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An Empirical Test of the Interpersonal Theory of Suicide in a Heterogeneous Eating Disorder Sample

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Abstract

Objective—The Interpersonal Theory of Suicide (IPTS) model has not been fully tested in a clinical eating disorder (ED) population.

Method—Participants (N = 114) completed questionnaires assessing suicidal ideation (SI), suicide attempts (SA), and constructs of the IPTS. Logistic regressions determined whether thwarted belongingness and perceived burdensomeness were associated with lifetime SI. Among those who endorsed lifetime SI, logistic regressions were used to determine whether elements of the acquired capability for suicide (fearlessness about death and painful and provocative events) were associated with lifetime SA.

Results—Sixty-five participants (57.0%) had lifetime SI and 24 (21.1%) had lifetime SA. Thwarted belongingness ($p < 0.001$) and perceived burdensomeness ($p < 0.01$) were associated with lifetime SI. Painful and provocative events were associated with lifetime SA ($p < 0.03$).

Discussion—The IPTS was partially supported. Targeting interpersonal variables may be important in treating and preventing suicidality.

Keywords

Suicide; eating disorders

Suicide is one of the primary causes of death among individuals with eating disorders (EDs). Elevated mortality due to suicide has been observed in anorexia nervosa (1) and bulimia nervosa (2) and individuals with purging disorder and binge eating disorder have elevated rates of suicide attempts (3). Thus, individuals across the ED spectrum are at significantly elevated risk for suicide. However, there has been limited research to determine the specific role of interpersonal perception and self-oriented cognition that may contribute to suicide risk in individuals with EDs.

The interpersonal theory of suicide (IPTS; 4, 5) is an empirically supported theory of suicide risk (5). The IPTS posits that, in order for an individual to attempt suicide, the individual must have both the desire and the acquired capability for suicide (4,5). The desire for suicide

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(i.e., suicidal ideation) results from an individual experiencing both 1) perceived burdensomeness (PB; i.e., “I am a burden”) and 2) thwarted belongingness (TB; i.e., “I am alone”). According to the IPTS, suicide attempts are made only by those with suicidal ideation who also have acquired capability, which includes 1) an increased physical pain tolerance and 2) a reduced fear of death.

Emerging data provide initial support for applying the IPTS to EDs. PB has been associated with fasting, binge eating, and laxative use (6). TB has been associated with body dissatisfaction (6). Additionally, ED behaviors have been associated with acquired capability (7–9). However, the full IPTS model has not been tested in a clinical ED sample.

The current study examined the extent to which the IPTS components are associated with lifetime suicidal ideation (SI) and lifetime suicide attempts (SA) in a heterogeneous ED sample. We hypothesized that PB and TB would each be associated with lifetime SI and that, among those with lifetime SI, the components of acquired capability (painful and provocative events, a proxy measure for increased pain tolerance, and fearlessness about death) would be associated with a lifetime SA.

Method

Participants and Procedures

Participants (N = 114; 93.9% female; age M = 33.7, SD = 12.11) with an ED (8.8% anorexia nervosa, 21.1% bulimia nervosa, 23.7% binge eating disorders, and 46.5% eating disorder not elsewhere classified in past month by EDE-Q algorithms; 88.6% in outpatient treatment, 11.4% in day treatment or residential) were recruited for a study on emotional experiences of individuals with EDs. No mention of suicide was made in the recruitment materials. Inclusion criteria included age > 18 years, current ED treatment, and ability to read and write English.

Potential participants obtained the study description and consent form from the study’s website. Participants signed the consent form electronically and completed the assessments online. The study was designed to be entirely web-based as the anonymity of online administration has been demonstrated to increase self-disclosure of sensitive information such as ED symptomatology and suicidality (10). The consent form indicated that the questionnaires would not be examined immediately after completion and that individuals with thoughts of hurting themselves should contact their treatment team, the local Emergency Department, or the National Suicide Prevention Hotline at the provided number. The study’s procedures were approved by the university’s institutional review board.

Measures

Interpersonal Needs Questionnaire (INQ; 11)—The INQ is 15 items and assesses PB (α = .94) and TB (α = .91).

Painful and Provocative Events Scale (PPES; 12)—The PPES assesses how many times individuals have been engaged in experiences that are hypothesized to be associated with the acquired capability for suicide (e.g., got in physical fights, been a victim of sexual

abuse; α = 0.79). This scale has previously been demonstrated to be associated with increased pain tolerance (17).

Acquired Capability for Suicide Scale - Fearlessness About Death (ACSS-FAD; 13)—The ACSS-FAD is 7 items and assesses fearlessness about death, a component of acquired capability. This subscale has been found to be more psychometrically sound than the full scale (18). However, reliability in the present sample was questionable (α = 0.65).

Eating Disorder Examination Questionnaire (EDE-Q; 14)—The EDE-Q was used to determine ED diagnosis, frequency of eating disorder behaviors and global eating disorder severity (α = 0.92).

Lifetime Suicidal Ideation and Suicide Attempts—Participants were asked "Have you ever had thoughts of killing yourself?" and "Have you ever made an actual attempt to kill yourself in which you had at least some intent to die?" Response options for both questions were yes or no.

Statistical Analyses

Three lifetime suicide status groups were determined, no lifetime SI or SA (n = 49; 43.0%), lifetime SI but no SA (n = 41; 36.0%) and at least one lifetime SA (n = 24; 21.1%), and were compared on demographic variables and constructs of interest using ANOVAs.

Two univariate logistic regression analyses were conducted to determine whether PB and TB were associated with the lifetime presence of SI. Then, an exploratory multivariate logistic regression analysis was conducted to determine whether PB and TB were each uniquely associated with lifetime SI. Finally, two univariate logistic regression analyses were conducted to determine whether, among those with lifetime SI, fearlessness about death and painful and provocative events were associated with a lifetime SA.

Results

Sample Characteristics

Descriptive statistics and differences across groups on ED diagnosis, ED severity and IPTS construct variables are presented in Table 1. PB and PPES were higher among those with a lifetime SA than among those without SI or a SA (p's < 0.006). TB was higher among those with lifetime SI and a lifetime SA compared with those without SI or SA (p < 0.001). There was no difference in fearlessness about death across groups (p < 0.09).

Lifetime Suicidal Ideation

PB was associated with lifetime SI (β = 0.06, SE = 0.02, Wald X^2 = 6.36, OR = 1.06 [95% CI = 1.03, 1.10], p < 0.012) and the model explained 9.7% of the variance (Nagelkerke R^2 = 0.097). TB was associated with lifetime SI (β = 0.06, SE = 0.02, Wald X^2 = 11.93, OR = 1.06 [95% CI = 1.03, 1.10], p < 0.01) and the model explained 17.2% of the variance (Nagelkerke R^2 = 0.172). When both PB and TB were entered in the same model, the overall model was significant (p < 0.001, Nagelkerke R^2 = 0.182) but only TB was uniquely

associated with lifetime SI (β = 0.52, SE = 0.02, Wald X^2 = 5.49, OR = 1.05 [95% CI = 1.01–1.10], $p < 0.02$).

Lifetime Suicide Attempt

Among those with lifetime SI ($n = 65$), the PPES was significantly associated with a lifetime SA (β = 0.06, SE = 0.03, Wald X^2 = 4.67, OR = 1.06 [95% CI 1.00–1.12], $p < 0.03$) and the model explained 11.5% of the variance (Nagelkerke R^2 = 0.115). Fearlessness about death was not significantly associated with the presence of a lifetime SA (β = 0.09, SE = 0.10, Wald X^2 = 0.76, OR = 1.09 [95% CI = 0.90, 1.33], $p < 0.39$).

Discussion

This study tested all elements of the IPTS in a clinical ED sample and found partial support for the model. As hypothesized, both PB and TB were positively associated with lifetime SI. Interestingly, only TB was uniquely associated with lifetime SI. As hypothesized, among those with lifetime SI, lifetime engagement in painful and provocative events was significantly positively associated with a lifetime SA. However, contrary to hypotheses, fearlessness about death was not associated with a lifetime SA among those with lifetime SI. This finding should be interpreted with caution though given the relatively weaker reliability of this scale in this sample.

The present findings indicate that TB is uniquely associated with increased prevalence of SI in EDs. Thus, patients who do not feel connected to a social support network should be actively monitored for SI as they may be at increased risk. Potential treatment targets include identifying social support networks and improving social skills to effectively engage support networks. Individuals who have lifetime SI and who have been engaged in a variety of painful and provocative events may also be at elevated risk of SAs. This finding is consistent with previous research indicating increased risk of suicide in individuals with EDs who have experience childhood abuse (15,16).

The present study has several strengths, including the use of a clinically-based ED sample and anonymous online data collection that may have increased self-disclosure (10, 17). However, a few limitations should be noted. The fearlessness about death scale had questionable reliability in the present sample and these results should be interpreted with caution. We have no information about the lethality of the suicide attempt. The use of a heterogeneous sample may have impacted findings due to differences observed between ED diagnoses and ED subtypes on prevalence and correlates of lifetime SA (3). Additionally, the data were cross-sectional and did not allow for the examination of temporal precedence. Thus, future research is needed to replicate these findings in a longitudinal sample.

The present study partially supports the potential usefulness of the IPTS for understanding suicide risk in individuals EDs. Thwarted belongingness may be particularly important to identify those at highest risk of suicidal ideation and engaging social support may be a target for suicide prevention efforts.

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Table 1

Sample characteristics by the presence or absence of a lifetime suicidal ideation (SI) and history of a suicide attempt (SA)

	No SI or SA (N = 49)	SI but no SA (N = 41)	SA (N = 24)	Comparison
	N (%)	N	N	
AN	4 (40.0)	4 (40.0)	2 (20.0)	$X^2(6) = 7.86$, $p < 0.26$
BN	11 (45.8)	4 (16.7)	9 (37.5)	
BED	10 (37.0)	12 (44.4)	5 (18.5)	
EDNEC	24 (45.3)	21 (39.6)	8 (15.5)	
	M (SD)	M (SD)	M (SD)	
Age (years)	32.3 (11.9) [a]	33.3 (10.5) [a]	38.8 (14.0) [a]	F(2,111) = 2.86, $p < 0.06$
BMI (kg/m^2)	27.6 (10.5) [a]	28.3 (10.2) [a]	28.9 (13.9) [a]	F (2, 109) = 0.13, $p < 0.89$
Binge Eating Episodes	6.2 (7.4) [a]	8.10 (11.1) [a]	11.4 (17.3) [a]	F (2, 109) = 1.69, $p < 0.20$
Self-Induced Vomiting	1.8 (4.7) [a]	2.0 (6.2) [a]	8.8 (17.9)[b]	F (2, 111) = 5.14, $p < 0.007$
Laxative Abuse	1.1 (3.7) [a]	0.7 (3.2) [a]	0.6 (1.5) [b]	F (2, 111) = 0.34, $p < 0.71$
EDE-Q Global	3.8 (1.2) [a,b]	3.4 (1.3) [a]	4.14 (1.1) [b]	F (2, 106) = 3.20, $p < 0.045$
Perceived Burdensomeness	11.1 (7.8) [a]	13.6 (9.6) [a]	20.4 (11.4) [b]	F (2, 102) = 7.27, $p < 0.001$
Thwarted Belongingness	22.1 (11.5) [a]	28.9 (12.9) [b]	34.1 (12.6) [b]	F (2, 102) = 7.37, $p < 0.001$
Painful and Provocative Events	39.0 (8.8) [a]	40.9 (9.3) [a]	47.4 (11.0) [b]	F (2, 99) = 5.39, $p < 0.006$
Fearlessness about Death	18.6 (4.3) [a]	20.4 (5.3) [a]	22.0 (5.6) [a]	F (2, 101) = 1.30, $p < 0.29$

Note: Diagnoses and frequency of eating disorder behaviors in the past 28 days derived from the Eating Disorder Examination Questionnaire; Superscripts sharing a letter are not significantly different at the $p < 0.05$ level.