

6-15-2021

Targeting Burdensomeness among Clinic Referred Youth: Development of a CBT Module

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FLORIDA INTERNATIONAL UNIVERSITY

Miami, Florida

TARGETING BURDENSOMENESS AMONG CLINIC REFERRED YOUTH:
DEVELOPMENT OF A BRIEF CBT MODULE

A dissertation submitted in partial fulfillment of the
requirements for the degree of
DOCTOR OF PHILOSOPHY

in

PSYCHOLOGY

by

Victor Buitron

2021

To: Dean Michael R. Heithaus
College of Arts, Sciences, and Education

This dissertation, written by Victor Buitron, and entitled Targeting Burdensomeness among Clinic Referred Youth: Development of a Brief CBT Module, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

Stacy Frazier

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Date of Defense: June 15, 2021

The dissertation of Victor Buitron is approved.

Dean Michael R. Heithaus
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Andrés G. Gil
Vice President for Research and Economic Research
and Dean of the University Graduate School

Florida International University, 2021

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DEDICATION

Thank you for your vision grandpa,
Mom and dad for your support,
And Katherine for all the love.

ACKNOWLEDGMENTS

I would like to state my appreciation for my Major Professor, Jeremy Pettit, and his unconditional support. I am grounded in academia and practice by his patience, care for others, and exceptional mentorship.

I would also like to thank Dana McMakin for the masterful clinical training, and invaluable professional guidance. Thank you Stacy Frazier for instilling in me the deepest appreciation for the communities we serve, and all of the professional support. Thank you Mark Padilla for introducing me to the art and method of analyzing people's truth. Thank you to the entire committee for the thoughtful contributions to my project.

I am also deeply grateful to Ryan Hill for his foundational work in this area, his guidance, and valued collaboration.

ABSTRACT OF THE DISSERTATION
TARGETING BURDENSOMENESS AMONG CLINIC REFERRED YOUTH:
DEVELOPMENT OF A BRIEF CBT MODULE

by

Victor Buitron

Florida International University, 2021

Miami, Florida

Professor Jeremy W. Pettit, Major Professor

Research has established perceived burdensomeness toward others as a correlate and risk factor for suicide ideation in youth. Existing CBT protocols for internalizing disorders target thoughts and behaviors related to anxiety and/or depression, but do not explicitly target other identified risk factors for suicide ideation, including perceived burdensomeness toward others. The aims of the current study were to (1) develop a novel, brief selective prevention module (the “Give program”) targeting perceived burdensomeness toward others that can be embedded within existing CBT protocols for youth internalizing disorders, (2) evaluate the acceptability and feasibility of the module with an eye toward intervention refinement, and (3) examine reductions in perceived burdensomeness. Participants were 18 clinic-referred youths with anxiety or depressive disorders who endorsed burdensomeness. The study utilized a quasi-experimental interrupted time-series design to evaluate changes in burdensomeness scores following the administration of the module. The module was clinically feasible and well-accepted.

Youth burdensomeness scores increased in the first half of the CBT protocol, and decreased immediately following the administration of the Give program module. The current study is the first to develop and evaluate a selective preventive module targeting burdensomeness in at-risk youth in an outpatient setting, demonstrating that burdensomeness can be efficiently and effectively targeted within existing evidence-based treatment protocols for internalizing disorders in youth.

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INTRODUCTION

My program of research is focused on the etiology and prevention of suicide-related behavior in youth. The goals of my research include 1) the examination of interpersonal risk factors for suicide-related behavior in youth and 2) the development and examination of novel preventive approaches to suicide-related behavior in youth.

Rationale for Research

Suicide-related behavior is prevalent and impairing in youth, with 17.7% of high school students reporting seriously considering a suicide attempt and 14.6% reporting making a specific plan for suicide in the past 12 months (CDC, 2018). Although research efforts have been directed toward developing and evaluating psychosocial interventions targeting reductions in suicidal behavior, including safety planning (e.g., Pettit, Buitron & Green, 2018), attachment-based family therapy (Diamond et al., 2010), and cognitive-behavioral therapy for suicide prevention (Stanley et al., 2009; Asarnow et al., 2017), the rates of suicide ideation and suicide in youth have continued to rise in recent years (CDC, 2018). There is a critical need for novel intervention targets to prevent and reduce suicide ideation in youth. To address this critical need, my research focused on advancing understanding of perceived burdensomeness toward others as etiological risk factor for suicide ideation in youth, and developing and evaluating a novel, brief psychosocial treatment module targeting perceived burdensomeness toward others that can be embedded within existing psychosocial treatments for youth.

Research Portfolio

The Interpersonal Psychological Theory of Suicide (ITS) posits that perceived burdensomeness (i.e., the belief that one is a drain on others) and thwarted belongingness (i.e., the belief that one is socially disconnected) are proximal risk factors for suicide ideation (Van Orden et al., 2010; Joiner, 2005). Given the paucity of research examining

the tenets of the theory in youth, the current dissertation research sought to examine associations between burdensomeness and belongingness, different forms of stressors (e.g., interpersonal, non-interpersonal), and suicide ideation in psychiatric inpatient adolescents (Study 1). I hypothesized that perceived burdensomeness and thwarted belongingness would be positively associated with chronic interpersonal stressors and suicide ideation, respectively. Further, I hypothesized that perceived burdensomeness would partially account for the association between chronic interpersonal stressors and suicide ideation.

Given growing support for the ITS in youth, including findings presented in Study 1, I moved to develop and examine a conceptual model wherein the combination of low parental warmth and youth impairment foster a sense of burdensomeness in youth (Study 2). I hypothesized that the association between low parental warmth and youth perceived burdensomeness would be moderated by youth impairment, such that the association would be statistically significant at high but not low levels of youth impairment.

Given support for the ITS in youth and evidence implicating the role of parent-child relationship variables in youth perceived burdensomeness, I then developed a novel, brief psychosocial intervention module targeting perceived burdensomeness toward others designed to be embedded within existing CBT protocols for youth internalizing problems (Study 3). I hypothesized that the intervention would result in a reduction of burdensomeness using a quasi-experimental interrupted time-series study design. I also collected qualitative data from the families regarding acceptability, feasibility, and client satisfaction with the intervention.

In all, my dissertation research portfolio aimed to examine the ITS in youth, elucidate factors that shape the belief of burdensomeness in youth, and examine a novel intervention module targeting burdensomeness.

CHAPTER 1: INTERPERSONAL STRESS AND SUICIDAL IDEATION IN
ADOLESCENCE: AN INDIRECT ASSOCIATION THROUGH PERCEIVED
BURDENSOMENESS TOWARD OTHERS

This manuscript was published in the Journal of Affective Disorders, Volume 190, pages 143-149.

Buitron, V., Hill, R.M., Pettit, J. W., Green, K.L., Hatkevich, C., Sharp, C. (2016).

Interpersonal stress and suicidal ideation in adolescence: An indirect association through perceived burdensomeness toward others. *Journal of Affective Disorders. 190*, 143-149.

Abstract

Background. Research has documented significant associations between life stress, especially interpersonal stress, and suicidal ideation in adolescents. Little is known about variables that explain the association between interpersonal stress and suicidal ideation.

Methods. The present study evaluated a conceptual model in which interpersonal stress (chronic and episodic) predicted suicidal ideation indirectly via thwarted belongingness and perceived burdensomeness among 180 inpatients (65.0% girls) ages 12 to 17 years ($M = 14.72$, $SD = 1.49$). Non-interpersonal stress was also examined to determine whether the model was specific to interpersonal stress or common to stress in general.

Results. Structural equation modeling identified a significant indirect effect of chronic interpersonal stress on suicidal ideation via perceived burdensomeness. Episodic interpersonal stress was significantly correlated with thwarted belongingness and suicidal ideation, but was not a significant predictor of suicidal ideation in a model that controlled for depressive and anxious symptoms. No significant associations were found between non-interpersonal stress and suicidal ideation.

Limitations. Adolescents were the sole informant source, data on psychiatric diagnoses were not available, and the optimal time interval for examining stress remains unclear. The cross-sectional study design prevents conclusions regarding directionality.

Conclusions. These findings highlight the role of chronic interpersonal stress in suicidal ideation in adolescents, as well as the potential promise of perceived burdensomeness as a target for programs designed to prevent or reduce suicidal ideation.

Keywords: suicidal ideation; stress; interpersonal; adolescence

Interpersonal Stress and Suicidal Ideation in Adolescence: An Indirect Association through Perceived Burdensomeness toward Others

The prevalence of suicidal ideation increases dramatically and peaks during adolescence; 17% of high school students endorsed seriously considering a suicide attempt and 14% reported making a specific plan about how they would attempt suicide in the past 12 months (CDC, 2014). Adolescence thus is a crucial period in which to examine variables indicated in the etiology of suicidal ideation. Life stress, especially life stress in interpersonal relationships, has received considerable attention in the etiology of suicidal ideation among adolescents (e.g., Heikkinen, Aro, & Lönnqvist, 1993; Johnson et al., 2002; King & Merchant, 2008; Sandin et al., 1998).

Life stress and Suicidal Ideation in Adolescence

A large empirical literature has demonstrated significant associations between life stress and suicidal ideation in adolescence (e.g., Overholser, 2003; Pettit et al., 2011), including episodic stress and chronic stress (Grover et al., 2009). Episodic stress includes discrete, acute events that disrupt an adolescent's life (e.g., break-up of a romantic relationship), whereas chronic stress refers to ongoing and persistent difficulties and threats (e.g., frequent arguments with parents). Global, or composite, indices of episodic stress and chronic stress have demonstrated only modest associations with suicidal ideation (Kelly, Lynch, Donovan, & Clark, 2001), indicating a need for a more fine-grained examination of the associations between specific domains of stress and suicidal ideation.

Stress in interpersonal domains, meaning stress that occurs in the context of relationships with others, has consistently been identified as a significant correlate or predictor of suicidal ideation in adolescence (King & Merchant, 2008; Whitlock, Wyman, & Moore, 2014). For example, interpersonal events such as physical or sexual abuse,

major family disruptions, and romantic break-ups were common precipitants of suicide-related behaviors in adolescence (Garber, Little, Hilsman, & Weaver, 1998; Asarnow et al., 2008; Bruffaerts et al., 2010) and serious fights with family members in middle adolescence predicted risk of suicide-related behaviors into late adolescence and early adulthood (Johnson et al., 2002). Similarly, chronic, ongoing stress in interpersonal relationships was significantly associated with suicidal ideation in a sample of adolescents (Pettit et al., 2011) and ongoing difficulties in eight interpersonal domains were significantly associated with risk of suicide-related behaviors in late adolescence and early adulthood (Johnson et al., 2002). In contrast, evidence for an association between stress in non-interpersonal domains and suicide-related behavior has been less consistent, with some studies failing to find significant associations between episodic stressful events and chronic stress in non-interpersonal domains, on the one hand, and suicide-related behaviors, on the other hand (Johnson et al., 2002; Pettit et al., 2011).

Although evidence supports an association between interpersonal stress and suicidal ideation in adolescence, it remains unclear *how* interpersonal stress leads to suicidal ideation. That is, little is known about mediators of the association between interpersonal stress and suicidal ideation. The identification of mediators of the association between interpersonal stress and suicidal ideation could inform etiologic models of suicidal ideation as well as prevention strategies designed to reduce the risk of suicidal ideation following the occurrence of interpersonal stress.

The Interpersonal Psychological Theory as an Explanation of the Association between Interpersonal Stress and Suicidal Ideation in Adolescence

The interpersonal psychological theory of suicide (IPTs) provides a compelling framework to elucidate the relationship between interpersonal stress and suicidal ideation in adolescence. According to the IPTs, suicidal ideation results from a sense of thwarted

belongingness (i.e., social disconnection) and a sense of perceived burdensomeness toward others (i.e., the belief that one is a burden or drain on others) (Joiner, 2005; Van Orden, 2010). Considerable evidence supports a significant association between perceived burdensomeness and suicidal ideation among adults (e.g., Hill & Pettit, 2014; Van Orden et al., 2010), and recent findings provide support for a significant association between perceived burdensomeness and suicidal ideation among adolescents (Hill et al., 2015; Venta, Mellick, Schatte, & Sharp, 2014). Evidence for an association between thwarted belongingness and suicidal ideation has been mixed in adults (Van Orden et al., 2012; Woodward et al., 2014; O’Keefe et al., 2014); two published studies among adolescents found a significant association between thwarted belongingness and suicidal ideation (Hill et al., 2015; Venta, Mellick, Schatte, & Sharp, 2014). Thus, evidence is accumulating to support perceived burdensomeness and thwarted belongingness as correlates of suicidal ideation in adolescents.

It is possible that interpersonal stress is associated with an erosion in one’s relationships with others and a diminished quality and/or quantity of social interactions. The possibility of such an erosion is supported by findings that interpersonal stress is significantly associated with lower levels of social support (Auerbach, Bigda-Peyton, Eberhart, Webb, & Ringo Ho, 2011) and higher levels of family disruption (Rudolph & Flynn, 2007) in adolescents. Erosion of relationships subsequent to interpersonal stress may be associated with a sense of social disconnection (i.e., thwarted belongingness) and a sense of social drain (i.e., perceived burdensomeness) that in turn, according to the IPTS, are associated with thoughts of suicide. Although such erosion may occur in the context of episodic, disruptive interpersonal events, it may be especially likely to occur when interpersonal stress is chronic and ongoing. Repeated strains on interpersonal

relationships, even more so than isolated events, may exert a cumulative effect on perceptions of social connectedness and social contribution.

We are not aware of published studies that have examined the associations between interpersonal stress, perceived burdensomeness, and thwarted belongingness among adolescents. However, evidence consistent with significant associations between interpersonal stress, perceived burdensomeness, and thwarted belongingness has been reported among young adults: Among 189 undergraduate students, retrospectively reported childhood emotional abuse was significantly associated with current levels of thwarted belongingness, perceived burdensomeness, and suicidal ideation (Puzia et al., 2014). Further, perceived burdensomeness, but not thwarted belongingness, significantly mediated the association between childhood emotional abuse and current suicidal ideation. These findings provide preliminary evidence that distal stress in interpersonal relationships is associated with a sense of thwarted belongingness and perceived burdensomeness, and that perceived burdensomeness may partially explain the association between distal interpersonal stress and suicidal ideation among young adults. Although they did not measure thwarted belongingness or perceived burdensomeness, Johnson et al. (2002) reported similar findings among 659 late adolescents and young adults: interpersonal difficulties in middle adolescence mediated the association between maladaptive parenting or abuse during childhood and suicide-related behaviors in late adolescence or early adulthood.

Present Study

The purposes of the present study were to build on those promising preliminary findings by (a) examining the associations between stress, perceived burdensomeness, thwarted belongingness, and suicidal ideation and (b) evaluating a conceptual model wherein interpersonal stress is associated with suicidal ideation via perceived

burdensomeness and thwarted belongingness in a sample of psychiatric inpatient adolescents. Based on past research and the IPTS, we made three sets of hypotheses. First, we hypothesized that interpersonal stress (episodic and chronic) would be significantly and positively associated with suicidal ideation. Second, we hypothesized that interpersonal stress would be significantly and positively associated with thwarted belongingness and perceived burdensomeness. Whereas episodic interpersonal stress may strain interpersonal relationships in the short term, we tentatively expected chronic interpersonal stress would be especially likely to be associated with thwarted belongingness and perceived burdensomeness due to repeated, ongoing strains on relationships with others. Third, we hypothesized that a model of indirect effects wherein the relationship between interpersonal stress (episodic and chronic) and suicidal ideation is accounted for in part by thwarted belongingness and perceived burdensomeness would provide a good fit to the data. Findings in support of the proposed conceptual model would suggest the potential promise of thwarted belongingness and perceived burdensomeness as targets in prevention programs designed to reduce the risk of suicidal ideation among adolescents who experience high levels of interpersonal stress.

To evaluate whether the proposed conceptual model is specific to interpersonal stress or common to stress irrespective of domain, we also examined the associations between non-interpersonal stress, perceived burdensomeness, thwarted belongingness, and suicidal ideation. Based on past research findings (e.g., Johnson et al., 2002; Pettit et al., 2011), we did not expect non-interpersonal stress to be significantly associated with perceived burdensomeness, thwarted burdensomeness, and suicidal ideation. Finally, given well documented significant associations between depressive and anxious symptoms and suicidal ideation in adolescence (e.g., Hill, Castellanos, & Pettit, 2011;

Kandel, Raveis, & Davies, 1991), we included depressive and anxious symptoms as a covariate in statistical analyses.

Method

Participants and Procedures

This study was conducted as approved by the appropriate institutional review boards. Adolescent participants were recruited from consecutively admitted inpatients at a university-affiliated acute-care psychiatric hospital in a large urban area. After the nature of the study was explained, 378 parents provided informed consent for their adolescent child to participate. Of those 378 adolescents with parental consent, 305 (81.4%) provided assent to participate, 41 (10.8%) declined to participate, and 32 (8.5%) were ineligible to participate due to severe psychosis and/or intellectual disability. Of the 305 who were eligible and assented, 80 (25.3%) were discharged prior to completion of the research protocol due to the acute nature of this inpatient unit and 8 (2.5%) withdrew assent/consent prior to completion of the research protocol. Of the remaining 217 adolescents, a final sample of 180 (82.9%) was included in the current study based on completion of pertinent study measures (Chronic Stress and Episodic Life Events Interview for Adolescents, Modified Scale for Suicidal Ideation, Interpersonal Needs Questionnaire, and Youth Self-Report). No significant differences were found between participants included in the final sample and adolescents who were excluded on any demographic variable.

Participants were interviewed in a private testing room on the psychiatric unit. Interviewers were advanced clinical psychology graduate students with training in the interview procedures, including practice and supervised administrations. Participants were remunerated for their time. Participants (65.0% girls) ranged in age from 12 to 17

years ($M = 14.72$, $SD = 1.49$) and identified themselves as Hispanic (42.7%), Caucasian (25.4%), African American (23.2%), multiracial (7.3%), or Southeast Asian (1.1%).

Measures

Chronic and Episodic Stress. The Chronic Stress and Episodic Life Events Interview for Adolescents (Hammen, 2004) is a semi-structured interview about chronic stress and episodic stress (i.e., life event stress). The interview covered interpersonal domains (close friend, social life, romantic, and family) and non-interpersonal domains (academic, finance, personal health, and family health) during the prior six months. During the interview, a narrative was written to summarize ongoing conditions and the context of each life event. A team of three to eight members, blind to participants' subjective ratings of stress severity, gave consensual severity ratings of chronic and episodic stress. Chronic stress in each domain was rated on a scale from 1 (*exceptionally high-quality circumstances*) to 5 (*extreme adverse conditions*) with behaviorally specific anchors for each value. Episodic events were rated on a scale from 1 (*no impact*) to 5 (*extremely severe impact*). Episodic events also were judged to be interpersonal (i.e., predominately involved or affected relationships with other people) or non-interpersonal (Shih, Eberhart, Hammen, & Brennan, 2006). Reliabilities based on independent ratings of chronic stress domains and episodic events yielded correlations from .85 to .96. Consistent with past studies (e.g., Ostiguy et al., 2009; Shih et al., 2006), we computed separate stress indices for interpersonal domains and non-interpersonal domains: episodic interpersonal stress, episodic non-interpersonal stress, chronic interpersonal stress, and chronic non-interpersonal stress.

Suicidal Ideation. The Modified Scale for Suicide Ideation (MSSI) is an 18-item clinician rating scale of the severity of suicidal ideation (Miller, Norman, Bishop, & Dow, 1986). Each item is rated from 0 to 3 and the total score ranges from 0 to 54 (higher

scores represent greater suicidal ideation). The internal consistency, interrater reliability, and factor structure of the MSSSI have been supported among adolescents (Pettit et al., 2009). Concurrent and discriminant validity have been adequately supported (Miller et al., 1986; Pettit et al., 2009). Internal consistency in the present sample was acceptable ($\alpha = .93$).

Thwarted Belongingness and Perceived Burdensomeness. The Interpersonal Needs Questionnaire-10 (INQ; Van Orden, 2009; Van Orden, Cukrowicz, Witte, & Joiner, 2012) is a 10-item measure of perceived burdensomeness (5 items) and thwarted belongingness (5 items). Participants rate the extent to which each item describes how they have felt recently, using a 7-point Likert scale. Higher scores indicate greater perceptions that one is a burden to others (perceived burdensomeness) and does not feel connected to others (thwarted belongingness). Example items on the perceived burdensomeness scale include “These days, the people in my life would be happier without me” and “These days, I think I make things worse for the people in my life.” Example items from the thwarted belongingness scale include, “These days, I feel disconnected from other people” and “These days, I often feel like an outsider in social gatherings.” Prior research has supported the factor structure, internal consistency, and convergent validity of the subscales among adolescents (Hill et al., 2015). Additionally, research by Silva et al. (unpublished manuscript) has supported the test-retest reliability of the subscales. Internal consistency in the present sample was $\alpha = .86$ for perceived burdensomeness and $\alpha = .82$ for thwarted belongingness.

Anxiety and Depressive Symptoms. The Youth Self Report (YSR) is a 112 item self-rating scale of behavior problems for children and adolescents aged 11 to 18 years (Achenbach, 1991). The YSR contains nine syndrome scales, including the anxious/depressed scale. For the present study, we used participants’ scores on the

anxious/depressed scale as a measure of depressive and anxious symptom severity. Research supports the convergent validity of the anxious/depressed scale via significant associations with diagnoses of major depressive disorder and anxiety disorders (Gomez, Vance, & Gomez, 2014; Ivarsson et al., 2002).

Data Analysis

Missing data occurred at a low frequency for the MSSSI (1.6%), INQ thwarted belongingness scale (0.5%), chronic stress measures (3.8%), and YSR anxious/depressed scale (11.1%). There were no missing data for the INQ perceived burdensomeness scale or the episodic stress measures. Missing data was assessed by computing a dummy variable representing the presence or absence of missing data for each variable. This dummy variable was then correlated with all other variables in the model as well as demographic variables. No significant correlations were observed, indicating no evidence of bias due to missing data. Missing data were assumed to be missing at random and an expectation maximization algorithm was used to account for missing data.

Prior to analysis, the data were evaluated for multivariate outliers by examining leverage indices for each individual and influence values for each predictor and individual. An outlier was defined as a leverage score four times greater than the mean leverage or a $df\beta$ greater than one for any variable. One case (0.6%) was identified as a statistical outlier; identical conclusions were drawn both with and without the outlier in the analysis and the results presented include the outlier to better represent the population of interest. Due to non-normality of the data and the presence of a statistical outlier, a robust maximum likelihood estimator was used.

Pearson product-moment correlations were used to examine relations between study variables prior to evaluating structural equation models. Hypothesized relations between variables that were not evidenced by significant Pearson product-moment

correlations were not included in the structural equation model for the sake of fitting a parsimonious structural model. All tests were two-tailed and alpha was set at .05. Structural equation models were evaluated using the Mplus version 6.12 statistical software package (Muthen & Muthen, 2010). A robust maximum likelihood procedure was used to generate several indices of model fit in order to judge how well the model represented the data. A model that accurately represents the data should generate non-significant chi-squared values, comparative fit index (CFI) and Tucker-Lewis index (TLI) values near or greater than 0.95, a root mean square error of approximation (RMSEA) value near or less than 0.06, and a standardized root mean square residual (standardized RMR) value near or less than 0.08 (Hu & Bentler, 1999; Kline, 2011).

Results

Preliminary Analyses

Associations between study variables and demographic factors were examined. Female adolescents reported significantly higher suicidal ideation, thwarted belongingness and episodic interpersonal stressors. Caucasian adolescents reported significantly higher levels of thwarted belongingness than both African American and Hispanic adolescents. Chronic non-interpersonal stress was significantly correlated with age. Given these significant associations, gender, race/ethnicity, and age were included as covariates in the structural equation model.

Means and standard deviations of study variables, and the correlations between them, are shown in Table 1. Mean scores for suicidal ideation fell in the moderate to severe range, as expected in this sample of psychiatric inpatient adolescents. Suicidal ideation was significantly correlated with perceived burdensomeness, thwarted belongingness, episodic interpersonal stress, and chronic interpersonal stress. Thwarted belongingness was significantly correlated with both episodic interpersonal and chronic

interpersonal stress. Perceived burdensomeness was significantly correlated with chronic interpersonal stress, but was not significantly correlated with episodic interpersonal stress; consequently, the path between episodic interpersonal stress and perceived burdensomeness was omitted from the structural equation model. Episodic non-interpersonal stress and chronic non-interpersonal stress were not significantly correlated with suicidal ideation or thwarted belongingness. Episodic non-interpersonal stress was significantly correlated with perceived burdensomeness. We thus did not include the chronic non-interpersonal stress index in the structural equation model. As episodic non-interpersonal stress was significantly associated with perceived burdensomeness, this relationship was included in the structural equation model.

Direct and Indirect Effects of Interpersonal Stress on Suicidal Ideation via Thwarted Belongingness and Perceived Burdensomeness

The model depicted in Figure 1 was examined as a structural equation model. In addition to the relationships depicted in Figure 1, the model also controlled for participant age, gender, race/ethnicity, and anxious/depressed scores. A variety of indices of model fit were evaluated and uniformly pointed toward excellent model fit: $\chi^2(3) = 1.17, p = .76, RMSEA < .001, CFI = 1.00, TLI = 1.06, Standardized RMR = .01$. Figure 1 presents the standardized parameter estimates for the coefficients (unstandardized coefficients are presented in parenthesis). Table 2 presents the 95% confidence intervals for each of the unstandardized path coefficients in the model.

The model identified significant direct paths from chronic interpersonal stress to thwarted belongingness and perceived burdensomeness, and from perceived burdensomeness to suicidal ideation. No other direct path was statistically significant.

With respect to the hypothesized indirect effects, the model identified a significant indirect path from chronic interpersonal stress to suicidal ideation via perceived burdensomeness. No other indirect path was statistically significant.

Discussion

Findings from the present study provide evidence of significant associations between interpersonal stress, perceived burdensomeness, thwarted belongingness, and suicidal ideation among 180 inpatient adolescents. Further, findings from a structural equation model provide evidence of an indirect association between chronic interpersonal stress and suicidal ideation via perceived burdensomeness toward others.

The present study adds to a growing body of research demonstrating a connection between interpersonal stress and suicide-related behaviors in adolescence (King & Merchant, 2008; Pettit et al., 2011). These findings extend prior research by empirically demonstrating that both chronic and episodic interpersonal stress were significantly associated with the severity of suicidal ideation. Acute events that disrupt an adolescent's interpersonal relationships (i.e., episodic interpersonal stress) and ongoing interpersonal difficulties (i.e., chronic interpersonal stress) each are associated with thoughts of suicide and may represent separate risk pathways to suicide-related behaviors in adolescence (Grover et al., 2009). In contrast to the significant association between stress in interpersonal domains and suicidal ideation, no significant associations were found between stress in non-interpersonal domains and suicidal ideation. As will be elaborated below, these findings suggest case identification strategies in clinical settings and prevention strategies may prioritize interpersonal stress relative to non-interpersonal stress.

Findings on the proposed conceptual model revealed a significant indirect association for chronic interpersonal stress, such that the association between ongoing

interpersonal difficulties and suicidal ideation was accounted for by a sense of burdensomeness toward others. These findings are congruent with those of Puzia et al. (2014), who reported that perceived burdensomeness mediated the association between childhood emotional abuse and suicidal ideation among college students. Adolescents who have interpersonal relationships characterized by ongoing conflict and tension (i.e., chronic stress) may come to believe that they are a drain or a burden on other people in their lives, and this belief of being a burden on others appears to play a role in the pathway from chronic interpersonal stress to suicidal ideation.

Findings from the present study also are consistent with the possibility that ongoing stress in interpersonal relationships contributes to a sense of thwarted belongingness or social disconnection, but belongingness did not explain the association between interpersonal stress and suicidal ideation. These findings also are congruent with those of Puzia et al. (2014), who found that thwarted belongingness did not mediate the association between childhood emotional abuse and suicidal ideation. Growing evidence indicates that thwarted belongingness does not remain a statistically significant predictor of suicidal ideation after controlling for perceived burdensomeness toward others (e.g., Anestis & Joiner, 2011; Bryan et al., 2012; Monteith et al., 2013). Those findings, in conjunction with the present finding that thwarted belongingness does not account for the association between stress and suicidal ideation, suggest that social disconnection might hold lower value than perceived burdensomeness in screening and prevention approaches. Existing suicide prevention programs for adolescent suicide-related behaviors focus heavily on building social connectedness (i.e., thwarted belongingness) but do not explicitly address burdensomeness or social contribution (King et al., 2009; King et al., 2006; Carter et al., 2007). The present findings suggest a more explicit focus on social contribution (i.e., perceived burdensomeness toward others) may be a promising

prevention target, especially among adolescents who experience ongoing stress in relationships with others.

Episodic interpersonal stress was significantly associated with suicidal ideation in bivariate analyses. However, no significant direct or indirect associations between episodic interpersonal stress and suicidal ideation were found in the structural equation model controlling for demographic variables and depressive and anxious symptoms. Although we did not test depressive and anxious symptoms as a mediator, the present findings are consistent with the possibility that the disruptive and acute nature of episodic stress precipitates intense psychological distress (i.e., depressive and anxiety symptoms) that cascades towards suicidal ideation (Bagge, Glen, & Lee, 2013; Hill, Pettit, Green, Morgan, & Schatte, 2012). Alternatively, it may be that shared variance between episodic interpersonal events and chronic interpersonal stress contributed to the non-significant associations between episodic interpersonal stress and suicidal ideation in the structural equation model.

The present study focused on proximal contextual (i.e., life stress) and cognitive variables (i.e., perceptions of belongingness and burdensomeness) associated with suicidal ideation in adolescence. These proximal variables are likely influenced by extensive learning histories and occur within broader developmental contexts. Early learning experiences with caregivers lead to the formation of attachment-related schema through which individuals process social information (Dykas & Cassidy, 2011). Insecure attachment-related schema may lead adolescents to process stressful social interactions as signs that they are a drain on others or they do not connect with others (cf. Venta et al., 2014). The influence of early learning histories and insecure attachments likely plays out in the context of familial relationships, as family relationship quality is a significant predictor of emotional well-being (e.g., Stice et al., 2004) and suicidal ideation (e.g.,

Lipschitz et al. 2012) during adolescence. Early learning histories may also influence social functioning in peer and romantic relationships, which are characterized by increasing complexity and importance during adolescence. Now that this study has documented an indirect association between chronic interpersonal stress and suicidal ideation via perceived burdensomeness toward others, important next steps will be to identify specific interpersonal contexts (e.g., family, friend, romantic) in which ongoing stress and perceptions of burdensomeness are most likely to promote suicidal ideation during adolescence and to disentangle the influences of distal (e.g., attachment-related schema) and proximal processes (e.g., interpersonal stress) on suicidal ideation in adolescence.

The findings should be interpreted in light of the study's limitations. First, although suicidal ideation and stress were assessed using semi-structured interviews and stress ratings were made by an independent team, adolescents were the sole informant source. Collection of data from an additional source, such as parents, could corroborate the occurrence of life events and behaviors reported by adolescents. Second, the optimal time interval for evaluating the associations between stress and constructs such as perceived burdensomeness, thwarted belongingness, and suicidal ideation remains unclear. It is possible that stress, especially episodic stress, may exert short term influences on interpersonal functioning and suicidal ideation that were not adequately captured in the six month measurement period of this study. Third, the high racial/ethnic minority composition and clinical severity of this inpatient sample may limit the generalizability of these findings to adolescents in other settings. Fourth, although depressive and anxious symptoms were statistically controlled, data on psychiatric diagnoses were not available.

The cross-sectional design prevented examination of the temporal duration or persistence of thwarted belongingness and perceived burdensomeness. It is possible that indirect associations between interpersonal stress and suicidal ideation are stronger when stress leads to prolonged as opposed to transient cognitions of thwarted belongingness and burdensomeness (cf. Van Orden et al., 2010). The cross-sectional design also prevents conclusions regarding the directions of associations. Guided by theory, we have discussed findings in terms of a model wherein interpersonal stress predicts suicidal ideation at least in part via perceived burdensomeness. In light of the cross-sectional study design, however, we cannot rule out alternative directional paths. For example, it is possible that perceptions of social disconnection or of being a burden on others may promote behaviors that unintentionally generate stress in interpersonal relationships (i.e., stress generation; Hammen, 1991). It also is possible that chronic stress in relationships with others gives rise to acute, episodic stress in relationships. We encourage future studies to examine such possibilities and to test the theoretical model presented in this study using prospective, longitudinal designs.

Implications for Research, Policy, and Practice

The current findings may be used to inform case identification, prevention strategies, risk monitoring for adolescents at risk of suicidal ideation. With regards to case identification, the findings suggest distinguishing between interpersonal and non-interpersonal stress may lead to more accurate identification of adolescents at risk for high levels for suicidal ideation in clinical settings. Not all types of stress are equal in terms of their association with suicidal ideation; interpersonal stress relative to non-interpersonal stress may hold greater utility for clinicians in identifying adolescents at high risk. With regard to prevention strategies, the present findings suggest social contribution and perceptions of being a burden on others hold promise as potential targets

for preventing or reducing suicidal ideation, especially among adolescents who experience ongoing stress in interpersonal relationships. We are currently evaluating such a prevention program that explicitly targets social contribution in adolescence. Finally, with regard to risk monitoring among adolescents who are already receiving mental health services, routine monitoring of the presence and level of interpersonal stress could be embedded within current suicide risk assessment strategies. Further, the occurrence of stress in interpersonal relationships and/or thoughts of being a burden on others could be identified as a warning sign to cue adolescents to use a safety plan (Stanley & Brown, 2012).

Table 1
Means of, standard deviations of, and correlations between study variables

	1	2	3	4	5	6	7	8	Mean (SD)
1. Suicidal ideation	--								19.93 (13.37)
2. Perceived burdensomeness	.61***	--							19.46 (9.91)
3. Thwarted belongingness	.46***	.61***	--						19.45 (8.18)
4. Episodic interpersonal stress	.19*	.12	.15*	--					3.64 (3.51)
5. Episodic non-interpersonal stress	.13	.15*	.08	.13	--				2.60 (3.69)
6. Chronic interpersonal stress	.18*	.34***	.37***	.16*	.18*	--			11.30 (2.90)
7. Chronic non-interpersonal stress	.13	.12	.10	.06	.26***	.31***	--		12.65 (2.94)
8. YSR anxious/depressed T score	.58***	.57***	.50***	.16*	.08	.33***	.10	--	66.04 (11.80)

Note: $N = 180$; * $p < .05$, *** $p < .001$; YSR = Youth Self-Report

Table 2

Point Estimates and Confidence Intervals of Unstandardized Path Coefficients for the Indirect Effect Model

	Point	95%
Direct Paths	Estimate	Confidence Interval
Chronic Interpersonal Stress to Perceived Burdensomeness	0.49*	0.06, 0.91
Chronic Interpersonal Stress to Thwarted Belongingness	0.62*	0.28, 0.96
Chronic Interpersonal Stress to Suicidal Ideation	-0.49	-0.98, 0.001
Episodic Interpersonal Stress to Thwarted Belongingness	0.09	-0.18, 0.36
Episodic Interpersonal Stress to Suicidal Ideation	0.27	-0.11, 0.65
Episodic Non-Interpersonal Stress to Perceived Burdensomeness	0.14	-0.22, 0.49
Thwarted Belongingness to Suicidal Ideation	0.09	-0.10, 0.29
Perceived Burdensomeness to Suicidal Ideation	0.54*	0.34, 0.73
Indirect Paths		
Chronic Interpersonal Stress to Suicidal Ideation via Perceived Burdensomeness	0.26*	0.02, 0.50
Chronic Interpersonal Stress to Suicidal Ideation via Thwarted Belongingness	0.06	-0.07, 0.18
Episodic Interpersonal Stress to Suicidal Ideation via Thwarted Belongingness	0.01	-0.02, 0.04
Episodic Non-Interpersonal Stress to Suicidal Ideation via Perceived Burdensomeness	0.07	-0.12, 0.27

*Note: N = 180; *p < .05.*

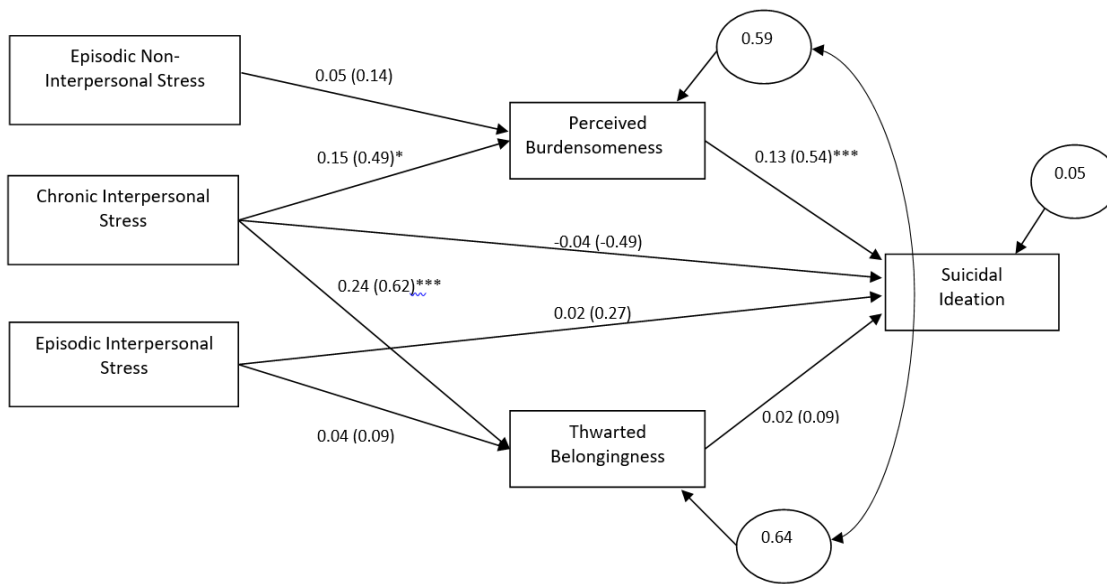


Figure 1. Model of Indirect Effects of Stress on Suicidal Ideation via Perceived Burdensomeness and Thwarted Belongingness.

Note: All exogenous variables were assumed to be correlated; standardized path coefficients were estimated using STDYX Standardization; unstandardized path coefficients are in parentheses; model controls for participant age, gender, race/ethnicity, and Youth Self-Report anxiety and depression T score; * $p < .05$, *** $p < .001$.

CHAPTER 2

LOW PARENTAL WARMTH AND HIGH YOUTH IMPAIRMENT: A RECIPE FOR PERCEIVED BURDENSOMENESS?

This manuscript was published in Behavior Therapy, 2020.

Buitron, V., Vaclavik, D., Hill, R. M., Bose, D., & Pettit, J. W. (2020). Low parental warmth and high youth impairment: a recipe for perceived burdensomeness? *Behavior therapy, 51*(5), 789-799.

Abstract

Theory and research document the role of perceived burdensomeness in the development of suicide ideation, including in youth. There is a critical need to identify and evaluate variables that foster perceived burdensomeness in youth, with an eye toward advancing etiological models and informing prevention approaches for at-risk youth who are not yet actively suicidal. The current study examined and replicated a conceptual model wherein the association between low parental warmth and burdensomeness is moderated by youth impairment. Participants were 75 and 150 clinic referred youths in Study 1 and Study 2, respectively, with anxiety-related difficulties. Youth impairment significantly moderated the association between low parental warmth and youth perceived burdensomeness such that the association was negative and statistically significant at high levels of impairment, but not at low levels of impairment. The moderation effect was statistically significant in both studies while controlling for anxiety and depressive symptoms. These findings provide insight into variables that are associated with a sense of burdensomeness toward others in youth, and identify potential targets for preventing or intervening to reduce perceived burdensomeness in clinic-referred youth.

Keywords: Perceived Burdensomeness; Parental Warmth; Impairment; Anxiety

Low Parental Warmth and High Child Impairment: A Recipe for Perceived Burdensomeness?

Perceived burdensomeness toward others is defined as the belief that one is a burden or a drain on others. The interpersonal psychological theory of suicide proposes that perceived burdensomeness is a key causal variable implicated in suicide ideation (Joiner, 2005; Van Orden et al., 2010). In support of this proposal, research has found that perceived burdensomeness is significantly associated with suicide ideation both cross-sectionally and prospectively (Hill & Pettit, 2014), including in children and adolescents (e.g., Buitron et al., 2016; Hill et al., 2018; Roeder & Cole, 2019). A number of variables have been proposed and empirically identified as correlates of perceived burdensomeness in adults, including symptoms of anxiety and depression (Davidson et al., 2011), social support and connectedness (Rayle & Chung, 2007; Van Orden et al., 2010), and attachment anxiety (Raque-Bogdan et al., 2011). The theoretical and empirical landscapes are bleaker when it comes to perceived burdensomeness in children and adolescents (i.e., youth). There is critical need to develop theory and knowledge on perceived burdensomeness in youth to advance etiological models and to inform strategies to identify and intervene on at-risk youth before they are actively suicidal. The present study represents a step toward addressing this need by proposing and testing a conceptual model of the associations between parenting behaviors, youth impairment in functioning, and youth perceived burdensomeness.

Parenting Behaviors and Cognitive Vulnerabilities in Youth

Developmental-cognitive models of psychopathology emphasize the role of parenting behaviors in shaping children's beliefs about themselves and their interpretations of life

events (e.g., Alloy, Abramson, Smith, Gibb, & Neeren, 2006; Chorpita & Barlow, 1998; Rapee, 1997). For example, parenting behaviors characterized by low warmth, harshness and criticism significantly predict the development of negative inferential styles (Gibb & Abela, 2008), low self-esteem, and biased information processing in youth (Garber, 1992; Hankin et al., 2009), which in turn confer risk of internalizing problems. It is possible that harsh, negative parental statements directly supply negative beliefs or interpretations to youth (e.g., “You are stupid”; Rose & Abramson, 1992). It is also possible that youth develop negative beliefs about themselves as they seek to understand and interpret negative parenting behaviors (e.g., “If my parent says mean things about me, it means that I am a bad person”; Rose & Abramson, 1992). In either possibility, negative parenting behaviors result in the formation of negative self-beliefs in youth that enhance risk of internalizing problems (Alloy et al., 2006). In the current study, we build upon this developmental-cognitive framework and extend it to youths’ beliefs about being a burden, or drain, on other people in their lives.

Parental Warmth, Youth Impairment, and Youth Perceived Burdensomeness

According to the interpersonal psychological theory, perceived burdensomeness consists of self-hate (i.e., low self-esteem, self-blame and shame) and a sense of liability (i.e., expendability, distress in situations that appear to lower one’s contribution [e.g., illness]; Van Orden et al., 2010). We propose that low parental warmth, meaning low affection, care, and responsiveness, is a key parenting behavior implicated in youth beliefs of self-hatred (e.g., Suchman et al., 2007). Low parental warmth may be interpreted by youth as an indication that they are unacceptable to others and unworthy of others’ attention, care and love. Indirect support for this proposal comes from research demonstrating

significant associations between low parental warmth and youth low self-esteem (e.g., Bean & Northrup, 2009), and from research demonstrating that emotional abuse by family members during childhood is significantly associated with perceived burdensomeness as reported retrospectively by young adults (Puzia et al., 2014; Smith et al., 2018).

Whereas low parental warmth is proposed to foster youth self-hatred, it may not lead to a sense of liability in the absence of environmental input indicating the youth is a drain on others, especially parents. Youth with internalizing problems, including anxiety disorders, report elevated levels of impairment in peer, family, and academic domains (Langley, Bergman, McCracken, & Piacentini, 2004). Youth who experience anxiety that interferes with their families' functioning may be especially likely to develop a sense of liability. For instance, parents of youth with concerning levels of anxiety often make accommodations in response to their children's anxiety, including rearranging their work and personal schedules, providing excessive reassurances, and interceding for youth in developmentally inappropriate ways (e.g., walking a 10 year old into class daily; Lebowitz et al., 2013). In these instances, some youth may believe that the parental accommodations and/or the act of seeking treatment for their anxiety place a burden on family members. Relatedly, youth who experience low parental warmth and have high levels of impairment may also receive direct messages of liability from parents (e.g., "you always make things difficult") that could foster perceived burdensomeness.

We propose that the combined experiences of "you are not worthy of affection" (i.e., low parental warmth) and "you make things difficult" (i.e., high youth impairment) will be especially pernicious, fostering a sense of self-hatred and liability in youth (i.e., perceived

burdensomeness). That is, we expect that the association between low parental warmth and burdensomeness will be especially strong when youth impairment is high, because this interaction provides the necessary ingredients for burdensomeness: self-hatred and liability.

Present Study

The current study examined a conceptual model wherein (a) low parental warmth is significantly associated with high youth perceived burdensomeness and (b) the association between parental warmth and youth perceived burdensomeness is moderated by youth impairment. The current model is grounded in the identification of variables that could aid in efforts to prevent perceived burdensomeness (e.g., Hill & Pettit, 2019).

Although a large theoretical and empirical literature links low parental warmth to negative child outcomes, our study is the first to propose and test a conceptual model wherein the association between parental warmth and negative youth outcome varies across levels of youth impairment. This is important because it could provide a nuanced understanding of a circumstance under which low parental warmth is especially likely to be associated with a negative child outcome. We are aware of no prior theoretical or empirical work that has addressed how youth come to view themselves as a burden on others.

We formulated two sets of hypotheses. First, we hypothesized that low parental warmth and high youth impairment would be significantly associated with high levels of youth perceived burdensomeness. Second, we hypothesized that the association between low parental warmth and youth perceived burdensomeness would be moderated by youth impairment, such that the association would be statistically significant at high but not low

levels of youth impairment. We tested our hypotheses in two independent samples (hereafter referred to as Study 1 and Study 2). To ensure sufficient variability in perceived burdensomeness, we sampled clinic-referred youth with anxiety-related difficulties. Given evidence that anxiety and depression symptoms are associated with low parental warmth (for a review see, Rapee, 1997) and perceived burdensomeness (Buitron et al., 2016), we included anxiety and depressive symptoms as covariates in statistical analyses.

Findings consistent with the proposed model would suggest low parental warmth and youth impairment as potential targets in prevention or intervention programs that aim to reduce perceived burdensomeness in youth.

Study 1

Method

This study was conducted as approved by the Institutional Review Board. Study 1 participants were 75 youths ages 9 to 17 years (44% female; $M_{\text{age}} = 11.40$; $SD_{\text{age}} = 2.07$) and their parents (usually mothers) referred to a university-based anxiety disorders specialty clinic in a large urban setting. A majority of participants identified as Hispanic/Latino ethnicity (86.7%) and White (86.7%); 4% identified Mixed race, 1.3% as Black, 1.3% as Other race, and 6.7% did not report race/ethnicity.

The most common primary diagnoses were generalized anxiety disorder (30%), social anxiety disorder (26%), separation anxiety disorder (15%), and specific phobia (12%). A subset of participants met criteria for co-occurring attention deficit/hyperactivity disorder (ADHD; 20.0%) and oppositional defiant disorder (ODD; 8.0%). Annual household income as reported by parents was as follows: 13% below \$21,000, 26% between

\$21,000 and \$40,999, 15% between \$41,000 and \$60,999, 9% between \$61,000 and \$80,999, 8% between \$81,000 and \$99,999, 18% between \$100,000 and \$149,000, and 4% over \$150,000. The remaining 7% declined to report income. 69% of parents were married, 16% were either divorced or separated, 8% were single, 3% were unmarried living with a partner, and 1% were widowed. The remaining 3% did not report marital status.

The measures described below were administered during the intake assessment in both studies.

Measures

Parental Warmth. The Child Report of Parental Behavior Inventory (CRPBI; Schludermann & Schludermann, 1970) is a 30-item youth-rated measure of perceived parental behavior. Items are rated on a 3-point Likert scale, indicating whether each statement is “Not like”, “Somewhat like”, or “A lot like” the parent’s behavior toward the youth. The Warmth subscale consists of 10 items, with subscale scores ranging from 10 to 30, and higher scores representing higher levels of parental warmth. Sample items include “My mother is a person who smiles at me very often” and “my mother is a person who often praises me”. The CRPBI has demonstrated good internal consistency and validity, significantly correlating with other measures of parental behavior (Raskin et al., 1971; Safford, Alloy, & Pieracci, 2007). The alpha coefficient in this sample was .69.

Youth Impairment. The Columbia Impairment Scale (CIS; Bird et al., 1993) is a 13-item youth-report measure of global impairment. Items are rated on a 4-point Likert scale, ranging from “no problem” to “very bad problem”. Total scores range from 0 to 52, with higher scores indicating greater impairment. Sample items include “how much of a

problem do you think you have with having fun?” and “how much of a problem would you say you have with getting along with other kids your age?” The CIS has demonstrated good internal consistency and convergent validity has been demonstrated through significant correlations with other measures of impairment (Bird et al, 1993; Bird et al, 1996; Steinhausen & Metzke, 2001). The alpha coefficient in this sample was .83.

Youth Perceived Burdensomeness. The Interpersonal Needs Questionnaire-15 (INQ-15; Van Orden, Cukrowicz, Witte, & Joiner, 2012) is a 15-item self-report measure of thwarted belongingness (nine items; e.g., “These days, other people care about me”) and perceived burdensomeness (six items; e.g., “These days, I think I make things worse for the people in my life,” “These days, the people in my life would be happier without me”). The burdensomeness scale was used in the present study. Items are rated on a 7-point Likert scale ranging from “not at all true for me” to “very true for me”. Total scores range from 6 to 42 for perceived burdensomeness, with higher scores representing higher levels of perceived burdensomeness. The INQ-15 has demonstrated excellent internal consistency and validity in samples of children and adolescents (Hill et al., 2015, Buitron et al., 2016). The alpha coefficient for perceived burdensomeness in this sample was .88.

Youth Anxiety Symptoms. The Screen for Child Anxiety Related Emotional Disorders (Child/Parent Versions; SCARED-C/P; Birmaher et al., 1997) is a 41-item youth-rated measure of anxiety symptoms. Items are rated on a 3-point Likert scale ranging from “not true or hardly ever true” to “very true or often true”. The SCARED-C/P has demonstrated good internal consistency and validity compared with other widely used screening scales (Birmaher et al., 1999; Monga et al., 2000). The alpha coefficient in this sample was .93.

Youth Depressive Symptoms. The Child Depression Inventory (CDI; Kovacs, 1985) is a 27-item youth self-rated measure of depressive symptoms administered. Each item lists 3 statements, scored 0 to 2 according to symptom severity. Sample items include “I am sad all the time” and “I feel alone all the time”. Higher scores represent higher levels of depressive symptoms. The CDI has demonstrated good internal consistency and validity (Nelson et al., 1987; Saylor et al., 1987; Smucker et al 1986; Kovacs, 2003). The alpha coefficient in this sample was .88.

Data Analysis

Missing data occurred at a minimal frequency: perceived burdensomeness (0%), parental warmth (1.3%), impairment (0%), anxiety symptoms (0%), and depressive symptoms (0%). Given the minimal frequency of missing data, the data were estimated using an expectation maximization algorithm. Data were then evaluated for the presence of outliers with respect to leverage, influence, and discrepancy, resulting in the identification of two possible outliers. Analyses were conducted both with and without the possible outliers included and conclusions remained the same. The results presented here include the outliers to better represent the population of interest. Variance inflation factor values were also evaluated using a cutoff of 5 (Kline, 1998); all values fell below 5, indicating no evidence of multicollinearity. Univariate indices of normality indicated that three variables in the data had a high kurtosis value. Due to the non-normality present in the data, we used a nonparametric statistical approach. Raw score data was used for the analyses. Hypotheses were tested using Pearson’s correlations and the PROCESS macro for IBM SPSS version 21 (Preacher & Hayes, 2008). PROCESS uses a nonparametric resampling procedure with $n = 5,000$ bootstrap resamples to derive a 95%

confidence interval (CI) and point estimates. The macro creates mean-centered variables to calculate the interaction product term. PROCESS also computes simple slopes (± 1 standard deviation) to illustrate the direction of the moderation effect. The independent variables in the moderation model were parental warmth, impairment, and the warmth X impairment interaction, and the dependent variable was perceived burdensomeness. Anxiety symptoms and depressive symptoms were selected a priori and included as covariates. Age and sex were included as covariates because they were significantly correlated with anxiety symptoms. The statistical significance and direction of the moderation effect was the same with and without the covariates (i.e., age, sex, depressive and anxiety symptoms). Other sociodemographic variables (i.e., race, ethnicity, income, parent marital status) and diagnostic variables (i.e., anxiety diagnoses, ADHD, ODD) were also considered as possible covariates, but were excluded from the final model for ease of presentation because conclusions remained the same with and without them in the model.

Results

Means of, standard deviations of, and correlations between variables are presented in Table 1. Consistent with our hypothesis, perceived burdensomeness was significantly and positively associated with impairment. Perceived burdensomeness was also significantly and negatively associated with parental warmth. Perceived burdensomeness was significantly and positively associated with anxiety and depressive symptoms. The Study 1 model is displayed in Table 2. Depressive symptoms, impairment, and the impairment X warmth interaction were statistically significant predictors of perceived burdensomeness.

Simple slopes were examined to probe the warmth X impairment interaction, and are displayed in Table 3 and Figure 1. The association between warmth and perceived burdensomeness was not statistically significant at one standard deviation below the mean level of impairment. At the mean level of impairment and one standard deviation above the mean level of impairment, the association between warmth and perceived burdensomeness was statistically significant. That is, warmth was negatively associated with perceived burdensomeness among youths who reported high or mean levels of impairment, but not among youths who reported lower levels of impairment.

Study 2

Method

Study 2 participants were 150 youths ages 9 to 17 years (51.3% female; $M_{\text{age}} = 11.71$; $SD_{\text{age}} = 2.35$) referred to the same university-based anxiety disorders specialty clinic as in Study 1; there was no overlap in participants between Study 1 and Study 2, and the measure of depressive symptoms differed in Study 2. A majority of participants identified as Hispanic/Latino ethnicity (81.3%) and White (84.0%); 2.7% identified as Mixed race, 0.7% as Black, 0.7% as Asian, 8.0% as Other race, and 4.0% did not report race/ethnicity.

The most common primary diagnoses were social anxiety disorder (38.0%), generalized anxiety disorder (34.0%), specific phobia (18.0%), and separation anxiety disorder (11%). A subset of participants met criteria for co-occurring ADHD (28.7%) and ODD (10.7%). Annual household income as reported by parents was as follows: 12.6% below \$21,000, 19.4% between \$21,000 and \$40,999, 18.7% between \$41,000 and \$60,999, 14% between \$61,000 and \$80,999, 9.4% between \$81,000 and \$99,999, 12.7% between

\$100,000 and \$149,000, and 11.3% over \$150,000. The remaining 2% declined to report income. 76% of parents were married, 13.3% were either divorced or separated, 4.7% were single, 2% were unmarried living with a partner, and 2% were widowed. The remaining 2% did not report marital status.

Measures

Parental Warmth. The CRPBI was used to measure parental warmth. The alpha coefficient in this sample was .87.

Youth Impairment. The CIS was used to measure global impairment. The alpha coefficient in this sample was .83.

Youth Perceived Burdensomeness. The INQ-15 Burdensomeness subscale was used to measure perceived burdensomeness. The alpha coefficient in this sample was .90.

Youth Anxiety Symptoms. The SCARED-C was used to measure anxiety symptoms. The alpha coefficient in this sample was .94.

Youth Depressive symptoms. The Child Depression Inventory 2 (CDI-2; Kovacs, 2010) was used to measure depressive symptoms. The CDI-2 is a 28-item youth self-rated measure of depressive symptoms. Like the CDI, each item in the CDI-2 lists 3 statements, scored 0 to 2 with higher scores representing higher levels of depressive symptoms. The CDI-2 has demonstrated good internal consistency and validity in clinical samples (Kovacs, 2015; Wolff et al., 2018). The alpha coefficient in this sample was .90.

Data Analysis

Missing data occurred at a minimal frequency at the measure level: perceived burdensomeness (0%), parental warmth (0%), impairment (0%), anxiety symptoms (1.2%), and depressive symptoms (0%). Data were estimated using an expectation

maximization algorithm. We identified two possible outliers. Analyses were conducted both with and without the possible outliers included and conclusions remained the same. The results presented here include the outliers to better represent the population of interest. There was no evidence of multicollinearity. Univariate indices of normality indicated that one variable had a high kurtosis value. Due to the non-normality present in the data, we used a nonparametric statistical approach. The independent and dependent variables, and the covariates were identical to the Study 1 final model. One exception was the exclusion of sex as a covariate because it was not correlated with any Study 2 variable (see Table 4). The statistical significance and direction of the moderation effect was the same with and without the covariates (i.e., age, depressive and anxiety symptoms). The statistical approach used to examine moderation was identical to that of Study 1.

Results

Means of, standard deviations of, and correlations between variables are presented in Table 4. Consistent with hypothesis, perceived burdensomeness was significantly and positively associated with impairment. Perceived burdensomeness was also significantly and negatively associated with parental warmth. Perceived burdensomeness was significantly and positively associated with anxiety and depressive symptoms.

The Study 2 model is displayed in Table 5. Depressive symptoms, impairment, and the impairment X warmth interaction were statistically significant predictors of perceived burdensomeness.

Simple slopes were examined to probe the impairment X warmth interaction, and are displayed in Table 6 and Figure 2. The association between warmth and perceived burdensomeness was not statistically significant at the mean level impairment, or at one

standard deviation below the mean level of impairment. At one standard deviation above the mean level of impairment, the association between warmth and perceived burdensomeness was statistically significant. That is, warmth was negatively associated with perceived burdensomeness among youths who reported high levels of impairment, but not among youths who reported mean or lower levels of impairment.

In ancillary analyses, we tested the parental warmth X youth impairment interaction only among children ages 9 to 11 years ($n=86$) to evaluate whether the conceptual model held in pre-adolescent children (statistical power was insufficient to test this interaction term among pre-adolescent children in Study 1).¹ The moderation effect remained statistically significant and in the expected direction in this subsample of children.

Discussion

The current findings provide evidence of significant associations between parental warmth, youth impairment, and youth perceived burdensomeness. Further, they support a conceptual model wherein the association between low parental warmth and youth perceived burdensomeness was moderated by youth impairment: the negative association between parental warmth and perceived burdensomeness was statistically significant only among youths who reported high or mean levels of impairment in Study 1 and high levels of impairment in Study 2.

The current study is the first to evaluate parenting variables related to perceived burdensomeness in youth. Although the interpersonal-psychological theory of suicide has received extensive empirical evaluation in adults, theory development and empirical evaluation in youth has been limited to adolescent samples and contextual (e.g., life stress; Buitron et al., 2016) or psychopathological variables. This study thus moves the

field forward in conceptualizing and demonstrating a parenting variable, low warmth, as a correlate of perceived burdensomeness toward others among youth who experience high levels of impairment in two independent samples. Because of the cross-sectional study design, we cannot draw conclusions about the directionality of associations. However, the current findings are consistent with the possibility that low parental warmth might lead to youth beliefs of burdensomeness when impairment is high. It will be important for further research to test this possibility using a longitudinal design. The findings also are consistent with a theoretical model in which low parental warmth is conducive toward youth developing a negative cognitive style. Conceptually, low parental warmth provides material to support a key ingredient of burdensomeness, self-hatred (Van Orden et al., 2010). In the absence of clear, consistent and positive parental gestures, youth may come to internalize a negative view of themselves as unworthy of love and acceptance. When combined with contextual input of impairment (e.g., my anxiety or depression causes problems for people around me), youth may come to view themselves as a liability to others. In line with the interpersonal psychological theory of suicide, this combination provides the necessary ingredients for the emergence of perceived burdensomeness among youth. Of note, our conceptual model and findings are also in line with recently collected qualitative data documenting that preadolescent children can articulate how they think they are a burden on others, usually referencing impairment and related accommodations, as well as corresponding parental discontentment (Buitron et al. 2019). Burdensomeness has typically been conceptualized, described, and examined in adults and older adolescents; our demonstration that pre-adolescent children experience burdensomeness, and that it is associated with impairment

and parental warmth, represent novel contributions and support the importance of pursuing future research on perceived burdensomeness in children.

Previous research has emphasized the role of impairment in suicide risk among geriatric samples (e.g., Conwell et al., 2010), and has documented a significant association between impairment and perceived burdensomeness in older adults (Cukrowicz et al., 2011). The current study identifies impairment as a correlate of perceived burdensomeness in youth, even after controlling for anxiety and depressive symptoms. This finding provides further support for the interpersonal psychological theory of suicide in youth by documenting that youth who believe that they experience high levels of impairment or situations that increase their liability on others also believe that they are a burden on others (Van Orden et al., 2010).

Recent findings highlight the potential promise of intervening on perceived burdensomeness in at-risk youth (Hill & Pettit, 2019). As the field moves in the direction of intervention, the current findings provide guidance by identifying two promising variables to target with an eye toward reducing perceived burdensomeness (parental warmth, youth impairment). There are multiple ways to target and reduce youth impairment, including through interventions shown to reduce anxiety and its disorders (Silverman, Pina, & Viswesvaran, 2008). Such interventions may lead indirectly to reductions in youth levels of perceived burdensomeness by reducing impairment. Further, we are currently evaluating a brief intervention module that directly targets youth perceived burdensomeness and parental warmth.

The current findings should be considered in light of the study's limitations. First, as noted, the cross-sectional design precludes conclusions regarding the directionality of

associations. We cannot rule out alternative models of the associations between variables, although the present findings are consistent with our a priori hypotheses based on theory. Second, the current study did not examine suicide ideation as an outcome. In light of the consistent empirical support for the association between perceived burdensomeness and suicide ideation in adolescent and adult samples, the purpose of this study was to identify variables that might be implicated in youth perceived burdensomeness to serve as targets for upstream preventive intervention. Third, mono-method bias may have inflated associations between variables in the current study. Controlling for other common method variables (i.e., depression and anxiety symptoms) in statistical analyses reduces the influence of mono-method bias (Siemens, Roth, Oliveira, 2010), but does not rule it out entirely. Last, the generalizability of the current findings to samples with different levels of clinical severity (e.g., nonreferred samples) or different racial/ethnic compositions is unknown.

Despite these limitations, the current findings are the first to identify, and replicate in an independent sample, low parental warmth and high youth impairment as interactive predictors of perceived burdensomeness in youth. It is possible that interventions targeting low parental warmth and/or youth impairment may reduce the risk and/or severity of perceived burdensomeness, and ideally, have downstream preventive effects on suicide ideation. Future research is encouraged to examine this possibility, as well as to examine the current study's conceptual model using a prospective design.

Table 1.

Means of, standard deviations of, and correlations between Study 1 variables

	1	2	3	4	5	6	7	8
1. Perceived Burdensomeness	--							
2. Parental Warmth	-.62*	--						
3. Impairment	.63*	-.39*	--					
4. Anxiety Symptoms	.47*	-.18	.61*	--				
5. Depressive Symptoms	.77*	-.49*	.74*	.73*	--			
6. Age	.14	-.20	.25 ⁺	.07	.17	--		
7. Sex	.02	.06	-.16	-.27 ⁺	-.03	.04	--	
8. Ethnicity	.10	-.02	.02	-.01	.09	-.03	.11	--
Mean	4.93	26.31	14.67	28.41	11.36	11.40	--	--
Standard Deviation	7.08	4.41	9.56	15.80	8.51	2.07	--	--
Range	0-30	10-30	0-40	3-70	0-37	9-17	--	--

Note: $N = 75$; * $p < .001$, ⁺ $p < .05$. Ethnicity coded as 1 (Hispanic) or 0 (other).

Table 2.

Regression model of perceived burdensomeness (Study 1)

Model: $R^2 = .714, p < .0001$	<i>Est.</i>	<i>LCI</i>	<i>UCI</i>	<i>S. E.</i>	<i>T</i>	<i>p</i>
Age	-.143	-.614	.328	.236	-.607	.546
Sex	.958	-1.082	2.998	1.022	.352	.352
Anxiety Symptoms	-.027	-.126	.073	.050	-.535	.594
Depressive Symptoms	.425	.198	.652	.114	3.736*	<.001
Parental Warmth	.027	-.487	.540	.257	.103	.918
Impairment	.894	.209	1.579	.343	2.606*	.011
Warmth X Impairment Interaction	-.029	-.054	-.004	.012	-2.307*	.024

Note. The model included a constant. *Est.*= Estimate, *LCI/UCI*= Lower/upper confidence interval, *S.E.*= Standard error. *denotes statistically significant t-value. R-Square increase due to the interaction term: .023.

Table 3.

Simple Slopes (Study 1)

Impairment Value	<i>Est.</i>	<i>LCI</i>	<i>UCI</i>	S.E.	<i>t</i>	<i>p</i>
-9.558	-.120	-.528	.288	.205	-.587	.559
<i>(1 SD below mean)</i>						
0	-.394	-.663	-.125	.135	-2.925	.005
<i>(mean)</i>						
9.558	-.668	-.969	-.368	.151	-4.435	<.0001
<i>(1 SD above mean)</i>						

Note. *Est.*= Estimate, *LCI/UCI*= Lower/upper confidence interval, *S.E.*= Standard error.

Table 4.

Means of, standard deviations of, and correlations between Study 2 variables

	1	2	3	4	5	6	7	8
1. Perceived Burdensomeness	--	--	--	--	--	--	--	--
2. Parental Warmth	-.35*	--	--	--	--	--	--	--
3. Impairment	.61*	-.30*	--	--	--	--	--	--
4. Anxiety Symptoms	.55*	-.15	.73*	--	--	--	--	--
5. Depressive Symptoms	.74*	-.39*	.72*	.72*	--	--	--	--
6. Age	.20*	-.28*	.14	.18*	.32*	--	--	--
7. Sex	.04	-.06	-.002	-.15	-.05	-.05	--	--
8. Ethnicity	.03	-.02	.12	-.01	-.01	.09	.06	--
Mean	3.63	16.52	12.59	30.49	11.71	11.71	--	--
Standard Deviation	6.06	3.97	8.49	16.65	8.65	2.35	--	--
Range	0-31	3-20	0-33	0-77	0-46	9-17	--	--

Note: $N = 150$; * $p < .001$, + $p < .05$. Ethnicity coded as 1 (Hispanic) or 0 (other).

Table 5.

Regression model of perceived burdensomeness (Study 2)

Model: $R^2 = .589$, $p < .0001$	<i>Est.</i>	<i>LCI</i>	<i>UCI</i>	<i>S. E.</i>	<i>t</i>	<i>p</i>
Age	-.085	-.380	.210	.149	-.569	.570
Anxiety Symptoms	-.004	-.068	.060	.032	-.120	.905
Depressive Symptoms	.428	.302	.553	.064	6.730*	<.001
Parental Warmth	.328	-.027	.684	.180	1.825	.070
Impairment	.595	.251	.940	.174	3.418*	<.001
Warmth X Impairment Interaction	-.029	-.049	-.009	.010	-2.895*	.004

Note. The model included a constant. *Est.*= Estimate, *LCI/UCI*= Lower/upper confidence interval, *S.E.*= Standard error. *denotes statistically significant t-value. R-Square increase due to the interaction term: .024.

Table 6.

Simple Slopes (Study 2)

Impairment Value	<i>Est.</i>	<i>LCI</i>	<i>UCI</i>	S.E.	<i>t</i>	<i>p</i>
-8.486	.209	-.080	.497	.146	1.427	.156
<i>(1 SD below mean)</i>						
0	-.039	-.231	.153	.097	-.399	.690
<i>(mean)</i>						
8.486	-.286	-.503	-.069	.110	-2.600	.010
<i>(1 SD above mean)</i>						

Note. *Est.*= Estimate, *LCI/HCI*= Lower/upper confidence interval, *S.E.*= Standard error.

Figure 1.

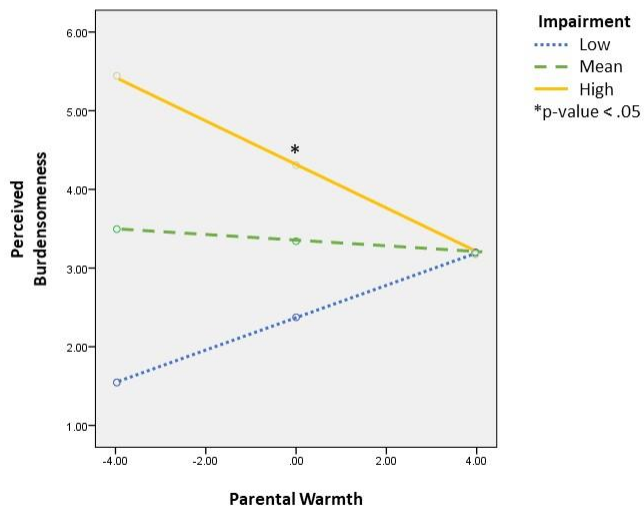
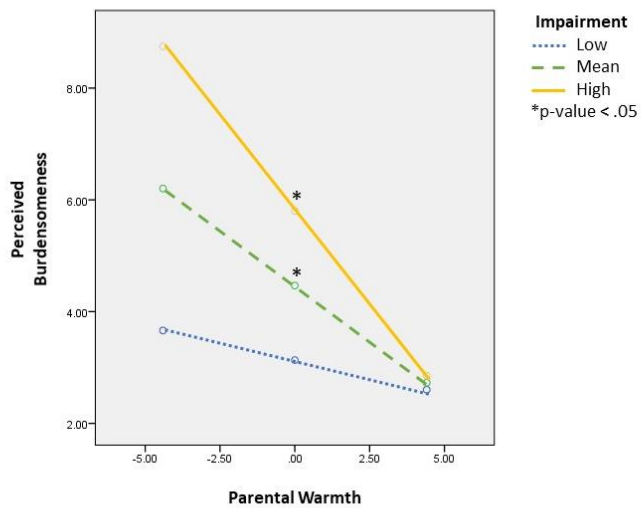


Figure 2.



CHAPTER 3

TARGETING BURDENSOMENESS AMONG CLINIC REFERRED YOUTH: DEVELOPMENT OF A BRIEF CBT MODULE

This manuscript is pending submission to peer review.

Buitron, V., Hill, R. M., Bose, D., Vaclavik, D., & Pettit, J. W. (unpublished). Targeting burdensomeness among clinic referred youth: development of a brief CBT module.

Abstract

Research has established perceived burdensomeness toward others as a correlate and risk factor for suicide ideation in youth. Existing CBT protocols for internalizing disorders target thoughts and behaviors related to anxiety and/or depression, but do not explicitly target other identified risk factors for suicide ideation, including perceived burdensomeness toward others. The aims of the current study were to (1) develop a novel, brief selective prevention module (the “Give program”) targeting perceived burdensomeness toward others that can be embedded within existing CBT protocols for youth internalizing disorders, (2) evaluate the acceptability and feasibility of the module with an eye toward intervention refinement, and (3) examine reductions in perceived burdensomeness. Participants were 18 clinic-referred youths with anxiety or depressive disorders who endorsed burdensomeness. The study utilized a quasi-experimental interrupted time-series design to evaluate changes in burdensomeness scores following the administration of the module. The module was clinically feasible and well-accepted. Youth burdensomeness scores increased in the first half of the CBT protocol, and decreased immediately following the administration of the Give program module. The current study is the first to develop and evaluate a selective preventive module targeting burdensomeness in at-risk youth in an outpatient setting, demonstrating that burdensomeness can be efficiently and effectively targeted within existing evidence-based treatment protocols for internalizing disorders in youth.

Keywords: perceived burdensomeness, cognitive-behavioral therapy, anxiety, depression, suicide

Suicide ideation is prevalent in youth, with 17.2% of high school students reporting seriously considering a suicide attempt and 13.6% reporting making a specific plan for suicide in the past 12 months (Kann et al., 2018 [CDC]). Suicide ideation is a strong predictor of future suicide attempts and suicide in youth (Brown et al., 2000; Lewinsohn, Rohde, & Seeley, 1996). Although efforts have been directed toward developing and evaluating psychosocial interventions targeting reductions in suicidal behaviors in youth, including safety planning (Pettit, Green, & Buitron, 2018), attachment-based family therapy (Diamond et al., 2010), cognitive-behavioral therapy (CBT) for suicide prevention (Stanley et al., 2009; Asarnow et al., 2017), and dialectical behavior therapy (McCauley et al., 2018), the rates of suicide ideation and suicide in youth have continued to rise steadily for two decades (CDC, 2018). There is critical need for novel targets to prevent and reduce suicide ideation in youth. We begin to address this need in the current study by developing and preliminarily evaluating a novel, brief selective prevention module targeting perceived burdensomeness toward others that can be embedded within CBT protocols for youth with internalizing disorders.

The Interpersonal Theory of Suicide (ITS) posits that perceived burdensomeness is a proximal risk factor for suicide ideation (Van Orden et al., 2010; Joiner, 2005). Research has established perceived burdensomeness toward others as a correlate and risk factor for suicide ideation in youth (Buitron et al. 2016; Buitron et al., 2020; Hill et al., 2018; Hunt et al., 2020), highlighting the promise of perceived burdensomeness as a novel preventive intervention target. We are aware of only two studies that have examined an intervention targeting perceived burdensomeness in youth (Hill & Pettit, 2019; Zullo et al., 2021). In 80 nonreferred youths ages 13 to 19 years sampled from the community, participants who completed two brief online modules targeting perceived burdensomeness using cognitive-

behavioral strategies showed significantly lower levels of perceived burdensomeness compared with participants who received psychoeducation (Hill & Pettit, 2019). This finding is exciting because it demonstrates a brief intervention can successfully target and reduce perceived burdensomeness when administered online. Tempering this excitement is the finding that approximately 50% of participants did not complete the online modules. In 123 youths ages 12 to 18 years sampled from an intensive outpatient program (IOP) for suicidal youth, participants who completed an enhanced IOP intervention that targeted perceived burdensomeness showed a reduction in perceived burdensomeness that did not significantly differ from participants who received the standard IOP (Zullo et al., 2021).

These findings indicate a need to enhance engagement with interventions among low-risk youth in community settings, on one hand, and enhance the efficacy of interventions among high-risk, actively suicidal youth in IOP settings, on the other hand. They also identify a gap in treatment development efforts for youth in intermediate risk settings. Youth with internalizing disorders (i.e., anxiety and depressive disorders) who receive standard, non-intensive interventions in outpatient settings represent one such population. CBT is the leading evidence-based, psychosocial treatment for these youth (Higa-McMillan et al., 2016; Weersing et al., 2017). CBT protocols target specific thoughts and behaviors related to anxiety and/or depression, but do not consistently and explicitly target other identified risk factors for suicide ideation, including perceived burdensomeness toward others. This failure to target an established risk factor represents a missed window of opportunity for selective prevention in at-risk youth. CBTs for youth with internalizing disorders offer an optimal context in which to embed and deliver a selective prevention module that targets perceived burdensomeness.

Consistent with a modular CBT approach (Chorpita, 2007), developing and embedding a selective prevention module into CBTs for internalizing disorders would enable clinicians to select and employ a brief intervention when youth clients demonstrate thoughts of being a burden on others, with minimal disruption to the ongoing intervention protocol. Imposing minimal disruption to ongoing intervention is critical to ensure clinicians and families are able to maintain focus on and make progress treating the primary presenting problem (e.g., anxiety disorder) while also transitioning with ease between treatment components (Chorpita, Daleiden, & Weisz, 2005). This minimal disruption can be achieved in part by targeting perceived burdensomeness within an ongoing CBT framework using a brief module (i.e., one core session). Concepts and skills that have already been covered and practiced in prior CBT sessions can be applied to a novel topic, perceived burdensomeness. For example, cognitive restructuring skills routinely taught and practiced in existing CBT protocols could be applied specifically to beliefs about being a burden on others.

The aims of the current study were thus to (1) develop a novel, brief psychosocial selective prevention module (the “Give program”) targeting perceived burdensomeness toward others that can be embedded within existing CBT protocols for youth internalizing disorders, (2) evaluate the acceptability and feasibility of the module with an eye toward intervention refinement, and (3) examine reductions in perceived burdensomeness. We examined acceptability and feasibility using a qualitative interview administered to parents and youths, and by tracking completion of the module activities. We examined reductions in perceived burdensomeness using a quasi-experimental interrupted time-series design. We hypothesized that the module would result in reduced levels of burdensomeness in youth, such that there would be statistically significant reductions in the slope of burdensomeness scores upon administration of the module.

That is, there would be an ‘interruption’ or shift in the trend of burdensomeness scores that coincides with the timing of the administration of the module. Findings supportive of the acceptability, feasibility, and preliminary efficacy of the Give program module would provide a novel and brief selective prevention approach for an identified risk factor for suicide ideation in youth and set the stage for a larger controlled trial.

Method

Participants

Participants were 18 youths ages 10 to 17 years (83.3% female) and their parents (usually mothers) referred to a university-affiliated, outpatient mental health clinic in a large urban setting. Fifteen participants (83.3%) identified as Hispanic/Latino, one as African American, one as Asian-American, and one as Euro-American/Caucasian. Primary diagnoses were social anxiety disorder (33.3%), major depressive disorder (27.8%), generalized anxiety disorder (22.2%), persistent depressive disorder (5.6%), specific phobia (5.6%), and separation anxiety disorder (5.6%). Two participants had a prior history of psychiatric hospitalization, one for suicide ideation and non-suicidal self-injury and the other for suicide ideation with preparatory behavior (i.e., writing a farewell note). No participant had a history of suicide attempt.

To be included in this study, youth needed to: 1) be between ages 10 to 17 years old; 2) meet for a primary diagnosis of an anxiety disorder, major depressive disorder, or persistent depressive disorder; and 3) endorse perceived burdensomeness before the administration of the module, operationalized as a score ≥ 4 on the Interpersonal Needs Questionnaire 10-Perceived Burdensomeness subscale (INQ-10PB; see Measures). The rationale for inclusion criterion 3) was twofold. One, from a selective prevention lens, it was important to identify participants who experienced elevated levels of perceived burdensomeness so that the content of the module would be relevant to their experiences

and so that we could sensitively test the effects of the module (i.e., avoid a floor effect). Two, a score ≥ 4 on the INQ-PB optimally maximized sensitivity and specificity in the prediction of concurrent suicide ideation in youth (Buitron et al., 2020). Youth were excluded from this study if they showed high acute risk of self-injurious behaviors (Pettit et al., 2018). One eligible participant was excluded at pretreatment for this reason and was redirected to appropriate crisis management services.

Procedure

This study was conducted as approved by the Institutional Review Board. All parents and youths provided informed consent/assent prior to participation. Participants completed a 12-session CBT protocol wherein the Give program module was administered at session 6 with a brief follow-up at session 7. The Give program module was administered at session 7 to five youths due to parents being unavailable at session 6; the data coding for treatment phase (i.e., timing of the module) was adjusted accordingly for these youths. All other sessions consisted of treatment-as-usual CBT in which gradual behavioral exposures and cognitive restructuring (e.g., identification of cognitive distortions, evidence gathering, generating alternative thoughts, chain analysis) were used to treat anxiety (e.g., Silverman et al., 2008), and pleasant activity scheduling and cognitive restructuring were used to treat depression (e.g., TADS Team, 2004).

The Give program module was developed using an iterative process that involved three independent, external reviews by content experts on CBTs and the ITS. The resulting manual was based on principles and common components of CBTs for internalizing disorders. The three components of the Give program module were cognitive restructuring (i.e., evidence gathering, discussion of cognitive distortions), a behavioral contribution task, and a parent letter task (see Appendix 1 for manual). Cognitive restructuring focused on identifying and highlighting youths' current contributions to

others, as well as emphasizing their inherent capability to contribute to others regardless of current contributions. The contribution task was a behavioral exercise in which youths and their therapists planned an activity that youths believed would contribute to their parent's or parents' overall well-being, thus providing evidence that they are a contributor (a "giver") and that they have agency related to their contribution to others. The parent letter task was a cognitive-behavioral exercise in which parents wrote a letter to their child detailing how the child has contributed to their lives over time, thereby providing external evidence that youths are a contributor, not a burden. Parents were instructed to use their own format and style in writing the letter, both to make the task easier for them to complete and to enhance the letter's credibility to youth. Parents were told they could use any memories and anecdotes to illustrate their points, and that they should attempt to communicate information in the letter that they do not typically communicate to their child. To foster openness and sincerity in the letters, parents were informed that therapists would not read the letter.

Therapists were advanced doctoral students trained in CBT via manual review, didactics, role-plays, shadowing a full 12-session CBT case led by a more experienced therapist, and then completing at least five supervised 12-session CBT cases. Training on the Give program module was conducted by the first author via manual review, didactics, and role play. Supervision for the module and larger CBTs was provided by the first and last authors in weekly meetings.

Measures

Diagnostic Interview. The Anxiety Disorders Interview Schedule for Children–IV (Child and Parent versions; ADIS-IV: C/P; Silverman & Albano, 1996) was administered to youths and parents to determine youth diagnoses for inclusion/exclusion purposes. The diagnosis rated most impairing was considered primary and targeted in

CBT. Before administering the ADIS-IV: C/P, evaluators were trained in administration and scoring procedures and met reliability criterion on five videotaped assessments. The ADIS-IV: C/P yields retest reliability kappas between .80 to .92 for combined youth and parent diagnoses for both English (e.g., Silverman, Saavedra, & Pina, 2001) and Spanish (Pina & Silverman, 2004) versions, and good convergent validity via associations with youth self-ratings (e.g., Wood, Piacentini, Bergman, McCracken, & Barrios, 2002).

Youth Perceived Burdensomeness. The Interpersonal Needs Questionnaire-10 Perceived Burdensomeness Scale (INQ-10PB; Bryan, 2011; Hill et al., 2015) is a 5-item measure of perceived burdensomeness (e.g., “These days, I think I make things worse for the people in my life,” “These days, the people in my life would be happier without me”). Items are rated on a 7-point Likert scale ranging from “not at all true for me” to “very true for me”. Total scores range from 0-30, with higher scores representing higher levels of perceived burdensomeness. The INQ-10PB has demonstrated excellent internal consistency and validity in samples of youth (Hill et al., 2015, Buitron et al., 2016). Scale internal consistency reliability of the INQ-10PB in the current sample at the initial treatment session was adequate (McDonald's $\omega = .93$). The INQ-10PB was administered immediately before each treatment session. Because the Give program module was administered at session 6, there were six administrations of the INQ-10PB before and after the module.

Youth Depressive Symptoms. The Child Depression Inventory 2 Child/Parent Versions (CDI-2-C/P; Kovacs, 2010) are 28-item youth self-rated and 17-item parent-rated measures of youth depressive symptoms. Each item in the CDI-2 lists 3 statements, scored 0 to 2 according to symptom severity. Higher scores represent higher levels of depressive symptoms. The CDI-2-C/P has demonstrated good internal consistency and validity in samples of youth (Kovacs, 2015; Wolff et al., 2018). Scale internal

consistency reliability of the CDI-2-C/P in the current sample at pre-treatment was adequate (McDonald's $\omega = .92/.94$, respectively). The CDI-2-C/P were administered at pretreatment, mid-treatment (session 6), and posttreatment.

Youth Anxiety Symptoms. The Screen for Child Anxiety Related Emotional Disorders (Child/Parent Versions; SCARED-C/P; Birmaher et al., 1997) are 41-item youth- and parent-rated measures of youth anxiety symptoms. Items are rated on a 3-point Likert scale ranging from “not true or hardly ever true” to “very true or often true”. The SCARED-C/P has demonstrated good internal consistency and validity compared with other widely used screening scales (Birmaher et al., 1999; Monga et al., 2000). Scale internal consistency reliability of the SCARED-C/P in the current sample at pre-treatment was adequate (McDonald's $\omega = .92/.93$, respectively). The SCARED-C/P were administered at pretreatment, mid-treatment (session 6), and posttreatment.

Acceptability and Feasibility. Acceptability (i.e., the extent to which the program was suitable, satisfying, and attractive to families) and feasibility (i.e., the extent to which the program components are practical and suitable for further testing) were evaluated using a qualitative interview instrument developed for this project. The qualitative interview instrument consisted of a set of standard instructions and open-ended queries about the overall intervention module and specific module components (i.e., contribution task, letter task). The verbal instructions described the type of questions asked, emphasized the focus on the Give program module (rather than overall CBT), and stated the purpose of the questions as being improvement of the module (see Appendix 2). The open-ended queries were designed to allow interviewees to describe their experiences with the intervention while encouraging independence from the researcher's conceptual expectations (see appendix 2; Nelson & Quintana, 2005). The first author conducted all interviews, and parents and youths were interviewed independently.

Data Analysis

Qualitative Analysis of Acceptability and Feasibility

All qualitative data were coded and analyzed using NVIVO 11 software (QSR, 2020). NVIVO 11 was used to facilitate organizing and relating of coded segments of textual data within categories of acceptability and feasibility of the module. Given that participants were administered open-ended queries (e.g., “What did you think of the Give program?”), all codes were generated from observed participant responses without a priori categories. A structured codebook was developed by the first author based on open-coding of the textual data. The codebook described each code, listed the inclusion/exclusion criteria, and provided examples for ease of interpretation. Subsequently, a trained independent coder conducted focused coding of all textual data using the structured codebook. Both coders (i.e., the first author and the trained independent coder) discussed and resolved discrepancies. Following recommended practice for small data sets with a high number of variables (Roberts et al., 2019), interrater agreement percentage (93%) was calculated with a training set of three participant interviews (Miles & Huberman, 1994; Saldana, 2009). Four youths and five parents did not complete the interviews because families did not attend the interview visit and we were unable to contact them; they were excluded from the qualitative analyses.

Interrupted Time-series Analysis on Perceived Burdensomeness

We modeled multilevel analyses to examine the interrupted time-series data of burdensomeness scores over the twelve treatment sessions. Predictors in the statistical model were phase (i.e., binary coding to indicate pre- or post-module), time (i.e., session number 1 to 12), and the interaction between phase and time (Reichardt, 2019). The outcome variable in the time series was perceived burdensomeness. Missing data in the time series is displayed on Table 1. Examination of autocorrelation function plots and

corresponding partial autocorrelation function plots displayed the presence of an expected autoregressive lag-1 effect, indicating that the residual for any given time-point was affected by all prior residuals with a temporal decay (Reichardt, 2019). Thus, the autocorrelation function plots suggested that the final statistical model should have an autoregressive error-covariance structure (AR1; Velicer & Fava, 2003). Model comparison considered AIC and BIC values to determine the best fitting and most parsimonious model (see Table 2; Singer & Willett, 2003). Statistical models with different combinations of AR1 and/or random effects for intercept, phase, and time were compared to determine their relative fit. The model that included AR1 and a random effect for the intercept had the lowest BIC value, which consequently was selected as the most parsimonious and final statistical model. The interaction between phase and time was statistically significant in every statistical model compared. Analyses were estimated using restricted maximum likelihood using all available data. The time-series data analysis was conducted using the R statistical package (Version 3.6.3; R Core Team, 2020).

To establish that anxiety and depressive symptoms decreased from pretreatment to posttreatment, we conducted a series of Wald tests using full information maximum likelihood in MPlus software version 7 (Muthen & Muthen, 2017).

Results

Acceptability. Thematic analysis of the open-ended interviews revealed almost all interviewees viewed the Give program module as highly acceptable; twelve of the thirteen parents and thirteen of the fourteen youths interviewed described the intervention as satisfactory and/or therapeutic. Participants provided narratives of being satisfied with the intervention and its activities (7 youths, 7 parents), experiencing a positive affective

reaction to the intervention activities (11 youths, 1 parent), finding the intervention topic important (4 parents), and being satisfied with parent involvement (2 youths, 3 parents). Narratives also indicated participants found the module therapeutic, understandable, and engaging. Specifically, participants described additional contributory behaviors by the youths beyond the prescribed contribution task (2 parents) and improvements in communication within the family (7 youths, 5 parents). In reference to the letter task, participants described their belief that the letter provided a novel opportunity to communicate information within the family (3 youths, 8 parents) and generated evidence that the youths contribute to others (3 youths, 3 parents). In reference to the contribution task, participants described a sense of self-efficacy upon completion of the task (2 youths).

Small numbers of participants noted preferences for modifying the intervention content or format and difficulties inherent to family dynamics. These included preferences for no family involvement for privacy reasons (1 youth), to discuss issues unrelated to the module content (1 youth), and to complete the intervention at a later time due to unrelated life events (2 youths). Others noted a preference for a longer intervention (1 youth, 4 parents). With regards to intervention content, small numbers of participants described beliefs that written communication is not meaningful (1 youth), the intervention included activities that had been completed previously (1 youth, 1 parent), and planning the youth contribution task was challenging because of an active pattern of contributory behavior already existed (1 youth, 1 parent).

With regards to family dynamics, one or two participants described youth anxiety about a parent's willingness to engage in the activities (1 youth), low youth interest in the module activities (2 parents), and the absence of a positive parental reaction to the contribution task (1 youth). Others noted the letter task was not completed following instructions (1

youth) and the core session was difficult due to a defensive and hostile disposition from the youth (1 parent). Two youths provided narratives describing ambivalence about the helpfulness of the intervention.

Feasibility. All families in the study completed the core session of the module. The majority of families (15 of 18, 83.3%) successfully completed the module activities operationalized as (1) a parent or youth completing the letter or contribution task and (2) the youth's participation in the core and follow-up sessions. A small number of participants provided narratives with implications for the feasibility of the module activities. Namely, two parents noted that it was difficult to complete the module tasks in one week because of limited time. One youth reported needing more guidance from the clinician to complete the contribution task.

Preliminary Efficacy. Table 3 displays the results of the final statistical model of burdensomeness scores. The time predictor was statistically significant and positive, indicating a positive slope of burdensomeness scores from CBT session 1 to immediately before administration of the module. Further, the phase X time interaction was statistically significant and negative, indicating a negative slope of burdensomeness scores after administration of the module. That is, burdensomeness scores increased from CBT session 1 until administration of the module, and then decreased immediately after administration of the module through CBT session 12.

Anxiety and Depressive Symptoms. Consistent with prior findings on the efficacy of the overall CBT protocols for internalizing disorders, there was a statistically significant reduction in parent (Wald test: $\chi^2=21.819$, $df=2$, $p<.00001$) and youth-reported (Wald test: $\chi^2=14.985$, $df=2$, $p<.001$) depressive symptoms from pretreatment to posttreatment, as well as a statistically significant reduction in youth-reported anxiety symptoms (Wald test: $\chi^2=9.782$, $df=2$, $p<.01$). There was also a non-significant reduction in parent-

reported anxiety symptoms from pretreatment to posttreatment (Wald test: $\chi^2=2.351$, $df=2$, $p >.05$).

Discussion

The current findings support the acceptability, feasibility, and preliminary efficacy of a selective prevention module for burdensomeness embedded within CBT protocols for internalizing disorders in clinic-referred youths. Eighty-three percent of participants completed the module and its tasks, and thematic analysis revealed a well-accepted and clinically-feasible approach. Further, interrupted time-series analysis indicated that youth burdensomeness scores increased in the first half of a standard CBT protocol for anxiety or depression, and then decreased immediately following the administration of the Give program module.

The current findings indicate that burdensomeness can be targeted within a modular CBT approach with minimal disruption. As expected given the documented efficacy of the overall CBT protocols, youth's levels of anxiety and depressive symptoms decreased from pre- to post-CBT. Further, the Give program module leveraged strategies and skills taught in CBT sessions, such as cognitive restructuring, to efficiently target youths' beliefs about being a burden on others. Almost all parents (92%) and youths (93%) interviewed about the module provided narratives indicating high satisfaction and comprehension of the intended therapeutic themes (e.g., parent-child communication). Further, families completed the module activities with minimal indication of barriers or challenges.

This study is a step toward concretizing therapeutic strategies to reduce burdensomeness in an efficient modular format that may be translated to other treatment modalities. The principles and activities of the module focus on facilitating communication and adaptive parent-child interactions, and reframing the parent-child relationship. As such, they are

consistent with multiple treatment approaches, not limited to CBT. An important direction for future investigation will be to evaluate embedding the Give program module within other evidence-based treatment approaches for youth internalizing disorders, such as interpersonal psychotherapy (Mufson et al., 2015).

From a selective prevention standpoint, the outpatient setting provides an opportunity to target an identified risk factor for suicide ideation in youth (e.g., burdensomeness), leveraging existing contact with mental health care providers. The current findings indicate that this brief, selective preventive module for at-risk youth can target and reduce burdensomeness in this setting. This builds on and extends prior research demonstrating that two brief online modules can reduce burdensomeness in youth from community settings (Hill & Pettit, 2019). Prior research among suicidal youth in an intensive outpatient program (IOP) setting was less supportive, as an enhanced IOP treatment targeting burdensomeness was not superior to standard IOP care (Zullo et al., 2021). It is possible that cognitions related to burdensomeness are more malleable in youth who experience less severe psychopathology, or that the narrow, direct focus of the current module and the modules used in Hill and Pettit (2019) produce more concentrated and specific effects on burdensomeness.

The increase in severity of burdensomeness scores in the first half of CBT in the current study further highlights the importance of targeting youth burdensomeness directly, as it suggests that CBT protocols for anxiety and depression do not produce reductions in burdensomeness, at least through the mid-point of outpatient treatment. Relatedly, although prior research documents significant associations between burdensomeness and depressive symptoms in youth (e.g., Buitron et al., 2016), the current study suggests that reductions in depressive symptoms during treatment do not necessarily correspond to reductions in burdensomeness. The cognitive-behavioral principles used to target

depression (e.g., behavioral exposures, pleasant activity scheduling, etc.) may produce depression symptom reductions, but additional, direct targeting of burdensomeness may be required to address this interpersonal risk variable for suicide ideation.

The current study has multiple limitations. First, although an interrupted time-series design provides high statistical power with small samples (Fok, Henry, & Allen, 2015) and strong support for causal inference (Reichardt, 2019), we cannot definitively rule out that the CBT protocol alone would have resulted in the burdensomeness trend being reversed at the same time as the module was administered. Second, the absence of a follow-up evaluation precluded examination of subsequent trends of burdensomeness and its downstream effects on suicide ideation. Third, the study sample was predominantly female and Hispanic/Latino. It will be important for future studies to evaluate the module in other, diverse samples of youth.

Despite its limitations, the current study is the first to develop and evaluate a selective preventive module targeting burdensomeness in at-risk youth in an outpatient clinical setting. Making use of a qualitative interview and an interrupted time-series design, our findings demonstrate that burdensomeness can be efficiently and effectively targeted within existing evidence-based treatment protocols for internalizing disorders in youth.

Table 1. *Descriptive Statistics by Treatment Session*

	Session											
	1	2	3	4	5	6	7	8	9	10	11	12
PB	9.94 (6.30)	9.53 (7.24)	7.82 (6.55)	10.00 (8.26)	11.83 (9.15)	12.11 (8.78)	10.28 (9.22)	9.00 (9.52)	9.00 (7.49)	7.25 (5.93)	8.14 (6.43)	7.94 (6.98)
Miss- ing Cases	0	1	1	1	0	0	0	2	0	2	4	2

Note: Perceived burdensomeness (PB) descriptive statistics are displayed as mean (standard deviation).

Table 2. Model Fit Comparison

	AIC	<i>BIC</i>	-2 restricted log likelihood
AR(1) only	1226.401	1246.280	-607.201
AR(1) + Random intercept	1210.719	1233.911	-598.359
AR(1) + Random intercept, time, phase	1202.630	1242.388	-589.315
Random intercept only	1230.936	1250.815	-609.468
Random intercept, time, phase	1205.974	1242.419	-591.987

Note: Lowest akaike information criterion (AIC) and bayesian information criterion (BIC) values in bold. AR(1) denotes an autoregressive process of order 1.

Table 3. *Final Statistical Model*

	Value	SE	t	p
Intercept	11.884	1.721	6.904	<.0000
Time	0.581	0.270	2.154	.033*
Phase	-1.859	1.254	-1.483	.140
Phase X Time	-0.984	0.444	-2.215	.028*

Note: *denotes statistical significance at .05 level. *phi* coefficient = .399

Acknowledgments

Research reported in this dissertation was supported by the National Institute of Mental Health of the National Institutes of Health under Award Number F31MH116603. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

CONCLUSION

The current dissertation research found support for the ITS by examining associations between burdensomeness and belongingness, different forms of stressors (e.g., interpersonal, non-interpersonal), and suicide ideation in psychiatric inpatient adolescents (Study 1). I found that perceived burdensomeness and thwarted belongingness were positively associated with chronic interpersonal stressors and suicide ideation, respectively. I also found that perceived burdensomeness partially accounted for the association between chronic interpersonal stressors and suicide ideation. This study provided some of the first data supportive of the ITS in youth thereby contributing to the impetus for subsequent etiologic suicide research in youth using the interpersonal theoretical orientation.

A conceptual model wherein the combination of low parental warmth and youth impairment foster a sense of burdensomeness in youth was also supported by the current dissertation research (Study 2). I found that the association between low parental warmth and youth perceived burdensomeness was moderated by youth impairment, such that the association was statistically significant at high but not low levels of youth impairment. Study 2 provided initial insight into the role parenting behavior may have in fostering youth burdensomeness, as well as possible content for intervention research.

The current dissertation research also included the development of a well-accepted and preliminarily efficacious brief psychosocial intervention module targeting perceived burdensomeness toward others designed to be embedded within existing CBT protocols for youth internalizing problems (Study 3). Study 3 provided support for the idea that the outpatient clinical setting may be leveraged to target burdensomeness in at-risk

youth and positions me to examine treatment protocols with the intervention module in larger trials.

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The GIVE Module:
Manual for a Brief Intervention Targeting Perceived
Burdensomeness Toward Others in Youth

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Introduction

This manual provides guidelines for the administration of a treatment module (the GIVE module) to be used in the course of Cognitive Behavioral Treatment (CBT) for anxiety and/or depression in children and adolescents ages 10 to 17 years (hereon called “youth”). The module is conceptually rooted in the interpersonal theory of suicide (Joiner, 2005), and is designed to target perceived burdensomeness, meaning youth’s belief that they are a burden or a drain on others and that others would be better off without them.

For Whom Is the GIVE Module appropriate?

The module is appropriate for youth who are receiving CBT for anxiety or depression and who are at low acute risk of suicide, meaning they do not currently experience frequent or intense thoughts of suicide [see Appendix 1 for suicide risk designation algorithm; Pettit, Buitron, and Green (2018)]. The module requires caregiver involvement. Thus, it is not appropriate when the clinician judges that caregivers may not contribute to the session components in a productive way (e.g., caregiver is not able to engage actively in child’s treatment, caregiver’s own distress interferes with his or her ability to contribute productively in child’s treatment, etc.). The module is designed for youth who are approximately ages of 10 to 17 years. The focus on this age range is because the module requires that youth be able to identify and reflect upon their thoughts, behaviors, and feelings, and because pre-adolescence and adolescence are high risk windows for the development of suicidal thoughts and behaviors.

How should the GIVE module be administered?

The GIVE module is designed to be embedded in CBT protocols without disrupting ongoing treatment goals and tasks related to the youth’s presenting problems (i.e., reducing anxiety or depressive symptoms, and related impairment). To that end, the module leverages existing cognitive and behavioral tools that youth have already learned in earlier sessions of CBT.

What are the components of the GIVE module?

The module consists of Psychoeducation for youth and their caregivers, Cognitive Restructuring for youth, a Warmth Activity for caregivers, and a Behavioral Activity in which youths contribute to the well-being of others (usually a caregiver). Table 1 outlines the core components included in the primary session and brief follow-up session, and the expected duration for each component.

At what point in CBT should the GIVE module be administered?

The GIVE module is designed to be flexible. As such, it could be administered at any point in treatment. However, we recommend administration after youth have learned and demonstrated proficiency in the cognitive components of CBT (i.e., identification of cognitive errors, testing and challenging cognitions), and begun out-of-session assignments (e.g., behavioral exposures to feared objects/situations, pleasant activities scheduling). This often corresponds to approximately sessions 6 and 7 in 12- to 16-session CBT protocols. The module maximizes efficiency of administration by

leveraging cognitive skills learned and behavioral routines established in early sessions of CBT.

Table 1. Module Components

<p>Core Session (typically the 6th session of overall CBT protocol)</p>	<ul style="list-style-type: none"> • 5 minutes: Rationale for module and psychoeducation on burdensomeness • 20 minutes: Cognitive restructuring of burdensomeness • 10 minutes: Planning youth home behavioral assignment • 5 minutes: Psychoeducation on caregiver warmth and youth burdensomeness • 10 minutes: Caregiver Warmth Activity
<p>Follow-up Session (typically the 7th session of overall CBT protocol)</p>	<ul style="list-style-type: none"> • 5 minutes: Discussion of youth home behavioral assignment • 5 minutes: Discussion with caregiver about youth home assignment, Caregiver Warmth Activity, and review of psychoeducation, • 5 minutes: Wrap-up • Resume ongoing CBT for anxiety or depression

Preparation for the core session.

In the following sections, we provide guidelines for administering the GIVE model. In the CBT session immediately preceding administration of the GIVE module, inform youth and caregivers that the next session will involve talking about the youth’s relationship with the family and working on activities to improve the youth’s well-being and his or her relationships with other family members.

I. Goals

The goals of this session are to identify and modify youth's cognitions of burdensomeness, plan a behavioral activity in which youth contribute to the well-being of caregivers, and facilitate a caregiver warmth activity (i.e., letter activity). To accomplish these goals, we recommend you begin the core session of the module individually with youth, without caregivers in the room, and then bring caregivers into the room for the final 15 minutes of the session. In the remainder of this manual, blurbs in bold font provide general guidance to illustrate the principles of the module. They are not intended to be rigid scripts.

II. Psychoeducation and Identification of Cognitions

Begin by introducing the concept of perceived burdensomeness and its significance:

- **“Caregivers [use ‘parents’ hereafter if appropriate] have the important responsibility of raising their teens and taking care of their children [use ‘kids’ or ‘teens’ hereafter as appropriate]. What things do caregivers have to do to raise and take care of their children?”** Allow for youth to answer. Here are some possible examples to explore with youth, if needed: **“When children participate in activities like theater or dance or soccer, caregivers sometimes change their schedules to take their children to practices and competitions, or pay for things that they need for their activities. Or when children learn to read, or something even harder like algebra, caregivers sometimes help teach their children and do homework with them. Or when children become sick, caregivers sometimes take off work to care for them and take them to the doctor.”**
- **“In these ways, the responsibility that caregivers have is similar to responsibilities lots of other people have. Take for example firefighters, who have some very important responsibilities, like putting out fires and helping people in harm’s way. Or teachers, who have the responsibility of helping us learn to read and write. Or doctors, who have the responsibility of helping people when they are sick. Taking care of their children is a very important responsibility that caregivers have.”**
- **“Taking care of their children usually brings caregivers feelings of happiness and pride, even if they don’t show it or say it often. But sometimes youth think that their caregivers’ responsibility actually makes their caregivers’ lives harder and worse. Sometimes they think that their caregivers may even be better off without them.**

Probe to elicit youth's current and previous thoughts of being a burden on others.

- **“When you first came to our clinic, you said that you had some thoughts like the ones I just talked about. You said that you thought ____.”** If youth state that they do not currently have these thoughts, inform them that the following activities could help in the event they experience these thoughts again in the future. Importantly, indicate to such youth that most of the activities in the GIVE program are meant to improve youth's relationships with their caregivers, and specific and/or current negative thoughts are not necessary.
- **“What things do you do when you think that you make others’ lives harder?”** If youth cannot identify behaviors, provide examples such as avoiding getting in parents’ way, or youth not asking to do something that they really want to do so as to avoid bothering the parent: **“For example, a teenage girl wanted to go to see a new movie with her friends. They were all going to meet at the theater. When the girl saw that**

her mom came home tired from work, she decided not to ask her mom to take her to the theater because she didn't want to bother her mom. Instead, she stayed in her room that evening. Or a boy was having trouble with his math homework and knew his dad could help him understand it. He thought his dad grew tired of helping him with homework, so he didn't say anything. He just struggled with the homework by himself."

Reflect on the reported distressing thoughts and related behaviors, and identify possible affective consequences of those thoughts and behaviors. Use Appendix 2 to illustrate the connection between thoughts, actions, and feelings.

- **"In our earlier meetings, we have talked about how our thoughts, actions (the things we do), and feelings are related to each other. In other words, how we think and the things we do, can lead to how we feel. When you have these thoughts (insert specific burdensome thoughts youth just reported) and/or do (insert specific actions) how do you feel?"**

Help youth establish a connection between thoughts of burdensomeness, behaviors, and distressing feelings (and suicide ideation for some youth, if applicable). Then, shift the focus to provide the rationale for the GIVE intervention.

"Just like thinking that you make things harder for others can make you feel bad, finding out how much you give to other people and make their lives better can make you feel good. Remember that the way you think about things in your life and the things that you do are connected to how you feel. (Illustrate the following prompt with Appendix 2). **So, we will go ahead and focus on your thoughts first, using our thinking traps and evidence gathering, and then we will focus on the things that you do, using two tasks that you and your caregiver will do.**

III. Cognitive Restructuring

Draw from earlier discussions in CBT of cognitive errors (thinking traps) and strategies (e.g., evidence gathering) to target beliefs about burdensomeness. Explore cognitive errors with youth:

- **"We've talked before about how some of the thoughts you've had can come from thinking traps."** Very briefly refer back to an unrelated, personal example of a thinking trap that youth discussed in earlier sessions, and proceed.
- **"What thinking traps do you think *could* fit the thought that you make your caregivers' lives harder?"**

Provide some specific suggestions only if needed, and as applicable:

- **"Some youth fall into the '**focusing on the negative**' thinking trap in which they don't pay attention to all the good that they do and *can* do for other people's lives, and how much they matter to other people. Instead, they focus on the negative."**
- **"Some youth think that they know what their caregivers are thinking. For example, maybe a mom has taken her teen to a doctor's appointment and she looks very serious in the waiting room. This youth might think that his mom is upset that she has to take time out of her day to bring him to a doctor's appointment, but the caregiver may be thinking about something else. This is the '**mind reading**' thinking trap."**
- **"Some youth feel a very strong need to do everything they can to help their**

families. But they think that, no matter how hard they try, it is not good enough and that they fail to be helpful and important to the family. This could be the ‘perfectionism’ thinking trap.”

Ensure youth understand and are able to generate examples of how their beliefs of being a burden can come from cognitive errors, and then complete an evidence-gathering exercise with youth.

- **“It sounds like your thought that you make other people’s lives harder could be a thinking trap. Let’s gather some evidence about how true these thoughts are, so that we can come up with other thoughts that may be more true and positive (just like we’ve done in previous sessions!). First, let’s come up with examples of how youth can make their caregivers’ lives better. I’ll go first! Andy’s mom has a stressful job, and after a long day, Andy talks with her and tells silly jokes that make her laugh. So, Andy helps her relax after a stressful day. Now it’s your turn. Can you come up with an example of how youth can make their caregivers’ lives better?”**

Some hypothetical examples to explore may be: providing affection, helping with household chores, providing company to the caregiver, helping with technology.

Do you think that you do, or *can* do, any of these things that you came up with? Tell me a little more about them.

Some youth may come up with sufficient evidence that they make their caregivers’ lives better:

- **“It looks like you do _____ and so you have evidence that you make your caregiver’s life better. If you continued to do _____, then how do you think that would affect your parent? Given this evidence, what is an ‘other’ thought that is more true than thinking that your caregiver’s life is harder and worse because of you?”** Shape the youth’s cognitions toward something along the lines of: “I do _____ which makes my caregiver’s lives better, *and* they also help me with ____.” **“We can also find some ways that you can give back to your caregiver beyond all the good things that you already said as an extra way to show how thankful you are for your caregiver’s help. Let’s find some ways that you can give back to your caregiver.”**

Some youth may indicate that their life circumstances (e.g., expensive health-related costs, excessive help with homework) are burdensome on caregivers. Respond to this by noting how caregivers’ contributions provide evidence of how much they care for the youth.

- **“It sounds like your caregivers must really care about you to help in any way that they can. You have all the power to give back to them as a thank you for their help, beyond all the good things you do for them that you already said. Let’s find some ways that you can give back to your caregiver.”**

Some youth may indicate that they do not give much to their caregivers in any way, interpersonally (e.g., low affection due to conflict) or pragmatically (e.g., helping with chores). They may even report that their caregivers have made verbal statements about how difficult they are.

- **“It sounds like sometimes you don’t get along with your caregiver. [It also seems like your caregiver gets upset at things you do or don’t do]. What would you**

like to change about your relationship with your caregiver? Briefly explore motivation to change, and acknowledge that relationships are a two-way street (youth and caregivers can both make changes). **Let’s find some ways that you can give back to your caregiver and take a step toward getting along better with them. We will also talk with your caregiver about some things they can do to get along better with you.”**

IV. Behavioral Assignment

Now work on planning an activity in which youth contribute to their caregivers.

Appendix 1 provides a list of examples you can share with youth to help them identify an activity efficiently. Highlight that this list contains suggestions and that an activity that is not listed may work just as well. When deciding on the activity, make sure it is feasible and possible for youth to carry out, and problem solve around any barriers to completing the activity.

- **“We talked about how what we think, what we do, and how we feel are connected to each other. We just focused on your thoughts, and now we will focus on *doing* something that can also help you think about things differently, and feel good.**
- **Has something small ever made you feel good, like someone saying something nice about you or helping you with something?**

Allow youth to generate examples. If youth struggle to generate examples, provide an example and then prompt them to come up with an example.

- **“Small things that happen during the day can make a big difference in how we think and feel. We could come up with positive activity (the ‘give to parent’ activity) that you can do with or for your caregiver that shows your caregiver that you are thankful and want to give back to them [or “that shows your caregiver that you are taking a step toward getting along better,” if the teen reports a strained relationship], even if it is not big or expensive. Take a minute to look at the list and think of an idea or two that we could talk about.”**

Get specifics about when, where and how youth will complete the activity, and then explore possible obstacles. Lead the discussion with two main, common obstacles: forgetting to do the activity and caregiver being unavailable. Set up a reminder in session (e.g., phone reminder), and see if youth know caregiver’s availability (if not, then discuss availability when caregiver enters the session). Briefly probe for other obstacles.

Note: Some youth, especially pre-adolescents, may have limited access to resources (e.g., money, transportation). Identify an activity that requires minimal resources for these youth.

V. Caregiver Psychoeducation and Letter Activity

After planning the behavioral activity with youth, bring caregiver into the session to inform them of the activity and recruit their assistance in facilitating the activity.

- **“Before you came in, (youth’s name) and I talked about a way that (youth’s name) can give back to you as a thank you for the things that you do as a caregiver.”**
Alternate introduction for youth reporting a strained relationship with caregivers:
“Before you came in, (youth’s name) and I talked about a way that (youth’s name) can do something positive with you or for you to get along better.”

Let caregiver know about the nature of the activity, and when and where youth will complete the activity. Confirm with caregiver that they are available at the proposed day and time, if appropriate, or select a more feasible time.

Explain the rationale for caregiver involvement and the activity:

- **“The reason we planned this activity is because building youth’s sense of contribution toward other people is important for their esteem and well-being. (Youth’s name) had previously reported believing that sometimes he/she makes your life harder. This at-home activity is an important step toward challenging that belief and demonstrating to (youth’s name) that he/she is a valued, contributing member of the family.”**

- **“In addition to the activity we just discussed, there is another brief activity that mainly involves you, Mr/Ms. _____. Sometimes life gets in the way and we take for granted that the people we love know how much we value them. It is important for youth to receive clear and consistent messages that indicate to them how much they are valued and enrich others’ lives. When youth don’t have these clear and consistent messages they might come to inaccurate and negative conclusions, or they may fall into thinking traps, as we call them here.”** Give caregiver an example of a neutral interaction that may be misinterpreted by youth with anxiety/depression. You may use the ‘mind reading’ thinking trap example of a caregiver in a waiting room (see section II), and you may ask youth to give the example, as appropriate.

“Most families find that life gets in the way at times, like I mentioned, and that there is room for improvement in how, and how often, they communicate. How have you noticed life getting in the way of your communication with _____? If caregivers indicate that everything is fine in their communication with youth, then still proceed with the activity and highlight that this activity could further strengthen their relationship.

- **“This activity is a step toward strengthening your communication and relationship with _____. As part of this activity, Mr/Ms. _____, you will write a letter to _____ describing how he/she has contributed to your life and made your life better. The letter can be in whatever style you want, however long or short you want, and it should reflect your *honest, positive feelings*. You can include anecdotes and memories, if you would like, but you do not have to. I will not be coaching or pushing you to write the letter in any certain way, and I will not read the letter. I will only discuss _____’s feelings about it.”**

Give the caregiver handout (Appendix 2) to the caregiver. The handout summarizes the module material for the caregiver, and elaborates on parental warmth (Silverman, Marin, & Rey, n.d.)

- **“This handout summarizes what we just spoke about today, and reviews the brief activity for you to do out of session. Please read it as a refresher out of session. Is this activity something that you could complete by next session?”**

Caregivers may complain about things that their teens do or don’t do during the core session, and may indicate that they have to be tough or harsh on their teens to control their behaviors. Redirect caregivers away from these negative statements quickly. Related to this (and perhaps to prevent this negative caregiver reaction), give a brief disclaimer at the end of your explanation of the caregiver activity to improve caregiver engagement with the module:

- **“Now, sometimes caregivers believe that working on their relationship with their youth means that they have to enforce the house rules less or give way to the**

youth's every demand. That will not be the case in our work. We encourage caregivers to consistently enforce rules and consequences, *and* at the same time to be warm and praise teens' positive behaviors. Being warm refers to any caregiver gestures that transmit positivity and acceptance, like praise and smiling. When interacting with your child, it is best to be both warm *and* firm when needed."

Explore possible obstacles to caregivers completing the letter. Encourage caregivers to set up a reminder (e.g., phone reminder) in session.

Follow-up Session

The goals of this session are to increase youth's cognitions and behaviors toward positive contribution, and to increase caregiver warmth toward youth. These goals will be accomplished in part by reviewing the at-home activities that should have been completed since the last session. In this follow-up session, aim to consolidate the main cognitive takeaways from the module: That youth contribute to the well-being of others, and have control over their contributions to others.

I. Review the Behavioral Activity with Youth

Begin the session with the youth, and process how the behavioral activity went. For some youth, the activity may go well and result in a positive interpretation (e.g., "I made my parents happier"). When this is the result, (1) praise youth's effort, (2) tell them that their completion of the activity provides additional evidence that they contribute and can continue to contribute to others (they have control over their contributions to others), and (3) aim for youth to start a pattern of positive, contributory behavior toward loved ones. To accomplish (3), explore how youth would feel, and how youth think caregivers would feel, if they actively worked on contributing to caregivers (draw a parallel with behavioral activation and the behavior-feelings link, if applicable). For (3):

- **"If you were to continue doing things like [youth's contribution activity] every week or so and your caregiver had a similar positive reaction, then how do you think you would feel?" "How do you think your caregiver would feel if he/she saw you making this effort?" "It sounds like you are making the link between these good actions (doing things for your caregiver) and how you feel."**

If youth have negative interpretations about how the activity went, revert to brief cognitive restructuring (e.g., evidence gathering that the caregiver was not happy about the behavioral activity) while still covering the three aforementioned points.

If youth did not complete the activity, explore the reasons why and any obstacles that might have interfered with activity completion. If the activity was too difficult to complete, explore ways to scale it down to a more manageable level. Encourage and facilitate an additional attempt, draw parallels between previous experiences in treatment that required multiple attempts (e.g., completing a difficult exposure or carrying out a pleasant activity schedule), and include caregivers as appropriate to facilitate completion of the activity in the coming week.

II. Review Caregiver Letter Activity with Youth

Review the caregiver warmth activity with youth. Contrast the letter's positive content with youth's negative beliefs of burdensomeness to shape more adaptive cognitions along the lines of: "I do _____ which makes my caregiver's life better, *and* they also help me with _____." Is the positive content consistent with the teen's beliefs about being a burden?

- **"Something that is really important to think about is that your caregiver was asked to write this letter with purpose and thoughtfulness, which shows their true feelings much better than quick comments made during emotional or stressful times. For example, when caregivers tell their kids that they make things difficult for them during an argument or after a long day at work, that probably is more**

about them feeling stressed out than how they feel about their kids.”

If youth gave a specific example of caregivers saying negative things, then draw the connection between saying negative things while emotional or stressed, *and* saying inaccurate things. You could make two lists to contrast how people communicate when they are stressed/tired/emotional vs. when they are calm and writing (i.e., writing is more accurate, clear, etc.). Lastly, encourage youth to take a cell phone picture of the letter to keep it for posterity, and/or keep it in a place with other items of remembrance (e.g., memory box).

III. Review Psychoeducation on Caregiver Warmth & the Letter Activity with Caregivers

Obtain permission from youth to meet individually with the caregiver by indicating that you would like to get the caregiver’s perspective about what was learned from this activity. Get caregiver’s perspective on how youth’s behavioral activity worked out, and praise caregiver for facilitating youth’s completion of the activity, as appropriate. Then, probe for caregiver’s thoughts about youth’s reaction to the letter.

- **“Like we discussed last session, life often gets in the way of how we communicate with others. For example, some people have a difficult time communicating as they intend to when they are feeling upset or stressed out. Sitting down to do this letter activity was an opportunity to be clear and thoughtful about ____’s contribution to the family, and to build momentum toward making your relationship with ____ even more positive. Did you find yourself writing things in the letter that usually go unsaid? What was ____’s reaction?”**
- **“Some people find that taking the time to write allows them to express their feelings more clearly and thoughtfully. In these days of high stress and quick communications like text messages, these thoughtful expressions are sometimes lost. I’m glad ____ had a positive reaction!”**

If caregiver sensed a negative reaction from youth, then let caregiver know that over time youth may internalize the message (particularly after opening up communication) even though their initial reaction was negative.

- **“Before we wrap up, let’s review the idea of caregiver warmth that we touched on last session, and that you reviewed on the handout that you received. Let’s start by defining it. Caregiver warmth refers to any gestures by caregivers that transmit positivity and acceptance, like praise and smiling. Last session we discussed how there is always room for improvement in how, and how often we communicate. For example, some caregivers may aim to display warmth even after a stressful workday, and others may aim to take a deep breath and not lose their temper when enforcing rules. Given the room for improvement that you see in your communication with ____, what single goal could we set for you, Mr./Ms. ____?”**

After wrapping up the individual meeting with caregivers, bring youth back into the room with caregivers still present and praise them for working on their relationship and communication. Have the caregivers and youth generate things they learned with the module.

- **“What did you learn or discover about yourself, your [caregiver/child], or your family with the activities that were done?”** Shape the content of the dialogue toward the takeaways of the module: That youth contribute to the well-being of others,

have control over their contributions to others, and that caregiver warmth and overall communication improve parent-child relationships.

Praise and reaffirm any comments from youth indicating that they learned how they contribute to their families, or how they may do so in the future, or any other indication that their original negative belief was challenged or shaped by the activities in the module. If youth do not specifically note anything related to the takeaways of the module, then simply state the takeaways and provide supporting evidence (e.g., refer back to the evidence gathering exercise) as per the following: **“The main lessons from the program are that you [youth] are valued by your caregiver and make his/her life better, according to what we discussed, and that you have control over how you make others’ lives better by changing what you *do*, as you may have noticed from *doing* the ‘give to parent’ task.”**

Inform them that you will resume working on previous goals (reducing anxiety and/or depression), and that you look forward to continuing to support their relationship. In subsequent CBT sessions, consider brief check-ins with youth and caregivers to monitor beliefs of burdensomeness and encourage continued engagement in contributory activities (youth) and expressions of warmth (caregiver).

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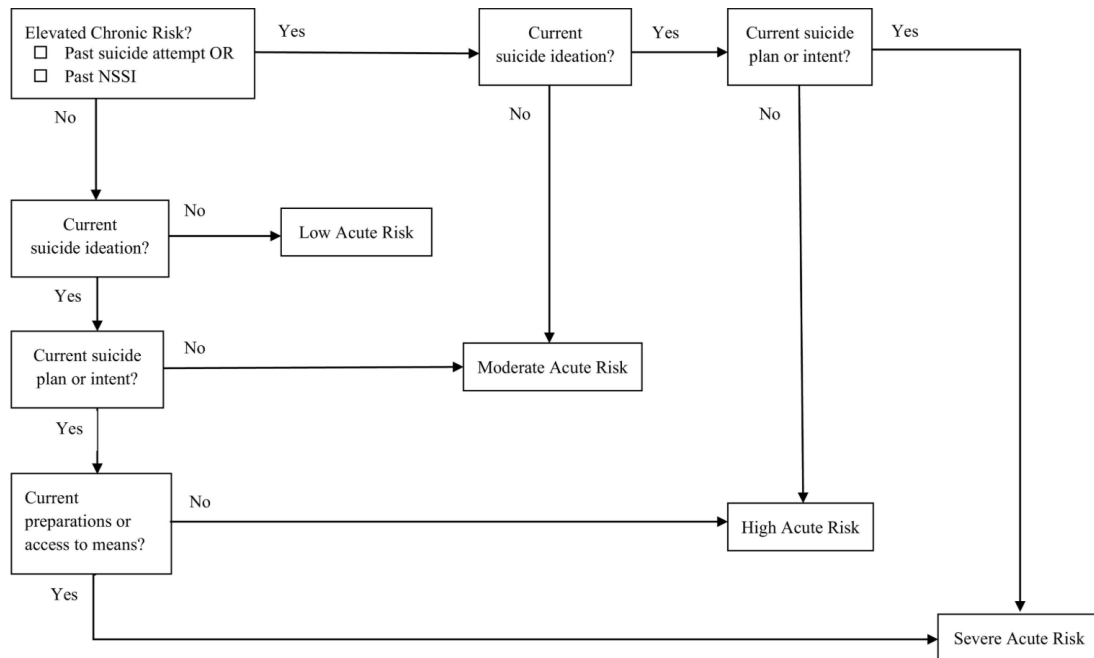
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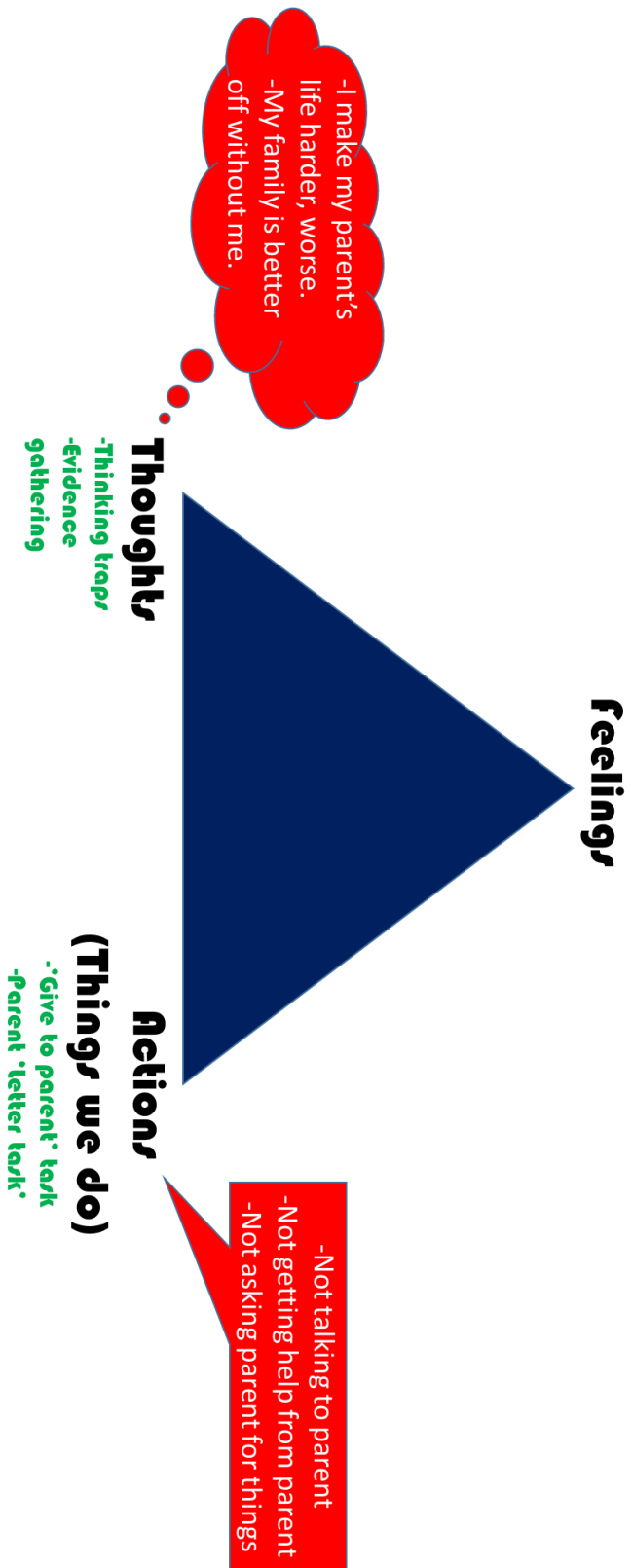
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Risk Algorithm (Manual Appendix 1)



NSSI: Non-suicidal self-injury



Things to do for your caregiver (Manual Appendix 2)

- **Helping with a chore that you are not usually asked to do**
 - **Examples: Cleaning, organizing, mowing the lawn, washing the dishes, washing parent's car, walking the family dog, bathing the family pet.**
- **Cooking a meal for your parent**
- **Writing a thank you letter**
- **Do a fun activity that your parent really enjoys (examples: a sport, a video game, drawing/painting, board game)**
- **Artistic performance (example: play an instrument for your parent)**
- **Teach your parent something (example: technology-related activity)**
- **Taking parents out to eat (if you have a job)**
- **Buying a thoughtful gift (if you have a job)**

Caregiver Handout (Manual Appendix 3)

- **Purpose of GIVE.** Building one’s sense of contribution toward other people is important for their self-esteem and well-being. Some young people believe that they make their loved ones’ lives harder and that loved ones would be better off without them. The brief GIVE program aims to counter this negative belief.
- **Contribution activity.** The at-home ‘contribution’ activity allows your child to give back to you, the caregiver, in some way. This may be additional help with an extra chore, doing an activity that you enjoy, etc. The activity teaches kids and teens two main things: They contribute to the family, and they have control over how they contribute to others.
- **Letter activity overview.** It is important for kids and teens to receive clear, meaningful, and consistent messages that indicate they are valued and make others’ lives better. Adults often take for granted that kids and teens fully understand the degree to which they are valued. In fact, kids and teens are still shaping their view of themselves, other people, and the world by the messages they receive from the people in their lives (including you). This activity gives you an opportunity to clearly communicate to your child how much you value them.
- **Completing the letter activity.** Express how he/she contributes to your life and makes your life better. The style is entirely up to you; the therapist will not read the letter. You may write personal stories, feelings, and thoughts that are related to how much you value your child/teen, and any other positive topic. Examples of contribution from your child could include receiving affection, getting a sense of personal fulfillment, helping with household chores, having company from your child, etc.
 - Often, life gets in the way and positive things go unsaid; this is an opportunity to express these things!
- **Getting along better.** Getting along better and opening up your communication with your child/teen does not mean enforcing rules less. You can be firm with rules and warm at the same time.
 - Examples of warmth:
 - Praising positive behaviors (verbal statements or rewards).
 - Nonverbal gestures (smiles, hugs, etc.)
 - Affirmations/compliments: “You’re smart,” “You can do this!”
 - Consistent and meaningful positive gestures leave little room for deeply held, negative beliefs to take root (like the belief that one is not valued). We recognize that communication is a skill that can be challenging. The program supports you in practicing this important skill!

APPENDIX 2

Parent Interview

Instructions: I will be asking several open-ended questions. Some of the questions are related to the GIVE program which you and your child completed over the last two sessions. Your child is also receiving our standard cognitive behavioral therapy, and the following questions will *not* be about the standard therapy sessions (that is, the first five sessions your child received). Please elaborate as much as possible in your responses, as you see fit. There are no right or wrong answers. Your responses will be used to improve our program. We are interested in hearing any suggestions you have for improving the program. And remember, when you respond, please focus only on the last two sessions, not the first five sessions.

-What did you think about the brief GIVE program?

-What did you think about the contribution task that your child completed? The contribution task is the one in which your child contributed to you in some way or did an activity with you that you enjoy.

-What did you think about the letter task?

Youth Interview

Instructions: I will be asking you questions. Some of them are about the GIVE program which you and your caregiver completed over the last two sessions. You have also done other therapy sessions *before* the GIVE program, and these next questions will *not* be about those other sessions. Please tell us as much as you can in your answers. There are no right or wrong answers. Your answers will help us make our program better. If you think there is something in the GIVE program that could be done better, then hearing about it would help a lot.

Rapport building probe [for youth not known to interviewer]: What is your favorite thing, hobby, or activity? Tell me more about it.

-What did you think about the brief GIVE program? Remember, the GIVE program means what we did only in the last two sessions, not what we did in earlier sessions.

-What did you think about the 'give to parent' task? IF CHILD DID NOT COMPLETE TASK, PROBE OBSTACLES.

-What did you think about the 'parent letter' task?

CURRICULUM VITAE

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The goal of this fellowship is to develop a selective prevention approach that targets beliefs of burdensomeness in youth with anxiety and depressive disorders, and for the fellow to train in intervention development, quasi-experimental and mixed-method designs, and research with diverse populations.
Role: PI

Peer-reviewed Publications

Hill, R. M., Mellick, W., Alvis, L., Dodd, C. G., Do, C., Buitron, V., Sharp, C., Pettit, J. W., & Kaplow, J. B. (2020). Performance of the interpersonal needs questionnaire in adolescent clinical samples: Confirmatory factor analyses and evaluation of measurement invariance. *Suicide and Life-Threatening Behavior*, 50(6), 1214-1222.

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