

University of Nevada, Reno

**The missing link: An empirical investigation of the relationship between identity dysfunction and suicidality**

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Psychology

by

Julie M. Skutch

Dr. Anthony Papa/Dissertation Advisor

August, 2020



THE GRADUATE SCHOOL

We recommend that the dissertation  
prepared under our supervision by

**JULIE M. SKUTCH**

entitled

**The Missing Link: An Empirical Investigation of the Relationship  
between Identity Dysfunction and Suicidality**

be accepted in partial fulfillment of the  
requirements for the degree of

**DOCTOR OF PHILOSOPHY**

Anthony Papa, Ph.D.

*Advisor*

Holly Hazlett-Stevens, Ph.D.

*Committee Member*

Cynthia Lancaster, Ph.D.

*Committee Member*

Yani Dickens, Ph.D.

*Committee Member*

Markus Kemmelmeier, Ph.D.

*Graduate School Representative*

David W. Zeh, Ph.D., Dean

*Graduate School*

August, 2020

## **Abstract**

Nearly 45,000 people die by suicide in the U.S. alone each year and rates continue to rise. While much research has been done to identify risk factors, a clearer understanding of these has done little to arrest or even reduce the growing rates of suicide despite an increase in the availability of evidence-based treatments designed to address it. An important potential risk factor for suicide, beyond psychopathology, which warrants further attention is that of identity. Research to date clearly demonstrates an indirect relationship between identity and suicide. Multiple studies establish associations between identity dysfunction, mental health symptoms, and risk factors associated with suicide. However, there is a dearth of research that directly examines the link between identity and suicidality. The purpose of the current study was to directly test the relationship between identity and suicidality. This study also sought to clarify confusion in the conceptualization and measurement of identity processes hampering research in this area to date. Exploratory factor analysis revealed four unique identity constructs capturing healthy and abnormal identity processes. Results indicated that identity distress, identity disturbance, and disruption in roles all predicted a range of suicidality, including ideation and past attempts. Identity variables also predicted suicidality above and beyond known predictors, such as NSSI, thwarted belongingness, and perceived burdensomeness. This study clarifies the direct link between identity and suicide, a step toward better triage and treatment for those at risk of suicide across mental and public health sectors.

## Contents

The missing link: An empirical investigation of the relationship between identity dysfunction and suicidality .....	1
Normative Identity Development and Maintenance .....	3
Processes Related to Identity Dysfunction .....	8
Identity Dysfunction in Clinical Research .....	10
Identity Dysfunction and Suicide.....	13
Existing Research on Identity and Suicidality: Problems with Operationalizing and Measuring Identity Dysfunction .....	15
The Current Study.....	18
Study Implications.....	20
Method .....	20
Participants and Procedures .....	20
Participant Risk and Safety .....	23
Measures.....	23
Self-concept.....	24
Identity Distress.....	25
<i>Suicidality</i> .....	25
<i>Other predictors of suicidality</i> .....	26
Data Analysis Plan .....	28
Results.....	30
Exploratory Factor Analysis (EFA) .....	30
Regression Analyses .....	31
Identity Factors and Suicidality.....	32
Identity Factors Compared to NSSI as a Predictor of Suicidality.....	33
Post hoc Analyses: Replication of Regression Analyses in Sample 1 .....	37
Identity Factors and Suicidality in Sample 1.....	38
Identity Factors Compared to NSSI as a Predictor of Suicidality in Sample 1.....	39
Identity Factors Compared to Joiner’s Theory as Predictors of Suicidality in Sample 1 .....	42
Discussion.....	44
Clarification of identity constructs.....	45

Identity Dysfunction.....	45
Exploration of the Original SCIM Factor Structure.....	47
Remaining Conceptual Confusion.....	48
Summary of EFA.....	49
Identity and Suicidality: The Empirical Link.....	49
Identity and Suicidality: Adding Variance to Established Predictors.....	51
Additional Evidence: Post hoc Replication Analyses.....	52
Clinical Applications: Risk Assessment and Intervention.....	54
Limitations and Future Directions.....	55
Conclusion.....	58
References.....	60
Appendix.....	95
Study Measures.....	95

## List of Tables

Table 1. Demographic and clinical characteristics .....	79
Table 2. Means and standard deviations for all measures .....	79
Table 3. Items retained in EFA .....	80
Table 4. Mean, standard deviation, and Cronbach's alphas for identity factors derived from the EFA .....	81
Table 5. Correlation matrix of all continuous predictors in regression models (Sample 2) .....	82
Table 6. Linear regression models predicting intensity of suicidal ideation .....	83
Table 7. Logistic regression models: Identity factors predicting suicidality .....	85
Table 8. Logistic regression models: NSSI and identity factors predicting suicidality ....	86
Table 9. Logistic regression models: Joiner's theory and identity factors predicting suicidality .....	88
Table 10. Correlation matrix of all continuous predictors in regression models (Sample 1) .....	89
Table 11. Linear regression models predicting intensity of suicidal ideation (Sample 1) 90	
Table 12. Logistic regression models: Identity factors predicting suicidality (Sample 1) 91	
Table 13. Logistic regression models: NSSI and identity factors predicting suicidality (Sample 1).....	92
Table 14. Logistic regression models: Joiner's theory and identity factors predicting suicidality (Sample 1) .....	93

## **The missing link: An empirical investigation of the relationship between identity dysfunction and suicidality**

Suicidality is a serious clinical problem, associated with a wide range of mental health problems and intense psychological pain (Kaufman & Crowell, 2018; Shneidman, 1998). Moreover, suicide continues to be a serious and costly public health concern. Rates of suicide have risen steadily in the United States across every state, increasing nearly 30% nationally from 1999 to 2016, across both sexes, all ethnic groups, and all urbanization levels (Stone et al., 2018). Suicide is the tenth leading cause of death in the United States and only one of three that is increasing, with nearly 45,000 Americans ten years or older died by suicide in 2016 (CDC, 2018).

Completed suicides are just one part of the suicide crisis in the U.S. For every person who tragically dies by suicide, there are approximately 31 adults who attempt (Han et al., 2016). Suicidal ideation is even more common. In 2016, 4% of adults 18 years or older in the U.S. reported that they had seriously contemplated killing themselves (SAMSHA, 2017). Of those 4%, 29% reported that they had made a plan and 13% reported having made an attempt (SAMSHA, 2017). The national costs of both completed suicides and suicide attempts in 2013 was over 58 billion dollars (Shepard et al., 2016).

While much research has been done to identify risk factors for suicide (e.g., Van Orden, Witte, Cukrowicz, Braithwaite, Selby & Joiner, 2010), a clearer understanding of the myriad variables associated with increased risk has done little to arrest or even reduce the growing rates of suicidality (McClatchey, Murray, Rowat, & Chouliara, 2017; Zalsman et al., 2016). In addition, most prevention efforts are targeted toward those with

mental health conditions, potentially missing other individuals with undiagnosed sources of distress ultimately leading to suicidal behavior (Stone et al., 2017). More than half of those who died by suicide from 1999 to 2016 did not have a known mental health disorder, suggesting that there may be significant risk factors for suicidality beyond the specific mental health diagnoses often associated with it (CDC, 2018; Stone et al., 2018).

An important potential risk factor for suicide, beyond psychopathology, which warrants further attention is that of identity disruption. A state-level analysis of suicide trends in the U.S. from 1999 to 2016 by Stone and colleagues (2018) revealed that completers without a mental health diagnosis had high rates of relationship problems or loss and other life stressors such as criminal/legal matters, eviction or loss of home, and recent or impending crises. Most, if not all, of these stressors suggest difficulties in the maintenance of a stable sense of self. Disruption in social roles and statuses central to a person's sense of self or identity have also been associated with increases in psychopathologies associated with suicidality (i.e., MDD, PTSD, Complicated Grief; Papa, Lancaster, & Kahler, 2014).

A focus on factors beyond psychopathology that might contribute to life stressors associated with suicide completion could inform a broader approach to suicide prevention (Stone et al., 2017). Identity formation is a normative developmental process, affecting all individuals, believed to peak in adolescence and culminate in a developmental endpoint by late adulthood (Everall, Bostick, & Paulson, 2005; Schwartz, 2001). As a universal process at the core of psychosocial functioning across the lifespan, identity is a prime target for suicide prevention with the potential for a very broad reach. However, despite a mass of theoretical and empirical work that supports identity disruption as an

important construct related to increases in factors associated with increased suicide (self-harm, depression, loneliness, hopelessness, Borderline Personality Disorder, etc.), little research has been done examining the direct link between identity disruption and suicidality.

### **Normative Identity Development and Maintenance**

The identity literature is broad, encompassing multiple theories, each with their own constructs of normal and abnormal identity development (Schwartz, 2001; Waterman, 1988). However, most are extensions of Erikson's ego identity theory (Balistreri, Busch-Rossnagel, & Geisinger, 1995; Kaufman, Montgomery, & Crowell, 2014; Schwartz, 2001; Schwartz, Zamboanga, Luyckx, Meca, & Ritchie, 2013). These theories assume that identity development is a process best explained by a single, bipolar dimension ranging from ego identity synthesis, or consolidation, to ego identity confusion. Identity synthesis, or consolidation, is considered the maturational endpoint of identity in late adolescence or early adulthood and is characterized by self-determined self-identified ideals which are clear and consistent across time and contribute to a sense of purpose and meaning in life (Schwartz, 2001). From this perspective, exploration is necessary for individuals to move through the adolescent identity crisis into healthy identity synthesis via the process of examining different ideals and ultimately choosing which to adopt (Schwartz, 2001).

It is assumed that during the process of exploration some confusion will occur but should resolve once exploration leads to commitments across domains, such as friendships, career choice, and long term goals, and result in a consolidated identity (Gfeller & Cordoba, 2011; Marcia, 2006; Schwartz, 2001; Schwartz et al., 2011a).

Once identity is consolidated, individuals make choices and engage in behaviors that are consistent across time and context (Schwartz et al., 2011a). Identity synthesis is generally associated with positive outcomes in development such as high self-esteem and academic adjustment (Luyckx, Goossens, Soenens, Beyers, & Vansteenkiste, 2005), healthy social relationships (Zimmer-Gembeck & Petherick, 2006) and lower levels of depression and anxiety (Schwartz, 2007).

When identity does not develop normally, identity confusion prevails, ranging from mild to more severe (Schwartz, 2001). The most extreme identity confusion is called identity diffusion, a problematic identity outcome which occurs when normative identity confusion does not resolve by way of commitments, extends into adulthood, and causes subjective distress that increases the risk of maladaptive functioning (Gfeller & Cordoba, 2011; Kaufman, Montgomery, & Crowell, 2014; Taylor & Goritsas, 1994; Waterman, 1988). Identity confusion, and the more pervasive diffusion, are marked by incoherence in commitments or ideals and uncertainty about roles and values which interferes with the ability to achieve a healthy identity (Gfeller & Cordoba, 2011; Kaufman, Montgomery, & Crowell, 2014; Taylor & Goritsas, 1994). Identity confusion predicts earlier onset and higher frequency of sexual behavior, smoking, and alcohol use as well as lower self-esteem, lower optimism, and higher depressive symptoms in adolescents (Meca et al., 2017; Schwartz, Mason, Pantin, & Szapocznik, 2008). Identity confusion is also associated with low academic achievement (Pop, Negru-Subtirica, Crocetti, Opre, & Meeus, 2016).

Erikson's theory and conceptualization of identity along the dimension of synthesis and confusion is an essential cornerstone for the empirical study of identity.

However, as originally posed, his broad, dimensional conceptualization of identity was difficult to operationalize and test empirically (Rosenthal, Gurney, & Moore, 1981; Schwartz, 2001). In the last 50+ years, a significant amount of work has been done to clearly operationalize these constructs (Schwartz, 2001). The most widely used and tested of these models is Marcia's Identity Status Model (Marcia, 1966; Schwartz, 2001).

Marcia expanded Erikson's dimensions of identity exploration and commitment into four identity statuses, or endpoints of identity development (Marcia, 1966; Schwartz, 2001). The identity status model describes both the process and the outcome of identity development (Kroger, Martinussen, & Marcia, 2010). Marcia conceptualized exploration and commitment to be independent processes which were then sorted into high and low levels to derive four independent identity statuses: achievement, moratorium, foreclosure, and diffusion (Marcia, 1966). These four statuses describe characteristic ways that individuals resolve the theorized adolescent identity crisis and maintain a stable sense of self in adulthood. Marcia's identity achievement status is most similar to Erikson's conceptualization of identity synthesis and the identity diffusion status is most similar to confusion (Schwartz et al., 2011a). Moratorium and foreclosure map less clearly onto Erikson's bipolar dimension (Schwartz et al., 2011a).

Identity achievement was considered by Marcia to be the healthiest identity development and is characterized by high levels of commitments across domains after a period of exploration (high commitment, low exploration). Achieved status is associated with psychological maturity via deeper, more meaningful interpersonal relationships (Craig-Bray, Adams, & Dobson, 1988), a greater use of problem focused coping (Luyckx, Klimstra, Duriez, Schwartz, & Vanhalst, 2012; Mullis, Mullis, Schwartz, Pease,

& Michael, 2007) and higher engagement in work with less burn out (Luyckx, Duriez, Klimstra, & De Witte, 2010). Achieved identity status is also associated with many positive outcomes such as psychological well-being (Cakir, 2014; Waterman, 2007), avoidance of health compromising behaviors such as excessive alcohol consumption (Bishop et al., 2005), and lower levels of anxiety (Lillevoll, Kroger, & Martinussen, 2013).

Marcia's other three statuses indicate some degree of identity problem, or abnormal identity development. Moratorium status is applied to individuals who are high in exploration but are unable to make commitments or have not yet done so (high exploration, low commitment). Moratorium is most common during late adolescence and early adulthood and is also believed to be the least stable, most transitory status in which individuals spend the least amount of time (Kroger, Martinussen, & Marcia, 2010; Schwartz, 2001). Because moratorium is associated with high levels of exploration and lack of commitments, it is associated with the potential for heightened anxiety and distress (Kroger, Martinussen, & Marcia, 2010; Lillevoll, Kroger, & Martinussen, 2013; Schwartz, 2001).

Foreclosure refers to individuals who have made commitments without exploration (high commitment, low exploration), as in the case of simply adopting the roles and beliefs espoused by the family of origin. Foreclosure's firm commitments in the context of a lack of personal exploration confers both stability and instability in identity. In as much as foreclosed individuals have made commitments, they generally experience less anxiety, higher self-esteem, and higher psychological well-being (Johnson, Kent, & Yale, 2012; Lillevoll, Kroger, & Martinussen, 2013; Marcia &

Friedman, 1970). The lack of responsibility for decision making about significant life commitments and the social support garnered by commitments to popular choices (i.e., taking over the family business) may protect against the anxiety found in statuses marked by greater exploration (Lillevoll, Kroger, & Marcia, 2013). But because these commitments have simply been assumed without exploration, foreclosure is associated with less cognitive flexibility and open-mindedness (Schwartz, 2001; Stephen, Fraser, & Marcia, 1992).

Last, the diffused status refers to individuals who are not exploring or making commitments across domains or are confused and disorganized in their attempts at identity development (low commitment and exploration; Marcia, 1966; Schwartz et al., 2011a). Identity diffusion is generally associated with the worst outcomes. Diffused individuals are at risk for negative consequences such as academic (Berzonsky, 1985) and substance abuse problems (Jones, 1992). They tend to be easily impacted by stress, lacking in social support, and prone to depression (Marcia, 1993; Meeus & Dekovic, 1995; Schwartz, Mullis, & Dunham, 1998). Identity diffusion is also related to indecision about major life choices, difficulty forming intimate relationships, and reduced well-being (Adams, Ryan, Hoffman, Dobson, & Nielsen, 1984; Crawford, Cohen, Johnson, Sneed, & Brooks, 2004; Shanahan & Pychyl, 2007; Waterman, 2007).

Marcia's work moved the predominant conceptualization of identity development and maintenance into the realm of empirical testing with lasting impacts on our understanding of identity and its relationship with a range of normative outcomes. Marcia's statuses have been expanded into more complex models, but the four basic statuses have been retained and the identity status model has contributed to a substantial

empirical literature on identity development and associations with a variety of outcomes (e.g., Crocetti, Rubini, Luyckx, & Meeus, 2008; Kroger, Martinussen, & Marcia, 2010; Luyckx, Goossens, Soenens, & Beyers, 2006; Schwartz et al., 2011a). Marcia's model allowed for greater empiricism as his statuses were more clearly operationalized than Erikson's dimensions of exploration and commitment. The Ego Identity Status Interview (Marcia, 1966) was initially developed to capture these statuses. While a preference has emerged for the measurement and testing of identity as statuses (Schwartz, 2001), the original constructs of synthesis and confusion are still sometimes measured in research, either independently or in conjunction with identity statuses (Rosenthal, Gurney, & Moore, 1981; Schwartz, Zamboanga, Wang, & Olthuis, 2009). As in many areas of psychological research, there is no overall consensus on which measure should be used to capture statuses or the synthesis/confusion dimension and researchers continue to develop and test new and different self-report measures in an effort to refine and improve measurement (Luyckx et al., 2008).

### **Processes Related to Identity Dysfunction**

As in the identity literature broadly, there is a lack of consensus on the conceptualization and measurement of identity dysfunction, or abnormal identity development, across theories and disciplines (Kaufman, Montgomery, & Crowell, 2014; Schwartz, 2001; Schwartz, Zamboanga, Luyckx, Meca, & Ritchie, 2013). Many constructs overlap in both label and operational definition, directly impacting measurement and interpretation of empirical results (Kaufman et al., 2014). However, from the large literature on identity development, identity distress, identity diffusion, and self-concept clarity are three conceptualizations that best capture identity dysfunction and

are specifically relevant to clinical outcomes, such as suicidality.

*Identity distress* is used to describe the normal uncertainty and pain inherent in the developmental process of identity formation (Berman, Montgomery, & Kurtines, 2004; Berman & Montgomery, 2014; Berman, Weems, & Petkus, 2009; Bronson, 1959). This construct is often measured using the Identity Distress Survey, a self-report measure developed to capture the diagnostic criteria for Identity Disorder as defined in the DSM-III (Berman et al., 2004). This diagnosis was characterized by severe subjective distress in response to uncertainty about roles across domains such as long-term goals, career choice, friendships, sexual orientation, and beliefs and an inability to integrate the self into a coherent whole (Berman et al., 2004). While distress is thought to be a normal part of the development of a healthy identity, it is not uncommon for individuals to experience it as quite severe and disruptive in daily life (Berman et al., 2004; Berman et al., 2009). Identity distress has been established as a distinct construct from other identity processes and statuses and linked to a wide range of negative outcomes including negative affect, loneliness, and a higher incidence of mental health symptoms in non-clinical samples, including anxiety, depression, and externalizing symptoms, suggesting that it might be indicative of abnormal adjustment (e.g., Gfeller and Cordoba, 2011; Hernandez, Montgomery, & Kurtines, 2016; Sica, Sestito, & Ragozini, 2014;).

Separate from identity distress, a lack of coherent commitments across domains leads to more severe uncertainty about the self and an unstable identity termed *identity diffusion* (Schwartz et al., 2011a). Diffusion has been conceptualized as one of several identity statuses (Marcia, 1966; Schwartz et al., 2013). A diffused status is marked by a lack of age-appropriate commitments to roles and poorer psychosocial functioning

(Carlsson, Wangqvist, & Frisen, 2016). Diffusion has been associated with poor psychological well-being and increased internalizing, externalizing and high-risk behaviors in college student samples (Schwartz et al., 2011a; Schwartz et al., 2015). Those with diffused status also endorsed higher rates of illicit drug use, rule breaking, social aggression, and physical aggression (Schwartz et al., 2011a).

*Self-concept clarity* is another identity-related process which has received empirical attention (Campbell et al., 1996; Schwartz et al., 2011b). Self-concept refers to one's overall view of the self as coherent, stable, and continuous across time and is believed to be separate from but related to identity status and commitments (Campbell et al., 1996; Schwartz et al., 2011b). A clear and stable self-concept is generally associated with positive psychological adjustment and may buffer against stress, while self-concept fragmentation is associated with depression, anxiety, low self-esteem, and neuroticism (Campbell, Assanand, & Di Paula, 2003; Suszek, Fronczyk, Kopera, & Maliszewski, 2018; Willis & Burnett, 2016). Low self-concept clarity moderated the relationship between negative affect and self-injurious behavior in individuals with Borderline Personality Disorder and anxiety disorders (Scala et al., 2018) while high self-concept clarity was associated with lower levels of social anxiety and depression in a non-clinical sample (Gregory & Peters, 2017).

### **Identity Dysfunction in Clinical Research**

While several terms are used to capture identity dysfunction (i.e., identity distress, identity diffusion, lack of self-concept clarity), all conceptualizations of identity dysfunction are generally marked by instability, inconsistency across time, and confusion about the self, roles, goals, and values (Kaufman, Montgomery, & Crowell, 2014;

Kaufman & Crowell, 2018). The predominant view of identity dysfunction within contemporary clinical psychology is referred to as identity disturbance in the context of DSM-V criteria for BPD (APA, 2013). However, a lack of conceptual consistency and a general lack of empirical data on basic constructs of identity dysfunction is noted (Kaufman et al., 2014).

In clinical samples specifically, identity dysfunction is associated with a range of psychopathology in adolescents and adults and overwhelmingly, individuals with psychopathology report far greater identity distress and identity problems as compared to healthy controls (Berman, Weems, & Petkus, 2009; Benedik, 2008; Neacsiu, Herr, Fang, Rodriguez, & Rosenthal, 2015; Samuolis, Barcellos, LaFlam, Belson, & Berard, 2015; Taylor & Goritsas, 1994; Wiley & Berman, 2013). Identity diffusion and distress are also associated with the most severe psychopathology, including personality disorders and bipolar disorder (Marcia, 2006; Inder et al., 2008). Thus, identity dysfunction is far more likely to occur in the context of psychopathology and may contribute to psychological distress and dysfunction above and beyond mental health diagnosis and symptoms.

Identity disturbance is most associated with Borderline Personality Disorder (Bender & Skodol, 2007; Kernberg, 2005; Linehan, 1993; Westen & Heim, 2003). Lack of commitments, role absorption, and inconsistency in beliefs and behaviors have been found to be aspects of identity dysfunction associated with BPD more than other psychiatric problems and were positively associated with clinician ratings of the identity disturbance diagnostic criteria for BPD (Wilkinson-Ryan & Westen, 2000). Psychiatric patients who met criteria for BPD evidenced significantly higher identity diffusion

compared to a college student sample (Jorgenson, 2009). Those with BPD scored lower on measures of identity commitment (Jorgenson, 2009). Individuals with BPD were also found to endorse greater complexity of self-representation, but with less integration and an overall more negative valence (Beeney, Hallquist, Ellison, & Levy, 2016).

Several aspects of identity dysfunction—including lack of self-clarity, lack of self-cohesion, identity diffusion, and identity distress—have been associated with non-suicidal self-injurious behavior (NSSI) in both clinical and non-clinical samples. For example, in a sample of high school students, those in achieved identity status were less likely to have ever engaged in NSSI and students in diffused identity status were most likely to be currently engaging in NSSI (Luyckx, Gandhi, Bijttebier, & Claes, 2015a). Similar results were found in a sample of non-clinical female adolescents compared with a sample of female psychiatric patients (Luyckx, Gandhi, Bijttebier, & Claes, 2015b). Inpatients scored significantly higher on identity confusion and lower on identity synthesis than the non-clinical sample. NSSI in both samples was positively associated with confusion and negatively associated with synthesis (Luyckx et al., 2015b). In both samples, identity confusion predicted NSSI above and beyond other known risk factors such as anxiety, depression, and age (Luyckx et al., 2015b). Identity distress has also been implicated in the prevalence of NSSI above and beyond gender, age, depression, and anxiety (Gandhi, Luyckx, Maitra, & Claes, 2015). In addition, general identity distress (i.e., severity of subjective distress about identity across domains), rather than domain-specific identity distress (i.e., distress about relationships, religion, etc.), explained additional variance in lifetime occurrence of NSSI above and beyond gender, age, depression, and anxiety (Gandhi et al., 2015).

NSSI, in and of itself, is a significant risk factor for suicide (e.g., Burke et al., 2016; Horwitz et al., 2015) and identity dysfunction contributes to both its frequency and severity. In a sample of high school students, identity synthesis was negatively associated with NSSI and identity confusion was positively associated with NSSI (Claes, Luyckx, & Bijttebier, 2014). Importantly, identity confusion explained additional variance in self-harm above and beyond depression, age, and sex (Claes et al., 2014). These findings were replicated in a sample of patients seeking treatment for eating disorders. In this sample, lack of identity synthesis explained additional variance in NSSI above age, anxiety, and depression (Claes et al., 2015). Lear and Pepper (2013) specifically examined the relationship between NSSI and stability of identity, as measured by self-concept clarity (SCC), in a college student sample. Results indicated that lower SCC significantly predicted NSSI engagement, above and beyond negative affect. SCC, but not negative affect, predicted frequency of NSSI and number of methods used (Lear & Pepper, 2013). In fact, SCC was a more robust predictor of severity than occurrence, suggesting that while other factors may predict whether or not individuals engage in NSSI, identity stability may uniquely predict how frequently they do so (Lear & Pepper, 2013).

### **Identity Dysfunction and Suicide**

While identity diffusion and distress are associated with the most severe psychopathology, including personality disorders and bipolar disorder (Marcia, 2006; Inder et al., 2008), identity dysfunction may contribute to psychological distress above and beyond mental health diagnosis and help identify those at risk for suicide without a mental health diagnosis. Up to 18% of individuals without psychopathology evidence

identity disturbance and identity distress during the early adulthood years (ages 18-25; Samuolis & Griffin, 2014). This age group also experienced increased rates of adjustment problems during this time, including reports of feeling overwhelmed, exhausted, and lonely (Samuolis & Griffin, 2014). In a large college student sample, severe identity distress associated with increased negative affect was most commonly reported in the domains of long-term goals (25%), career choice (18%), and friendships (12.2%), suggesting that social role disruptions contribute to distress (Samuolis & Griffin, 2014). Lack of commitments across domains—a marker of abnormal identity development—could also explain the high rates of relationship problems and problems in living found in suicide completers without a mental health diagnosis (Carlsson et al., 2016; Josselson, 1987; Stone et al., 2018).

Some have argued that suicidality in adolescence should always be considered a symptom of severe underlying pathology, such as schizophrenia, depression, or a personality disorder (Crumley, 1982). Others have theorized that the central task of identity development during this period makes adolescents particularly vulnerable to suicide through such mechanisms as increased anxiety and the increased intensity and salience of social stressors (Bronson, 1959; Everall, Bostik, & Paulson, 2005; Sands & Dixon, 1986). It has been argued that healthy identity development would buffer against distress, which can serve as a precursor to suicidality, in the adolescent period because it confers a sense of the self as consistent and stable (Bar-Joseph & Tzuriel, 1990; Marcia, 2006; Schwartz et al., 2011b). It has also been proposed that the failure to construct a health identity can serve as a cause for suicidality, as adolescents are likely to become hopeless in the face of ongoing identity dysfunction they perceive as distressing and

unresolvable (Portes et al., 2002). All of these assertions are largely theoretical and have not been well tested.

Despite evidence of the clear link between identity dysfunction and poor psychosocial outcomes, the increased incidence of identity dysfunction in psychopathology, the diagnostic emphasis on identity dysfunction in severe personality disorders commonly associated with chronic suicidality, and known risk factors for suicide in non-clinical samples such as depression, loneliness, hopelessness, and risky behaviors (Samuolis & Griffin, 2014; Schwartz et al., 2011a), the link between identity and suicide has been largely uninvestigated empirically.

### **Existing Research on Identity and Suicidality: Problems with Operationalizing and Measuring Identity Dysfunction**

Definitional and measurement variance within identity theory inhibits a cohesive description of identity development across disciplines (Kaufman, Montgomery, & Crowell, 2014). These conceptual and measurement disparities also impact the ability to investigate new connections between identity and relevant phenomena, such as suicidality. Recently, there has been increased theoretical interest in identity as it relates specifically to psychopathology and a call for more empirical research on identity constructs, such as identity distress and disturbance, and their role in relevant clinical outcomes (Kaufman et al., 2014; Kaufman & Crowell, 2018). Kaufman and colleagues (2014) have acknowledged that identity development has significant implications within clinical research and practice, but empirical work on identity within the developmental literature has largely been removed from references to identity within the field of psychopathology (e.g., within the study of BPD).

Research to date clearly demonstrates an indirect relationship between identity and suicide as multiple studies establish associations between identity dysfunction, mental health symptoms, and risk factors associated with suicide. There is a dearth of research that directly examines the link between identity and suicidality. Within the small body of existing empirical research that supports this relationship, difficulties with the operationalization and measurement of identity dysfunction limit the interpretation and generalization of findings. For example, a small sample of treatment-seeking adolescents rated by providers as high-risk for suicide were found via narrative analysis of interview data to demonstrate a failure to *conceive of themselves in the future* (Ball & Chandler, 1989; Chandler, 1994). These researchers described this failure associated with suicidality as a lack of self-continuity, though their operationalization and measurement of self-continuity was idiographic and has not been replicated. In contrast, a different study measured identity as *ego identity development*, an identity construct defined by both synthesis and continuity, and found that suicidal adolescents endorsed lower scores on this construct (Bar-Joseph & Tzuriel, 1990). Despite vastly different measures of a similar but not fully overlapping identity process, the findings of both studies were interpreted in the context of identity commitment and continuity (Ball & Chandler, 1989; Bar-Joseph & Tzuriel, 1990).

Similarly, the links between identity disturbance, lack of sense of self, instability in self-representation, and a diagnosis of BPD have been established in a very small number of studies, but lack consistency of measures used to assess them (Adler et al., 2012; Beeney et al., 2016; Jorgensen, 2009; Sollberger et al., 2012; Wilkinson-Ryan & Westen, 2000). A direct association between the BPD diagnostic criteria of identity

disturbance and prospective suicidal behaviors in a sample of patients with BPD was established (Yen et al., 2004). However, the measure of identity disturbance was conflated with the diagnostic criteria for the disorder itself (Yen et al., 2004). This research, while supporting the observed relationship between BPD and suicide, does not clearly explicate the link between identity processes and suicidality, beyond the diagnosis of BPD. Another study using a different measure of BPD diagnostic criteria to assess identity disturbance failed to support the relationship between suicide and identity disturbance (Modestin, Oberson, & Erni, 1998).

A recent empirical study attempted to address this dearth of data and lack of clarity regarding the relationships between these variables. Ren and colleagues (2016) tested the reciprocal links between identity disturbance, relationship disturbance, and suicidal ideation among Chinese adolescents. They found that suicidal ideation predicted later identity disturbance, but the reverse relationship did not hold. They also found that relationship disturbance mediated the association between identity disturbance and suicidal ideation (Ren et al., 2016). It is possible that identity disturbance did not predict suicidality because their model included relationship disturbance, a well-established variable relevant to suicidality (Van Orden, Witte, Cukrowicz, Braithwaite, Selby & Joiner, 2010). In addition, identity disturbance was measured in this study by way of a diagnostic interview for BPD, conflating the diagnostic criteria for a specific psychopathology with the broader and less well-defined construct of identity disturbance.

Conflicting findings and difficulties clearly interpreting results beyond the diagnostic criteria of BPD may be the consequence of a lack of consensus on the operational definition and measurement of identity disturbance (Kaufman, Montgomery,

& Crowell, 2014; Jorgenson, 2010). For example, self-concept clarity and identity disturbance have in common a focus on instability in self-image or subjective sense of self, but different measures are generally used to capture each. Likewise, the psychological suffering inherent in identity distress overlaps with chronic emptiness associated with identity disturbance in the DSM-V. In addition, the terms identity diffusion and more serious identity disturbance are sometimes used interchangeably (Kaufman et al., 2014). Multiple constructs of identity dysfunction overlap but this issue is largely unaddressed in measurement. For example, while there are existing measures of self-concept clarity and identity distress that are frequently used in identity literature, they are not used in clinical research. To date, identity disturbance in clinical research has been most commonly measured using diagnostic tools which capture BPD diagnostic criteria in the DSM-V, contributing to definitional and measurement issues. There is a need for clearer measurement tied to operationalization of various identity processes across disciplines in order to better test important links between identity and relevant outcomes, such as suicidality.

### **The Current Study**

The primary objective of the current project was to address the dearth of clear empirical research testing the direct link between identity processes and suicidal distress. This project also sought to clarify conceptual confusion in the application of identity theory to clinical outcomes. This confusion currently impacts the measurement of identity processes across disciplines and make interpretation of findings across studies difficult (Jorgensen, 2010; Kaufman et al., 2015). Given inconsistencies in conceptualizations of identity processes, the first step in this study was to distinguish

underlying factors of identity using items from existing identity measures.

Next, the relationship between the empirically derived factors of identity and suicidality were examined. We investigated the range of normative identity processes and more severe, clinically relevant identity dysfunction on suicidality. We hypothesized that identity factors related to consolidated identity would be negatively associated with suicidality. Specifically, increases in the healthy experience of coherent and stable identity would predict low levels of all suicidality (Hypothesis 1a). We also hypothesized that increases in identity dysfunction would predict increases in suicidality (Hypothesis 1b).

The ability of the empirically derived identity factors to predict suicidality was compared to two well-established predictors of suicidality, non-suicidal self-injurious behavior (NSSI) and Joiner's interpersonal theory of suicide (Van Orden et al., 2010). NSSI is a robust risk factor for suicide (e.g., Burke et al., 2016; Horwitz et al., 2015). Research to date has demonstrated that identity dysfunction contributes to both the frequency and severity of NSSI in normative and clinical samples (Claes et al., 2014; Claes et al., 2015; Lear & Pepper, 2016). We hypothesized that identity factors would significantly predict suicidality above and beyond NSSI (Hypothesis 2).

Perhaps the most well-known model of suicide prediction is Joiner's interpersonal theory of suicide (Ribeiro & Joiner, 2009; Van Orden et al., 2010). This theory posits that a combination of feeling like a burden on others (i.e. perceived burdensomeness) and an inability to form meaningful connections and a sense of belonging with others (i.e., thwarted belongingness), increase the likelihood that a person will develop suicidal ideation and engage in suicidal behaviors (Ribeiro & Joiner, 2009; Van Orden et al.,

2010). These relationships have been well-tested, and a large literature supports their association with suicidality (e.g., Batterham, et al., 2018; Chu et al., 2017; Ribeiro & Joiner, 2009). There is no direct link between Joiner's theory and theories of identity, nor has this relationship been empirically tested. Similar to NSSI, we hypothesized that identity factors would significantly predict suicidality above and beyond perceived burdensomeness and thwarted belongingness (Hypotheses 3a and 3b).

### **Study Implications**

The current study answers the recent theoretical call to better define and measure identity dysfunction and to bridge the gap between developmental research on identity development and the application of these processes in clinical research (Kaufman, Montgomery, & Crowell, 2014; Kaufman, Cundiff, & Crowell, 2015). The present study will contribute to a better understanding of the universal, developmental process of identity development, how it may manifest within individuals in abnormal ways, and how specific aspects of identity may be associated with suicidality. This effort can directly inform the prevention of suicide, a growing and costly public health concern. This study will also help position identity within the larger clinical literature by examining identity constructs alongside well-established predictors of suicide such as NSSI and Joiner's interpersonal theory.

## **Method**

### **Participants and Procedures**

Self-report measures were administered via an online survey to two independent samples. Participants in both samples were recruited through Amazon's online marketplace, Mechanical Turk (MTurk). To be eligible, participants had to be 18 years

of age or older, from the United States, and report English as their first language. Recruitment postings were listed in MTurk as tasks for workers. In order to participate, MTurk workers would select the task, answer eligibility screening questions, and if eligible, proceed to informed consent. Following informed consent, participants completed the online battery of measures. Those who completed the entire assessment battery were compensated with fair pay through MTurk's worker platform. Workers were restricted from responding to the survey more than once. This study was approved by the University of Nevada, Reno Institutional Review Board.

MTurk is a well-established forum for collecting valid data for research studies (Bartneck, Duenser, Moltchanova, & Zawieska, 2015). Research on MTurk suggests that data collected from MTurk samples are reliable (Buhrmester et al., 2011) and more representative of the general population than college convenience samples (Casler et al., 2013; Steward et al., 2015). Despite evidence of its validity, the use of web-based crowd-sourcing software for data collection is not without some risks to internal validity. Careful screening of survey responses was conducted to maximize the likelihood that the final samples retained high quality data. Open text field questions embedded throughout the survey required participants to type out an answer, rather than select a menu option. As this type of question requires greater response effort and free text responding allows subjective evaluation of response quality, these questions served as an additional check of eligibility criteria, effort, and attention. Questions of this type embedded in the demographics questionnaire were used to confirm eligibility criteria after initial screening (e.g., "What is the first language you learned to speak?") and confirm attentive responding using questions relevant to the content of the survey (e.g., "Who do you know

in your life who has had suicidal thoughts? List all.”). In addition, only workers with a strong record of quality work were recruited from the larger MTurk pool (i.e., high approval rating, high number of successfully completed tasks).

As Sample 1 was used to examine underlying factors of a range of identity processes in a normative sample, a general sample of participants was recruited from the MTurk pool. Workers were invited to complete a survey about “how people think about themselves and how that’s related to how they’re doing in day-to-day life.” A total of 293 participants initially completed the survey. A small number of participants were removed for failure to meet eligibility criteria ( $n = 8$ ) and four participants were removed due to inattentive responding. A total of 281 participants were retained for analysis in Sample 1. Participants were largely Caucasian (73.7%), roughly equal in gender, and ranged in age from 18 to 68 ( $m=35.18$ ,  $SD=11.53$ ).

Sample 2 was used to test the associations between empirically derived identity factors and suicidality. Based on study rationale, we assumed that recruitment for identity problems would automatically tap a percentage of participants with some suicidality but still allow us to capture a range of identity factors. Recruitment postings used language to encourage self-selection of workers experiencing identity problems. For Sample 2, the study was advertised as a survey about “how people think about who they are, how they might feel confused or lost about their role in life, or struggle to feel sure of themselves.” A total of 314 participants initially completed the survey. As with Sample 1, participants who failed to meet eligibility criteria and failed markers of effort and attention were removed ( $n=24$ ), leaving a total sample of 290 participants. Participants in Sample 2 were largely Caucasian (72.8%), roughly equal in gender, and

ranged in age from 18 to 69 ( $m=33.08$ ,  $SD=10.71$ ). Characteristics of both samples are summarized in Table 1.

### **Participant Risk and Safety**

The risk of emotional discomfort to individuals participating in survey research is low to moderate. However, participants in this study were asked about their lifetime suicidality. While the evidence is clear that asking participants about suicidal thoughts and behaviors does not increase either, and in some cases, can even serve to decrease them (Blades et al., 2018; Cha et al., 2016; Gould et al., 2005), additional safeguards to minimize any potential participant risk were implemented. To ensure unbiased samples, participants were not told that they would be asked about suicidality during informed consent. However, several free mental health and suicide prevention resources available 24/7 were provided during informed consent (i.e., National Suicide Prevention Lifeline, Crisis Text Line, SAMHSA Behavioral Health Treatment Services Locator). All participants were explicitly told that they could exit the survey at any time. At the exit point, participants were again provided with mental health resources and a debriefing statement more fully explaining the purpose of the study and the rationale for the questions asked. Contact information for the Institutional Review Board and the researchers were provided to participants in this debriefing statement, in case of any questions or concerns.

### **Measures**

The following measures were administered to participants in both samples. Means and standard deviations for all measures are summarized in Table 2. Items from all measures are in the Appendix.

**Demographics questionnaire.** A questionnaire was administered assessing common demographic variables such as ethnicity, age, and gender.

**Identity.** Measures of identity were selected based on their use in existing empirical work to capture a range of different identity processes on suicidality.

**Identity Disturbance.** Identity was measured using the Self-Concept and Identity Measure (SCIM; Kaufman, Cundiff, & Crowell, 2015). The SCIM is a 27-item measure recently developed to capture a range of normative and abnormal identity processes in individuals with and without psychopathology. To this end, the SCIM assesses identity dimensionally, across three domains: (1) continuity of self-concept, self-cohesion, and identity commitments in values and interests (consolidated identity (ID) subscale), (2) discontinuity in an individual's sense of self, values, and beliefs including normative identity confusion secondary to exploration and identity diffusion (disturbed ID subscale) and, (3) more extreme identity distress characterized by a sense of no self, chronic emptiness, or being lost (lack of ID subscale). The SCIM initially demonstrated strong construct validity and good reliability in a large college student sample for total score ( $\alpha = 0.89$ ) and subscale scores ( $\alpha = 0.84$ , disturbed;  $\alpha = 0.73$ , consolidated;  $\alpha = 0.87$ , lack; Kaufman et al., 2015). The factor structure and reliability were replicated in an Amazon MTurk adult sample (Kaufman et al., 2015). In the current study, Sample 1 demonstrated good reliability for total score ( $\alpha = 0.93$ ) and subscale scores ( $\alpha = 0.92$ , disturbed;  $\alpha = 0.79$ , consolidated;  $\alpha = 0.92$ , lack). Similarly, reliability for all scores in Sample 2 were good ( $\alpha = 0.92$ , total;  $\alpha = 0.90$ , disturbed;  $\alpha = 0.81$ , consolidated;  $\alpha = 0.92$ , lack).

**Self-concept.** The Self-Concept Clarity Scale (SCCS; Campbell et al., 1996)

contains 12 items measuring the extent to which an individual's self-concept is clearly defined and temporally stable. The SCCS was initially tested in a large sample of undergraduate students and demonstrated good validity and internal consistency reliability ( $\alpha = 0.86$ ). This measure, as compared to the SCIM, captures an individual's view, or cognitive description of themselves, and the extent to which this self-view is positive and consistent across time. Self-concept clarity overlaps to some degree with continuity as measured by the SCIM but has also been found to influence and be influenced by broader identity processes, such as identity commitments (Schwartz et al., 2011b). In the current study, the SCCS demonstrated good levels of reliability in Sample 1 ( $\alpha = .92$ ) and Sample 2 ( $\alpha = .92$ ).

**Identity Distress.** The Identity Distress Survey (IDS; Berman, Montgomery, & Kurtines, 2004) was developed to measure distress specific to abnormal identity development across seven domains (e.g., long-term goals, friendships, career choice). Three additional items assess overall level of discomfort experienced, degree of uncertainty related to all domains taken together, and how long distress has persisted (Berman et al., 2004). The IDS was initially developed in a college student sample and demonstrated good internal consistency reliability ( $\alpha = 0.84$ ; Berman et al., 2004). The IDS has been used extensively in research to date (e.g., Wangqvist & Frisen, 2011, Wiley & Berman, 2013) and is the only existing measure which aims to capture the psychological suffering associated with identity dysfunction. In the current study, reliability for Sample 1 ( $\alpha = 0.91$ ) and Sample 2 ( $\alpha = 0.89$ ) were good.

**Suicidality.** Suicidal ideation, planning, intent, and attempts were measured to capture the range of clinically relevant suicidality.

**Columbia-Suicide Severity Rating Scale.** The Columbia-Suicide Severity Rating Scale (C-SSRS, Posner et al., 2011), adapted for self-report administration (DeVylder et al., 2015), was used to measure a broad range of suicidality, including ideation, planning, intent, and behavior. The measure has been found to have strong validity relative to other, existing measures of suicidality in a range of adolescent and adult inpatient samples with internal consistency reliability ranging from 0.73 to 0.95 across samples (Posner et al., 2011). This measure has extensive empirical support across a wide range of psychiatric samples and is used extensively in large-scale, nationally sponsored studies of suicide risk (Columbia Lighthouse Project, 2018; Army STARRS; Kessler et al., 2013). The C-SSRS interview protocol has been adapted with success for use in a self-report format in a college student sample, demonstrating good reliability for ratings of ideation intensity ( $\alpha = 0.90$ ; DeVylder et al., 2015) and in very large epidemiological samples of military servicemembers (Campbell-Sills et al., 2016; Kessler et al., 2013).

Consistent with previous research (DeVylder et al., 2015; Posner et al., 2011), individual items from the C-SSRS were used to capture different aspects of suicidality for analyses. Dichotomous variables were created for suicidal ideation, ideation with plan and intent, and suicidal behavior including attempts, aborted attempts, interrupted attempts, and active planning for attempt. A continuous variable was created to capture severity of worst point lifetime suicidal ideation (i.e., ideation intensity). In the current study, reliability for Sample 1 ( $\alpha = 0.91$ ) and Sample 2 ( $\alpha = 0.89$ ) were good.

***Other predictors of suicidality.*** The following measures were used to assess well-established predictors of suicidality.

**The Interpersonal Needs Questionnaire.** The Interpersonal Needs

Questionnaire was developed to measure two constructs related to suicide risk, perceived burdensomeness (PB) and thwarted belongingness (TB). PB measures the degree to which an individual feels they are a burden on others and TB measures feelings of alienation or separation from others despite a desire to connect (Ribeiro & Joiner, 2009). PB and TB are related but distinct constructs and are measured as separate subscales (Van Orden et al., 2010). The current study used the INQ-12, a twelve-item version of the INQ, with seven items measuring PB and five items measuring TB. The INQ-12 has demonstrated good internal consistency reliability for both constructs (TB,  $\alpha = 0.85$ ; PB,  $\alpha = 0.89$ ; Van Orden et al., 2008). In the current study, reliability for Sample 2 was good ( $\alpha = 0.85$ , TB;  $\alpha = 0.92$ , PB). Reliability for Sample 1 was missing due to an error in administration of this measure.

**Non-suicidal self-injurious (NSSI) behavior questions.** Consistent with previous research examining identity and NSSI, several questions were used to assess participant's endorsement of lifetime NSSI, including duration (i.e., "How many years have you been doing this?"), frequency (i.e., "How many times have you done this?"), and severity (i.e., "How many different ways have you hurt yourself?"). Wording for items was roughly based on the most widely used measure of NSSI, the Deliberate Self-Harm Inventory (DSHI; Gratz, 2001). The DSHI asks participants to rate duration, frequency, and severity across 16 types of NSSI means (i.e., cutting with different types of objects, dripped acid onto skin, etc.) resulting in a 22-item measure. Only four questions generally assessing NSSI were used in the current study, because of the length of the DSHI and degree of detail it captures. A dichotomous variable was created for

analyses which measured lifetime occurrence of NSSI behavior. This approach to assessing NSSI is consistent with other studies examining identity and NSSI (e.g., Gandhi, Luyckx, Maitra, & Claes, 2015; Gandhi et al., 2017; Lear & Pepper, 2016).

### **Data Analysis Plan**

First, an exploratory principal component factor analysis (EFA) with varimax rotation was conducted on all items from the three identity measures (i.e., SCIM, SCCS, and IDS). Given multiple conceptualizations of identity dysfunction and a lack of consensus on measurement of identity dysfunction, the EFA was necessary to examine proposed identity constructs and underlying factors of these constructs captured by each measure.

Next, factors retained in the EFA were then used as predictors in a series of four regression analyses to examine the associations between identity processes and four outcome variables measuring a range of suicidality, including (1) ideation, (2) intensity of worst point ideation, (3) ideation with plan and intent, and (4) behavior. Linear regression was used for the sole continuous outcome variable (i.e., ideation intensity). Binary logistic regressions were used to test the three other dichotomous outcome variables.

Hierarchical multiple linear and hierarchical binary logistic regression models were then used to investigate whether identity factors significantly predict suicidality above and beyond existing predictors of suicidality. First, identity variables were compared with NSSI as predictors of the four outcome variables measuring suicidality. Last, the same analyses were used to compare identity variables to thwarted belongingness and perceived burdensomeness as predictors of suicidality. Age and

gender were included as covariates in all models to assess whether any association between identity and suicide were accounted for by these variables.

Assumptions for linear regression were checked for all models testing the continuous variable. Shapiro-Wilk test of normality was significant, suggesting that the data violate assumptions of normality. However, skew and kurtosis were within normal limits for all variables and examination of the residual plots, P-P plots, and histograms indicated that data were normal. Multicollinearity was assessed based on correlations between predictors, tolerance, and variance inflation factor (VIF) and found to be acceptable. Multivariate outliers were identified and removed if they fell more than three standard deviations above or below the mean standardized residuals or had a high Cook's or Mahalanobis distance.

Similarly, assumptions for all binary logistic regression models were examined. All outcome variables were binary, and observations were assumed to be independent. The relationship between predictors and logit of outcome variables were linear for all variables, except for one identity factor (i.e., roles) which was non-linear in some models. In these cases, log transformation was used to address moderate skew, and then these models did meet assumptions. Correlations between predictors and VIF were used to determine that multicollinearity was acceptable for analyses. Multivariate outliers were identified if they fell more than three standard deviations above or below the mean standardized residuals or had a high Cook's distance. No outliers were identified for logistic regression models.

## Results

### Exploratory Factor Analysis (EFA)

Sample 1 was used for the EFA ( $n=281$ ). All items from the SCIM, the IDS, and the SCCS were used in the analysis. Prior to analysis, reverse scoring was used to ensure that all items were coded such that higher scores indicated more dysfunction in the identity construct measured. This was done to allow items from different instruments to load on the same factor. To determine the suitability of data for factor analysis, an examination of the correlation matrix and significant content overlap between all individual items was examined. Correlations were acceptable and no items were removed for content redundancy. A parallel analysis was conducted before completing the EFA to determine the number of factors to be retained (Costello & Osborne, 2005; O'Connor, 2000). Results suggested a four factor solution.

All items were submitted to a principal components factor analysis with varimax rotation. Visual inspection of the Scree plot, Kaiser's criteria of eigenvalues greater than 1, and cumulative percentage of variance extracted by each factor were consistent with a four factor solution. Items were then submitted to the same factor analysis, constraining the model to extract only four factors. Item trimming was conducted until only items which met the following criteria were retained: (1) the communality for an item was greater than 0.50, (2) the largest factor loading for an item was greater than 0.60, and (3) the discrepancy between the first and second factor loading was sufficiently large, greater than 0.30.

In the final solution, a total of 22 items met the criteria of communality  $>0.50$  and simple structure and were retained (Table 3). The first factor consisted of items from the

SCCS and accounted for 46.44% of the variance. Items retained on Factor 1 represented a lack of clarity and temporal stability in self-concept. This factor was labeled as “Identity Disturbance” for subsequent analyses. Factor 2 contained items from the IDS and accounted for 9.10% of the variance. Items on Factor 2 captured uncertainty, discomfort, and distress specific to identity across domains, including intensity and severity of this distress. Interestingly, items from the IDS which assess identity distress about long term goals such as career and being in a romantic relationship also loaded on this factor. Factor 2 was labeled as “Identity Distress” for subsequent analyses. Items from the IDS assessing identity distress in the domains of religion, sexual orientation and behavior, values or beliefs, and group loyalties loaded onto Factor 3. Factor 3 accounted for 8.10% of the variance and was labeled “Identity Roles” for subsequent analyses.

All items from the SCIM were removed during item trimming except for four of ten items from the consolidated identity subscale. These four items loaded on Factor 4, which accounted for 6.61% of the variance. These items measure a stable, healthy, and clear sense of identity and this factor was labeled “Consolidated Identity.” Table 4 summarizes means, standard deviations, and internal consistency scores for all four factors.

### **Regression Analyses**

Sample 2 was used for all regression analyses ( $n=290$ ). Gender was dichotomized for analyses, which excluded an additional four participants who reported a non-binary gender identity. Thus, the final sample used in regression analyses was 286.

Correlations between all variables used in regression models are displayed in Table 5.

**Identity Factors and Suicidality.** The four factors retained in the EFA, identity disturbance, distress, roles, and consolidation, were used in a series of regression analyses to test the associations between identity and suicidality. Suicidality was measured using one continuous variable (i.e., intensity of worst point ideation) and three dichotomous variables (i.e., ideation, ideation with intent and plan, and suicide behavior). Age and gender were included as covariates in all models.

Linear regression was used to test the relationship between the four identity variables and a continuous variable measuring intensity of suicidal ideation (Table 6). Two multivariate outliers were removed for analysis. The overall model was significant, with an adjusted  $R^2=.28$  ( $F=19.59$ ,  $p<.001$ ). Identity distress was the only significant predictor ( $\beta=.42$ ,  $p<.001$ ). Increases in identity distress were associated with increased intensity of ideation. Identity disturbance, roles, and consolidation did not predict intensity of ideation when controlling for the other variables in the model. Age and gender were also nonsignificant.

Binary logistic regressions explored the association between the four identity variables predicting the three dichotomous outcome variables (Table 7). First, the four identity variables were examined as predictors of a dichotomous rating of suicidal ideation. The model was significant, accounting for 34% of the variance in ideation (Nagelkerke pseudo- $R^2=.34$ ,  $X^2=83.97$ ,  $p<.001$ ). Both identity distress ( $OR=1.20$ , 95%  $CI$  [1.11, 1.29]) and identity disturbance ( $OR=1.05$ , 95%  $CI$  [1.01, 1.10]) predicted ideation, with every unit increase in distress scores associated with 20% higher odds that a person would report suicidal ideation and a 5% increase in odds for one unit increases

in disturbance scores. Identity roles, consolidation, age, and gender were not significant when controlling for the other variables in the model.

Next, ideation with plan and intent was examined with identity variables as predictors. The overall model was also significant (Nagelkerke pseudo- $R^2=.29$ ,  $X^2=68.93$ ,  $p<.001$ ) with identity distress ( $OR=1.19$ , 95%  $CI$  [1.11, 1.28]) and identity disturbance ( $OR=1.05$ , 95%  $CI$  [1.00, 1.10]) emerging as significant predictors. Every unit increase in distress scores was associated with 19% higher odds a person would endorse ideation with plan and intent and a 5% increase in odds for each unit increase in disturbance scores. Identity roles, consolidation, age, and gender were not significant when controlling for the other variables in the model.

Last, suicide behaviors were examined with identity factors as predictors. The overall model was again significant (Nagelkerke pseudo- $R^2=.37$ ,  $X^2=83.12$ ,  $p<.001$ ). Identity distress ( $OR=1.13$ , 95%  $CI$  [1.04, 1.23]), identity disturbance ( $OR=1.07$ , 95%  $CI$  [1.02, 1.13]), and identity roles ( $OR=1.15$ , 95%  $CI$  [1.05, 1.27]) were all significant predictors. The odds of endorsing suicidal behavior increased 13% for every one unit increase in distress scores, 7% for every one unit increase in disturbance scores and 15% for every one unit increase in roles scores. Consolidated identity, age and gender were not significant predictors when controlling for the other variables in the model.

**Identity Factors Compared to NSSI as a Predictor of Suicidality.** Next, a series of hierarchical multiple regressions were used to examine if the four identity factors predicted suicidality above and beyond NSSI. Hierarchical linear regression was used to examine NSSI, entered first, and then all four identity variables, entered second as predictors of intensity of ideation (Table 6). One multivariate outlier was removed.

Step 1 with only NSSI was significant, accounting for 23% of the variance ( $F=28.55, p<.001$ ). The addition of identity variables in Step 2 increased the variance by 16% ( $\Delta R^2=.17, \Delta F=19.54, p<.001$ ). NSSI ( $\beta=.36, p<.001$ ) and identity distress ( $\beta=.33, p<.001$ ) were significant predictors of intensity of ideation in this model. Endorsing NSSI and higher scores on identity distress predicted greater intensity of suicidal ideation. Identity distress and NSSI were nearly equal in their predictive ability. Identity disturbance, roles, and consolidation, gender, and age were not significant predictors when controlling for the other variables in the model.

Three hierarchical binary logistic regression models examined the relationships between NSSI, entered first, and the four identity variables, entered second, predicting suicidal ideation, ideation with plan and intent, and suicidal behavior (Table 8). Step 1 testing NSSI alone as a predictor of ideation was significant (Nagelkerke pseudo- $R^2=.24, X^2=56.24, p<.001$ ). The addition of identity variables in step 2 resulted in improved model fit ( $\Delta$ Nagelkerke pseudo- $R^2=.18, \Delta X^2=52.01, p<.001$ ). In this final model, NSSI ( $OR=4.79, 95\% CI [2.50, 9.19]$ ) and identity distress ( $OR=1.18, 95\% CI [1.09, 1.27]$ ) predicted ideation. Those endorsing NSSI were 4.8 times more likely to endorse suicidal ideation and the odds of endorsing suicidal ideation increased 18% for every one unit increase in distress scores. Identity disturbance, roles, and consolidation, gender and age did not significantly predict ideation when controlling for the other variables in the model.

Suicidal ideation with plan and intent was examined next. Step 1 was significant (Nagelkerke pseudo- $R^2=.23, X^2=52.63, p < 0.001$ ). However, model fit was improved with the addition of identity variables in Step 2 ( $\Delta$ Nagelkerke pseudo- $R^2=.16, \Delta X^2=44.66,$

$p < 0.001$ ). In this final model, NSSI ( $OR=5.16$ , 95%  $CI$  [2.76, 9.64]) and identity distress ( $OR=1.16$ , 95%  $CI$  [1.08, 1.26]) predicted ideation with plan and intent. As before, those who endorsed NSSI were 5.2 times more likely to endorse suicidal ideation with plan and intent and every one unit increase in distress scores increased the odds by 16%. Identity disturbance, roles, and consolidation, age, and gender were not significant predictors when controlling for the other variables in the model.

Last, suicidal behavior was examined. Step 1 was significant (Nagelkerke pseudo- $R^2=.27$ ,  $X^2=57.09$ ,  $p < 0.001$ ). The addition of identity variables in Step 2 accounted for significantly more variance ( $\Delta$ Nagelkerke pseudo- $R^2=.25$ ,  $\Delta X^2=67.64$ ,  $p < 0.001$ ). In the final model, NSSI ( $OR=13.96$ , 95%  $CI$  [5.68, 34.32]), identity disturbance ( $OR=1.06$ , 95%  $CI$  [1.00, 1.12]), and identity roles ( $OR=1.27$ , 95%  $CI$  [1.13, 1.43]) predicted suicide behavior. Those who endorsed NSSI were 14 times more likely to endorse suicidal behavior. The odds of endorsing suicidal behavior increased 6% for every one unit increase in disturbance scores and 27% for every one unit increase in roles scores. Identity distress was trending, but non-significant ( $B=.09$ ,  $p=.06$ ). Consolidated identity, age, and gender did not significantly predict when controlling for the other variables in the model.

#### **Identity Factors Compared to Joiner's Theory as Predictors of Suicidality.**

Last, the same series of regressions were used to examine the four identity factors as predictors of suicidality above and beyond perceived burdensomeness (PB) and thwarted belongingness (TB), two variables of importance in Joiner's interpersonal theory of suicide. Hierarchical linear regression was used to examine PB and TB, entered first, and

then all four identity variables, entered second as predictors of intensity of ideation (Table 6). Two multivariate outliers were removed for analysis.

Step 1 with PB and TB alone was significant, producing an adjusted  $R^2=0.27$  ( $F=26.70, p<.001$ ). However, when identity variables were added to the model, it accounted for 6% more variance in intensity of ideation ( $\Delta R^2=.07, \Delta F=7.36, p<.001$ ). In this final model both PB ( $\beta=.29, p<.001$ ) and identity distress ( $\beta=.34, p<.001$ ) predicted intensity of ideation such that higher scores on both predicted more severe suicidal ideation. Although notably, identity distress was a stronger predictor than PB. Identity disturbance, roles, and consolidation, TB, age, and gender were not predictors when controlling for the other variables in the model.

Three hierarchical binary logistic regression models examined the effect of PB and TB, entered first, and the four identity variables, entered second, predicting suicidal ideation, ideation with plan and intent, and suicidal behavior (Table 9). Suicidal ideation was explored first. Step 1 was significant (Nagelkerke pseudo- $R^2=.27, X^2=63.79, p<.001$ ). The addition of identity variables in Step 2 resulted in improved model fit ( $\Delta$ Nagelkerke pseudo- $R^2=.10, \Delta X^2=27.11, p<.001$ ). In this final model, PB ( $OR=1.06, 95\% CI [1.02, 1.11]$ ) and identity distress ( $OR=1.18, 95\% CI [1.09, 1.27]$ ) predicted ideation, with distress being a stronger predictor than PB. The odds of endorsing suicidal ideation increased 6% for every one unit increase in PB scores and 18% for every one unit increase in distress scores. Gender was the most significant predictor ( $OR=1.81, 95\% CI [1.00, 3.27]$ ), with female gender increasing the odds of experiencing ideation by 81%. Identity disturbance, roles, and consolidation, TB, and age did not predict ideation when controlling for the other variables in the model.

Suicidal ideation with plan and intent was examined next. Step 1 was significant (Nagelkerke pseudo- $R^2=.25$ ,  $X^2=59.11$ ,  $p < 0.001$ ). Model fit was improved with the addition of identity ( $\Delta$ Nagelkerke pseudo- $R^2=.08$ ,  $\Delta X^2=21.61$ ,  $p < 0.001$ ). In this second step, PB ( $OR=1.07$ , 95%  $CI [1.03, 1.11]$ ) and identity distress ( $OR=1.16$ , 95%  $CI [1.07, 1.25]$ ) predicted ideation with plan and intent. As before, the odds of endorsing suicidal ideation increased 7% for every one unit increase in PB scores and 16% for every one unit increase in disturbance scores. Identity disturbance, roles, and consolidation, TB, age and gender were not significant predictors when controlling for the other variables in the model.

Finally, suicidal behavior was examined. Step 1 was significant (Nagelkerke pseudo- $R^2=.31$ ,  $X^2=68.06$ ,  $p < 0.001$ ). The addition of identity variables in Step 2 accounted for more variance ( $\Delta$ Nagelkerke pseudo- $R^2=.11$ ,  $\Delta X^2=27.14$ ,  $p < 0.001$ ). PB was a significant predictor ( $OR=1.07$ , 95%  $CI [1.03, 1.12]$ ), with a one unit increase in scores increasing the odds of endorsing suicidal behavior by 7%. Both identity distress ( $OR=1.10$ , 95%  $CI [1.01, 1.21]$ ) and identity roles ( $OR=1.12$ , 95%  $CI [1.01, 1.24]$ ) were significant predictors. The odds of endorsing suicidal behavior increased by 10% for every one unit increase in distress scores and 12% for every one unit increase in roles scores. Identity disturbance and consolidation, age, and gender did not significantly predict behavior when controlling for the other variables in the model.

### **Post hoc Analyses: Replication of Regression Analyses in Sample 1**

Given results of regression analyses in Sample 2, post hoc analyses were conducted to see if these findings replicated in Sample 1. The identical approach to data analyses was used. As before, assumptions were checked and found acceptable for all linear regression

models. For binary logistic regression models, the predictors identity roles and age showed a non-linear relationship with the logit of outcome variables and were resistant to transformation. The pattern of results did not change with transformations, thus data were analyzed without transformations. The dichotomization of gender resulted in the removal of two participants who reported a non-binary gender identity. The final sample was 279. Correlations between all variables used in regression models are displayed in Table 10.

**Identity Factors and Suicidality in Sample 1.** Linear regression was used to test the relationship between the four identity variables and the continuous variable measuring intensity of suicidal ideation (Table 11). Three multivariate outliers were removed for analysis. The overall model was significant, with an adjusted  $R^2=.33$  ( $F=23.43, p<.001$ ). Identity distress was a significant predictor ( $\beta=.49, p<.001$ ). Increases in identity distress were associated with increased intensity of ideation. Identity disturbance was trending, but not significant ( $\beta=.15, p=.05$ ). Age was also a significant predictor ( $\beta=.13, p=.01$ ), such that older age was associated with greater intensity of ideation. Identity roles, identity consolidation, and gender did not predict intensity of ideation when controlling for the other variables in the model.

Binary logistic regressions explored the association between the four identity variables predicting the three dichotomous outcome variables (Table 12). The model was significant, accounting for 35% of the variance in ideation (Nagelkerke pseudo- $R^2=.35, X^2=85.70, p<.001$ ). Consistent with Sample 2 results, identity distress ( $OR=1.22, 95\% CI [1.14, 1.31]$ ) and identity disturbance ( $OR=1.06, 95\% CI [1.01, 1.11]$ ) predicted ideation, with every unit increase in distress scores associated with 22% higher odds that a person

would report suicidal ideation and a 6% increase in odds for one unit increases in disturbance scores. Additionally, identity roles predicted ideation ( $OR=0.89$ , 95%  $CI$  [0.81, 0.98]), such that every unit increase in roles scores was associated with an 11% decrease in odds of endorsing ideation. Identity consolidation, age, and gender were not significant when controlling for the other variables in the model.

Next, ideation with plan and intent was examined with identity variables as predictors. The overall model was also significant (Nagelkerke pseudo- $R^2=.36$ ,  $X^2=82.76$ ,  $p<.001$ ). In this model, only identity distress ( $OR=1.23$ , 95%  $CI$  [1.14, 1.33]) was a significant predictor. Every unit increase in distress scores was associated with 23% higher odds a person would endorse ideation with plan and intent. Identity disturbance, roles, and consolidation, age, and gender were not significant when controlling for the other variables in the model.

Last, suicide behaviors were examined with identity factors as predictors. The overall model was again significant (Nagelkerke pseudo- $R^2=.29$ ,  $X^2=58.42$ ,  $p<.001$ ). Identity distress was again a significant predictor ( $OR=1.17$ , 95%  $CI$  [1.08, 1.27]), such that every unit increase in distress scores was associated with a 17% increase in endorsing suicidal behaviors. Age was also significant ( $OR=1.04$ , 95%  $CI$  [1.01, 1.07]), such that every unit increase in age was associated with a 4% increase in endorsing behavior. Identity disturbance, roles, and consolidation, and gender were not significant predictors when controlling for the other variables in the model.

### **Identity Factors Compared to NSSI as a Predictor of Suicidality in Sample 1.**

Next, the same series of hierarchical multiple regressions were used to examine if the four identity factors predicted suicidality above and beyond NSSI in Sample 1.

Hierarchical linear regression was used to examine NSSI, entered first, and then all four identity variables, entered second as predictors of intensity of ideation (Table 11). Three multivariate outliers were removed.

Step 1 with only NSSI was significant, accounting for 21.6% of the variance ( $F=26.22, p<.001$ ). The addition of identity variables in Step 2 increased the variance by 18.4% ( $\Delta R^2=.19, \Delta F=21.95, p<.001$ ). As in Sample 2, NSSI ( $\beta=.29, p<.001$ ) and identity distress ( $\beta=.40, p<.001$ ) were significant predictors of intensity of ideation in this model. Endorsing NSSI and higher scores on identity distress predicted greater intensity of suicidal ideation. Age was also a significant predictor ( $\beta=.14, p=.005$ ), such that older age was associated with greater intensity of ideation. Identity disturbance, roles, and consolidation, and gender were not significant predictors when controlling for the other variables in the model.

Three hierarchical binary logistic regression models examined the relationships between NSSI, entered first, and the four identity variables, entered second, predicting suicidal ideation, ideation with plan and intent, and suicidal behavior (Table 13). Step 1 testing NSSI alone as a predictor of ideation was significant (Nagelkerke pseudo- $R^2=.24, X^2=55.10, p<.001$ ). The addition of identity variables in step 2 resulted in improved model fit ( $\Delta$ Nagelkerke pseudo- $R^2=.18, \Delta X^2=51.63, p<.001$ ). In this final model, NSSI ( $OR=4.70, 95\% CI [2.39, 9.27]$ ), identity distress ( $OR=1.19, 95\% CI [1.10, 1.28]$ ), identity disturbance ( $OR=1.05, 95\% CI [1.00, 1.10]$ ), and identity roles ( $OR=0.90, 95\% CI [0.81, 0.99]$ ) all predicted ideation. Those endorsing NSSI were 4.7 times more likely to endorse suicidal ideation. The odds of endorsing suicidal ideation increased 19% for every one unit increase in distress scores and 5% for every one unit increase in

disturbance scores. Identity roles significantly predicted in the opposite direction, with every one unit increase in roles scores associated with an 11% decrease in odds of endorsing ideation. Identity consolidation, gender and age did not significantly predict ideation when controlling for the other variables in the model.

Suicidal ideation with plan and intent was examined next. Step 1 was significant (Nagelkerke pseudo- $R^2=.23$ ,  $X^2=50.27$ ,  $p < 0.001$ ). However, model fit was improved with the addition of identity variables in Step 2 ( $\Delta$ Nagelkerke pseudo- $R^2=.20$ ,  $\Delta X^2=52.82$ ,  $p < 0.001$ ). In this final model, NSSI ( $OR=4.41$ , 95%  $CI [2.30, 8.48]$ ) and identity distress ( $OR=1.20$ , 95%  $CI [1.11, 1.30]$ ) predicted ideation with plan and intent. As before, those who endorsed NSSI were 4.4 times more likely to endorse suicidal ideation with plan and intent and every one unit increase in distress scores increased the odds by 20%. Identity disturbance, roles, and consolidation, age, and gender were not significant predictors when controlling for the other variables in the model.

Last, suicidal behavior was examined. Step 1 was significant (Nagelkerke pseudo- $R^2=.30$ ,  $X^2=59.34$ ,  $p < 0.001$ ). The addition of identity variables in Step 2 accounted for significantly more variance ( $\Delta$ Nagelkerke pseudo- $R^2=.13$ ,  $\Delta X^2=31.08$ ,  $p < 0.001$ ). In the final model, NSSI ( $OR=2.11$ , 95%  $CI [3.85, 17.76]$ ), identity distress ( $OR=1.11$ , 95%  $CI [1.02, 1.21]$ ), and identity roles ( $OR=1.12$ , 95%  $CI [1.00, 1.25]$ ) predicted suicide behavior. Those who endorsed NSSI were twice as likely to endorse suicidal behavior. The odds of endorsing suicidal behavior increased 11% for every one unit increase in distress scores and 12% for every one unit increase in roles scores. Age was also a significant predictor ( $OR=1.05$ , 95%  $CI [1.02, 1.09]$ ), with every one unit increase in age associated with a 5% increase in odds of endorsing behavior. Identity

disturbance, consolidated identity, and gender did not significantly predict when controlling for the other variables in the model.

### **Identity Factors Compared to Joiner's Theory as Predictors of Suicidality in**

**Sample 1.** Last, the same regression analyses were used to examine the four identity factors as predictors of suicidality above and beyond perceived burdensomeness (PB) and thwarted belongingness (TB). Due to an error in the administration of the INQ-12, participants in Sample 1 answered items on a "true/false" scale. Prior to analyses, a scaled score was created for TB and PB based on a sum of all items endorsed for each subscale, accounting for reverse coded items. Hierarchical linear regression was used to examine PB and TB, entered first, and then all four identity variables, entered second as predictors of intensity of ideation (Table 11). Four multivariate outliers were removed for analysis.

Step 1 with PB and TB alone was significant, producing an adjusted  $R^2=0.25$  ( $F=24.02, p<.001$ ). However, when identity variables were added to the model, it accounted for 14% more variance in intensity of ideation ( $\Delta R^2=.15, \Delta F=16.39, p<.001$ ). In this final model both PB ( $\beta=.27, p<.001$ ) and identity distress ( $\beta=.40, p<.001$ ) predicted intensity of ideation such that higher scores on both predicted more severe suicidal ideation. As in Sample 2, identity distress was a stronger predictor than PB. Age was also a significant predictor ( $\beta=.10, p=.04$ ), such that older age was associated with greater intensity of ideation. Identity disturbance, roles, and consolidation, TB, and gender were not predictors when controlling for the other variables in the model.

Three hierarchical binary logistic regression models then examined the effect of PB and TB, entered first, and the four identity variables, entered second, predicting

suicidal ideation, ideation with plan and intent, and suicidal behavior (Table 14).

Suicidal ideation was explored first. Step 1 was significant (Nagelkerke pseudo- $R^2=.21$ ,  $X^2=46.69$ ,  $p<.001$ ). The addition of identity variables in Step 2 resulted in improved model fit ( $\Delta$ Nagelkerke pseudo- $R^2=.18$ ,  $\Delta X^2=48.32$ ,  $p<.001$ ). In this final model, PB ( $OR=1.44$ , 95%  $CI$  [1.13, 1.84]), identity distress ( $OR=1.20$ , 95%  $CI$  [1.12, 1.30]), and identity roles ( $OR=0.84$ , 95%  $CI$  [0.75, 0.93]) predicted ideation. The odds of endorsing suicidal ideation increased 44% for every one unit increase in PB scores and 20% for every one unit increase in distress scores. Additionally, every unit increase in roles scores was associated with an 16% decrease in odds of endorsing ideation. Identity disturbance and consolidation, TB, gender, and age did not predict ideation when controlling for the other variables in the model.

Suicidal ideation with plan and intent was examined next. Step 1 was significant (Nagelkerke pseudo- $R^2=.26$ ,  $X^2=57.25$ ,  $p < 0.001$ ). Model fit was improved with the addition of identity ( $\Delta$ Nagelkerke pseudo- $R^2=.14$ ,  $\Delta X^2=37.61$ ,  $p < 0.001$ ). In this second step, PB ( $OR=1.43$ , 95%  $CI$  [1.14, 1.80]), identity distress ( $OR=1.21$ , 95%  $CI$  [1.11, 1.31]), and identity roles ( $OR=0.88$ , 95%  $CI$  [0.79, 0.98]) predicted ideation with plan and intent. The odds of endorsing suicidal ideation increased 43% for every one unit increase in PB scores and 21% for every one unit increase in distress scores. Every one unit increase in roles scores was associated with a 12% decrease in odds of endorsing ideation with plan and intent. Identity disturbance and consolidation, TB, age and gender were not significant predictors when controlling for the other variables in the model.

Finally, suicidal behavior was examined. Step 1 was significant (Nagelkerke pseudo- $R^2=.23$ ,  $X^2=68.06$ ,  $p < 0.001$ ). The addition of identity variables in Step 2

accounted for more variance ( $\Delta$ Nagelkerke pseudo- $R^2=.09$ ,  $\Delta X^2=17.89$ ,  $p < 0.001$ ). PB ( $OR=1.29$ , 95%  $CI$  [1.04, 1.59]) and identity distress ( $OR=1.14$ , 95%  $CI$  [1.05, 1.24]) were significant predictors. Every one unit increase in PB scores increased the odds of endorsing suicidal behavior by 29%. The odds increased 14% for every one unit increase in distress scores. Age was also a significant predictor ( $OR=1.03$ , 95%  $CI$  [1.00, 1.07]), with every one unit increase in age associated with a 5% increase in odds of endorsing behavior. Identity disturbance, roles, consolidation, and gender did not significantly predict behavior when controlling for the other variables in the model.

### **Discussion**

The purpose of the current study was to directly test the relationship between identity and suicidality in a broad, normative sample to allow for the inclusion of normal and abnormal identity processes. This study also sought to clarify the conceptualization and measurement of identity processes. Results of the EFA suggested four distinct identity processes, three related to identity dysfunction (i.e., distress, disturbance, and roles), and one related to healthy identity (i.e., consolidated). It appears that unique identity constructs captured by different identity measures seem to represent separate underlying factors, as evidenced by the lack of overlap between items from different measures loading on the same factor. Taken together, results suggest that identity distress is a strong predictor of all aspects of suicidality examined. In addition, identity disturbance predicts most aspects of suicidality and identity roles is a robust predictor of suicidal behavior. Consolidated identity was not a significant predictor of any aspect of suicidality. Last, results suggest that identity factors predict all measures of suicidality above and beyond perceived burdensomeness and NSSI, two robust predictors of

suicidality.

### **Clarification of identity constructs**

A lack of consensus about how to define and measure healthy and dysfunctional identity has hampered the extension of basic identity theory to empirical tests of the applicability of identity constructs to relevant clinical outcomes, such as suicidality (Kaufman, Cundiff, & Crowell, 2015; Kaufman, Montgomery, & Crowell, 2014). This lack of consensus also makes the comparison of findings across studies difficult, further obstructing a clear understanding of the role of identity in a variety of outcomes, including suicidality. Confusion about the operationalization of several aspects of identity was addressed through exploratory factor analysis. The EFA sought to investigate the degree of overlap between measures as it relates to different conceptualizations of identity. Overall, results of the EFA are consistent with multiple theoretical frameworks (Marcia, 1994; Schwartz, 2001) which explain identity as a bidimensional construct, ranging from healthy identity (i.e., ego identity synthesis, commitment, achieved status) to identity dysfunction (i.e., confusion, diffusion status, disturbance, distress), with multiple important processes contained within that range.

**Identity Dysfunction.** Notably, many items from the SCCS were retained and loaded onto Factor 1. These items describe a lack of continuity and temporal consistency in sense of self and accounted for the majority of the variance among the four factors. Our findings are consistent with existing research which demonstrates the importance of these structural aspects of identity, distinct from content of identity (i.e., positive or negative valence of self views, commitments within certain domains). High levels of self-concept clarity have been positively associated with effective stress management and

high self-esteem (Suszek, Fronczyk, Kopera, & Maliszewski, 2018; Willis & Burnett, 2016). Greater self-concept clarity has also been negatively associated with lower levels of social anxiety and depression in a non-clinical sample (Gregory & Peters, 2017). Low self-concept clarity has been found to predict NSSI in a non-clinical sample of college student (Lear & Pepper, 2016).

Factor 2 and Factor 3 contained items from the IDS, which loaded onto two separate factors in interesting ways. Factor 2 captured questions purely assessing distress, discomfort, worry, and uncertainty about identity generally, across a wide variety of domains (i.e., career, friendships, religion, values, etc.). This is consistent with a large body of research that suggests that distress about one's identity generally is a separate construct from identity within any particular domain or dimension (e.g., Hernandez, Montgomery, & Kurtines, 2016; Samuolis & Griffin, 2014).

In addition, different domains of identity loaded separately on Factors 2 and 3, with career and long-term relationship partner on one factor and other aspects such as values, religion, group loyalties, and sexual orientation and behavior on Factor 3. Notably, career and romantic relationship loaded on the same factor as general items assessing distress about identity. These results suggest there is some overlap or commonality between general identity distress and identity distress specific to these two areas. Given cultural norms in the United States for career and long-term romantic partnership to serve as markers for the successful transition from an elongated adolescence into adulthood, it could be that these two areas of identity are more salient and thus, disruptions in these two domains confer more distress.

In contrast, domains represented in items retained on Factor 3, suggest perhaps

more stable aspects of identity. Values and beliefs, religion, some group loyalties, and even sexual orientation for many, often develop early in life. These items may also represent issues of exploration and commitment as described by Marcia (1966). Values, religion, and group loyalties may be aspects of identity people are more likely to commit to without much questioning, which may confer more stability and less distress (Lillevoll, Kroger, & Marcia, 2013). In individualistic cultures, there may be more allowance for personal choice in the areas of career and relationships as compared to the areas represented in Factor 3. The increase in choice confers more responsibility for exploration prior to commitment, which can be associated with increased distress (Kroger, Martinussen, & Marcia, 2010; Lillevoll, Kroger, & Marcia, 2013).

**Exploration of the Original SCIM Factor Structure.** The analysis also served as a test of the factor structure of the SCIM, a measure of identity recently created to address these conceptual problems. To our knowledge, the validation of this measure has not been conducted beyond its initial development. When other measures of identity processes were included in the EFA, the initial factor structure of the SCIM did not hold. For example, items from the disturbed subscale of the SCIM (i.e., “The things that are most important to me change pretty often) did not load onto Factor 1 with items from the SCCS capturing similar disturbance (i.e., “I spend a lot of time wondering about what kind of person I really am”), despite conceptual overlap. This is notable, in that the SCIM does purport to measure some aspects of identity captured in Factors 1 and 2 (i.e., disturbance, distress). Interestingly, only items from the consolidated subscale of the SCIM were retained in the EFA. Items from the SCCS which also appear to have some conceptual overlap with consolidated, or healthy, identity were not retained in Factor 4

(i.e., “In general, I have a clear sense of who I am and what I am”). This is helpful information in the broader scope of how identity should be conceptualized and measured for empirical study. Results suggest that consolidation, which is a measure of healthy, stable identity, is as important in the broad conceptualization of identity as identity dysfunction. It also suggests that this domain of identity is independent of other, related domains, such as self-concept clarity.

**Remaining Conceptual Confusion.** Lack of overlap of items from different measures onto the same factor is consistent with theory and research to date which purports multiple, unique identity processes of importance. The results clarify which processes might be best captured by existing measures. However, some confusion does remain. In the larger identity literature, the construct of identity diffusion has been highlighted as a central process. However, there is no consensus of measurement on this construct. Most commonly, clinical interview or rating scale used to measure BPD has been used to measure diffusion. In the current EFA, Factor 1 had some overlap with identity diffusion, but diffusion itself as a construct did not emerge in the EFA. Likewise, some items from Factor 1 seem to capture the same construct as the Lack of Identity subscale of the SCIM (i.e., “I feel lost when I think about who I am”). But those items from the SCIM did not load onto Factor 1. It may be that these factors were better captured by the distress factor, comprised of items from the IDS. It is also possible that these aspects of identity disturbance are too infrequent in a normal sample. Identity diffusion and lack of identity are conceptually (Kaufman et al., 2014) and empirically (e.g., Wilkinson-Ryan & Westen, 2000) linked most strongly to the most severe psychopathology. It is possible that identity processes are differentially represented in

non-clinical versus clinical samples, and even within different diagnoses within clinical samples (i.e., mood disorders versus personality disorders). Further work to clarify constructs, including replication of this EFA, with clinical samples is warranted to better understand remaining conceptual confusion.

**Summary of EFA.** Taken together, results of the EFA in this study bring clarity to the question of how identity should be measured, and which aspects of identity are important to consider. Lines of demarcation between dysfunction and stability, for example, are important to consider when researching the possible relationships between identity and outcomes, particularly clinically relevant outcomes such as suicidality. Results are consistent with wide use of the IDS as a measure of identity distress, and the SCCS as a measure of lack of consistency and temporal continuity in sense of self. The retention of consolidated identity items from the SCIM speaks to the importance of this healthy trajectory of identity development. Broadly, results confirm what basic identity theory has well-established over decades: Consistency of self, executed within roles over time, confers stability and disruptions in this process leads to distress.

### **Identity and Suicidality: The Empirical Link**

When these identity factors were tested as predictors of suicidality, the results partially supported our hypotheses. First, there is a direct relationship between identity and a range of suicidality, including ideation, intensity of ideation, ideation with plan and intent, and suicidal behavior. Second, results supported our hypothesis that factors related to identity dysfunction (i.e., distress, disturbance, and roles) are positively associated with increases in suicidality. Identity distress was a significant predictor of all types of suicidality. This suggests that distress is particularly important, consistent with

existing research demonstrating a notable link between distress and a range of negative outcomes including anxiety, depression, and NSSI (Gandhi, Luyckx, Maitra, & Claes, 2015; Hernandez, Montgomery, & Kurtines, 2016; Schwartz et al., 2011a).

Identity disturbance also significantly predicted ideation, ideation with plan and intent, and suicidal behavior. This is consistent with previous research which suggests that lack of continuity and temporal consistency in identity is associated with more severe outcomes such as NSSI and BPD (e.g., Jorgensen, 2009; Lear & Pepper, 2013; Wilkinson-Ryan & Westen, 2000). Roles was not a significant predictor of suicidality, except in the case of suicidal behavior. It is interesting that high levels of identity disruption in the domain of roles is associated with the most severe form of suicidality. It is possible that these aspects of self (i.e., religion, beliefs, sexual orientation) confer stability and that problems in these domains are particularly disruptive and distressing.

Finally, our hypothesis that increases in consolidated identity would predict low levels of suicidality was not supported. Consolidated identity not significantly associated with any aspects of suicidality in our sample. A large body of research demonstrates that consolidated identity is associated with the most positive outcomes (Campbell, Assanand, & Di Paula, 2003; Schwartz et al., 2011a; Zimmer-Gembeck & Petherick, 2006). It is possible that this construct is orthogonal to suicidality as a marker of such significant psychological distress. It is notable, however, that consolidated identity did not emerge as a protective factor. Interestingly, age and gender, usually associated with ideation and attempts, were not significant predictors in any models, controlling for identity variables. Taken together, results suggest that identity distress is the strongest predictor of all aspects of suicidality examined. Distress about identity and temporal consistency of

identity appear to be the most important aspects of identity relevant to suicidal distress.

### **Identity and Suicidality: Adding Variance to Established Predictors**

Our results suggest that identity is a strong predictor above and beyond known predictors of suicidality. This is important in that identity has generally not been included in clinical research studying suicidality, even though identity is discussed in the context of mental health problems associated with suicidality (i.e., Jorgensen, 2009; Wilkinson-Ryan & Westen, 2000). In order to move identity from theory to potentially helpful application in clinical research and practice, a better understanding of the relationship of identity to suicidality above and beyond known predictors is important.

Results suggest that identity factors predict all measures of suicidality above and beyond NSSI. Identity distress emerged as a strong predictor of both measures of suicidal ideation and suicidal ideation with plan and intent, above and beyond NSSI. Both disturbance and roles significantly predicted behavior, above and beyond NSSI. However, NSSI remained a more robust predictor than identity factors. As before, consolidated identity was not a significant predictor, suggesting that this healthy identity process is not a protective factor when considering identity distress, NSSI, and suicidality in our sample. The relationships between the various identity factors and the different measures of suicidality remained, even when accounting for NSSI in the models.

Results suggest that identity factors predict all measures of suicidality above and beyond Joiner's interpersonal theory of suicide. Perceived burdensomeness (PB), but not thwarted belongingness, predicted all aspects of suicidality. However, identity distress was a strong predictor of both measures of suicidal ideation above and beyond PB. Distress also predicted ideation with plan and intent and distress and roles predicted

behavior. TB and consolidated identity were not significant predictors in any models. These findings highlight the importance of identity dysfunction in the prediction of suicidality, a relationship that remained significant even when including two of the most well-established predictors of this serious clinical problem.

### **Additional Evidence: Post hoc Replication Analyses**

Given the findings of regression analyses in Sample 2, post hoc analyses were done testing the same series of regression models predicting suicidality in Sample 1. These analyses were conducted to test the strength of the findings in Sample 2 and to see if results replicate in a normative sample, as compared to a sample recruited for identity issues. Overall, the results from Sample 2 were generally replicated in Sample 1, with some differences in specific identity factors predicting different types of suicidality. For example, in Sample 2, distress and disturbance predicted ideation with plan and intent but in Sample 1, only distress was a significant predictor. Similarly, identity roles only predicted ideation in Sample 1, but only predicted behavior in Sample 2. There was also a general pattern of more identity factors emerging as significant predicts of different types of suicidality, as compared to Sample 2 results. Across all analyses, multiple identity factors were significant predictors in most models.

Similar results emerged in the comparison of identity factors to well-established predictors of suicidality. As in Sample 2, results from Sample 1 suggest that identity factors predict all measures of suicidality above and beyond NSSI. Consistent with previous results, identity distress was the only identity factor which predicted all aspects of suicidality. As in Sample 2, NSSI remained a more robust predictor than identity factors. Likewise, results from Sample 1 suggest that identity factors predict all measures

of suicidality above and beyond Joiner's interpersonal theory of suicide. However, perceived burdensomeness was a more robust predictor than any of the identity factors in all models, unlike Sample 2 results in which identity distress was a stronger predictor of some types of suicidality.

Interestingly, in all of these models except one (i.e., NSSI and identity factors predicting suicidal behavior), increases in identity roles predicted decreased odds of suicidality, a relationship which did not emerge in initial analyses. This suggests that the more distress an individual feels about their identity in the domains of religion, values, sexual orientation and behavior, and group loyalties, the less likely they are to endorse suicidality. It is possible that this association is the result of normative distress secondary to health exploration, which may lead to identity commitments which are more egosyntonic and therefore, less likely to result in suicidality. For example, a person may automatically ascribe to the religion of their family of origin but suffer from this choice as they mature into adulthood, and then revise their religious beliefs to be more consistent with their personal values. Identity theory has long argued that this process of exploration toward healthy commitments is characterized by distress along the way (Marcia, 2006; Schwartz, 2001).

Differences in which specific identity factors predicted specific types of suicidality between Sample 1 and Sample 2 may be associated with sampling. Sample 1 was a normative sample, while Sample 2 was recruited for identity difficulties. More identity distress would be expected in Sample 2. The pattern of identity dysfunction predicting suicidality in both samples supports the recent focus on expanding the study of identity beyond developmental research and into domains of clinical importance

(Kaufman, Cundiff, & Crowell, 2015). Replication in Sample 1 also supports our suggestion that identity is an important variable to consider in better understanding suicidality beyond risk factors specific to mental health diagnoses and symptoms. Our results support identity as a predictor of suicidality in a normal sample. It is notable however that as in Sample 2, consolidated identity was not a significant predictor of any aspect of suicidality even in the more normative sample. It has been theorized that healthy identity might be protective against suicidality as it confers stability of self (Marcia, 2006; Schwartz et al., 2011b), suggesting that it could be leveraged in the prediction of suicide. However, our results did not support this assertion.

### **Clinical Applications: Risk Assessment and Intervention**

Clarifying the role of identity dysfunction in suicidality has the potential to have a tremendous impact on the prevention and treatment of suicidality, which takes the lives of almost 45,000 people per year in the US alone and remains a significant mental health and public health crisis despite advancements in prevention and treatment. Most prevention efforts are targeted toward those with mental health conditions, potentially missing other individuals with undiagnosed sources of distress ultimately leading to suicidal behavior (Stone et al., 2017). The National Center for Injury Prevention and Control and the American Foundation for Suicide Prevention have recently called for a comprehensive and wide range approach to prevention, including a more thorough understanding of risk factors, particularly those beyond mental health diagnosis (Stone et al., 2017; Torguson & O'Brien, 2017). Our results support identity as such a risk factor. Identity development and maintenance is a central psychological process occurring in everyone. Information about specific identity processes which contribute to suicidality

has the potential to broaden our ability to identify those at risk of dying by suicide.

In addition, better treatment for suicidality is needed. The increased availability of empirically supported treatments for diagnoses associated with suicidality have not effectively lowered suicide rates (i.e., Dialectical Behavior Therapy for Borderline Personality Disorder; Ward-Ciesielski & Linehan, 2014). Suicide attempts are a significant risk factor for subsequent attempts (Bostwick et al., 2014; Rosenbaum et al., 2017), yet 50% of suicide attempters who did receive mental health treatment after their attempt reported unmet treatment needs one year later (Han et al., 2014). It is possible that direct intervention for identity disturbance and distress would facilitate reductions in suicidality for those suffering. Two interventions have been developed and preliminarily tested to target identity achievement in a non-clinical sample with initial success (Berman et al., 2008; Meca et al., 2014). These identity treatments could be adapted to the needs of suicidal individuals with identity dysfunction, including distress, disturbance in identity, and disruption of roles.

### **Limitations and Future Directions**

The most notable limitation of the current study is the use of single method survey instruments administered online via convenience sampling. While this methodology was appropriate for an initial examination of an understudied relationship and the need for a normative sample, online data collection contains inherent threats to internal validity. It is possible that a sample of MTurk workers may not be completely representative of the general American population. In addition, our sample was primarily Caucasian and heteronormative. While suicide deaths are more prevalent in Caucasian Americans, overall suicidality is higher in sexual minorities. The results of this study should be

further tested, in both more diverse normative samples beyond Mturk and in clinical samples, to further refine the relationship between identity and suicidality for optimal prevention. Last, in both of our samples, there were some indications that our data violated assumptions of normality for binary logistic regression, secondary to skewness of the identity roles variable. While we would expect roles, along with most other variables in this study, to be somewhat skewed in a relatively normal sample, this is further reason to recommend that results be further tested in carefully recruited samples.

Results also need to be replicated with age in mind. Emerging adulthood, which is thought to occur between 18-25 years of age, is considered the most rapid time of identity development, when identity consolidation increases most significantly (Arnett, 2000; Kroger, Martinussen, & Marcia, 2010; Schwartz, Zamboanga, Luyckx, Meca, & Ritchie, 2013). Other theory purports that adolescence is the most important time of identity development and more likely to be associated with distress (Crumley, 1982). Some have theorized that the central task of identity development during this period makes adolescents particularly vulnerable to suicide through such mechanisms as increased anxiety and an increased intensity and salience of social stressors (Bronson, 1959; Everall, Bostik, & Paulson, 2005; Sands & Dixon, 1986). These theoretical ideas warrant further empirical test across age groups, particularly as recent data from the Centers for Disease Control demonstrate unprecedented increases in suicide rates for teens between 10 and 17 years of age and an 80% increase for middle-aged white women (Stone et al., 2018), historically two demographic groups with the lowest overall suicide rates. While both samples were recruited with no restriction on age, to maximize the likelihood of capturing a wide range of identity processes, the mean age of both samples

in the current study were in the early-mid 30s, above the hypothesized cut off for emerging adulthood. It is also possible that different domains of identity confer distress differently across age groups. For example, in the current sample, distress about long-term career plans and romantic relationship partner were particularly salient. These are normative developmental milestones that generally correspond to the mean age of our samples.

The use of cross-sectional design limits our ability to predict suicidality directly in our sample. The low probability of suicidal behavior makes it difficult to predict, however, suicidal ideation, planning, and intent could be studied in a longitudinal fashion with identity variables. Future research is needed to determine how these relationships exist over time, if identity distress and disturbance are relatively stable or fluctuate, and if so, what impact does that have on their relationship to suicide. It would also be useful to study the impact of other state level variables associated with suicide, such as emotion dysregulation or negative affect, on identity factors. Further exploration of differences between those who endorse identity problems and those who do not might also clarify the role of identity in suicidality. We did find some nuanced differences in results between samples. Further explication of these differences and potential moderators or mediators of the associations between different predictors and suicidality may further clarify our efforts to use identity factors to predict suicidality.

While our EFA did elucidate constructs across commonly used measures of identity, some confusion remains. In particular, identity diffusion and lack of identity often seen in more extreme clinical populations did not emerge in our data. Further replication of the EFA with both normative and clinical samples is warranted. It might

also be useful to consider the use of mixed method data collection to further refine the clarification of aspects of identity most associated with suicidality. For example, qualitative analysis is justified when a construct is not well-defined or when research in a particular area is very limited (Asher & Asher, 1999). Further differentiation of identity constructs might be facilitated by careful interview of those struggling with suicidality to inform refinement of more objective and convenient measures.

Identity distress was the most frequent significant predictor of all types of suicidality in both Sample 1 and Sample 2. It is possible that there may be overlap between this construct and general psychological distress, which is of course associated with suicidality. Further refinement of measurement to elucidate distress specific to identity from general psychological distress is warranted. Additionally, the inclusion of measures which capture psychological distress more generally is warranted in replication studies. Additionally, Sample 2 data were collected at the beginning of the Covid-19 pandemic in the US, just prior to nationwide restrictions and subsequent economic catastrophe (early March 2020), while Sample 1 data was collected in October 2019. It is notable that identity distress was most frequently significant in analyses in Sample 2, while a broader range of identity variables were significant in Sample 1 results. Given the possibility that identity distress may have some overlap with general distress, it is possible that a more significantly distressed worker pool, secondary to unprecedented national hardship, may have impacted results of analyses using Sample 2.

## **Conclusion**

Despite these limitations, the current study did provide important information about which aspects of identity are most important and which identity processes are

directly linked to the full range of suicidality. Importantly, these results address a theoretically important, but understudied area of clinical psychology. These results are also an important first step toward bridging the rich theoretical and empirical study of identity theory and research and practice in clinical psychology, a discipline which has long remained separate from basic identity research. This study demonstrates that there is an important link between identity and suicide, one which has great potential to help in the accurate assessment and effective intervention for those at risk of dying by suicide. Basic research in the area of identity development has long shown that disruption in sense of self, roles, values, and long-term goals is psychologically painful and negatively impacts functioning across a wide range of areas such as work, relationships, and mental health. This study demonstrates the importance of identity development and maintenance within the scope of clinical psychology and provides an empirically derived measure of salient identity processes for further use in clinical research. As research in this area continues to grow, we will be better equipped to help those suffering the most.

## References

- Adams, G. R., Ryan, J. H., Hoffman, J. J., Dobson, W. R., & Nielsen, E. C. (1984). Ego identity status, conformity behavior, and personality in late adolescence. *Journal of Personality and Social Psychology, 47*(5), 1091-1104.
- Adler, J. M., Chin, E. D., Kolisetty, A. P., & Oltmanns, T. F. (2012). The distinguishing characteristics of narrative identity in adults with features of borderline personality disorder: An empirical investigation. *Journal of Personality Disorders, 26*(4), 498-512.
- American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders: DSM-5. Washington, D.C: American Psychiatric Association.
- Asher, N. S., & Asher, K. C. (1999). Qualitative methods for an outsider looking in: Lesbian women and body image. In M. Kopala & L. A. Suzuki (Eds.) *Using Qualitative Methods in Psychology*. Thousand Oaks, CA, US: Sage Publications.
- Balistreri, E., Busch-Rossnagel, N.A., & Geisinger, K. F. (1995). Development and preliminary validation of the ego identity process questionnaire. *Journal of Adolescence, 18*, 179-192.
- Ball, L. & Chandler, M. (1989). Identity formation in suicidal and nonsuicidal youth: The role of self-continuity. *Development and Psychopathology, 1*, 257-275.
- Bar-Joseph, H., & Tzuriel, D. (1990). Suicidal tendencies and ego identity in adolescence. *Adolescence, 25*(97), 215-223.
- Batterham, P. J., Walker, J., Leach, L. S., Ma, J., Calear, A. L., & Chistensen, H. (2018). A longitudinal test of the predictions of the interpersonal-psychological theory of

- suicidal behaviour for passive and active suicidal ideation in a large community-based cohort. *Journal of Affective Disorder*, 227, 97-102.
- Beeney, J. E., Hallquist, M. N., Ellison, W. D., & Levy, K. N. (2016). Self-other disturbance in borderline personality disorder: Neural, self-report, and performance-based evidence. *Personality Disorders: Theory, Research, and Treatment*, 7(1), 28-39.
- Bender, D. S. & Skodol, A. E. (2007). Borderline personality as a self-other representational disturbance. *Journal of Personality Disorders*, 21(5), 500-517.
- Benedik, E. (2008). Identity diffusion and psychopathology: Comparison between adult psychiatric patients and normal. *Psychiatria Danubina*, 20(2), 123-133.
- Berman, S. L., Kennerley, R. J., Kennerley, M. A. (2008). Promoting adult identity development: A feasibility study of a university-based identity intervention program. *Identity: An International Journal of Theory and Research*, 8, 139-150.
- Berman, S. L., & Montgomery, M. J. (2014). Problematic identity processes: The role of identity distress. *Identity: An International Journal of Theory and Research*, 14, 241-245.
- Berman, S. L., Montgomery, M. J., & Kurtines, W. M. (2004). The development and validation of a measure of identity distress. *Identity: An International Journal of Theory and Research*, 4(1), 1-8.
- Berman, S. L., Weems, C. F., & Petkus, V. F. (2009). The prevalence and incremental validity of identity problem symptoms in a high school sample. *Child Psychiatry and Human Development*, 40, 183-195.

- Berzonsky, M. D. (1985). Diffusion within Marcia's identity status paradigm: Does it foreshadow academic problems? *Journal of Youth and Adolescence*, *14*, 527-538.
- 2005).
- Bishop, D. I., Weisgram, E. S., Holleque, K. M., Lund, K. E., & Wheeler-Anderson, J. R. (2005). Identity development and alcohol consumption: Current and retrospective self-reports by college students. *Journal of Adolescence*, *28*, 523-533.
- Blades, C. A., Stritzke, W. G. K., Page, A. C., & Brown, J. D. (2018). The benefits and risks of asking research participants about suicide: A meta-analysis of the impact of exposure to suicide-related content. *Clinical Psychology Review*, *64*, 1-12.
- Bostwick, W. B., Meyer, I., Aranda, F., Russell, S., Hughes, T., Birkett, M., & Mustanski, B. (2014). Mental health and suicidality among racially/ethnically diverse sexual minority youths. *American Journal of Public Health*, *104*(6), 1129-1136.
- Bronson, G. W. (1959). Identity diffusion in late adolescents. *The Journal of Abnormal and Social Psychology*, *59*(3), 414-417.
- Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's mechanical turk: A new source of inexpensive, yet high-quality data? *Perspectives on Psychological Science*, *6*(1), 3-5.
- Burke, T. A., Hamilton, J. L., Cohen, J. N., Stange, J. P., & Alloy, L. B. (2016). Identifying a physical indicator of suicide risk: Non-suicidal self-injury scars predict suicidal ideation and suicide attempts. *Comprehensive Psychiatry*, *65*, 79-87.

- Cakir, S. G., (2014). Ego identity status and psychological well-being among Turkish emerging adults. *Identity: An International Journal of Theory and Research*, 14, 230-239.
- Campbell, J. D., Assanana, S., & Di Paula, A. (2003). The structure of the self-concept and its relation to psychological adjustment. *Journal of Personality*, 71(1), 115-140.
- Campbell, J. D., Trapnell, P. D., Heine, S. J., Katz, I. M., Lavalley, L. F., & Lehman, D. R. (1996). Self-concept clarity: Measurement, personality correlates, and cultural boundaries. *Journal of Personality and Social Psychology*, 70(1), 141-156.
- Campbell-Sills, L., Kessler, R. C., Ursano, R. J., Rosellini, A. J., Afifi, T. O., Colpe, L. J., ... Stein, M. B. (2016). Associations of childhood bullying victimization with lifetime suicidal behaviors among new U.S. Army soldiers. *Depression and Anxiety*, 34, 7001-710.
- Carlsson, J. Wangqvist, M., & Frisen, A. (2016). Life on hold: Staying in identity diffusion in the late twenties. *Journal of Adolescence*, 47, 220-229.
- Casler, K., Bickel, L., & Hackett, E. (2013). Separate but equal? A comparison of participants and data gathered via Amazon's MTurk, social media, and face-to-face behavioral testing. *Computers on Human Behavior*, 29(6), 2156-2160.
- CDC. Web-based Injury Statistics Query and Reporting System (WISQARS). Atlanta, GA: US Department of Health and Human Services, CDC, National Center for Injury Prevention and Control; 2018. Retrieved from <https://www.cdc.gov/injury/wisqars/index.html>

- Cha, C. B., Glenn, J. J., Deming, C. A., D'Angelo, E. J., Hooley, J. M., Teachman, B. A., & Nock, M. K. (2016). Examining potential iatrogenic effects of viewing suicide and self-injury stimuli. *Psychological Assessment, 28*(11), 1510-1515.
- Chandler, M. (1994). Adolescent suicide and the loss of personal continuity. In D. Cicchetti & S. L. Toth (Eds.), *Disorders and dysfunctions of the self* (371-390). Rochester, NY: University of Rochester Press.
- Chu, C., Buchman-Schmitt, J., M., Stanley, I. H., Hom, M. A., Tucker, R. P., . . . & Joiner, T. E. (2017). The interpersonal theory of suicide: A systematic review and meta-analysis of a decade of cross-national research. *Psychological Bulletin, 143*(12), 1313-1345.
- Claes, L., Luyckx, K., & Bijttebier, P. (2014). Non-suicidal self-injury in adolescents: Prevalence and associations with identity formation above and beyond depression. *Personality and Individual Differences, 61-62*, 101-104.
- Claes, L., Luyckx, K., Bijttebier, P., Turner, B., Ghandi, A., Smets, J, . . . & Schoevarerts, K. (2015). Non-suicidal self-injury in patients with eating disorder: Associations with identity formation above and beyond anxiety and depression. *European Eating Disorders Review, 23*, 119-125.
- Columbia Lighthouse Project (2018). The columbia suicide severity rating scale (C-SSRS): Supporting evidence. Retrieved from <http://cssrs.columbia.edu/documents/c-ssrs-supporting-evidence/>
- Costello, A.B., & Osborne, J. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research, and Evaluation, 10*(7), 1-9.

- Craig-Bray, L., Adams, G. R., & Dobson, W. R. (1988). Identity formation and social relations during late adolescence. *Journal of Youth and Adolescence, 17*, 173-187.
- Crawford, T. N., Cohen, P., Johnson, J. G., Sneed, J. R., & Brook, J. S. (2004). The course and psychosocial correlates of personality disorder symptoms in adolescence: Erikson's developmental theory revisited. *Journal of Youth and Adolescence, 33*(5), 373-387.
- Crocetti, E., Rubini, M., Luyckx, K., & Meeus, W. (2008). Identity formation in early and middle adolescents from various ethnic groups: From three dimensions to five statuses. *Journal of Youth and Adolescence, 37*, 983-996.
- Crumley, F. E. (1982). The adolescent suicide attempt: A cardinal symptom of a serious psychiatric disorder. *American Journal of Psychotherapy, 36*(2), 158-165.
- DeVylder, J. E., Jahn, D. R., Doherty, T., Wilson, C. S., Wilcox, H. C., Schiffman, J., & Hilimire, M. R. (2015). Social and psychological contributions to the co-occurrence of sub-threshold psychotic experiences and suicidal behavior. *Social Psychiatry and Psychiatric Epidemiology, 50*, 1819-1830.
- Everall, R. D., Bostik, K. E., & Paulson, B. L. (2005). I'm sick of being me: Developmental themes in a suicidal adolescent. *Adolescence, 40*(160), 693-708.
- Gandhi, A., Luyckx, K., Maitra, S., & Claes, L. (2015). Non-suicidal self-injury and identity distress in Flemish adolescents: Exploring gender differences and mediational pathways. *Personality and Individual Differences, 82*, 215-220.

- Gandhi, A., Luyckx, K., Maitra, S., Kiekens, G., Verschueren, M., & Claes, L. (2017). Directionality of effects between non-suicidal self-injury and identity formation: A prospective study in adolescents. *Personality and Individual Differences, 109*, 124-129.
- Gfellner, B. M., & Cordoba, A. I. (2011). Identity distress, psychosocial maturity, and adaptive functioning among university students. *Identity: An International Journal of Theory and Research, 6*(1), 27-33.
- Gould, M. S., Marrocco, F. A., Kleinman, M., Thomas, J. G., Mostkoff, K., Cote, J., & Davies, M. (2005). Evaluating iatrogenic risk of youth suicide screening programs: A randomized controlled trial. *The Journal of the American Medical Association, 293*(13), 1635-1643.
- Gratz, K. L., (2001). Measurement of deliberate self-harm: Preliminary data on the deliberate self-harm inventory. *Journal of Psychopathology and Behavioral Assessment, 23*(4), 253-263.
- Gregory, B., & Peters, L. (2017). Unique relationships between self-related constructs, social anxiety, and depression in a non-clinical sample. *Behaviour Change, 34*(2), 117-133.
- Han, B., Compton, W. M., Gfroerer, J., & McKeon, R. (2014). Mental health treatment patterns among adults with recent suicide attempts in the United States. *American Journal of Public Health, 104*(12) 2359-2368.
- Han, B., Kott, P. S., Hughes, A., McKeon, R., Blanco, C., & Compton, W. M. (2016). Estimating the rates of death by suicide among adults who attempt suicide in the United States. *Journal of Psychiatric Research, 77*, 125-133.

- Hernandez, L., Montgomery, M. J., & Kurtines, W. M. (2006). Identity distress and adjustment problems in at-risk adolescents. *Identity: An International Journal of Theory and Research*, 6(1), 27-33.
- Horwitz, A. G., Czyz, E. W., & King, C. A. (2015). Predicting future suicide attempts among adolescent and emerging adult psychiatric emergency patients. *Journal of Clinical Child and Adolescent Psychology*, 44(5), 751-761.
- Inder, M. L., Crowe, M. T., Moor, S., Luty, S. E., Carter, J. D., & Joyce, P. R. (2008). "I actually don't know who I am": the impact of bipolar disorder on the development of self. *Psychiatry: Interpersonal and Biological Processes*, 71, 123-133.
- Johnson, D. H., Kent, A., & Yale, E. (2012). Examination of identity and romantic relationship intimacy associations with well-being in emerging adulthood. *Identity: An International Journal of Theory and Research*, 12(4), 296-319.
- Jones, R. M. (1992). Identity and problem behaviors. In G. R. Adams, T. P. Gullotta, & R. Montemayor (Eds.), *Adolescent identity formation: Advances in adolescent development* (pp. 216-233). Newbury Park, CA: Sage.
- Jorgensen, C. R. (2009). Identity style in patients with borderline personality disorder and normal controls. *Journal of Personality Disorders*, 23(2), 101-112.
- Jorgensen, C. R. (2010). Invited essay: Identity and borderline personality disorder. *Journal of Personality Disorders*, 24(3), 344-364.
- Josselson, R. (1987). Identity diffusion: A long-term follow-up. *Adolescent Psychiatry*, 14, 230-258.

- Kaufman, E. A., & Crowell, S. E. (2018). Biological and behavioral mechanisms of identity pathology development: An integrative review. *Review of General Psychology*, Advance online publication. <http://dx.doi.org/10.1037/gpr0000138>.
- Kaufman, E. A., Cundiff, J. M., & Crowell, S. E. (2015). The development, factor structure, and validation of the self-concept and identity measure (SCIM): A self-report assessment of clinical identity disturbance. *Journal of Psychopathology and Behavioral Assessment*, *37*, 122-133.
- Kaufman, E. A., Montgomery, M. J., & Crowell, S. E. (2014). Identity-related dysfunction: Integrating clinical and developmental perspectives. *Identity: An International Journal of Theory and Research*, *14*, 297-311.
- Kernberg, O. (2005). Identity diffusion in severe personality disorders. In S. Strack (Ed.), *Handbook of Personality and Psychopathology* (pp. 39-49). Hoboken, NJ: John Wiley & Sons, Inc.
- Kessler, R. C., Cople, L. J., Fullerton, C. S., Gebler, N., Naifeh, J. A., Nock, M. K. ... Heeringa, S. G. (2013). Design of the army study to assess risk and resilience in servicemembers (Army STARRS). *International Journal of Methods in Psychiatric Research*, *22*(4), 267-275.
- Kroger, J., Martinussen, M., & Marcia, J. E. (2010). Identity status change during adolescence and young adulthood: A meta-analysis. *Journal of Adolescence*, *33*, 683-698.
- Lear, M. K., & Pepper, C. M. (2016). Self-concept clarity and emotion dysregulation in non-suicidal self-injury. *Journal of Personality Disorders*, *30*(6), 813-827.

- Lillevoll, K. R., Kroger, J., & Martinussen, M. (2013). Identity status and anxiety: A meta-analysis. *Identity: An International Journal of Theory and Research, 13*(3), 214-227.
- Linehan, M. M. (1993). *Cognitive behavioral therapy of borderline personality disorder*. New York: Guilford Press.
- Luyckx, K., Duriez, B., Klimstra, T. A., & De Witte, H. (2010). Identity statuses in young adult employees: Prospective relations with work engagement and burnout. *Journal of Vocational Behavior, 77*(3), 339-349.
- Luyckx, K., Gandhi, A., Bijttebier, P., & Claes, L. (2015a). Non-suicidal self-injury in high school students: Associations with identity processes and statuses. *Journal of Adolescence, 41*, 76-85.
- Luyckx, K., Gandhi, A., Bijttebier, P., & Claes, L. (2015b). Non-suicidal self-injury in female adolescents and psychiatric patients: A replication and extension of the role of identity formation. *Personality and Individual Difference, 77*, 91-96.
- Luyckx, K., Goossens, L., Soenens, B., & Beyers, W. (2006). Unpacking commitment and exploration: Validation of an integrative model of adolescent identity formation. *Journal of Adolescence, 29*, 361–378.
- Luyckx, K., Goossens, L., Soenens, B., Beyers, W., & Vansteenkiste, M. (2005). Identity statuses based on 4 rather than 2 identity dimensions: Extending and refining Marcia's paradigm. *Journal of Youth and Adolescence, 34*, 605–618.

- Luyckx, K., Klimstra, T. A., Duriez, B., Schwartz, S. J., & Vanhalst, J. (2012). Identity processes and coping strategies in college students: Short-term longitudinal dynamics and the role of personality. *Journal of Youth and Adolescence, 41*(9), 1226-1239.
- Luyckx, K., Schwartz, S. J., Berzonsky, M. D., Soenens, B., Vansteenkiste, M., Smits, I., & Goossens, L. (2008). Capturing ruminative exploration: Extending the four-dimensional model of identity formation in late adolescence. *Journal of Research in Personality, 42*, 58-82.
- Marcia, J. E. (1966). Development and validation of ego-identity status. *Journal of Personality and Social Psychology, 3*(5), 551-558.
- Marcia, J. E. (1993). The ego identity status approach to ego identity. In J. E. Marcia, A. S. Waterman, D. R. Matteson, S. L. Archer, & J. L. Orlofsky (Eds.), *Ego identity: A handbook for psychosocial research* (pp. 1–21). New York: Springer-Verlag.
- Marcia, J. E. (2006). Ego Identity and Personality Disorders. *Journal of Personality Disorders, 20*(6), 577-596.
- Marcia, J. E., & Friedman, M. L. (1970). Ego identity status in college women. *Journal of Personality, 38*(2), 249-263.
- McClatchey, K., Murray, J., Rowat, A., Chouliara, Z. (2017). Risk factors for suicide and suicidal behavior relevant to emergency health care settings: A systematic review of post-2007 reviews. *Suicide and Life-Threatening Behavior, 47*(6), 729-745.

- Meca, A., Eichas, K., Quintana, S., Maximin, B. M., Ritchie, R. A., Madrazo, V. L., & et al. (2014). Reducing identity distress: Results of an identity intervention for emerging adults. *Identity: An International Journal of Theory and Research, 14*, 312-331.
- Meca, A., Sabet, R. F., Farrelly, C. M., Benitez, C. G., Schwartz, S. J., Gonzales-Backen, M. ... Lizzi, K. M. (2017). Personal and cultural identity development in recently immigrated Hispanic adolescents: Links with psychosocial functioning. *Cultural Diversity and Ethnic Minority Psychology, 23*(3), 348-361.
- Meeus, W., & Dekovic, M. (1995). Identity development, parental, and peer support: Results of a national Dutch survey. *Adolescence, 30*, 931-944.
- Modestin, J., Oberson, B., & Erni, T. (1998). Identity disturbance in personality disorders. *Comprehensive Psychiatry, 39*(6), 352-357.
- Mullis, A. K., Mullis, R. L., Schwartz, S. J., Pease, J. L., & Shriner, M. (2007). Relations among parental divorce, identity status, and coping strategies of college age women. *Identity: An International Journal of Theory and Research, 7*(2), 137-154.
- Neacsiu, A. D., Herr, N. R., Fang, C. M., Rodriguez, M. A., & Rosenthal, M. Z. (2015). Identity disturbance and problems with emotion regulation are related constructs across diagnoses. *Journal of Clinical Psychology, 71*(4), 346-361.
- O'Connor, B.P., 2000. SPSS and SAS programs for determining the number of components using parallel analysis and Velicer's MAP test. *Behavior Research Methods, Instruments, & Computers, 32*(3), 396-402.

- Papa, A., Lancaster, N. G., & Kahler, J. (2014). Commonalities in grief responding across bereavement and non-bereavement losses. *Journal of Affective Disorders, 161*, 136-143.
- Pop, E., Negru-Subtirica, O., Crocetti, E., Opre, A., & Meeus, W. (2016). On the interplay between academic achievement and educational identity: A longitudinal study. *Journal of Adolescence, 47*, 135-144.
- Portes, P. R., Sandhu, D. S., & Longwell-Grice, R. (2002). Understanding adolescent suicide: A psychosocial interpretation of developmental and contextual factors. *Adolescence, 37*(148), 805-814.
- Posner, K., Brown, G. K., Stanley, B., Brent, D. A., Yershova, K. V., Oquendo, M. A.,... Mann, J. J. (2011). The Columbia-suicide severity rating scale: Initial validity and internal consistency findings from three multisite studies with adolescents and adults. *American Journal of Psychiatry, 168*, 1266-1277.
- Ren, Y., Zhang, X., You, J., Jiang, Y., Lin, M., & Leung, F. (2016). The reciprocal associations between identity disturbance, relationship disturbance, and suicidal ideation among Chinese adolescents: A three-wave cross-lag study. *Journal of Clinical Psychology, 74*, 1174-1188.
- Ribeiro, J. D., & Joiner, T. E. (2009). The interpersonal-psychological theory of suicidal behavior: Current status and future directions. *Journal of Clinical Psychology, 65*(12), 1291-1299.

- Rosenbaum, A. J., Berk, M., Zhang, L., Wang, P., & Tang, L. (2017). Emergency department youth patients with suicidal ideation or attempts: Predicting suicide attempts through 18 months of follow-up. *Suicide and Life-Threatening Behavior, 47*(5), 551-566.
- Rosenthal, D. A., Gurney, R. M., & Moore, S. M. (1981). From trust to intimacy: A new inventory for examining Erikson's stages of psychosocial development. *Journal of Youth and Adolescence, 10*(6), 525-537.
- Samuolis, J., Bercellos, M., LaFlam, J., Belson, D., & Berard, J. (2015). Mental health issues and their relation to identity distress in college students. *Identity: An International Journal of Theory and Research, 15*(1), 66-73.
- Samuolis, J. & Griffin, K., W. (2014). Identity distress and negative affect in college students. *Identity: An International Journal of Theory and Research, 14*(4), 246-254.
- Sands, R. G., & Dixon, S. L. (1986). Adolescent crisis and suicidal behavior: Dynamics and treatment. *Child and Adolescent Social Work, 3*(2), 109-122.
- Scala, J. W., Levy, K. N., Johnson, B. N., Kivity, Y., Ellison, W. D., Pincus, A. L. ... Newman, M. G. (2018). The role of negative affect and self-concept clarity in predicting self-injurious urges in borderline personality disorder using ecological momentary assessment. *Journal of Personality Disorders, 32*, 36-57.
- Schwartz, S. J. (2001). The evolution of Eriksonian and neo-Eriksonian identity theory and research: A review and integration. *Identity, 1*(1), 7-58.

- Schwartz, S. J. (2007). The structure of identity consolidation: Multiple correlated constructs or one superordinate construct? *Identity: An International Journal of Theory and Research*, 7, 27–49.
- Schwartz, S. J., Beyers, W., Luyckx, L., Soenens, B., Zamboanga, B. L., Forthum, L. F., ... Waterman, A. S. (2011a). Examining the light and dark sides of emerging adults' identity: A study of identity status differences in positive and negative psychosocial functioning. *Journal of Youth and Adolescence*, 40, 839-859.
- Schwartz, S. J., Mason, C. A., Pantin, H. & Szapocznik, J. (2008) Effects of family functioning and identity confusion on substance use and sexual behavior in hispanic immigrant early adolescents. *Identity: An International Journal of Theory and Research*, 8(2), 107-124.
- Schwartz, S. J., Hardy, S. A., Zamboanga, B. L., Meca, A., Waterman, A. S., Picariello, S., ... Forthum, L. F. (2015). Identity in young adulthood: Links with mental health and risky behavior. *Journal of Applied Developmental Psychology*, 36, 39-52.
- Schwartz, S. J., Klimstra, T. A., Luyckx, K., Hale, W. H., Frijns, T., Oosterwegel, A., ... Meeus, W. H. J. (2011b). Daily dynamics of personal identity and self-concept clarity. *European Journal of Personality*, 25, 373-385.
- Schwartz, S. J., Mullis, R. L., & Dunham, R. M. (1998). Effects of authoritative structure in the measurement of identity formation: Individual computer-managed versus group paper-and-pencil testing. *Computers in Human Behavior*, 14, 239-248.

- Schwartz, S. J., Zamboanga, B. L., Luyckx, K., Meca, A., & Ritchie, R. A. (2013). Identity in emerging adulthood: Reviewing the field and looking forward. *Emerging Adulthood, 1*, 1-18.
- Shanahan, M. J., & Pychyl, T. A. (2007). An ego identity perspective on volitional action: Identity status, agency, and procrastination. *Personality and Individual Differences, 43*(4), 901-911.
- Shepard, D. S., Gurewich, D., Lwin, A. K., Reed, G. A., & Silverman, M. M. (2016). Suicide and suicidal attempts in the United States: Costs and policy implications. *Suicide and Life-Threatening Behavior, 46*(3), 352-362.
- Sica, L. S., Sestito, L. A., & Ragozini, G. (2014). Identity coping in the first years of university: Identity diffusion, adjustment and identity distress. *Journal of Adult Development, 21*, 159-172.
- Sollberger, D., Gremaud-Heitz, D., Riemenschneider, A., Kuchenhoff, J., Dammann, G., & Walter, M. (2012). Associations between identity diffusion, Axis II disorder, and psychopathology in inpatients with borderline personality disorder. *Psychopathology, 45*, 15-21.
- Shneidman, E. S. (1998). Further reflections on suicide and psychache. *Suicide & Life-Threatening Behavior, 28*(3), 245-250.
- Stephen, J. Fraser, E., & Marcia, J. E. (1992). Moratorium-achievement (Mama) cycles in lifespan identity development: Value orientations and reasoning system correlates. *Journal of Adolescence, 15*(3), 283-300.

- Stone, D.M., Holland, K.M., Bartholow, B., Crosby, A.E., Davis, S., and Wilkins, N. (2017). Preventing Suicide: A Technical Package of Policies, Programs, and Practices. Atlanta, GA: National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. Retrieved from <https://www.cdc.gov/violenceprevention/pdf/suicideTechnicalPackage.pdf>
- Stone, D. M., Simon, TR, Fowler KA, et al. Vital Signs: Trends in State Suicide Rates — United States, 1999–2016 and Circumstances Contributing to Suicide — 27 States, 2015. *MMWR Morb Mortal Wkly Rep* 2018;67:617–624. DOI: <http://dx.doi.org/10.15585/mmwr.mm6722a1>
- Substance Abuse and Mental Health Services Administration. (2017). *Key substance use and mental health indicators in the United States: Results from the 2016 National Survey on Drug Use and Health* (HHS Publication No. SMA 17-5044, NSDUH Series H-52). Rockville, MD: Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration. Retrieved from <https://www.samhsa.gov/data/>
- Suszek, H., Fronczyk, K., Kopera, M., Maliszewski, N. (2018). Implicit and explicit self-concept clarity and psychological adjustment. *Personality and Individual Differences, 123*, 253-256.
- Taylor, S., & Goritsas, E. (1994). Dimensions of identity diffusion. *Journal of Personality Disorders, 8*(3), 229-239.

- Torguson K, & O'Brien A. Leading suicide prevention efforts unite to address rising national suicide rate. Washington, DC: American Foundation for Suicide Prevention; 2017. <https://afsp.org/leading-suicide-prevention-efforts-unite-address-rising-national-suicide-rate/>
- Van Orden, K. A., Witte, T. K., Gordon, K. H., Bender, T. W., & Joiner, R. E. (2008). Suicidal desire and the capability for suicide: Tests of the interpersonal-psychological theory of suicidal behavior among adults. *Journal of Consulting and Clinical Psychology, 76*, 72-83.
- Van Orden, K. A., Witte, T. K., Cukrowicz, K. C., Braithwaite, S. R., Selby, E. A., & Joiner, T.E. (2010). The interpersonal theory of suicide. *Psychological Review, 117*(2), 575-600.
- Wangqvist, M. & Frisen, A., (2011). Identity and psychological distress in emerging adulthood in Sweden: Is it always distressing not to know who to be and what to do? *Identity: An International Journal of Theory and Research, 11*(2), 93-113.
- Ward-Ciesielski, E. F., & Linehan, M. M. (2014). Suicidality. In S. G. Hofmann, D. J. A. Dozois, W. Rief, & J. A. Smit (Eds.), *The Wiley Handbook of Cognitive Behavior Therapy* (pp. 1241-1262). Hoboken, NJ: Wiley-Blackwell.
- Waterman, A. S. (1988). Identity status theory and Erikson's theory: Communalities and differences. *Developmental Review, 8*, 185-208.
- Waterman, A. S. (2007). Doing well: The relationship of identity status to three conceptions of well-being. *Identity: An International Journal of Theory and Research, 7*(4), 289-307.

- Westen, D., & Heim, A. K. (2003). Disturbances of self and identity in personality disorders. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of Self and Identity* (pp. 643-664). New York, NY: Guildford Publications.
- Wiley, R. E., & Berman, S. L. (2013). Adolescent identity development and distress in a clinical sample. *Journal of Clinical Psychology, 69*(12), 1299-1304.
- Wilkinson-Ryan, T., & Westen, D. (2000). Identity disturbance in borderline personality disorder: An empirical investigation. *American Journal of Psychiatry, 157*(4), 528-541.
- Willis, K. D., & Burnett, H. J. (2016). The power of stress: Perceived stress and its relationship with rumination, self-concept clarity, and resilience. *North American Journal of Psychology, 18*(3), 483-498.
- Yen, S., Shea, M. R., Sanislow, C. A., Grilo, C. M., Skodol, A. E., Gunderson, J. G., . . . Morey, L. C. (2004). Borderline personality disorder criteria associated with prospectively observed suicidal behavior. *American Journal of Psychiatry, 161*, 1296-1296.
- Zalsman, G., Hawton, K., Wasserman, D., van Heeringen, K., Arensman, E., Sarchiapone, M. . . . Zohar, J. (2016). Suicide prevention strategies revisited: 10-year systematic review. *Lancet Psychiatry, 3*(7), 646-659.
- Zimmer-Gembeck, M., & Petherick, J. (2006). Intimacy dating goals and relationship satisfaction during adolescence and emerging adulthood: Identity formation, age and sex are moderators. *International Journal of Behavioral Development, 30*, 167-177.

**Table 1.** *Demographic and clinical characteristics*

<b>Variable</b>	<b><i>M (SD) or n (%)</i></b>	
	<b>Study 1 (N = 281)</b>	<b>Study 2 (N = 290)</b>
Age (years)	35.18 (11.53)	33.08 (10.71)
Race		
Caucasian	207 (73.7%)	211 (72.8%)
Latino/Hispanic	18 (6.4%)	13 (4.5%)
Black/African American	22 (7.8%)	23 (7.9%)
Native American/American Indian	1 (0.4%)	2 (0.7%)
Asian/Pacific Islander	19 (6.8%)	21 (7.2%)
Multi-ethnic/selected multiple	14 (5.0%)	18 (6.2%)
Gender		
Female	131 (46.6%)	158 (54.5%)
Male	148 (52.7%)	128 (44.1%)
Genderqueer/non-cisgender	1 (0.4%)	3 (1.0%)
Transgender	1 (0.4%)	1 (0.3%)
Lifetime history of mental health problem	69 (24.6%)	98 (33.8%)
Lifetime history of nonsuicidal self-injury	82 (29.2%)	108 (37.2%)
Lifetime active suicidal ideation	102 (36.3%)	153 (52.8%)
Lifetime history of suicide attempt	35 (12.5%)	50 (17.2%)

**Table 2.** *Means and standard deviations for all measures*

<b>Variable</b>	<b><i>M (SD)</i></b>	
	<b>Study 1 (N = 281)</b>	<b>Study 2 (N = 290)</b>
SCIM total	76.24 (25.27)	85.14 (25.09)
SCIM consolidated	32.93 (13.77)	36.41 (13.31)
SCIM disturbed	25.94 (7.69)	28.69 (8.37)
SCIM lack	17.37 (9.22)	20.04 (9.25)
IDS	21.35 (9.21)	23.54 (9.01)
SCCS	29.22 (11.00)	33.28 (11.21)
Thwarted belongingness		15.47 (7.44)
Perceived burdensomeness		18.13 (10.71)

**Table 3.** *Items retained in EFA*

Item	Factor 1: Disturbance	Factor 2: Distress	Factor 3: Roles	Factor 4: Consolidation
SCCS2: On one day I might have one opinion of myself and on another I might have a different opinion.	<b>.82</b>	.18	.09	.15
SCCS9: If I were asked to describe my personality, my description might end up being different from one day to another day.	<b>.80</b>	.17	.24	.12
SCCS1: My beliefs about myself often conflict with one another.	<b>.79</b>	.25	.12	.19
SCCS4: Sometimes I feel that I am not really the person I appear to be.	<b>.76</b>	.27	.22	.28
SCCS8: My beliefs about myself seem to change very frequently.	<b>.75</b>	.19	.32	.16
SCCS5: When I think about the kind of person I have been in the past, I'm not sure what I was really like.	<b>.69</b>	.23	.24	.12
SCCS12: It is often hard for me to make up my mind about things because I don't really know what I want.	<b>.67</b>	.24	.15	.25
SCCS3: I spend a lot of time wondering about what kind of person I really am.	<b>.65</b>	.28	.27	.27
SCCS7: Sometimes I think I know other people better than I know myself.	<b>.63</b>	.25	.29	.10
IDS1: Long term goals (i.e., finding a good job, being in a romantic relationship, etc.)	.31	<b>.82</b>	.21	.13
IDS8: Please rate your overall level of discomfort (how bad they made you feel) about all of the above issues that might have upset or distressed you as a whole	.35	<b>.78</b>	.25	.08
IDS10: How long (if at all) have you felt upset, distressed, or worried over these issues as a whole?	.20	<b>.78</b>	-.07	.14

IDS2: Career choice (e.g., deciding on a trade or profession, etc.)	.26	<b>.76</b>	.29	.18
IDS9: Please rate how much uncertainty over these issues as a whole has interfered with your life (e.g., stopped you from doing things you wanted to do, or being happy).	.33	<b>.75</b>	.34	.10
IDS6: Values or beliefs (e.g., feeling confused about what is right or wrong, etc.)	.29	.14	<b>.85</b>	.08
IDS5: Religion (e.g., stopped believing, changed your belief in God/religion, etc.)	.18	.13	<b>.85</b>	.10
IDS7: Group loyalties (i.e., belonging to a club, school group, gang, etc.)	.25	.18	<b>.78</b>	.14
IDS4: Sexual orientation and behavior (i.e., feeling confused about sexual preference, intensity of sexual needs, etc.)	.26	.17	<b>.76</b>	.03
SCIM17: I always have a good sense about what is important to me.	.20	.07	.15	<b>.80</b>
SCIM1: I know what I believe or value.	.23	-.02	.14	<b>.76</b>
SCIM5: I know who I am.	.32	.15	.01	<b>.69</b>
SCIM9: I am good.	.05	.36	.07	<b>.66</b>

*Note.* "To what degree have you recently been upset, distressed, or worried over the following issues in your life?" is the preceding root for IDS1, IDS2, and all items in Factor 3

**Table 4.** Mean, standard deviation, and Cronbach's alphas for identity factors derived from the EFA

Variable	<i>M (SD)</i>		Cronbach's alpha	
	Study 1 (N = 281)	Study 2 (N = 290)	Study 1 (N = 281)	Study 2 (N = 290)
Identity: Disturbance	21.91 (9.25)	25.14 (9.19)	.94	.93
Identity: Distress	12.67 (5.71)	14.03 (5.39)	.91	.87
Identity: Roles	6.51 (3.79)	7.15 (3.93)	.91	.87
Identity: Consolidated	8.89 (3.33)	10.05 (3.69)	.77	.77

**Table 5.** *Correlation matrix of all continuous predictors in regression models (Sample 2)*

<b>Variable</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1. Disturbance					
2. Distress	.65**				
3. Roles	.56**	.51**			
4. Consolidated	.52**	.39**	.18**		
5. TB	.41**	.36**	.19**	.45**	
6. PB	.61**	.58**	.56**	.43**	.53**

*Note.* \*\* $p < .01$

**Table 6.** Linear regression models predicting intensity of suicidal ideation

	$R^2_a$	$F$ (df)	$B$	$SE$	$\beta$
<b>Identity variables</b>	.28	19.59 (6, 277)***			
Gender			.25	.75	.02
Age			-.02	.04	-.03
Disturbance			.09	.06	.12
Distress			.54***	.09	.42***
Roles			.02	.12	.01
Consolidation			.11	.12	.06
<b>NSSI and identity</b>					
Step 1	.23	28.55 (3, 281)***			
Gender			-.42	.77	-.03
Age			-.01	.04	-.02
NSSI			7.10***	.82	.49***
Step 2	.39	26.63 (7, 277)***			
Gender			-.66	.71	-.05
Age			.02	.03	.02
NSSI			5.24***	.76	.36***
Disturbance			.04	.06	.06
Distress			.43***	.09	.33***
Roles			.10	.11	.05
Consolidation			.14	.11	.07
<b>Joiner's theory and identity</b>					
Step 1	.27	26.70 (4, 279)***			
Gender			1.52*	.73	.11*
Age			-.08*	.03	-.13*
Thwarted belongingness			.03	.06	.03
Perceived burdensomeness			.32***	.04	.49***
Step 2	.33	18.25 (8, 275)***			
Gender			.53	.74	.04
Age			-.04	.03	-.05
Thwarted belongingness			.00	.06	.00
Perceived burdensomeness			.19***	.05	.29***

Disturbance	.04	.06	.05
Distress	.44***	.09	.34***
Roles	-.08	.13	-.05
Consolidation	-.00	.12	-.00

---

*Note.* \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .  $R_a^2 = \text{Adjusted } R^2$ . Reference category for gender is male.

**Table 7.** Logistic regression models: Identity factors predicting suicidality

	pseudo- $R^2$	$\chi^2$ (df)	<i>B</i>	<i>SE</i>	<i>OR</i> [95% <i>CI</i> ]
<b>Ideation</b>	.33	83.97 (6)***			
Gender			0.53	0.29	1.66 [0.93, 2.94]
Age			0.005	0.01	1.01 [0.98, 1.03]
Disturbance			0.05*	0.02	1.05 [1.01, 1.10]
Distress			0.18***	0.04	1.20 [1.11, 1.29]
Roles			-0.62	0.90	0.95 [0.87, 1.05]
Consolidation			0.008	0.04	1.01 [0.92, 1.10]
<b>Ideation with plan and intent</b>	.29	68.93 (6)***			
Gender			-.009	.29	0.99 [0.56, 1.75]
Age			.003	.01	1.00 [0.98, 1.03]
Disturbance			.05*	.02	1.05 [1.00, 1.10]
Distress			.17***	.04	1.19 [1.11, 1.28]
Roles			-.45	.86	0.98 [0.89, 1.07]
Consolidation			-.02	.04	0.97 [0.89, 1.06]
<b>Suicidal behavior</b>	.37	83.12 (6)***			
Gender			-.04	.35	1.01 [0.51, 2.02]
Age			.006	.02	1.00 [0.97, 1.04]
Disturbance			.08**	.03	1.07 [1.02, 1.13]
Distress			.13**	.04	1.13 [1.04, 1.23]
Roles			2.48**	.95	1.15 [1.05, 1.27]
Consolidation			-.05	.05	0.96 [0.87, 1.06]

*Note.* \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ . Reported pseudo- $R^2$  is Nagelkerke pseudo- $R^2$ . OR = odds ratio. Reference category for gender is male.

**Table 8.** Logistic regression models: NSSI and identity factors predicting suicidality

	pseudo- $R^2$	$\chi^2$ (df)	<i>B</i>	<i>SE</i>	<i>OR</i> [95% <i>CI</i> ]
<b>Ideation</b>					
Step 1	.24	56.24 (3)***			
Gender			.35	.27	1.41 [0.84, 2.39]
Age			.002	.01	1.00 [0.98, 1.03]
NSSI			1.90***	.30	6.68 [3.70, 12.05]
Step 2	.42	108.25 (7)***			
Gender			.28	.31	1.30 [0.71, 2.40]
Age			.02	.01	1.02 [0.99, 1.05]
NSSI			1.57***	.33	4.79 [2.50, 9.19]
Disturbance			.04	.02	1.04 [0.99, 1.09]
Distress			.16***	.04	1.18 [1.09, 1.27]
Roles			-.44	.94	0.97 [0.88, 1.07]
Consolidation			.02	.05	1.01 [0.92, 1.11]
<b>Ideation with plan and intent</b>					
Step 1	.23	26.31 (3)***			
Gender			.22	.28	0.80 [0.46, 1.39]
Age			.005	.01	1.01 [0.98, 1.03]
NSSI			1.95***	.29	7.04 [3.96, 12.51]
Step 2	.39	97.29 (7)***			
Gender			-.32	.32	0.73 [0.39, 1.37]
Age			.02	.01	1.02 [0.99, 1.05]
NSSI			1.64***	.32	5.16 [2.76, 9.64]
Disturbance			.04	.02	1.03 [0.99, 1.09]
Distress			.15***	.04	1.16 [1.08, 1.26]
Roles			-.14	.91	1.00 [0.91, 1.10]
Consolidation			-.02	.05	0.98 [0.90, 1.07]
<b>Suicidal Behavior</b>					
Step 1	.27	57.09 (3)***			
Gender			-.72	.34	0.49 [0.25, 0.94]
Age			.02	.02	1.02 [0.99, 1.05]
NSSI			2.41***	.36	11.14 [5.55, 22.36]
Step 2	.52	124.73 (7)***			
Gender			-.40	.40	0.73 [0.33, 1.62]
Age			.03	.02	1.03 [0.99, 1.07]
NSSI			2.48***	.43	13.96 [5.68, 34.32]
Disturbance			.06*	.03	1.06 [1.00, 1.12]
Distress			.09	.05	1.09 [0.99, 1.21]

Roles	3.98***	1.11	1.27 [1.13, 1.43]
Consolidation	-.06	.05	0.96 [0.86, 1.07]

---

*Note.* \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ . Reported pseudo- $R^2$  is Nagelkerke pseudo- $R^2$ .  
OR = odds ratio. Reference category for gender is male.

**Table 9.** Logistic regression models: Joiner's theory and identity factors predicting suicidality

	pseudo- $R^2$	$\chi^2(df)$	<i>B</i>	<i>SE</i>	<i>OR</i> [95% <i>CI</i> ]
<b>Ideation</b>					
Step 1	.27	63.79 (4)***			
Gender			0.98***	0.28	2.69 [1.56, 4.63]
Age			-0.02	0.01	0.98 [0.96, 1.01]
Thwarted belongingness			-0.001	0.02	1.00 [0.96, 1.04]
Perceived burdensomeness			0.10***	0.02	1.10 [1.06, 1.14]
Step 2	.36	90.90 (8)***			
Gender			0.63*	0.30	1.88 [1.04, 3.39]
Age			0.0001	0.01	1.00 [0.97, 1.03]
Thwarted belongingness			-0.02	0.02	0.98 [0.94, 1.03]
Perceived burdensomeness			0.05*	0.02	1.06 [1.01, 1.10]
Disturbance			0.04	0.02	1.04 [0.99, 1.09]
Distress			0.16***	0.04	1.17 [1.09, 1.27]
Roles			-1.35	0.98	0.26 [0.04, 1.76]
Consolidation			-0.01	0.05	0.99 [0.90, 1.09]
<b>Ideation with plan and intent</b>					
Step 1	.25	59.11 (4)***			
Gender			.45	.28	1.57 [0.91, 2.71]
Age			-.02	.01	0.98 [0.96, 1.01]
Thwarted belongingness			-.002	.02	1.00 [0.96, 1.04]
Perceived burdensomeness			.09***	.02	1.10 [1.07, 1.13]
Step 2	.33	80.72 (8)***			
Gender			.13	.30	1.12 [0.62, 2.02]
Age			-.004	.01	1.00 [0.97, 1.03]
Thwarted belongingness			-.008	.02	0.99 [0.95, 1.04]
Perceived burdensomeness			.06**	.02	1.07 [1.03, 1.11]
Disturbance			.03	.02	1.03 [0.98, 1.08]
Distress			.15***	.04	1.16 [1.07, 1.25]
Roles			-1.20	.93	0.93 [0.84, 1.03]
Consolidation			-.05	.05	0.95 [0.86, 1.04]
<b>Suicidal behavior</b>					
Step 1	.31	68.06 (4)***			
Gender			.16	.32	1.18 [0.63, 2.21]



**Table 11.** Linear regression models predicting intensity of suicidal ideation (Sample 1)

	$R^2_a$	$F$ (df)	$B$	$SE$	$\beta$
<b>Identity variables</b>	.33	23.43 (6, 269)***			
Gender			.009	.68	.001
Age			.08	.03	.13
Disturbance			.11	.05	.15
Distress			.54***	.08	.49***
Roles			-.14	.13	-.08
Consolidation			.22	.12	.11
<b>NSSI and identity</b>					
Step 1	.22	26.22 (3, 272)***			
Gender			.38	.71	.03
Age			.01	.03	.02
NSSI			6.89***	.79	.47***
Step 2	.40	27.24 (7, 268)***			
Gender			-.07	.64	-.005
Age			.08	.03	.14
NSSI			4.28***	.74	.29***
Disturbance			.09	.05	.13
Distress			.46***	.08	.34***
Roles			-.12	.11	-.07
Consolidation			.19	.12	.09
<b>Joiner's theory and identity</b>					
Step 1	.25	24.02 (4, 270)***			
Gender			1.26	.69	.10
Age			-.012	.03	-.02
Thwarted belongingness			.47	.27	.12
Perceived burdensomeness			1.45***	.22	.43***
Step 2	.39	22.94 (8, 266)***			
Gender			.30	.65	.02
Age			.06*	.03	.10*
Thwarted belongingness			.17	.25	.04
Perceived burdensomeness			.90***	.25	.27***
Disturbance			.09	.05	.12
Distress			.47***	.08	.40***
Roles			-.34***	.11	-.19***
Consolidation			.19	.12	.10

Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .  $R^2_a$  = Adjusted  $R^2$ . Reference category for gender is male.

**Table 12.** Logistic regression models: Identity factors predicting suicidality (Sample 1)

	pseudo- $R^2$	$\chi^2$ (df)	<i>B</i>	<i>SE</i>	<i>OR</i> [95% CI]
<b>Ideation</b>	.35	85.7 (6)***			
Gender			-.23	0.30	0.80 [0.44, 1.43]
Age			0.008	0.01	1.01 [0.98, 1.03]
Disturbance			0.06*	0.02	1.06 [1.01, 1.11]
Distress			0.20***	0.04	1.22 [1.14, 1.31]
Roles			-0.11*	0.05	0.89 [0.81, 0.98]
Consolidation			0.04	0.05	1.04 [0.94, 1.15]
<b>Ideation with plan and intent</b>	.36	82.76 (6)***			
Gender			-.30	.31	0.74 [0.40, 1.37]
Age			.02	.01	1.02 [1.00, 1.05]
Disturbance			.04	.02	1.05 [1.00, 1.10]
Distress			.21***	.04	1.23 [1.14, 1.33]
Roles			-.06	.05	0.94 [0.86, 1.03]
Consolidation			.05	.05	1.05 [0.95, 1.16]
<b>Suicidal behavior</b>	.29	58.42 (6)***			
Gender			-.02	.34	0.95 [0.49, 1.85]
Age			.04**	.02	1.04 [1.01, 1.07]
Disturbance			.02	.03	1.02 [0.97, 1.07]
Distress			.15***	.04	1.17 [1.08, 1.27]
Roles			.09	.05	1.09 [0.99, 1.20]
Consolidation			1.28	1.21	1.04 [0.93, 1.15]

Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ . Reported pseudo- $R^2$  is Nagelkerke pseudo- $R^2$ . OR = odds ratio. Reference category for gender is male.

**Table 13.** Logistic regression models: NSSI and identity factors predicting suicidality (Sample 1)

	pseudo- $R^2$	$\chi^2$ (df)	$B$	$SE$	$OR$ [95% CI]
<b>Ideation</b>					
Step 1	.24	55.10 (3)***			
Gender			.03	.27	1.03 [0.61, 1.74]
Age			-.01	.01	0.99 [0.96, 1.01]
NSSI			2.04***	.31	7.73 [4.17, 14.32]
Step 2	.42	106.73 (7)***			
Gender			-.26	.31	0.77 [0.42, 1.42]
Age			.01	.01	1.01 [0.98, 1.04]
NSSI			1.54***	.35	4.70 [2.39, 9.27]
Disturbance			.05*	.02	1.05 [1.00, 1.10]
Distress			.17***	.04	1.19 [1.10, 1.28]
Roles			-.11*	.94	0.90 [0.81, 0.99]
Consolidation			.03	.05	1.03 [0.93, 1.14]
<b>Ideation with plan and intent</b>					
Step 1	.23	50.27 (3)***			
Gender			-.08	.28	0.92 [0.53, 1.61]
Age			-.000	.01	1.00 [0.98, 1.02]
NSSI			1.99***	.30	7.34 [4.10, 13.14]
Step 2	.43	103.09 (7)***			
Gender			-.36	.33	0.70 [0.37, 1.33]
Age			.03	.02	1.03 [1.00, 1.06]
NSSI			1.50***	.33	4.41 [2.30, 8.48]
Disturbance			.04	.03	1.04 [0.99, 1.10]
Distress			.18***	.04	1.20 [1.11, 1.30]
Roles			-.06	.05	0.94 [0.85, 1.04]
Consolidation			.04	.05	1.04 [0.94, 1.16]
<b>Suicidal Behavior</b>					
Step 1	.30	59.34 (3)***			
Gender			-.12	.33	0.88 [0.46, 1.70]
Age			.03*	.02	1.03 [1.00, 1.06]
NSSI			2.51***	.36	12.30 [6.12, 24.70]
Step 2	.43	90.42 (7)***			
Gender			-.11	.37	0.90 [0.43, 1.88]
Age			.05**	.02	1.05 [1.02, 1.09]
NSSI			2.11***	.40	8.27 [3.85, 17.76]
Disturbance			.02	.03	1.02 [0.96, 1.08]
Distress			.10*	.04	1.11 [1.02, 1.21]
Roles			.11*	.06	1.12 [1.00, 1.25]
Consolidation			.03	.06	1.03 [0.92, 1.16]

Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ . Reported pseudo- $R^2$  is Nagelkerke pseudo- $R^2$ . OR = odds ratio. Reference category for gender is male.

**Table 14.** Logistic regression models: Joiner's theory and identity factors predicting suicidality (Sample 1)

	pseudo- $R^2$	$\chi^2$ (df)	$B$	$SE$	OR [95% CI]
<b>Ideation</b>					
Step 1	.21	46.69 (4)***			
Gender			0.26	0.26	1.30 [0.77, 2.18]
Age			-0.02*	0.01	0.98 [0.95, 1.00]
Thwarted belongingness			-0.07	0.10	0.94 [0.77, 1.14]
Perceived burdensomeness			0.48***	0.10	1.62 [1.34, 1.96]
Step 2	.39	95.01 (8)***			
Gender			-.17	0.30	0.85 [0.47, 1.53]
Age			0.0004	0.01	1.00 [0.97, 1.03]
Thwarted belongingness			-0.17	0.11	0.84 [0.67, 1.05]
Perceived burdensomeness			0.36**	0.12	1.44 [1.13, 1.84]
Disturbance			0.05	0.02	1.05 [1.00, 1.10]
Distress			0.19***	0.04	1.20 [1.12, 1.30]
Roles			-.18**	0.06	0.84 [0.75, 0.93]
Consolidation			.04	0.06	1.04 [0.93, 1.16]
<b>Ideation with plan and intent</b>					
Step 1	.26	57.25 (4)***			
Gender			.20	.29	1.22 [0.69, 2.16]
Age			-.009	.01	0.99 [0.97, 1.02]
Thwarted belongingness			.03	.10	1.03 [0.84, 1.26]
Perceived burdensomeness			.50***	.09	1.65 [1.37, 1.97]
Step 2	.40	94.86 (8)***			
Gender			-.22	.32	0.80 [0.43, 1.52]
Age			.02	.01	1.02 [0.99, 1.05]
Thwarted belongingness			-.04	.12	0.96 [0.76, 1.22]
Perceived burdensomeness			.36**	.11	1.43 [1.14, 1.80]
Disturbance			.03	.03	1.04 [0.99, 1.09]
Distress			.19***	.04	1.21 [1.11, 1.31]
Roles			-2.79*	1.08	0.88 [0.79, 0.98]
Consolidation			.03	.06	1.03 [0.92, 1.15]
<b>Suicidal behavior</b>					
Step 1	.23	45.54 (4)***			

Gender			.15	.33	1.16 [0.61, 2.20]
Age			.01	.01	1.01 [0.99, 1.04]
Thwarted belongingness			-.04	.12	0.97 [0.76, 1.22]
Perceived burdensomeness			.48***	.09	1.62 [1.35, 1.93]
Step 2	.32	63.43 (8)***			
Gender			-.004	.35	1.00 [0.50, 1.97]
Age			.03*	.02	1.03 [1.00, 1.07]
Thwarted belongingness			-.12	.13	0.89 [0.68, 1.15]
Perceived burdensomeness			.25*	.11	1.29 [1.04, 1.59]
Disturbance			.01	.03	1.01 [0.96, 1.07]
Distress			.13**	.04	1.14 [1.05, 1.24]
Roles			.05	.05	1.05 [0.95, 1.16]
Consolidation			.02	.06	1.02 [0.91, 1.14]

*Note.* \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ . Reported pseudo- $R^2$  is Nagelkerke pseudo- $R^2$ .  
OR = odds ratio. Reference category for gender is male.

## Appendix

### Study Measures

#### **Self-Concept and Identity Measure** (SCIM; Kaufman, Cundiff, & Crowell, 2015)

Responses range from 1 to 7 (1=strongly disagree, 2=disagree, 3=somewhat disagree, 4=neither agree nor disagree, 5=somewhat agree, 6=agree, and 7=strongly agree)

1. I know what I believe or value.
2. When someone describes me, I know if they are right or wrong.
3. When I look at my childhood pictures I feel like there is a thread connecting my past to now.
4. Sometimes I pick another person and try to be just like them, even when I'm alone.
5. I know who I am.
6. I change a lot depending on the situation.
7. I have never really known what I believe or value.
8. I feel like a puzzle and the pieces don't fit together.
9. I am good.
10. I imitate other people instead of being myself.
11. I have been interested in the same types of things for a long time.
12. I am so different with different people that I'm not sure which is the "real me."
13. I am broken.
14. When I remember my childhood I feel connected to my younger self.
15. I feel lost when I think about who I am.
16. At least one person sees me for who I really am.
17. I always have a good sense about what is important to me.
18. I am so similar to certain people that sometimes I feel like we are the same person.
19. I am basically the same person I have always been.
20. I feel empty inside, like a person without a soul.
21. My opinions can shift quickly from one extreme to another.
22. I no longer know who I am.
23. I am more capable when I am with others than when I am by myself.
24. No one knows who I really am.
25. I try to act the same as the people I'm with (interests, music, dress) and I can change that all the time.
26. I am only complete when I am with other people.
27. The things that are most important to me change pretty often.

### **The Self-Concept Clarity Scale (SCCS; Campbell et al., 1996)**

Responses range from 1=strongly disagree to 5=strongly agree

1. My beliefs about myself often conflict with one another.
2. On one day I might have one opinion of myself and on another day I might have a different opinion.
3. I spend a lot of time wondering about what kind of person I really am.
4. Sometimes I feel that I am not really the person that I appear to be.
5. When I think about the kind of person I have been in the past, I'm not sure what I was really like.
6. I seldom experience conflict between the different aspects of my personality.
7. Sometimes I think I know other people better than I know myself.
8. My beliefs about myself seem to change very frequently.
9. If I were asked to describe my personality, my description might end up being different from one day to another day.
10. Even if I wanted to, I don't think I would tell someone what I'm really like.
11. In general, I have a clear sense of who I am and what I am.
12. It is often hard for me to make up my mind about things because I don't really know what I want.

### **The Identity Distress Survey (IDS; Berman, Montgomery, & Kurtines, 2004)**

Responses range from 1 to 5 (1=not at all, 2=mildly, 3=moderately, 4=severely, 5=very severely)

To what degree have you recently been upset, distressed, or worried over the following issues in your life?

1. Long term goals (e.g., finding a good job, being in a romantic relationship, etc.)
2. Career choice (e.g., deciding on a trade or profession, etc.)
3. Friendships (e.g., experiencing a loss of friends, change in friends, etc.)
4. Sexual orientation and behavior (e.g., feeling confused about sexual preference, intensity of sexual needs, etc.)
5. Religion (e.g., stopped believing, changed your belief in God/religion, etc.)
6. Values or beliefs (e.g., feeling confused about what is right or wrong, etc.)
7. Group loyalties (e.g., belonging to a club, school group, gang, etc.)
8. Please rate your overall level of *discomfort* (how bad they made you feel) about all of the above issues that might have upset or distressed you as a whole.
9. Please rate how much uncertainty over these issues as a whole has interfered with your life (for example, stopped you from doing things you wanted to do, or being happy).
10. How long (if at all) have you felt upset, distressed, or worried over these issues as a whole?

Never or less than a month      1 to 3 months      3 to 6 months      6 to 12 months      More than 12 months

**The Columbia-Suicide Severity Rating Scale (C-SSRS, Posner et al., 2011), adapted for self-report administration.**

Dimension of Suicidality Item Addresses	Questionnaire Item
Ideation	1. Have you ever wished you were dead or wished you could go to sleep and not wake up? <input type="radio"/> Yes <input type="radio"/> No
Ideation	2. Have you ever actually had any thoughts of killing yourself? <input type="radio"/> Yes <input type="radio"/> No
Ideation with plan	3. Have you ever thought about how you might kill yourself? <input type="radio"/> Yes <input type="radio"/> No
Ideation with plan and intent	4. Have you ever had these thoughts and had some intention of acting on them? <input type="radio"/> Yes <input type="radio"/> No
Ideation with plan and intent	5. Have you ever started to work out or worked out the details of how to kill yourself and did you intend to carry out this plan? <input type="radio"/> Yes <input type="radio"/> No
Severity of worst point ideation	6. When you have felt the most suicidal, how many times have you had these thoughts? <input type="radio"/> Less than once a week <input type="radio"/> Once a week <input type="radio"/> 2-5 times per week <input type="radio"/> Daily or almost daily <input type="radio"/> Many times daily <input type="radio"/> Never/not applicable
Severity of worst point ideation	7. When you have felt the most suicidal, how long do the thoughts last? <input type="radio"/> Fleeting (a few seconds or minutes) <input type="radio"/> Some of the time (less than 1 hour) <input type="radio"/> A lot of the time (1-4 hours)

	<ul style="list-style-type: none"> <li>○ Most of the day (4-8 hours)</li> <li>○ Persistent or continuous (more than 8 hours)</li> <li>○ Never/not applicable</li> </ul>
Severity of worst point ideation	<p>8. Could you stop thinking about killing yourself or wanting to die if you want to?</p> <ul style="list-style-type: none"> <li>○ Easily able to control thoughts</li> <li>○ Can control thoughts with little difficulty</li> <li>○ Can control thoughts with some difficulty</li> <li>○ Can control thoughts with a lot of difficulty</li> <li>○ Unable to control thoughts</li> <li>○ No attempt to control thoughts</li> <li>○ Not applicable</li> </ul>
Severity of worst point ideation	<p>9. Are there things – anyone or anything (e.g., family, religion, pain of death) – that have stopped you from wanting to die or acting on thoughts of committing suicide?</p> <ul style="list-style-type: none"> <li>○ Deterrents definitely stopped you</li> <li>○ Deterrents probably stopped you</li> <li>○ Uncertain that deterrents stopped you</li> <li>○ Deterrents most likely did not stop you</li> <li>○ Deterrents definitely did not stop you</li> <li>○ Not applicable</li> </ul>
Severity of worst point ideation	<p>10. Reasons for ideation</p> <ul style="list-style-type: none"> <li>○ Completely to get attention, revenge, or a reaction from others</li> <li>○ Mostly to get attention, revenge, or a reaction from others</li> <li>○ Equally to get attention, revenge, or reaction from others and to end/stop the pain</li> <li>○ Mostly to end or stop the pain (couldn't go on living with how you were feeling)</li> <li>○ Completely to end or stop the pain (couldn't go on living with how you were feeling)</li> <li>○ Not applicable</li> </ul>
Suicidal behavior: Actual attempt	<p>11. Have you ever made a suicide attempt?</p> <ul style="list-style-type: none"> <li>○ Yes</li> <li>○ No</li> </ul>
Suicidal behavior: Interrupted attempt	<p>12. Has there ever been a time when you started to do something to end your life but someone or something stopped you before you actually did anything?</p> <ul style="list-style-type: none"> <li>○ Yes</li> <li>○ No</li> </ul>
Suicidal behavior: Aborted attempt	<p>13. Has there ever been a time when you started to do something to try and end your life but you stopped yourself before you actually did anything?</p>

	<input type="radio"/> Yes <input type="radio"/> No
Suicidal behavior: Preparatory acts or behavior	14. Have you ever taken any steps toward making a suicide attempt or preparing to kill yourself (such as collecting pills, getting a gun, giving valuables away, or writing a suicide note)? <input type="radio"/> Yes <input type="radio"/> No

### Non-Suicidal Self-Injurious Behavior Screening Items

1. Have you ever intentionally (on purpose) caused physical harm to your body or hurt yourself (i.e., cut yourself, burned yourself, banged your head against something, hit yourself, bitten yourself) without intending to kill yourself?

Yes

No

2. How many times have you done this? \_\_\_\_\_

3. When was the last time you did this? \_\_\_\_\_

4. How many years have you been doing this? (If you are no longer doing this, how many years did you do this before you stopped?) \_\_\_\_\_

5. When you have done this, how many different ways have you hurt yourself (i.e. cutting, burning, hitting would equal 3 different total ways of harming yourself)?

\_\_\_\_\_

### Interpersonal Needs Questionnaire (INQ; Van Orden et al., 2008)

Responses range from 1 (not at all true for me) to 7 (very true for me)

1. These days, the people in my life would be better off if I were gone.
2. These days, the people in my life would be happier without me.
3. These days, I think I have failed the people in my life.
4. These days, I think I contribute to the well-being of the people in my life.
5. These days, I feel like a burden on the people in my life.
6. These days, I think the people in my life wish they could be rid of me.
7. These days, I think I make things worse for the people in my life.
8. These days, other people care about me.
9. These days, I feel disconnected from other people.
10. These days, I feel that there are people I can turn to in times of need.
11. These days, I am close to other people.
12. These days, I have at least one satisfying interaction every day.