Perceived Burdensomeness and Suicide-Related Behaviors in Clinical Samples: Current Evidence and Future Directions

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Context: The interpersonal-psychological theory of suicide identifies perceived burdensomeness as a primary component of suicidal desire and a possible point of intervention for suicide prevention. A growing literature has explored the relationship between perceived burdensomeness and suicide-related behaviors. Objective: The aim of this review is to integrate the evidence, identify critical gaps in the evidence-base, and explore implications for translation to prevention and intervention science. Methods: Papers published that reported on the association between perceived burdensomeness and suicide-related behaviors were included. Results: The literature indicates (a) significant cross-sectional associations between perceived burdensomeness and suicidal ideation and suicide attempts and (b) that perceived burdensomeness acts as either a moderator or a mediator of the association between risk and protective factors and suicide-related behaviors. Conclusion: Research is needed to examine the longitudinal association between perceived burdensomeness and suicide-related behaviors, develop additional measurement approaches, generalize findings to other samples, and begin translating findings to prevention and intervention science. © 2014 Wiley Periodicals, Inc. J. Clin. Psychol. 70:631–643, 2014.

Keywords: suicide; burdensomeness; interpersonal-psychological theory; review; suicidal ideation

Suicide-related behaviors are a serious health concern in the United States. Suicide is the 10th leading cause of death in the United States and accounted for more than 38,000 deaths nationally in 2010 (Centers for Disease Control and Prevention, 2013). The interpersonal-psychological theory of suicide (IPTS; Joiner, 2005) provides a theoretical account of the relationships between suicide-related behaviors and a broad array of risk factors, via a proximally situated set of constructs. The IPTS proposes that two factors are necessary for an individual to die by suicide, neither of which, alone, is sufficient: the acquired capability to enact lethal self-injury (acquired capability) and the desire for death. The acquired capability is developed through repeated exposure to pain and injury and is believed to be a static risk factor. The desire for death is roughly equivalent to suicidal ideation (Van Orden, Witte, Gordon, Bender, & Joiner, 2008). It is a subjective desire to cease living and is believed to be modifiable and amenable to change. The desire for death comprises two factors: a sense of perceived burdensomeness and thwarted belongingness. The IPTS proposes that the joint presence of perceived burdensomeness and thwarted belongingness predicts the desire for death, which, when combined with the acquired capability, leads to serious suicide attempts and suicide.

Thwarted belongingness refers to a sense of social disconnectedness from others (Joiner, 2005). It can be operationally defined as low levels of perceived social support from others, a low perceived sense of connectedness and relatedness, or loneliness. Decades of research on suicide-related behaviors have examined variables representative of thwarted belongingness, and these variables also have been leveraged in interventions designed to reduce suicide-related behaviors (e.g., King et al., 2009). Perceived burdensomeness refers to a perception that one is a burden or drain on significant others. Perceived burdensomeness received little empirical attention until the introduction of the IPTS in 2005 and has not yet been leveraged for suicide prevention efforts. A review of this recent, but rapidly emerging literature is necessary to draw conclusions about the role of perceived burdensomeness in suicide-related behaviors, identify gaps in the
evidence-base, and provide future directions to inform leveraging perceived burdensomeness as a component of prevention programs for reducing the incidence and severity of suicide-related behaviors.

Van Orden and colleagues (2010) elaborated on the IPTS and summarized the literature available concerning the theory. At the time, only a handful of studies had examined the relationship between perceived burdensomeness and suicide-related behaviors. Given the scarcity of work on perceived burdensomeness, Van Orden and colleagues (2010) drew on a broad array of evidence, including case reports and studies using perceived burdensomeness-related constructs, such as parental reports of unwanted pregnancies, descriptive case studies, psychotherapist ratings of patients’ perceived expendability, and constructs that confounded perceived burdensomeness with other constructs. That review concluded that (a) perceptions of burdensomeness appeared to be a common theme in suicide notes in one study, (b) perceived burdensomeness differentiated suicide attempters from nonsuicidal individuals in a second study, and (c) several variables tapping into aspects of perceived burdensomeness had been significantly associated with suicidal ideation (see Van Orden et al., 2010).

The purpose of the present review was to provide a more focused, in-depth review of the available literature specifically relevant to the associations between perceived burdensomeness and suicide-related behaviors. PsycInfo and PubMed databases were searched for articles including either “interpersonal-psychological theory” or “burden” and “suicide” or “suicidal” through 2013. The inclusion criterion was an original empirical work and that examined the relationship between perceived burdensomeness and suicidal ideation, suicide attempts, or suicide in a clinical sample. To ensure all relevant papers were reviewed, the references of all the included papers were thoroughly examined for additional publications that met criteria for inclusion. This review was restricted to studies with clinical samples to ensure that the mean level or frequency of suicide-related behaviors in the samples was sufficient to obtain reliable estimates of the association between burdensomeness and suicide-related behaviors. We note, however, that several additional studies not included in this review evaluated the relationship between burdensomeness and suicide-related behaviors in nonclinical samples and that conclusions were largely consistent with those drawn from studies of clinical samples. A brief description of the sample, measures used, and summary of the findings of each study are included in Table 1.

In this review, we first provide definitions of suicide-related behaviors and perceived burdensomeness along with measurement issues relevant to both constructs. We then review the empirical literature, focusing on the associations between perceived burdensomeness and suicidal ideation, suicide attempts, and suicide, and perceived burdensomeness as a moderator or mediator of the association between other known risk and protective factors and suicide-related behaviors. Finally, with the goal of identifying evidence needed for translation to prevention and intervention science, future directions are suggested.

Definitional and Measurement Issues

Suicide-Related Behaviors

The currently accepted nomenclature of suicide-related behaviors includes three primary constructs: suicidal ideation, suicide attempts, and suicide (Silverman, Berman, Sanddal, O’Carroll, & Joiner, 2007). Suicidal ideation includes any self-reported thought of killing oneself. A suicide attempt is a nonfatal, self-inflicted act in which there is the potential for injury and the individual has some intent to die. Suicide is a fatal, self-inflicted destructive act with some intent to die. Researchers have called for routine distinctions between these constructs (Silverman et al., 2007).

The IPTS hypothesizes that perceived burdensomeness is related to the desire for death, meaning suicidal ideation (Van Orden et al., 2008). The IPTS also proposes a conditional relationship between the desire for death and serious suicide attempts and suicide, in that these behaviors will result only in the presence of the acquired capability to enact lethal self-injury. Thus, perceived burdensomeness should have a main effect relationship with suicidal ideation and a conditional (i.e., moderated) relationship with suicide attempts and suicide.
Table 1

<table>
<thead>
<tr>
<th>Study</th>
<th>Sample (n)</th>
<th>PB Measure</th>
<th>Suicide-related behavior measure</th>
<th>Main finding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aketchi et al., 2004</td>
<td>Terminally ill cancer patients (n = 140)</td>
<td>Single item</td>
<td>Structured Clinical Interview for DSM-IV</td>
<td>PB higher in those who reported SI than those without SI.</td>
</tr>
<tr>
<td>Anestis &amp; Joiner, 2011</td>
<td>Outpatients (n = 492)</td>
<td>INQ</td>
<td>Beck Scale for Suicide Ideation item</td>
<td>The interaction between PB, thwarted belongingness, the acquired capability, and negative urgency predicted lifetime suicide attempts.</td>
</tr>
<tr>
<td>Brown, Comtois, &amp; Linehan, 2002</td>
<td>Women with borderline personality disorder and recent parasuicidal acts</td>
<td>Parasuicide History Interview</td>
<td>Parasuicide History Interview</td>
<td>Suicide attempts more strongly associated with making others better off than nonsuicidal self-injury.</td>
</tr>
<tr>
<td>Bryan, 2011</td>
<td>Military personnel (n = 219)</td>
<td>INQ</td>
<td>Behavioral Health Measure item</td>
<td>PB higher in service members who reported SI than those without SI.</td>
</tr>
<tr>
<td>Bryan, Clemans, &amp; Hernandez, 2012</td>
<td>Military personnel and contractors (n = 137); military personnel (n = 55)</td>
<td>INQ</td>
<td>Suicidal Behaviors Questionnaire – Revised</td>
<td>PB moderated the association between the acquired capability and SI.</td>
</tr>
<tr>
<td>Bryan, Cukrowicz et al., 2010</td>
<td>Military personnel (n = 522)</td>
<td>INQ</td>
<td>Suicidal Behaviors Questionnaire – Revised</td>
<td>PB correlated with SI.</td>
</tr>
<tr>
<td>Bryan et al., 2013</td>
<td>Outpatient military personnel (n = 219)</td>
<td>INQ</td>
<td>Suicidal Behaviors Questionnaire – Revised</td>
<td>PB mediated the association between depressive symptoms and SI.</td>
</tr>
<tr>
<td>Bryan et al., 2012</td>
<td>Military personnel (n = 92)</td>
<td>INQ</td>
<td>Beck Scale for Suicide Ideation</td>
<td>PB did not moderate the association between combat exposure and SI.</td>
</tr>
<tr>
<td>Cox et al., 2011</td>
<td>Military personnel files (n = 237)</td>
<td>Ratings of suicide notes</td>
<td>Suicide</td>
<td>PB-related themes were present in 40.8% of suicide notes.</td>
</tr>
<tr>
<td>de Catanzaro, 1995</td>
<td>Psychiatric inpatients (n = 52)</td>
<td>Single item</td>
<td>Seven item scale</td>
<td>PB correlated with SI.</td>
</tr>
<tr>
<td>Study</td>
<td>Sample (n)</td>
<td>PB Measure</td>
<td>Suicide-related behavior measure</td>
<td>Main finding</td>
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<tr>
<td>Dutton et al., 2013</td>
<td>Undergraduates and obesity treatment patients (n = 271)</td>
<td>INQ</td>
<td>Depressive Symptom Index – Suicidality Subscale</td>
<td>PB mediated the association between body mass index and SI.</td>
</tr>
<tr>
<td>Garza &amp; Pettit, 2010</td>
<td>Spanish-speaking outpatient women (n = 73)</td>
<td>INQ</td>
<td>Modified Scale for Suicide Ideation</td>
<td>PB did not moderate the association between familism and SI.</td>
</tr>
<tr>
<td>Gunn et al., 2013</td>
<td>Suicide notes (n = 261)</td>
<td>Ratings of suicide notes</td>
<td>Suicide</td>
<td>PB-related themes were present in 10.3% of suicide notes.</td>
</tr>
<tr>
<td>Joiner et al., 2002</td>
<td>Suicide notes (n = 40)</td>
<td>Ratings of suicide notes</td>
<td>Suicide/suicide attempt</td>
<td>Notes of suicide decedents showed greater PB than notes of suicide attempters.</td>
</tr>
<tr>
<td>Joiner et al., 2009</td>
<td>Young adults with sadness or anhedonia (n = 815); inpatients or outpatients (n = 313)</td>
<td>General Mattering Scale; Suicide Cognitions Scale items</td>
<td>Composite International Diagnostic Interview, SI items; interview</td>
<td>PB moderated the association between social support and SI. The interaction between PB, thwarted belongingness, and past suicide attempts predicted recent suicide attempts.</td>
</tr>
<tr>
<td>Kanzler et al., 2012</td>
<td>Chronic pain patients (n = 113)</td>
<td>Suicide Intensity Scale item</td>
<td>Beck Depression Inventory II item</td>
<td>PB correlated with SI.</td>
</tr>
<tr>
<td>Kowal et al., 2012</td>
<td>Chronic pain patients (n = 238)</td>
<td>Self-Perceived Burden Scale</td>
<td>Patient Health Questionnaire item</td>
<td>PB correlated with SI.</td>
</tr>
<tr>
<td>Lester &amp; Gunn, 2012</td>
<td>Suicide notes (n = 664)</td>
<td>Ratings of suicide notes</td>
<td>Suicide</td>
<td>PB-related themes present in 15.5% of suicide notes.</td>
</tr>
<tr>
<td>Monteith et al., 2013</td>
<td>Veteran inpatients (n = 185)</td>
<td>INQ</td>
<td>Beck Scale for Suicide Ideation</td>
<td>PB moderated the association between thwarted belongingness and SI.</td>
</tr>
<tr>
<td>Motto &amp; Bostrom, 1990</td>
<td>Psychiatric inpatients (n = 3005)</td>
<td>Single item</td>
<td>Suicide deaths</td>
<td>PB predicted suicide deaths over a 60-day period.</td>
</tr>
<tr>
<td>O’Reilly, Truant, &amp; Donaldson (1990)</td>
<td>Psychiatrists (n = 99)</td>
<td>Single item</td>
<td>Suicide deaths</td>
<td>Psychiatrists reported patients who had died by suicide had felt like a burden in 31% of cases.</td>
</tr>
<tr>
<td>Study</td>
<td>Sample (n)</td>
<td>PB Measure</td>
<td>Suicide-related behavior measure</td>
<td>Main finding</td>
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<td>Simlot, McFarland, &amp; Lester (2013)</td>
<td>County jail inmates (n = 38)</td>
<td>INQ</td>
<td>Suicide Behaviors Questionnaire-Revised</td>
<td>PB did not significantly correlate with SI.</td>
</tr>
<tr>
<td>Van Orden et al., 2006</td>
<td>Adult outpatients (n = 343)</td>
<td>Single item</td>
<td>Beck Scale for Suicide Ideation, attempt item</td>
<td>PB predicted SI and past suicide attempts.</td>
</tr>
<tr>
<td>Van Orden et al., 2012</td>
<td>Outpatients (n = 397)</td>
<td>INQ</td>
<td>Beck Scale for Suicide Ideation</td>
<td>PB predicted SI.</td>
</tr>
<tr>
<td>Wilson, Curran, &amp; McPherson, 2005</td>
<td>Terminally ill cancer patients (n = 69)</td>
<td>Structured Interview of Symptoms and Concerns item</td>
<td>Structured Interview of Symptoms and Concerns item</td>
<td>PB correlated with SI.</td>
</tr>
<tr>
<td>Wilson et al., 2013</td>
<td>Chronic pain patients</td>
<td>Self-perceived Burden Scale</td>
<td>Patient Health Questionnaire -9 item and Outcomes-Questionnaire-45 item</td>
<td>PB predicted SI.</td>
</tr>
<tr>
<td>Woznica &amp; Shapiro, 1990</td>
<td>Therapists of adolescent outpatients (n = 40)</td>
<td>Expendable Child Measure item</td>
<td>Background questionnaire</td>
<td>Adolescent outpatients with a history of suicide attempts were rated as being higher on burden than nonsuicidal outpatients.</td>
</tr>
</tbody>
</table>

*Note.* PB = perceived burdensomeness; SI = suicidal ideation; INQ = Interpersonal Needs Questionnaire.
Perceived Burdensomeness

Perceived burdensomeness is comprised primarily of the belief that one’s self has become a burden on others (Van Orden et al., 2010) or that one’s existence is a drain on the resources of others or on society as a whole (Joiner, 2005). Van Orden and colleagues (2010) also described an aspect of affectively laden cognitions of self-hatred, though this facet is not found in existing measures of perceived burdensomeness and has not yet been investigated empirically. Most research on the IPTS has operationalized perceived burdensomeness using the Interpersonal Needs Questionnaire (INQ; see Table 1; Van Orden, 2009), the first widely available scale designed to assess perceived burdensomeness. Several versions of the scale have appeared in the literature and each has been subjected to basic psychometric testing. Perceived burdensomeness has also been assessed by coding for burdensomeness-oriented statements in suicide notes.

Review of the Empirical Literature

The Association Between Perceived Burdensomeness and Suicidal Ideation

Statistically significant bivariate associations between perceived burdensomeness and suicidal ideation have been demonstrated among young adults endorsing sadness or anhedonia (Joiner et al., 2009), adult outpatients (Van Orden, Cukrowicz, Witte, & Joiner, 2012), outpatient military personnel (Bryan, 2011; Bryan, Clemans, & Hernandez, 2012; Bryan, Cukrowicz, West, & Morrow, 2010; Bryan, Ray-Sannerud, Morrow, & Etienne, 2013), inpatient military Veterans (Monteith, Menefee, Pettit, Leopoulus, & Vincent, 2013), psychiatric inpatients (de Catanzaro, 1995), chronic pain patients (Kowal, Wilson, McWilliams, Peloquin, & Duong, 2012), terminally ill cancer patients (Akechi et al., 2004; Wilson, Curran, & McPherson, 2005), and Spanish-speaking adult outpatient women (Garza & Pettit, 2010).

In addition to bivariate associations, it is important to determine whether perceived burdensomeness adds incrementally to the prediction of suicidal ideation beyond the effect of previously identified clinical and demographic risk factors to justify its inclusion in suicide risk assessment and suicide prevention and intervention strategies. Perceived burdensomeness significantly predicted suicidal ideation cross-sectionally after controlling for personality disorder diagnoses, depressive symptoms, and hopelessness in a sample of outpatient adults (Van Orden, Lynam, Hollar, & Joiner, 2006). Perceived burdensomeness also significantly predicted suicidal ideation controlling for age, gender, pain severity and duration, functional limitations, depressive symptoms, catastrophizing, and interpersonal relations (Wilson, Kowal, Henderson, McWilliams, & Peloquin, 2013) and controlling for age, gender, race, marital status, depressive symptom severity, and pain severity (Kanzler, Bryan, McGear, & Morrow, 2012) in samples of patients seeking care for chronic pain. These studies provide support for the incremental validity of perceived burdensomeness as a predictor of suicidal ideation beyond the effects of other well established risk factors.

The Association Between Perceived Burdensomeness and Suicide Attempts

Significant correlations between perceived burdensomeness and a past suicide attempt have been demonstrated in samples of outpatient military personnel (Bryan et al., 2010; Bryan, Hernandez, Allison, & Clemans, 2013; Bryan, Ray-Sannerud, et al., 2013), methadone clinic patients (Conner, Britton, Sworts, & Joiner, 2007), outpatients adults (Anestis & Joiner, 2011; Van Orden et al., 2006), and inpatient military Veterans (Monteith et al., 2013). In addition, therapists rated adolescent outpatients with a history of suicide attempt or severe suicidal ideation as being

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1 Bryan et al. (2010), Bryan et al. (2013), and Simlot, MrFacland, and Lester (2013) utilized the Suicidal Behaviors Questionnaire–Revised (Osman et al., 2001), a four-item self-report assessment of past suicide attempts, suicidal ideation, previous suicidal communication, and the likelihood of future suicidal behaviors. Given the assessment of past suicide attempts and the brief nature of the questionnaire, we have elected to include it as evidence in support of the relationship between perceived burdensomeness and suicide attempts.
Perceived Burdensomeness and Suicide

significantly higher on burdensomeness than nonsuicidal outpatients (Woznica & Shapiro, 1990). Women with borderline personality disorder who made a suicide attempt reported a significantly higher “desire to make others better off” than women who engaged in nonsuicidal self-injury (Brown, Comtois, & Linehan, 2002). Perceived burdensomeness was not significantly correlated with suicidal risk in a small cross-sectional study of county jail inmates (Simlot, McFarland, & Lester, 2013). These studies provide support for a significant bivariate relationship between perceived burdensomeness and suicide attempts.

The Association Between Perceived Burdensomeness and Suicide

Among notes left by suicide decedents or attempters in the United States and Germany, the presence of perceived burdensomeness in suicide notes significantly distinguished between suicide attempts and suicide decedents, with notes of decedents showing greater perceived burdensomeness (Joiner et al., 2002). Among notes left by suicide decedents who were United States Air Force members, perceived burdensomeness-related themes were present in 40.8% of suicide notes (Cox et al., 2011). Psychiatrists whose patients had died by suicide reported that 31% of those patients had considered themselves a burden to a significant other person prior to their deaths (O’Reilly, Truant, & Donaldson, 1990). The presence of perceived burdensomeness at the time of a psychiatric inpatient hospitalization significantly predicted suicide deaths over a 60-day period (Motto & Bostrom, 1990). In contrast, perceived burdensomeness-related themes were present in only 10.3% of suicide notes of Tasmanian suicide decedents (Gunn, Lester, Haines, & Williams, 2012) and only 15.5% of notes in a review of 11 other samples (Lester & Gunn, 2012). Thus, studies have found possible support for the role of perceived burdensomeness in suicide, although two studies failed to identify perceived burdensomeness as a common theme in suicide notes.

Conditional Effects and Indirect Effects

Conditional effects. In addition to the main effect of perceived burdensomeness on suicidal ideation, the IPTS hypothesizes that perceived burdensomeness and thwarted belongingness interact to predict suicidal ideation and, in the presence of the acquired capability, suicide attempts and suicide (Joiner, 2005).

Two-way interactions. The interaction between perceived burdensomeness (as measured by a mattering scale) and social support (a proxy for thwarted belongingness) significantly predicted suicidal ideation in young adults, controlling for depression (Joiner et al., 2009). The strength of the association between social support and suicidal ideation increased as levels of perceived burdensomeness increased. The interaction between perceived burdensomeness and thwarted belongingness significantly predicted higher suicidal ideation scores, controlling for depressive symptoms and PTSD symptoms, in an inpatient sample of military veterans (Monteith et al., 2013). The interaction between perceived burdensomeness and the acquired capability significantly predicted suicidal ideation in two samples of military personnel—those seeking services for mild traumatic brain injury and those seeking outpatient mental health services, controlling for sex, age, depressive symptoms, PTSD symptoms, and traumatic brain injury symptoms (Bryan, Clemans, et al., 2012).

Three-way interactions. The three-way interaction between perceived burdensomeness, thwarted belongingness, and past suicide attempts predicted the presence of a recent suicide attempt, controlling for depressive symptoms, past depression diagnoses, hopelessness, and demographic factors among young adults referred for treatment for a recent suicide attempt or severe suicidal ideation (Joiner et al., 2009). Perceived burdensomeness was a significant predictor of a recent suicide attempt among those with high thwarted belongingness and a history of multiple previous suicide attempts (a proxy of the acquired capability). The three-way interaction between perceived burdensomeness, thwarted belongingness, and the acquired
capability did not significantly predict a history of past suicide attempts or multiple past suicide attempts among outpatient military veterans (Monteith et al., 2013).

**Four-way interaction.** The four-way interaction between perceived burdensomeness, thwarted belongingness, the acquired capability, and negative urgency (i.e., acting rashly when upset to reduce negative affect) significantly predicted lifetime number of suicide attempts after controlling for participant sex, depressive symptoms, and the remaining main effects, two-way interactions, and three-way interactions, among adults seeking outpatient services at a community mental health center (Anestis & Joiner, 2011). Lifetime number of suicide attempts was highest in the presence of high levels of all four risk factors.

**Beyond the IPTS.** Significant interactions between perceived burdensomeness and other risk factors in the prediction of suicide-related behaviors may indicate that perceived burdensomeness serves as an activator or as a buffer of the negative impact of those risk factors on suicide-related behaviors. Consequently, these models suggest that reducing perceived burdensomeness may also reduce the impact of other risk factors on suicide-related behaviors. Several conditional relationships have been proposed and tested, including those between perceived burdensomeness and negative urgency (Anestis & Joiner, 2011), and combat exposure (Bryan, Ray-Sannerud, et al., 2013). Proposed interactions between perceived burdensomeness and risk or protective factors such as familism (Garza & Pettit, 2010) and combat exposure (Bryan, Ray-Sannerud, et al., 2013) did not significantly predict suicidal ideation. The interaction between perceived burdensomeness and negative urgency did significantly predict lifetime number of suicide attempts (Anestis & Joiner, 2011).

**Indirect effects.** In addition to conditional effects, risk factors may be associated with suicide-related behaviors indirectly via perceived burdensomeness, highlighting the proximal nature of perceived burdensomeness. Developing preventive interventions around perceived burdensomeness may interrupt indirect pathways, reducing suicidal ideation more efficiently by simultaneously reducing the impact of multiple, more distal risk factors. Perceived burdensomeness was a significant mediator of the association between depressive symptoms and suicide risk (as measured by the SBQ-R) in a sample of military personnel (Bryan et al., 2013). Perceived burdensomeness was also a significant mediator the association between body mass index and suicidal ideation among a mixed sample of college students and behavioral weight management clinic patients (Dutton, Bodell, Smith, & Joiner, 2013).

**Summary and Integration of Past Research**
A body of literature has emerged examining the relationship between perceived burdensomeness and suicide-related behaviors. Much of this literature has focused on establishing a relationship between these variables in various populations. This literature has recently begun to examine how other risk factors may relate to perceived burdensomeness and suicide-related behaviors via indirect or conditional effects models. The former establishes perceived burdensomeness as a risk factor for suicide-related behaviors. The latter has begun to place perceived burdensomeness within a broader nomological network and provides information relevant to the circumstances under which prevention programs may be efficacious. From the perspective of the IPTS, reduction of perceived burdensomeness should reduce suicidal ideation and should reduce the incidence of serious suicide attempts and suicide in the presence of the acquired capability to enact lethal self-injury.

Studies have consistently shown a significant relationship between perceived burdensomeness and suicidal ideation, consistent with the hypotheses of the IPTS. The relationship between perceived burdensomeness and suicide attempts has also been consistently found, though fewer studies have tested this relationship. The literature also demonstrates that perceived burdensomeness moderated the association between thwarted belongingness, the acquired capability to enact lethal self-injury, and negative urgency and suicidal ideation. Other hypothesized interactions, those with familism and combat exposure, were not supported, indicating that burdensomeness
may not augment or attenuate from the effects of these risk factors on suicidal ideation. These associations were tested in only a single study, so further research will be needed before drawing firm conclusions. One study highlighted the proximal nature of perceived burdensomeness as a risk factor for suicidal ideation by demonstrating an indirect effect of depressive symptoms on suicidal ideation via perceived burdensomeness. Reducing perceived burdensomeness thus may interrupt the effects of depressive symptoms on suicidal ideation.

Future Directions

Longitudinal Research

Longitudinal research is needed to demonstrate that perceived burdensomeness prospectively predicts suicide-related behaviors and that this relationship holds after accounting for other predictors of suicide-related behaviors. If perceived burdensomeness is to be leveraged in prevention programs, it should be a prospective predictor of suicide-related behaviors and have incremental predictive validity over other possible prevention targets. Until a prospective predictive effect has been demonstrated and replicated, it will remain unclear whether perceived burdensomeness is an antecedent, correlate, or consequence of suicide-related behaviors.

The Object of Burdensomeness

No study in a clinical sample has addressed the issue of upon whom individuals perceive themselves to be a burden. Two studies in nonclinical samples addressed this issue: Among older adults, perceptions of being a burden on younger generations had a stronger association with suicidal ideation than perceptions of being a burden on older generations (Jahn & Cukrowicz, 2011). Among undergraduates, perceptions of burdensomeness on parents were correlated with suicidal ideation, but perceptions of burdensomeness on siblings and friends were not (Brown et al., 2009).

Joiner (2005) hypothesized that perceptions of burdensomeness on society may increase the desire for death. Van Orden and colleagues (2010) hypothesized that perceptions of burdensomeness due to homelessness or incarceration may increase the desire for death. Alternatively, it may be the number of relationships perceived as burdened or the severity of the most burdened relationship that is the most salient aspect of perceived burdensomeness. Further research is needed to test these hypotheses and to identify the most salient aspects of perceived burdensomeness among different populations with regard to “upon whom” an individual feels like a burden. Prevention programs targeting perceived burdensomeness are most likely to be efficacious if they target the burdened relations with the greatest influence on suicidal ideation.

Measurement Approaches

The robustness of the relationship between perceived burdensomeness and suicidal ideation would be further supported by studies using psychometrically sound alternative measures of perceived burdensomeness. In contrast to suicide-related behaviors, in which a plurality of self-report scales and interviews introduces complexity and may confound results, the predominance of the INQ in research on burdensomeness presents a different concern: Given the lack of well-validated alternative measurement instruments, measurement effects due to identical assessment questions across studies are possible. Several studies used single item indicators of perceived burdensomeness. In addition, the INQ, though extensively used, exists in multiple forms, most of which have received only limited psychometric assessment (see Hill, Rey, Marin, & Pettit, 2012). Though a recent effort was made to empirically refine the INQ (Van Orden et al., 2012), the revised version has yet to be widely adopted.

Development of measurement instruments that do not rely solely on participant self-report rating scales would be particularly useful. For example, performance tasks such as modified Stroop tasks have been used to reduce the possible bias secondary to participant introspection (or lack thereof) to assess a variety of subjective phenomena, such as anxiety (e.g., Becker, Rinck,
Margraf, & Roth, 2001) and gambling behaviors (e.g., Boyer & Dickerson, 2003). Alternatively, implicit association tasks may also be developed to measure perceived burdensomeness, as has been done in other areas of suicide risk assessment (Randall, Rowe, Dong, Nock, & Colman, 2013). Similar approaches may be developed for perceived burdensomeness, tapping individuals’ bias toward burdensome interpretations. In the presence of varied assessment tools, multimethod assessment would be possible, which may increase the overall reliability and validity of perceived burdensomeness measurement.

Furthermore, if attention or interpretation biases are demonstrated among individuals high in perceived burdensomeness, this may pave the way for innovative suicide prevention approaches. Cognitive bias modification approaches have recently been developed and implemented to reduce symptoms of psychopathology by training individuals to shift their attentional focus or modify their interpretative biases. A similar approach (e.g., training individuals to modify their interpretations related to burdensomeness) might also be possible for individuals high in perceived burdensomeness. Alternative measurement approaches shift the focus from subjective, self-report measures of perceived burdensomeness and toward the underlying characteristics of perceived burdensomeness that may be less subject to strategic or effortful control.

Additional research should identify perceived burdensomeness cutoff scores indicative of risk for suicide-related behaviors. Bryan (2011) identified a nonzero score on the 10-item version of the INQ as the optimal indicator of suicidal ideation among a military sample. As additional measures are developed, scores prospectively predictive of various suicide-related behaviors should be established for various populations.

Finally, the use of suicide notes to determine whether perceived burdensomeness is associated with suicide has resulted in mixed findings. This may reflect the challenge of accurately assessing perceived burdensomeness in such studies (i.e., a lack of perceived burdensomeness-related themes in suicide notes may not imply a lack of perceived burdensomeness, just the absence of disclosure of perceived burdensomeness in suicide notes). Thus, to determine whether perceived burdensomeness is associated with suicide, it may be necessary to develop measures suitable to for use in psychological autopsy studies.

Applications to Prevention Science

The IPTS hypothesizes that perceived burdensomeness is a modifiable risk factor for the desire for death and that it should be amenable to change. This hypothesis assumes that perceived burdensomeness is not a stable, trait-like construct, but varies across time within an individual. Testing this assumption will require longitudinal studies with repeated assessments. Ecological momentary assessment and daily diary approaches may prove especially useful in this regard, capturing daily variation in perceived burdensomeness. Further, evidence that suicide-related behaviors are reduced following reductions in perceived burdensomeness would support the hypothesis that perceived burdensomeness is amenable to change and that such change may reduce suicide-related behaviors. Single case designs or pilot trials of novel interventions would also provide preliminary support for this hypothesis. If intended to reduce suicide-related behaviors by intervening early, large-scale prevention-based programs (such as internet-based interventions) or modules that augment existing treatments for psychological disorders such as depression, anxiety, or bipolar disorder might be developed. Minor modifications of existing intervention components, such as problem-solving approaches, cognitive restructuring, or activity scheduling may provide a useful means for reducing burdensome cognitions.

Developmental Considerations

Currently, little is known about the normative developmental trajectory of perceived burdensomeness. Additional research is needed to examine when and how perceived burdensomeness develops, at what age it typically first appears, and how perceived burdensomeness may change across developmental periods. This research should also examine how the developmental trajectory of perceived burdensomeness corresponds with the development of suicide-related behaviors. For example, suicide-related behaviors increase sharply in adolescence and research has
not yet examined whether adolescents report a corresponding onset or increase in perceived burdensomeness preceding the increase in suicide-related behaviors. Understanding the developmental course of perceived burdensomeness may provide important information about the optimal timing and targeting of prevention efforts.

Conclusions

A rapidly expanding literature has explored the relationship between perceived burdensomeness and suicide-related behaviors. This review sought to integrate the evidence, identify critical gaps in the evidence-base, and explore implications for translation to prevention and intervention science. The association between perceived burdensomeness and suicidal ideation and suicide attempts has been consistently demonstrated, though the association between perceived burdensomeness and suicide is less well-delineated.

In addition, studies are beginning to explore the role of perceived burdensomeness as a moderator or mediator of the associations between other risk and protective factors and suicide-related behaviors. Additional research is needed to examine the longitudinal associations between perceived burdensomeness and suicide-related behaviors, develop additional measurement approaches for perceived burdensomeness, generalize the findings to other samples, consider the developmental trajectory of perceived burdensomeness, and begin translating findings to prevention and intervention science. Given the consistent empirical evidence in support of the theorized relationship between perceived burdensomeness and suicide-related behaviors, the most important next step will be to develop and test clinical applications based on that foundation.

References


