism of previous research on suicidality and self-esteem is that when examining the relationship between low self-esteem and suicidality they did not control for confounding variables such as depression and hopelessness. Bhar et. al (2008) looked at 338 psychiatric outpatients from the Center for Cognitive Therapy at the University of Pennsylvania over a two-year span ranging from 1992 to 1994. The participants completed a battery of assessments including the Beck Self Esteem Scale (Beck, Brown, Steer, Kuyken, & Grisham, 2001), Beck Depression Inventory (Beck, Steer, Brown, & Gregory,1996), Beck Hopelessness Scale (Beck, 1988), and the Scale for Suicide Ideation (Beck, Kovacs, & Weissman, 1979). After the participants completed the assessments the means and standard deviations were collected for each assessment. To control for depression and hopelessness the researchers conducted a hierarchal regression analysis with depression and hopelessness entered as the covariates for the first step with self-esteem being entered for the second step and suicidal ideation was the dependent variable. Once depression and hopelessness were controlled for the Beck Self Esteem Scale was significantly associated with suicidal ideation R^2 change= -.01, F change (1, 334) = 5.47, p =.02, effect size (f^2) = .02. This finding is important as it

controls for depression and hopelessness and looks at how self-esteem alone can be a predictor for suicidal ideation (Bhar et al., 2008).

Disadvantages

While previous research has been found to support the idea that eating disorders and the interpersonal theory of suicide are related to an increase in suicidal ideation and suicide attempts the studies do have their limitations. Meta-analytic research findings indicate that ED are weak indicators of subsequent suicidal behavior (Smith et al., 2008) and longitudinal studies are lacking the influence of ED on suicidality. A major problem when looking at the interpersonal theory of suicide is determining the factors that can explain or predict suicidal behavior and if they are co-morbid with eating disorders and the effects they have on suicidality alone. Often times the data when looking at variables that could influence the IPTS they are cross-sectional making it difficult to say if the variable alone affects thwarted belongingness or perceived burdensomeness. Few studies have assessed potential trait-dependent variables of suicidal behavior (Hawkins & van Heering, 2009). A cross-sectional study conducted by Fenning et al. (2009) found the conclusions of their research cannot be reached regarding the causal relationship between depression, eating disorders, and suicidal behavior. However, cross-sectional designs make it nearly impossible to know if these, or any characteristics assessed, were present at the time of the attempted suicide. Thus, there is a need for an increase in longitudinal studies, however, they are difficult due to the large samples and low base rate of suicidal behavior (Portzky et al., 2014)

Although research has been on the topic of perfectionism and the psychopathology of eating disorders, other psychiatric disorders, and longitudinal studies of depression, there has been no quantitative findings of the relationship between perfectionism and psychopathological disorders (Smith et al., 2016). It should also be noted that data among suicide subjects diagnosed with ED are difficult to obtain because they are often reported with many other variables (Eckert et al.,1995). Another difficulty when assessing eating disorders in relation to suicidality is that follow up options can vary greatly and the majority of research only refers to female data and does not consider male patients as part of a cohort (Pompili et al., 2004)

It should also be noted that suicide rates do vary depending on geographical location. Large differences are found in multi-state countries like the USA, Canada, and Australia as compared to smaller countries. Another difficulty when examining results is that many studies are using participants that have been treated or seeking treatment for either their ED or suicidality. There is also the idea that those that have been diagnosed with an ED, or other psychiatric illness have an increase in comorbidity it should not be said that those who are not diagnosed are less severe. A recent study on self-reported diagnoses at the Eating Disorders Clinic of Minnesota University found an extremely high risk of suicide in patients who were self-diagnosed (Cow et al., 2009). It should also be considered that patients diagnosed with ED show a very high comorbidity with mood disorders, therefore, it cannot be dismissed that patients could have attempted or completed suicide after recovery from ED while still suffering from other mental illness (Preti et al., 2011).

Goals and Hypotheses

The present study aims to look at how eating disorders and the intrapersonal factors underlying ED are related to acquired capability for suicide and thwarted belongingness. Data has shown that AN, BN, BED, and EDNOS have been linked to suicidality, yet there are very few studies that look at how ED relates to the IPTS framework or if IPTS can even be used as a way to explain the differences between some patients with ED attempting suicide compared to another patient who does not. More specifically, the present study wants to assess intra-personal factors that could have a correlation to the main components of IPTS. A lot of research shows underlying factors that could be associated with ED and suicidality. This study wants to assess five factors that could be associated with perceived burdensomeness, thwarted belongingness, and acquired capability. The research on these five factors has both supportive and diminishing results on. This includes perfectionism, body dissatisfaction, anxiety, depression, and self-esteem. I hypothesize that the higher the score of intrapersonal factors the higher the higher they predict acquired capability and thwarted belongingness. Secondly, I hypothesize that the higher the score of acquired capability and the higher the score of thwarted belongingness the higher they predict eating disorder behaviors.

CHAPTER III

METHOD

Participants

The sample for this study was 219 number of participants that were collected through Mechanical Turk. The final number of participants was n= 210 (77% of the respondents identified as female, and 23 % identified as male). Of the 210 respondents to complete the survey 54% of participants were Caucasian, 12% were African American, 12% were Hispanic or Latino, 19% were Asian or Asian American and the final 3 % were Native American. All of the participants read and agreed to the consent form before participating in the study.

Measures

Each participant was requested to fill out the following questionnaires:

Eating Attitudes Test (EAT-26) (Garner, Olmsted, Bohr, & Garfinkle, 1982) is a self-report questionnaire to measure the symptoms and characteristic concerns of those experiencing an ED. The EAT-26 is based on a six-point scale including always, usually, often, sometimes, rarely, and never.

Patient Health Questionnaire (PHQ-9) (Kroenke, Spitzer, & Williams, 2001) is a multipurpose instrument used for the screening, diagnosing, monitoring, and measuring the severity of depression. The PHQ-9 measures depressive symptoms and characteristic thoughts of the participant for the past two weeks.

Generalized Anxiety Disorder 7 (GAD-7) (Spitzer, Kroenke, Williams, & Lowe, 2006) is a self-report measure that screens and measures the severity of generalized

anxiety disorder. It assesses the degree in which a participant has been bothered by feelings of anxiousness, not being able to control worrying, worrying too much, not being able to sleep or restless, and becoming irritable over the past two weeks

Interpersonal Needs Questionnaire (Van Orden, Cuckrowicz, Witte, & Joiner, 2011) is a 15-item survey assessing the concepts of perceived burdensomeness and thwarted belongingness. This will be used to cover the hopelessness intrapersonal factor. The items were measured on a 7- point Likert scale ranging from 1, not true at all, to 7 very true.

Acquired Capability for Suicide Scale- Fearlessness About Death (Ribeiro et al., 2014) is a 7-item survey assessing the level of fearlessness about death and pain. The items were rated on a scale ranging from 0, not at all like me, to 4 very much like me. Total scores could range from 0 to 28 with higher scores indicating greater levels of fearlessness about death.

Frost Multidimensional Perfectionism Scale (Stober, 1988) an 8-item assessment with two subscales; Evaluative Concerns and Striving. This questionnaire is rated on a 5-point Likert scale ranging from1 (strongly disagree) to 5 (strongly agree).

Rosenberg Self Esteem Scale (Rosenberg, 1965) is a 10-item scale assessing the general feelings participants have about themselves. This scale uses a 4-point Likert scale ranging from strongly agree to strongly disagree.

Body Appreciation Scale (Avalos, Tylka, & wood-Barcalow, 2005) is a 13 item self-report measure that measures body appreciation. Some of these can include “I feel my body has some good qualities” and covers if the participants feel their self-worth is

not dependent on their body. The answers include never, seldom, sometimes, often, and always.

Procedure

Participants accessed the self-report questionnaires through Amazon Mechanical Turk. This is a site that allows individuals all across the country to participate in surveys in exchange for monetary incentives. Participants were asked to provide demographic data including age, race, gender, and location. Then the participants were asked to fill out the self-report measures that assessed the intrapersonal factors, suicidality, and eating disorder behaviors. Once the survey was completed the participants received monetary compensation of $0.50 for their participation in the study.

CHAPTER IV

RESULTS

This study primarily focused on the relationship between the intrapersonal factors related to eating disorders and suicidality and how that, in turn, would predict the relationship between suicidality and eating disorders. For this study, it was hypothesized that higher scores on the intrapersonal factor's scales would predict higher chances of acquired capability and thwarted belongingness. Higher levels of acquired capability and thwarted belongingness would, in turn, predict a higher chance of being associated with eating disorders. For this study, we used multiple regression to test the relationship between the five intrapersonal factors and how they correlated with acquired capability. Multiple linear regression was calculated to predict acquired capability based on anxiety, depression, self-esteem, perfectionism, and body dissatisfaction (see table 1). A significant regression equation was found ($F(5,192) = 2.69$, $p < .02$, with an R^2 of .06). The results of the regression indicated that anxiety significantly predicted acquired capability for suicide (ß= .32, $t(192) = 2.45$, $p < .02$). The results of this regression also indicated that depression significantly predicted acquired capability for suicide (ß= -.41, $t(192) = -3.1$, $p < .00$). Another multiple linear regression was conducted to predict thwarted belongingness based on anxiety, depression, self-esteem, perfectionism, and body dissatisfaction (see table 2). A significant regression equation was found ($F(5,192) = 28.42$, $p < .00$, with an R^2 of .43). The results from this regression indicated that depression significantly predicted thwarted belongingness (ß = .56, $t(192) = 5.42$, $p < .00$). The results of this regression

also indicated that perfectionism significantly predicted thwarted belongingness (ß= .28, t (192) = 4.57, $p < .00$).

The second part of the hypothesis is that higher acquired capability for suicide and thwarted belongingness would predict a higher chance of an eating disorder. Multiple linear regression was conducted to predict eating disordered behavior based on acquired capability for suicide and thwarted belongingness (see table 3). A significant regression equation was found (F (2, 206) = 19.28, $p < .00$, and an R^2 of .16). The results of the regression indicated that thwarted belongingness significantly predicted eating disorder behaviors (ß= -.40, t (206) = -6.18, $p < .00$). Reliability analyses were done of the eight measures. Body satisfaction, perfectionism, depression, eating disorder behavior, and anxiety all had a Cronbach's alpha of 0.9 or higher, however, self-esteem, acquired capability for suicide, and interpersonal needs did not have a reliability of 0.9 (See table 5).

CHAPTER V

DISCUSSION

The overall purpose of the current study was to add to the already existing literature on eating disorders (ED) and the interpersonal theory of suicide (Joiner, 2005). This study focused on the relationship between the six intrapersonal factors that are associated with both eating disorders and suicidality. The results of this study partially supported the aims and hypotheses.

The first aim of this study was to examine the relationship between the five intrapersonal factors which were anxiety, depression, body dissatisfaction, self-esteem, and perfectionism and how they are associated with acquired capability and thwarted belongingness. The results of this study partially supported the hypothesis that the higher the score on the five intrapersonal factors the greater the ability to predict acquired capability for suicide or thwarted belongingness. The multiple regression showed that anxiety and depression significantly predicted acquired capability for suicide. However, the results also showed that there was no significant prediction between self-esteem, perfectionism, and body satisfaction on acquired capability for suicide. The results from the analysis also found that two of the intrapersonal factors, perfectionism, and depression, significantly predicted thwarted belongingness; while the results also showed there was no significant relationship between anxiety, self-esteem, and body satisfaction with thwarted belongingness.

The second aim of this study was to examine the relationship between acquired capability for suicide and thwarted belongingness and how they are associated with

eating disorder behaviors. The study partially supported the hypothesis that the higher the score on acquired capability and thwarted belongingness the higher they would predict eating disorder behaviors. The multiple regression showed that thwarted belongingness significantly predicted eating disorder behaviors, while the results also showed that acquired capability for suicide did not significantly predict eating disorder behaviors.

Implications

This was the first study done to date analyzing how intrapersonal factors of both eating disorders and suicidal ideation can predict the two factors that are associated with IPTS, acquired capability, and thwarted belongingness. More so, this is the first study to date that looks at how thwarted belongings and acquired capability for suicide could predict disordered eating behaviors.

The findings from the current study supported research that was done by Forrest et al. (2016) that found that body dissatisfaction was related to thwarted belongingness. The current results found that perfectionism significantly predicted thwarted belongingness with one of the key components in the perfectionism self-report measure being body satisfaction. Interestingly enough though the self-report measure that looked at just body dissatisfaction did not significantly predict either thwarted belongingness or acquired capability for suicide.

Kwan et al. (2017) looked at how eating disorder symptomology related to suicidal intent and ideation. The results from this study found that the greater the eating disorder symptomology the greater thwarted belongingness and

burdensomeness. The current study looked at reversing this model by assessing how thwarted belongingness and acquired capability for suicide predicted eating disorder behaviors. The current study did find results that partially supported this reversed model with thwarted belongingness predicting greater eating disorder behaviors.

When looking at the intrapersonal factors used in the current study there were several other studies that supported the present findings. The National Eating Disorder Association (2018) found that factors that are present in both eating disorders and suicidality include perfectionism, body dissatisfaction, anxiety, depression, hopelessness, and low self-esteem. The current research supported these findings in that anxiety and depression both significantly predicted acquired capability for suicide while perfectionism significantly predicted thwarted belongingness. Even though current research did not find a significant relationship from all of the intrapersonal factors chosen it still provides evidence on the relationship between intrapersonal factors and how they relate to suicidality through acquired capability and thwarted belongingness.

This study has mainly focused on how a theory-driven understanding of the predicting factors for suicidal ideation and eating disorders. Additionally, the findings of this study indicate an association between the intrapersonal factors that predict suicidal ideation and behaviors and ultimately how those predict eating disorders. Knowing this information could be beneficial to clinicians and those working with eating disorders as a way to start prevention programs that target those characterized by the intrapersonal factors that are predicting eating disorders will allow for more effective prevention

efforts. These findings can contribute to the therapeutic choices leading to intervention and prevention of eating disorders. Ultimately, the relationship between the theoretic component of this study and clinical applications is not unidirectional, allowing work done in both to influence the intervention and prevention of eating disorders.

Limitations and Future Directions

There are several limitations that should be discussed when looking at the current study. The first limitation is that all of the measures were self-report. Self-reports are not the most reliable source of data collection as participants can be vulnerable to societal pressures and social desirability. The reliability of the measures varied some having a score of less than 0.9, the lower the reliability of the measure the more it undermines the current findings in this study. However, the reports were anonymous in hopes that the respondents felt more honest with their answers than they would if they were to fill out the surveys in person or be contacted by a licensed doctor should they score high enough on the measures.

Another limitation of this study is that the respondents were not clinically diagnosed with eating disorders or other mental illnesses, such as major depression, and this could have had an effect on the data. Presumably, the scores on the intrapersonal factors measures would have been higher had the surveys been conducted in either or both inpatient and outpatient psychiatric and eating disorder clinics. Considering we had no way to verify if any of the participants in the study had previously been clinically diagnosed we can only look at the results from a general population standpoint and not a patient treatment standpoint.

Future studies should repeat this study in varying ways. One way is that data collection could be done in an ED treatment facility by gathering the data from those clinically diagnosed with an ED. Since the current study was conducted through Mechanical Turk the participants did have more males than those in a typical eating disorder facility and the majority of the participants were in their mid-twenties. This can be a limitation simply for the information that is already known of those with eating disorders being adolescent females. Likewise, the study could be conducted in a way where the surveys are taking over a longitudinal period of time comparing their self-report measures from the time they were admitted, halfway through their treatment, and at the end of their treatment at the treatment facility. The survey could again be re-administered to the same patients if the researchers want to look at how the scores would compare after being out of treatment for a year. Other studies may want to look at how a male dominant sample would provide a different representation of the relationship between intrapersonal factors, ED, suicidality, and IPTS.

Conclusion

In conclusion, suicidality can be predicted by some, but not all intrapersonal factors of IPTS and ED. Specifically, the intrapersonal factors of anxiety, depression, and perfectionism were more likely to predict suicidality based on the IPTS thwarted belongingness and acquired capability for suicide. Likewise, ED behavior can be predicted by some, but not all aspects of the IPTS. Specifically, thwarted belongingness predicted higher chances of ED behaviors. The findings of this study can be significantly beneficial when working with those who have disordered eating behaviors but have not

been clinically diagnosed with an ED yet. The scores of the intrapersonal factors along with acquired capability for suicide and thwarted belongingness can help clinicians detect and predict ED behaviors before being diagnosed giving the patient an earlier beginning to treatment and hopefully preventing mortality in those who are seeking treatment.

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APPENDICES

APPENDIX A:

Recruitment Statement

Appendix A: Recruitment Statement

Title: Eating Disorders, Suicidality, and Interpersonal Theory of Suicide.
Description: An academic study that explores the intrapersonal factors related to eating disorders and how those factors interact with suicidal ideation and thoughts.

APPENDIX B:

Consent Statement

Appendix B: Consent Statement

The current study is being led by Emily Mink at Eastern Kentucky University. Participation in this study is completely voluntary. If you do not feel comfortable answering any of the items you can skip the item and move on to the next item in the survey. Since the study is completely voluntary you are allowed to quit the study at any time if you wish to do so. If you feel any distress or uncomfortable during the study please exit the study and seek help.

The current study asks for participants to provide an honest answer when answering the items on the surveys. Participants will be answering questions about subjects including eating behavior habits, self-esteem, depression, anxiety, and thoughts of suicide. The current study could possibly take up to 60 minutes to complete. Participants will be awarded $0.50 upon the conditions that the surveys are complete and the attention checks have been passed. The funding for the monetary compensation of $0.50 is provided by the Eastern Kentucky University Department of Psychology.

Please direct all questions or concerns to Emily Mink at Emily.mink@eku.edu. If you have any questions or concerns about your rights as a research participant contact Eastern Kentucky University Institutional Review Board at 859-622-3636.

Thank you for participating in the study.

APPENDIX C:

Debriefing Statement

Appendix C: Debriefing Statement

Thank you for completing the study.

The current study is attempting to understand how intrapersonal personality factors are related with eating disorders. This study had two main questions we are hoping to answer.

First, we examined the six intrapersonal factors and how they were related to disordered eating behavior. The six factors being examined included perfectionism, anxiety, depression, body dissatisfaction, self-esteem, and hopelessness. The researchers expect that individuals who scored higher on these intrapersonal factors would also score higher on disordered eating habits and behaviors.

Secondly, we examined if these intrapersonal and disordered eating behaviors were correlated to suicidal ideations. More specifically we expected that the higher the scores on intrapersonal factors and disordered eating the higher the participants would score on the acquired capability for suicide scale.

You can send any questions, comments, or concerns about this study to Emily Mink at Emily.mink@eku.edu

APPENDIX D:

Acquired Capability for Suicide Scale – Fearlessness About Death

Appendix D: Acquired Capability for Suicide Scale – Fearlessness About Death

Please select a degree to which you think each statement applies to you.

(1 = Not at all like me 2 = Somewhat not like me 3 = somewhat like me 4 = very much like me)

1. _____ The fact that I am going to die does not affect me.
2. _____The pain involved in dying frightens.
3. _____I am very much afraid to die.
4. _____It does not make me nervous when people talk about death.
5. _____The prospect of my own death arouses anxiety in me.
6. _____I am not disturbed by death being the end of life as I know it.
7. _____I am not at all afraid to die

APPENDIX E:

Frost Multidimensional Perfectionism Scale – Brief

Appendix E: Frost Multidimensional Perfectionism Scale – Brief

Please rate to the degree in which you agree with the following statements.

(1 = strongly disagree 2 = moderately disagree 3 = neutral 4 = moderately agree 5 = strongly agree)

Evaluative concerns

Item 9: If I fail at work/school, I am a failure as a person.

Item 13: If someone does a task at work/school better than me, then I feel like I failed at the whole task. Item

Item 25: If I do not do well all the time, people will not respect me.

Item 34: The fewer mistakes I make, the more people will like me.

Striving

Item 12: I set higher goals for myself than most people.

Item 19: I have extremely high goals.

Item 24: Other people seem to accept lower standards from themselves than I do. Item 30: I expect higher performance in my daily tasks than most people

APPENDIX F:

Interpersonal Needs Questionnaire

Appendix F: Interpersonal Needs Questionnaire

Please rate to the degree in which the item is true

(1 = not true at all for me 4 = somewhat true 7 = very true)

Items:

1. These days the people in my life would be better off if I were gone.
2. These days the people in my life would be happier without me.
3. These days I think I am a burden on society.
4. These days I think my death would be a relief to the people in my life.
5. These days I think the people in my life wish they could be rid of me.
6. These days I think I make things worse for the people in my life.
7. These days, other people care about me.
8. These days, I feel like I belong.
9. These days, I rarely interact with people who care about me.
10. These days, I am fortunate to have many caring and supportive friends.
11. These days, I feel disconnected from other people.
12. These days, I often feel like an outsider in social gatherings.
13. These days, I feel that there are people I can turn to in times of need.
14. These days, I am close to other people.
15. These days, I have at least one satisfying interaction every day.

APPENDIX G:

Rosenberg Self Esteem Scale – Eating Disorders Version

Appendix G: Rosenberg Self Esteem Scale – Eating Disorders Version

For the following questions please indicate how strongly you agree or disagree with each statement:

(0 = strongly disagree 1 = disagree 2 = agree 3 = strongly agree)

1.On the whole, I am satisfied with myself.
2.At times I think I am no good at all.
3.I feel that I have a number of good qualities.
4.I am able to do things as well as most other people
5.I feel I do not have much to be proud of.
6.I certainly feel useless at times.
7.I feel that I'm a person of worth, at least on an equal plane with others
8.I wish I could have more respect for myself.
9.All in all, I am inclined to feel that I am a failure.
10.I take a positive attitude toward myself.

APPENDIX H:

Eating Attitudes Test

Appendix H: Eating Attitudes Test

For the following questions please choose how often you agree with the following statements.

Always Usually Often Sometimes Rarely Never

1. I am terrified about being overweight
2. I avoid eating when I am hungry
3. I find myself preoccupied with food
4. I have gone on eating binges where I feel like I may not be able to stop
5. I cut my food into small pieces
6. I am aware of the calorie content of the foods I eat
7. I particularly avoid food high in carbohydrates
8. I feel others would prefer if I ate more
9. I Vomit after I have often eaten
10. I feel extremely guilty after eating
11. I am preoccupied with a desire to be thinner
12. I think about burning calories when I exercise
13. Other people think I am too thin
14. I am preoccupied with the thought of having fat on my body
15. I take longer than others to eat
16. I avoid foods with sugar in them
17. I eat diet foods
18. I feel that food controls my life
19. I display self-control around food
20. I feel others pressure me to eat
21. I give too much time and thought to food
22. I feel uncomfortable after eating sweets
23. I engage in dieting behavior
24. I like my stomach to be empty
25. I have the impulse to vomit after meals
26. I enjoy trying new rich foods

How many times in the past 6 months have you:

Never Once a moth or less 2-3 times a month Once a week 2-6 times a week 1+ a day

1. Gone on eating binges where you feel like you might not stop
2. Ever made yourself sick to control weight or shape
3. Ever used laxatives, diet pills, or water pills to control your weight or shape
4. Exercised more than 60 minutes a day to control your weight or shape
5. Lost 20 lbs in the past 6 months

APPENDIX I:

Patient Health Questionnaire - 9

Appendix I: Patient Health Questionnaire – 9

Answer how often you have been bothered by the following over the past two weeks

Not at all Several Days More than half of the days Nearly Everyday

1. Little interest or pleasure in doing things
2. Feeling down, depressed, or hopeless
3. Trouble falling or staying asleep OR sleeping too much
4. Feeling tired or having little energy
5. Poor appetite OR overeating
6. Feeling bad about yourself or that you are a failure or let down to your family
7. Trouble concentrating on things like reading or watching TV
8. Moving or speaking so slowly that other people could notice OR so fidgety or restless
9. Thoughts that you would be better off dead or thoughts of hurting yourself

APPENDIX J:

Generalized Anxiety Disorder 7

Appendix J: Generalized Anxiety Disorder 7

Over the last two weeks how often have you been bothered by the following problems

Not at all Several days Over half the days Nearly every day

1. Feeling nervous, anxious, or on edge
2. Not being able to stop or control worrying
3. Worrying too much about different things
4. Trouble relaxing
5. Being so restless that its hard to sit still
6. Becoming easily annoyed or irritable
7. Feeling afraid as if something awful might happen

How much difficult has it made you to work or go on with daily life

Not difficult at all Somewhat Difficult Very difficult Extremely Difficult

APPENDIX K:

Body Appreciation Scale

Appendix K: Body Appreciation Scale

Please circle the number that best characterizes your attitudes or behaviors

Never Seldom Sometimes Often Always

1. I respect my body
2. I feel good about my body
3. On the whole, I am satisfied with my body
4. Despite its flaws, I accept my body for what it is
5. I feel that my body has at least some good qualities
6. I take positive attitude toward my body
7. I am attentive to my body's needs
8. My self-worth is independent of my body shape or weight
9. I do not focus a lot of energy being concerned with my body shape or weight
10. My feelings toward my body are positive for the most part
11. I engage in healthy behaviors to take care of my body
12. I do not allow unrealistically thin images of women presented in the media to affect my attitudes toward my body
13. Despite its imperfections I still like my body

APPENDIX L:

Table 1 - Correlations With Confidence Intervals

Appendix L: Table 1
Correlations with Confidence Intervals

Variable	1	2	3	4	5	6	7
Self Esteem							
Body Satisfction	.33** [.21, .45]						
Interpersonal Needs	.04 [-.09,.18]	-.20** [-.33,-					
Acquired Capability	-.10 [-.23, .04]	-.02 [-	-.16** [-.29,-.03]				
Perfectionism	-.06 [-.19, .08]	-.29** [-.41,-	.46** [.34, .56]	.09 [-.04,.23]			
Depression	-.03 [-.16, .11]	-.45** [-.56,-	.60** [.50, .68]	-.09 [-.22,.05]	.44** [.32, .54]		
Eating Disorder Behavior	.09 [-.05, .22]	.41** .[.30,	-.40** [-.50,-.28]	.04 [-.10,.18]	-.32** [-.44, -.20]	-.40** [-.51, -.28]	
Anxiety	-.14** [-.27,-.00]	-.45** [-.56,-	.48** [.37,.58]	.04 [-.10,.18]	.43** [.31, 54]	.83** [.79, .87]	-.40** [-.51, -.28]

Note. Values are standardized and inside the square brackets indicate the 95% confidence interval for each correlation. * indicates $p < .05$. ** indicates $p < .01$.

APPENDIX M:

Table 2 – Regressions Results using Acquired Capability as the criteria

Appendix M: Table 2

Regression Results using Acquired Capability as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	Fit
Intercept	18.74**	[14.79, 22.69]			
Perfectionism	.07	[-.03, .17]	.10	[-.05, .26]	
Depression	-.21**	[-.35, -.08]	-.41	[-.66, -.15	
Anxiety	.19*	[.04, .35]	.32	[.06, .57]	
Self Esteem	-.06	[-.18, .05]	-.09	[-.23, .06]	
Body Satisfaction	0.01	[-.04, .07]	.04	[-.13, .20]	R^2 = .066* 95% CI [.00,.12]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively.

* indicates $p < .05$. ** indicates $p < .01$.

APPENDIX N:

Table 3 – Regression using Interpersonal Needs as the criterion

Appendix N: Table 3

Regression Results using Interpersonal Needs as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	Fit
Intercept	16.72**	[11.08, 22.37]			
Perfectionism	.33**	[.19, .48]	.28	[.16, .40]	
Depression	.53**	[.34, .72]	.56	[.35, .76]	
Anxiety	-.06	[-.28, .16]	-.05	[-.25, .15]	
Self Esteem	.08	[-.08, .24]	.06	[-.06, .17]	
Body Satisfaction	.04	[-.04, .12]	.07	-.06, .20]	R^2 = .425** 95% CI [.31,.50]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively.

* indicates $p < .05$. ** indicates $p < .01$.

APPENDIX O:

Table 4 – Regression results using Eating Attitudes Test

Appendix I: Table 4

Regression Results using Eating Attitudes Test as the criterion

Predictor	*b*	*b* 95% CI [LL, UL]	*beta*	*beta* 95% CI [LL, UL]	Fit
Intercept	160.32**	[138.83, 181.80]			
Thwarted Belongingness	-1.24**	[1.64, -.84]	-.40	[-.53, -.27]	
Acquired capability	-.14	[-.87, .58]	-.03	[-.15, .10]	R^2 = .158** 95% CI [.07, .24]

Note. A significant *b*-weight indicates the beta-weight and semi-partial correlation are also significant. *b* represents unstandardized regression weights. *beta* indicates the standardized regression weights. sr^2 represents the semi-partial correlation squared. *r* represents the zero-order correlation. *LL* and *UL* indicate the lower and upper limits of a confidence interval, respectively.

* indicates $p < .05$. ** indicates $p < .01$.

Appendix P:

Table 5 – Realiability of Measures

Appendix I: Table 5
Reliability of Measures

	Minimum	Maximum]	M	SD	Number of Items	Cronbach's Alpha
Self Esteem	10	30	21.91	5.03	10	0.461
Body Satisfaction	13	65	39.37	11.27	13	0.938
Interpersonal Needs	15	57	37.17	7.04	15	0.697
Acquired Capability	7	28	18.19	3.84	7	0.611
Perfectionism	8	40	22.26	5.83	8	0.904
Depression	9	36	19.78	7.33	9	0.909
Eating Disorder Behavior	44	116	11.61	21.74	31	0.889
Anxiety	7	28	15.35	6.21	8	0.913