HHS Public Access

Author manuscript

*J Clin Child Adolesc Psychol*. Author manuscript; available in PMC 2023 April 05.

Published in final edited form as:

*J Clin Child Adolesc Psychol*. 2022 ; 51(2): 242–260. doi:10.1080/15374416.2022.2051526.

# Future Directions in Suicide and Self-Injury Revisited: Integrating a Developmental Psychopathology Perspective

**Caroline W. Oppenheimer, PhD**,
RTI International, University of Pittsburgh, Pittsburgh, PA

**Catherine R. Glenn, PhD**,
Old Dominion University, Norfolk, VA, Virginia Consortium Program in Clinical Psychology

**Adam Bryant Miller, PhD**
RTI International, University of North Carolina at Chapel Hill, Chapel, NC

## Abstract

The recent rise in suicide rates among children and adolescents has made suicide prevention in youth a major focus of government agencies and mental health organizations. In 2012, Nock presented future directions in the study of self-injurious thoughts and behavior (SITBs), highlighting the need to better examine which risk factors are associated with "each part of the pathway" to suicidal and non-suicidal self-injury in order to inform prevention and intervention efforts. Over the past decade, we have made important advances in understanding the development of SITBs and effective interventions. However, there are still major gaps of knowledge in our understanding of how to prevent suicide. Researchers have recently called for more studies focusing particularly on the pathway from suicidal ideation to suicidal behavior. However, we caution against prioritizing only a part of the suicide risk continuum (e.g., the transition from suicidal ideation to suicidal behavior), while minimizing research focusing on earlier developmental points of the pathway to suicide (e.g., the first development of suicidal ideation). We emphasize that childhood and adolescence represent a critical opportunity to intervene and prevent SITBs by altering developmental trajectories towards persistent and escalating self-injurious thoughts and behaviors over time. We advocate for integrating a developmental psychopathology perspective into future youth suicide research that focuses on how and when risk for SITBs first emerges and develops across childhood into emerging adulthood. This research is critical for informing interventions aimed at bending developmental pathways away from all SITBs. Here, we describe the need for future research that integrates key developmental psychopathology principles on 1) the identification of the continuum from developmentally typical to atypical as SITBs first emerge and develop, particularly among young children in early to middle childhood, 2) the way in which expressions of and risk for SITBs change across development, 3) how SITBs dynamically move along a continuum from typical to atypical over time, and 4) suicide prevention efforts. We also offer recommendations for future directions that focus on identifying disparities in SITBs occur among minoritized youth within a developmental psychopathology perspective.

caroline.oppenheimer@gmail.com .

Suicide is a major public health concern worldwide (Curtin & Heron, 2019; Glenn et al., 2020). In the United States (US), suicide is the second leading cause of death among adolescents (Curtin & Heron, 2019), and suicide death rates in children and adolescents have been rising (e.g., Bridge et al., 2015; Plemmons et al., 2018; Twenge et al., 2018). Further, as many as 18.8% of US high schoolers will report that they have seriously considered suicide in the past year, 15.7% will report making a suicide plan, and 8.9% will attempt suicide (Ivey-Stephenson et al., 2020). In addition, despite misconceptions that younger children do not experience self-injurious thoughts and behaviors (SITBs), emerging data from clinical samples of children under age 9 suggest rates of suicidal ideation between 11–19% (Luby, Whalen, et al., 2019; Martin et al., 2016; Whalen et al., 2015a), non-suicidal self-injury (NSSI) around 21% (Luby, Whalen, et al., 2019) and suicide attempts between 2.4–3.5% (Martin et al., 2016; Whalen et al., 2015a). Moreover, although rare, rates of suicide death in young children under 12 are increasing (Ayer et al., 2020). Overall, SITBs in youth have become a global issue and a major focus of government agencies and major health organizations.

Over 10 years ago, Nock (2012) presented future directions for research on suicide and self-injury. At the time of that paper, very little epidemiological research about NSSI in youth existed at all. Moreover, even less was known about potential intervention targets for youth SITBs and evidence-based interventions for SITBs compared to what we know now. Importantly, Nock (2012) highlighted that most research has lumped risk for all SITBs together, rather than making distinctions between what risk predicts suicidal ideation, NSSI, and suicidal behavior separately. The 2012 paper highlighted the glaring need to better examine which risk factors are associated with “each part of the pathway” to suicidal and non-suicidal self-injury in order to inform prevention and intervention efforts. We have made some progress in each of the areas outlined by Nock (2012), yet, as we outline here, we still have more work to do.

Within the past 15 years, several suicide researchers have articulated theories and models of suicide that fall within an “ideation-to-action” framework (e.g., Joiner, 2007; Klonsky & May, 2015; O’Connor, 2011), which has subsequently encouraged research on understanding who experiences suicidal ideation and factors that predict the transition to suicidal behavior. We agree that studies focusing on risk for suicidal behavior address a crucial area of research. However, the strong push for research focusing on the transition from suicidal thoughts to suicidal behavior deemphasizes research on how other forms of SITBs develop and change over time, including suicidal ideation and NSSI. A complete picture of these interrelationships in our research is necessary to prevent SITBs in youth. Moreover, these theories lack a developmental psychopathology perspective, and do not speak to understanding the development of SITBs in youth *specifically*, starting in childhood, when SITBs may first emerge for many individuals.

Indeed, the development of SITBs among youth is associated with recurrent, persistent, and escalating SITBs over time (e.g., Glenn et al., 2017; Miranda et al., 2021; Nock et al., 2013) and higher risk for suicidal behavior (Ribeiro et al., 2016). Further, suicidal ideation during adolescence predicts impaired functioning in adulthood 30 years later (Reinherz et al., 2006). Recent research has found that children who developed suicidal thoughts

and behaviors before age 10 are at risk for persistent and increasing suicidal thoughts and behaviors, functional impairment, and psychopathology in adolescence (Whalen et al., 2021). Taken together, childhood and adolescence represent a critical opportunity to intervene and prevent suicidal ideation before it escalates or persists into adulthood. Yet, substantial gaps in our understanding of youth SITBs critically limit our ability to effectively intervene.

The goal of this Future Directions article is to: (1) offer a brief overview of the state of youth SITB research since Nock's 2012 future directions in SITB research and highlight major remaining gaps in knowledge, (2) present four key principles of developmental psychopathology that we believe will help address these gaps, and (3) suggest critical future research directions in the study of youth SITBs. Our research overview section covers current knowledge regarding the emergence and developmental course of SITBs in youth, the transient nature of youth SITBs, study of risk factors associated with SITBs, and existing interventions and preventions for youth SITBs. Following this brief research review, we present four core principles of developmental psychopathology that we believe will aid in addressing gaps in extant research. Finally, we offer future directions in suicide and self-injury research in youth based on these developmental psychopathology principles.

## The State of the Research on the Development of Youth SITBs

### Emergence and Developmental Course

Although research on SITBs in youth has increased over the last several years, the majority of what we know about risk for SITBs still mostly comes from studies of adults (Franklin et al., 2017)—long after these SITBs have already developed for most individuals. Existing knowledge regarding the development of SITBs in youth typically comes from large-scale, cross-sectional epidemiological studies that survey youth from each age group. These data demonstrate that incident rates of SITBs rapidly accelerate across the adolescent period into young adulthood, beginning approximately around age 12 (Nock et al., 2013). Point prevalence of SITBs frequently is cited to emphasize rates of SITBs, and these data comes from national level surveillance systems, such as the Youth Risk Behavior Survey (*YRBSS CDC*, 2020). These surveys offer a snapshot of how many youths, typically high school students and sometimes middle school students, seriously considered killing themselves or attempted suicide in the past year. Both sources of national level data are useful for understanding prevalence rates of SITBs in adolescence but are still limited in contributing to knowledge regarding when and how SITBs first emerge, and how SITBs progress and change over time.

There is also emerging research suggesting that there may be a typical developmental progression of SITBs. It was once thought that NSSI develops first with suicidal ideation and suicide attempts occurring later in adolescence. This conclusion was based on research literatures that examined the onset of suicidal and nonsuicidal self-injury separately. For instance, epidemiological indicates that NSSI typically begins around 12–15 years old (e.g., Andrews et al., 2014; Gandhi et al., 2018; Glenn et al., 2017; Kiekens et al., 2018), whereas first suicide attempts occur later in adolescence (Kessler et al., 1999; Nock et al., 2013). However, this research did not examine the full spectrum of SITBs (i.e., both suicidal

and nonsuicidal self-injury) or SITB transitions within person. More recent cross-sectional, retrospective research indicates that, for many, NSSI and suicidal ideation may actually emerge either around the same time (within the same year), or suicidal ideation somewhat before NSSI, when reported during adulthood (Bryan et al., 2015; Kiekens et al., 2018) and adolescence (Glenn et al., 2017). For instance, among adolescents from both inpatient and outpatient samples, first onset of suicidal ideation was reported to begin approximately 4–6 months before first engagement in NSSI, but first onset of NSSI preceded suicide planning by approximately 3–6 months and suicide attempts by 1–2 years (Glenn et al., 2017). This research has key implications for understanding the emergence and developmental course of SITBs over time. Instead of NSSI leading to suicidal thoughts and behaviors later in development, NSSI and suicidal ideation may emerge at around the same time, or suicidal ideation may emerge somewhat before NSSI.

Moreover, several studies have examined the time to transition among SITBs, or the escalation to more severe SITBs (Glenn et al., 2017; Nock et al., 2013). In a nationally representative sample of adolescents ($N$=6,483 U.S. adolescents, 13–18 years old), most youth transitioned from thinking about suicide to suicide planning or attempting suicide within the first year after the onset of their first suicidal thought (Nock et al., 2013). That is, for most adolescents (63%), the transition from suicidal ideation to suicide planning occurred within one year, the transition from suicidal ideation to suicide attempt occurred for most (86%) within one year, and the transition from suicide planning to suicide attempt occurred for most (88%) within one year. These patterns were generally replicated in U.S. clinical samples of adolescents ($N$=106 adolescents, 12–19 years old, receiving outpatient care; $N$=174 adolescents, 13–18 years old, receiving inpatient care). In these samples, the transition from suicidal ideation to suicide planning occurred on average over 9–12 months, suicidal ideation to suicide attempt over 18–24 months, and suicide planning to suicide attempt over 8–15 months (Glenn et al., 2017).

However, it is important to reiterate that existing studies of the onset and escalation of SITBs come from cross-sectional, retrospective reports, which are prone to recall biases. Moreover, there is very little research focusing on pre-teen children (Soole et al., 2015). Evidence suggests that an understanding of the concept of death first begins to form around age 5, and thus, the transition from early to middle childhood may be another vulnerable period for the emergence of SITBs. Yet, the few existing studies focusing on child samples have been conducted with youth in the 9–12 year-old age range (e.g., Foley et al., 2006; Herba et al., 2007; Wyman et al., 2009), with far fewer in the 3–8 year-old age range (Hennefield et al., 2019; Whalen et al., 2015b, 2021). Thus, there remains a vast gap in knowledge of when or how SITBs first emerge and progress across early childhood into adolescence.

It is also important to note that current knowledge regarding youth SITBs is largely driven by theories and research that are not specifically designed to understand unique processes for minoritized youth (Polanco-Roman & Miranda, 2022). Yet, disparities in SITBs between minoritized and non-minoritized youth are well-established. A detailed review of this literature is beyond the scope of this manuscript, but here we offer a brief overview of these disparities. Data from the 2019 Youth Risk Behavior survey suggest that rates of suicide attempts differ significantly across racial/ethnic groups. Black, non-Hispanic youth

report the highest rates of suicide attempts (11.8%) compared to Hispanic (8.9%) and White non-Hispanic youth (7.9%) (Ivey-Stephenson et al., 2020). This rate was highest among Black, non-Hispanic girls (15.2%). Latina females report the next highest attempt rate at 11.9%, and White non-Hispanic females report rates at 9.4% (Ivey-Stephenson et al., 2020). Although updated statistics are less well-documented, American Indian/Alaska Native youth are two-times more likely to die by suicide than white youth (Leavitt et al., 2018). Rates of SITBs are far less well understood for Asian-American youth, but some evidence suggest they may be "hidden ideators" reluctant to disclose suicidal ideation and behaviors (Yu & Chang, 2021). Suicide attempt rates also differ by sexual identity. Rates were highest among lesbian, gay, or bisexual identified youth (23.4%) followed by those that were unsure/questioning (16.1%), and heterosexual youth (6.4%) (Ivey-Stephenson et al., 2020). Data from the Trevor Project National Survey suggest significant gender identity disparities for transgender and nonbinary versus cisgender youth for suicidal ideation (52% vs. 32%, respectively) and suicide attempts (20% vs. 10%, respectively)(The Trevor Project, 2021). Critically, these disparities are proxies for larger environmental and contextual factors, such as exposure to racism and discrimination, familial rejection, and shared cultural beliefs (Adams & Miller, 2021; Meyer, 2003; Opara et al., 2020; Sheftall & Miller, 2021; Slavin et al., 1991). However, there is a lack of research focusing on how these critical, contextual factors unique to minoritized youth influence the development of SITBs.

## Transient Nature of Youth SITBs

There is increasing recognition that while other forms of psychopathology often persist for weeks, months, or even years at a time (e.g., depression), SITBs often are transient and fluctuate over short periods (e.g., over days). Thus, there has been a recent shift to integrating more granular, frequent repeated measures into studies to capture SITBs as they naturally occur in real-time (Kleiman et al., 2019; Kleiman & Nock, 2017). Common approaches to studying SITBs over short periods are daily diary or ecological momentary assessment (EMA) studies that assess SITBs multiple times daily. This work further emphasizes the dynamic nature of SITBs over short periods, in addition to what we know about development of SITBs over longer periods of time (e.g., over months or years). For example, providing greater temporal resolution, a recent daily diary study during the post-hospitalization period in high-risk adolescents found that NSSI was more common for adolescents with more enduring and severe levels of day-to-day suicidal ideation on average, demonstrating that daily suicidal ideation predicted *who* engaged in NSSI; (Czyz et al., 2021). In addition, daily suicidal ideation that was more intense and enduring than youth typical levels of suicidal ideation also was a proximal predictor of *when* youth were likely to engage in NSSI (Czyz et al., 2021). Moreover, daily suicidal ideation was a better predictor of NSSI during the post-hospitalization period than adolescents' history of NSSI. Studies like this highlight the importance of understanding patterns and changes in SITBs in youth over shorter (days) and longer (months and years) periods of time.

## Risk Factors Associated with SITBs

Nock (2012), and other researchers over the past decade, have pointed out that most empirical work examining SITB risk factors focuses on single factors in adult samples, measured at one point in time (Franklin et al., 2017). This continues to be a limitation of

many studies of SITBs. As a recent example, there has been a surge in neuroimaging studies over the past several years examining neural correlates of SITBs, mostly in adult samples using cross-sectional designs (Schmaal et al., 2020). However, single, static risk factors have limited ability to predict risk by themselves given that most people with a single risk factor (such as a depression, or altered neural function) do not develop SITBs (Franklin et al., 2017; Nock, 2012). Moreover, a focus on static risk factors tells us little about *when* they will occur, given their transient nature.

Little research has focused on understanding risk for SITBs from the first emergence to suicidal behavior. Further, there is still little known about risk factors that predict transitions among SITBs (e.g., suicidal ideation to NSSI or suicidal behavior). Research conducted from ideation-to-action frameworks has focused on predicting the transition from suicidal ideation to attempt specifically to address this research gap. However, much of this work to date still focuses on single, static risk factors predicting attempts (versus ideation) in adults (May & Klonsky, 2016). This work also does not emphasize how risk unfolds to influence changes along other points of the continuum of SITBs.

Recent innovative work using daily diary or EMA approaches, has also examined contextual and behavioral factors repeatedly over short periods to advance understanding of dynamic changes in near-term risk factors (e.g., social rejection, sleep) that predict SITBs days or hours before they occur (Glenn et al., 2021; Victor et al., 2019). However, there is still much to learn about how interactions among multiple risk factors, including relatively stable risk over longer periods (months, years) and short periods (weeks, days, hours), predict the emergence and course of SITBs from childhood into adulthood.

## Evidence for Preventions and Interventions Targeting SITBs Across Childhood and Adolescence

Current evidence for youth SITB prevention and intervention is modest. In this section, we briefly provide an overview of the existing evidence base in this area. We encourage readers to consult recent excellent reviews on suicide prevention (Katz et al., 2013; King et al., 2018; Singer et al., 2019) and intervention (Glenn et al., 2015, 2019) for youth SITBs.

Suicide prevention programs for youth typically focus on increasing knowledge of suicide risk factors, decreasing stigma related to help-seeking, teaching coping and problem-solving skills, and training individuals in how to recognize warning signs in themselves or others. For example, the SOS Signs of Suicide prevention is a universal, school-based suicide prevention program for middle and high school students (Aseltine & DeMartino, 2004; Schilling et al., 2014, 2016). This short prevention program educates youth on depression and suicide warning signs, improving attitudes towards intervening with peers who are at suicide risk, and encouraging students experiencing suicidal ideaiton to seek help from trusted adults. Additionally, youth who complete this program are screened for depression and suicidal thoughts. Modest support has been shown for SOS from a handful of randomized controlled trials (RCTs), including increased knowledge of depression and suicide, and lower suicidal ideation and attempts among youth who received SOS (Aseltine et al., 2007; Aseltine & DeMartino, 2004). Other programs that focus on increasing coping skills (e.g., Aussie Optimism Program; Roberts et al., 2017) and behavior management in

classroom settings for younger children (Good Behavior Game; (Wilcox et al., 2008), have shown promise for preventing the development of suicidal ideation and suicide attempts in youth.

To date, the only existing well-established treatment for youth SITBs is Dialectical Behavior Therapy for Adolescents (DBT-A), which has demonstrated efficacy in two independent RCTs for reducing suicidal ideation and deliberate self-harm (which combines types of self-injury regardless of suicide intent) in adolescents (McCauley et al., 2018; Mehlum et al., 2014). In addition to DBT-A, two other interventions have shown promise for reducing suicide attempts in adolescents (e.g., integrated family therapy: Asarnow et al., 2017; integrated cognitive behavioral therapy: Esposito-Smythers et al., 2011). Across promising interventions, shared elements that may be particularly relevant for youth (compared to adults) include the significant role of family in therapy and skills training (e.g., emotion regulation, distress tolerance, and problem-solving). These common elements illustrate the importance of matching developmentally appropriate interventions to the developmental phase of the population.

Although significant progress in treatment for youth SITBs has been made in the past decade, there are several critical gaps in knowledge (Glenn et al., 2019). For instance, skills training seems to be an important element, but less is known about which skills are most important for youth, or if the types of skills vary across development. In addition, existing interventions have primarily been tested in samples of youth with a prior history of SITBs. As such, interventions have primarily tested efficacy for reducing recurrence of SITBs, but very little is known about how interventions may prevent emergence of SITBs, or transitions among SITBs (e.g., form suicidal ideation to NSSI or suicidal behavior). Finally, far less is known about the efficacy of these interventions in younger children. Most randomized control trials (RTCs) that include younger youth only include down to 12 years of age, with only three RCTs including youth as young as age 10 (Asarnow et al., 2011; Harrington et al., 1998; Huey et al., 2004). However, these younger children were grouped with older youth in middle to late adolescence. Further, none of the most efficacious interventions, like DBT-A, have been tested in an RCT among pre-adolescent children (however, see Perepletchikova et al., 2011 for a small pilot of DBT skills in 8–11 yo). As a result, we do not yet know which interventions may be most effective for youth under age 12. Research conducted from a developmental perspective will inform the development and use of interventions for SITBs across childhood and adolescence.

## Integrating Developmental Psychopathology into Youth SITB Research

One way to overcome current knowledge gaps and improve preventions and interventions for youth SITBs is to integrate a developmental psychopathology framework (Cicchetti & Rogosch, 2002). The promise of this approach can be readily seen from other areas of child and adolscent psychopathology. Indeed, decades of research has focused on the developmental course of risk for violent and delinquent behavior from early childhood into adulthood (Dodge, 2001). This research has outlined a clear developmental progression of severe delinquent behavior into adulthood (Loeber & Hay, 1997). From this work, researchers now see that hyperactive/impulsive behaviors in toddlerhood that progress to

oppositional or defiant behaviors in preschool may lead to conduct disorderd behavior in middle childhood and eventually antisocial behavior emerging in adolescence and adulthood (Loeber & Hay, 1997). Critically, these findings have led to multiple effective interventions targeting specific key risk factors across different developmental phases and that aid in the prevention of severe violence and delinquency in adolescence or adulthood (Dodge, 2001).

Such knowledge regarding the developmental progression of SITBs in youth could transform our ability to apply effective interventions targeting risk for SITBs from childhood to adolescence. More specifically, we would be able to develop interventions that are tailored for different stages of child development and SITB progression. In order to accomplish this, youth SITB research must integrate four core principles of developmental psychopathology. Of note, we present these four principles in isolation, when in reality they operate in concert to aid in our understanding of youth development (Cicchetti & Rogosch, 2002).

### Principle 1: Any Given Behavior Ranges from Typical to Atypical.

In contrast to a dichotomy of disordered versus non-disordered behavior, a developmental psychopathology perspective recognizes that there are shades or degrees of deviations from typical behavior (Cicchetti & Rogosch, 2002). When applied to youth SITBs, it will be essential to identify the range of typical to atypical SITB-related behavior across development to help identify early forms of atypical or maladaptive SITB related behavior. For example, this continuum may encompass typical death-related thoughts or play in childhood on one end, to more atypical, persistent and severe suicide-related cognitions on the other end (Figure 1. Principle 1.). In particular, very little is known about the typical-atypical SITB-related continuum in young children who may not yet have the developmental capacity to understand the concept of death, or engage in intentional self-injury.

### Principle 2: Expression Of and Risk For Psychopathology May Change Across Developmental Phases

This principle covers a concept known as heterotypic continuity (Cicchetti & Rogosch, 2002). For example, impulsive behavior in toddlerhood may develop into more delinquent behavior in adulthood (Loeber & Hay, 1997). Applied to SITBs, this principle suggests that it is essential to understand how vulnerability for later development of suicidal behavior is expressed early in childhood, when youth may not have yet developed a complete understanding of the concept of death. For example, youth may engage in very low-lethality forms of self-injurious behavior, such as head banging, with unclear suicidal intent. Additionally, youth may express a wish to “not be here” or “not being born” (Figure 1. Panel 2), without clearly articulating a desire to die.

This second principle also suggests that risk factors may influence youth functioning differently depending on the developmental phase. In other words, a stressor may exert a stronger influence in childhood compared to adolescent developmental periods. For example, exposure to general family conflict in early childhood may drive risk for suicidal ideation (DeVille et al., 2020), but in adolescence, peer relationships, or strains on the parent-adolescent relationship as youth strive for autonomy, may confer greatest risk for suicidal ideation (Hutchinson et al., 2021; Oppenheimer et al., 2018) (Figure 1. Principle 2.).

Risk factors may also be vary in importance along the developmental progression of SITBs; some factors may be most relevant to the first emergence of SITBs, whereas others are more important for the maintenance of SITBs, or worsening, or transitioning to other SITBs (e.g., suicidal ideation to NSSI).

### Principle 3: Behavior Dynamically Moves Along a Continuum Across the Lifespan

This principle asserts that a greater understanding of how behavior moves along the continuum from typical to atypical across the lifespan is a critical step towards identifying causes of psychopathology and effective prevention and intervention (Cicchetti & Rogosch, 2002). Applied to SITBs, this principle could help us understand how some youth may transition from gaining a developmentally typical understanding of death and having death-related thoughts to more concerning passive and active suicidal ideation.

Distinct from Principle 1 and in contrast to an ideation-to-action framework, Principle 3 suggests that charting the risk processes associated with the development of the full continuum of SITBs across the lifespan is a critical component of intervening to prevent SITBs. In other words, it is necessary to understand how suicidal ideation may begin to persist or worsen over time, and also how initial ideation may transition to a suicidal plan, as well as transition to other SITBs, such as NSSI or suicidal behavior. Critically, Principle 3 posits that shifts and transitions from typical behavior towards greater psychopathology may be nonlinear. For SITBs, this means that transitions from suicidal behavior back to NSSI or recurrent suicidal ideation are just as important as understanding initial shifts from suicidal ideation to suicidal behavior. A hypothetical pattern of SITBs for a single individual that visualizes these shifts is presented in Figure 1, Principle 3.

Although not depicted in Figure 1 to reduce visual complexity, Principle 3 also emphasizes dynamic, bi-directional influences and transactions between a person and their environment that influences behavior trajectories. These bi-directional influences become particularly salient for understanding behavior during critical developmental transitions or key life turning points associated with changes internal (e.g., neurobiological changes) or external (e.g., changes in social environment) to an individual, such as the onset of puberty and transition to adolescence. In addition, this principle can help enhance our understanding of not only factors that relate to the development of SITBs, but also how an individual's SITBs shape and influence the environment around them, such as caregiver reactions to disclosures of suicidal ideation or the effects of suicide attempts on families (Greene-Palmer et al., 2015).

### Principle 4: Early Intervention and Prevention Is Most Effective

Ultimately, developmental psychopathology asserts that waiting until problematic behavior and psychopathology has already developed is more labor-intensive and difficult to treat (Cicchetti & Rogosch, 2002). Thus, from a developmental psychopathology perspective, the identification of risk for and expressions of SITBs early in development, potentially even before active suicidal ideation first develops, is the most efficient and effective way to prevent morbidity and mortality. Further, this principal emphasizes that it is not simply the transition from suicidal ideation to behavior that should be the focus of prevention. Rather,

there are multiple steps along the developmental progression of SITBs that can be targeted to offset negative trajectories (Figure 1, Principle 4).

## How These Principles Apply to Minoritized Youth

Developmental psychopathology principles, especially principle 3, emphasize that any given youth's behavior must be understood in the context of dynamic transactions with the environment. Thus, we believe a developmental psychopathology framework applied to SITBs can begin uncovering mechanisms of SITB disparities among minoritized youth. Frequently, higher rates in SITBs among minoritized youth are reported without acknowledgement of the unique environmental context in which they exist (Adams & Miller, 2021). Yet, these environmental factors are essential for understanding higher rates of SITBs. For example, a Black child's suicide risk may result from exposure to racism and discrimination in their environment (Opara et al., 2020). Similarly, a child with a minoritized sexual or gender identity may experience SITBs as a result of an unsupportive familial or peer environment, or peer victimization that is specific to their identities (Burton et al., 2013). Developmental psychopathology principles would assert these environmental influences as essential in understanding the subsequent developmental progression of SITBs for minoritized youth. Moreover, understanding these environmental influences, and how children are affected by them, is critical for effective intervention and preventions for minoritized youth. We acknowledge that a careful application of developmental psychopathology principles for minoritized youth could stand alone as its own manuscript. Nevertheless, we believe it deserves mention here given the clear and present differences in rates of SITBs among many groups of minoritized youth. In sum, developmental psychopathology principles can help guide future research for understanding mechanisms that drive disparities in rates of SITBs.

## Existing Developmental Theories

A small handful of theories and models of SITBs from a developmental perspective have been put forth in the research literature (e.g., Bridge et al., 2006; Crowell et al., 2014; Cummings et al., 2021; Miller & Prinstein, 2019; Zayas et al., 2005). These developmental theories/models are consistent with a developmental psychopathology approach in many ways, such as positing transactions among child factors over time (e.g., biological and behavioral vulnerabilities) and contextual factors (e.g., stress, social relationships), which increase risk for SITBs. Second, these theories/models focus on how specific developmental periods (e.g., transition to adolescence) may influence risk (e.g., biological changes associated with heightened responses to social-affective information, autonomy from parents). In addition, many of these theories emphasize trajectories in risk mechanisms over time, rather than static risk factors. However, there is very little empirical work testing these theories.

## Future Directions in Youth SITBs Informed by Developmental Psychopathology

### Future Direction: Identify the Continuum from Typical to Atypical as SITBs First Emerge and Develop

Consistent with Principle 1, future SITB research should focus on identifying the continuum from developmentally typical to atypical behavior from early childhood to later adolescence. For older youth, there are assessment tools that identify where death-related thoughts might fall along a continuum from typical thoughts of death, persistent thoughts of death and dying, passive and active suicidal ideation, and suicidal behavior (e.g., Kaufman et al., 1997; Posner et al., 2011). However, there is very little known about how SITBs are expressed along this continuum in young children during the period in development from early to middle childhood, when the concept of death first develops and then matures (Mishara, 1999; Reilly et al., 1983; Speece & Brent, 1984).

Work from developmental psychology has suggested that a coherent conceptualization of death as universal, irreversible, and biologically based typically emerges at age seven, and children as young as four to six have a basic understanding of some aspects of death (Slaughter, 2005). However, research is needed to better delineate the range of typical to atypical death-related thoughts and death themes in play in the early to middle childhood periods. Indeed, researchers have recently raised questions and debated about how to best classify whether various forms of death-related talk and play in young children (e.g., “playing games in which people “drown or die”) are developmentally typical (Scheeringa, 2016; Whalen et al., 2016). Additionally, it is unclear how to classify or characterize more direct, suicide-related expressions, such as “I want to die,” among children who do not have a coherent concept of death. Further, younger children who may not have a strong grasp of the concept of death may express a desire to not be here or to disappear. These escape-related cognitions could be early indicators of suicidal ideation.

Similarly, there is a need for future research to delineate the range of typical to atypical self-injurious *behaviors* that occur in young children. It may be difficult to differentiate between self-injurious behavior with and without suicidal intent, such as hanging out a window or ingesting poisons among children who are still developing the concept of death. In addition, very little known about what forms of NSSI typically occur in young children and whether some forms of NSSI may be normative expressions of anger and frustration.

One large study of youth showed that pre-teen children who endorsed NSSI were mostly likely to report hitting themselves, whereas adolescents who engaged in NSSI were most likely to report cutting or carving the skin (Barrocas et al., 2012). However, aggressive tantrum behaviors, including self-injurious forms of aggression, are common in early childhood (Belden et al., 2008). Research is needed to identify the extent to which infrequent and less severe injury to the self (e.g., hitting self, which may or may not be self-injury) in early childhood is typical and when it becomes developmentally atypical and predictive of more severe and frequent NSSI in later childhood and adolescence.

In order to assess these early developmental patterns for SITBs, there is a clear need for reliable and valid assessment tools. With a few exceptions, SITB assessment instruments were not created from a developmental perspective and may not capture forms of SITBs as it first emerges, particularly in young children. Further, no SITB assessment instruments currently capture developmental complexity in the acquisition of the concepts of death and suicide. Even those that have been developed and/or validated for use with youth, such as the Suicidal Ideation Questionnaire (Reynolds, 1987) do not capture early forms of suicidal ideation that might occur early in childhood.

Additionally, interviews that ask about age of first onset (e.g., Self-injurious Thoughts and Behaviors Interview; Nock et al., 2007) may not pick up on important details about the form of suicidal ideation as it first emerges, particularly for young children. Indeed, many of these instruments either move from death-related thoughts to active “killing self” thoughts without assessing potential steps in between for youth still developing a coherent concept of death. Luby et al. (2019) and Whalen et al. (2021) have recently assessed SITBs in preschoolers using the Preschool Age Psychiatric Assessment (PAPA), and the Kiddie Schedule for Affective Disorders and Schizophrenia−Early Childhood (K-SADS-EC). These assessments measure a range of death- and self-injurious related thoughts and behaviors, including preoccupation with death as expressed in play (e.g., drawing pictures of individuals killing themselves), and passive and active suicidal ideation, suicidal behaviors, and NSSI. This work is an important first step to understanding the range of typical and atypical death- and SITBs that occur early in development.

To best capture SITBs along the typical to atypical continuum, future research may need to extend beyond simply asking direct questions about passive and active suicidal ideation to other developmentally appropriate methods. Conceptualizations about death and thoughts of suicide for young children can be assessed using narrative approaches (e.g., Hennefield et al., 2019) and non-verbal methods (e.g., body mapping, (Arnault & Shimabukuro, 2012). Body mapping is a clinical ethnographic, open-ended approach to elicit discussion about experiences and is currently under investigation as a technique for assessing the expression of suicidal behavior among adolescent Latinas (Gulbas & Zayas, 2017). The body-mapping approach involves presenting an image of the outline of a body as a visual analog to help the individual represent and describe where they feel emotions, thoughts, and physical sensations. Such novel approaches may help identify how younger youth describe suicidal ideation and associated physical feelings. Moreover, given research indicating that youth of color may report more somatic symptoms of psychological distress (Gonzalez et al., 2012; Varela et al., 2004), the body-mapping approach may be a more culturally sensitive approach to assess expressions of distress for some youth of color.

There is also increasing evidence that suicidal ideation might take the form of non-verbal mental imagery (Lawrence et al., 2021). It is plausible that suicidal mental imagery occurs even more frequently in younger children, given that these youth may lack strong verbal abilities to communicate suicide-related thoughts, although this is still unknown. Finally, the careful assessment of ability to think about the future (Pollak et al., 2021), and conceptualization of death, may also help characterize SITBs in youth. There are clear and

exciting opportunities for collaborations between developmental and suicide researchers to create assessments of SITBs that consider the developmental abilities of children.

Finally, research is needed to better understand the extent to which parents' understanding of SITBs contribute to our knowledge of the continuum of SITBs in youth. Research with existing assessment tools show low concordance rates between parent and adolescent report of SITBs, with especially poor parent and child agreement of SITBs in families of color (Bell et al., 2021; Gratch et al., 2021). However, less is known about concordance rates of reports of suicidal ideation in younger children. In recent studies of preschoolers, parents appear to be able to report on young child SITBs (Luby, Tillman, et al., 2019). It is possible that parent observations of early forms of suicidal ideation in children (e.g., child talk about desire to die or disappear) are especially valuable in assessing emergence of SITBs in young children. Building on the extensive literature on informant discrepancies (De Los Reyes et al., 2015; De Los Reyes & Kazdin, 2005), future research will need to create and identify the role of parent- and child-reports for identifying typical and atypical SITBs across childhood and adolescence.

## Future Direction: Investigate How Expressions of and Risk for SITBs Change Across Development

Consistent with developmental psychopathology principle 2, future research is needed to understand how the expression of and risk for SITBs change across development. Related to principle 1, we need research to determine whether preoccupation with death and death-related play in young children are early manifestations of passive and active suicidal ideation that is more commonly assessed in older children. Similarly, future longitudinal research should investigate whether the developmental expression of NSSI in early or middle childhood (e.g., hitting) is associated with later adolescent NSSI methods (e.g., cutting).

Consistent with principle 2, there may be periods in development when specific risk factors influence SITBs most strongly, and salient risk factors may change across development (Gee & Casey, 2015; Niederkrotenthaler et al., 2012). For example, theories of suicide highlight social disconnection as a common stressor that leads to negative emotional states, which in turn leads to the desire for suicide or self-injurious behavior (e.g., Joiner, 2007; Klonsky & May, 2015; O'Connor, 2011). Adolescence is thought to be a unique developmental window in which pubertal changes contribute to increased reactivity to stressors and increased affective sensitivity to novel peer experiences (e.g., Crone & Dahl, 2012; Luna et al., 2013; Miller & Prinstein, 2019). Thus, disruptions to peer social relationships may be especially relevant to SITBs during the transition to adolescence relative to early or middle childhood. However, little empirical research has focused on risk mechanisms for SITBs from a developmental perspective in adolescents. Future research is needed to focus on developmentally relevant child and contextual factors that may give insight into mechanisms and processes that contribute to SITBs during the pubertal transition and beyond, and that can be targeted by interventions.

More research is needed to understand developmentally relevant environmental factors that might contribute to risk for SITBs in pre-adolescent children, and if these differ from

those that most strongly influence SITBs during adolescence and adulthood. Initial findings from the Adolescent Brain and Cognitive Development (ABCD) study suggest that family conflict is strongly associated with SITBs in 9- and 10-year-olds (DeVille et al., 2020). Future research should draw on the wealth of well-established research over several decades on important influences on preteen childhood development across family (e.g., marital relationships; Mills-Koonce et al., 2020; Niederkrotenthaler et al., 2012; van Eldik et al., 2020), parent (e.g., parent sensitivity/warmth, emotion socialization; Ryan & Ollendick, 2018; Sulik et al., 2015; Tan et al., 2020), peer (e.g., sociometric status, social play/peer interactions, dyadic friendships; Muñoz-Silva et al., 2020; Parker et al., 2006), and school factors (e.g., teacher-student relationships, classroom environment; Valiente et al., 2020). Although studies have examined these risk factors in the context of child maladaptive development, internalizing, and externalizing symptoms in early and middle childhood (e.g., Barnett et al., 2012; Harrist & Ainslie, 1998; Morgan et al., 2022; Volling et al., 1993), this work has not yet examined how these factors influence SITBs in the early to middle childhood developmental period.

Future studies should also focus on how changes in risk may emerge following deviations from typical biological developmental changes. For example, from the aggression literature we know that decreases in aggressive behavior (particularly in emotional contexts) from preschool to middle childhood are developmentally typical, and that deviations from that trajectory (i.e., aggression that persists into middle childhood) confers vulnerability for a range of psychopathology (Tremblay et al., 2005). Thus, aggressive behavior appears to emerge as a strong risk factor for maladaptive outcomes in middle childhood, compared to early childhood. However, longitudinal work on typical trajectories was needed to pinpoint when aggressive behavior emerged as a risk factor. In more recent work, studies have shown that faster rate of gray matter decline from childhood into adolescence (Luby et al., 2016; Luby, Tillman, et al., 2019), are associated with the development of childhood depression. Overall, prior work has demonstrated how typical development is often characterized by decreases, increases, or even U-shaped or nonlinear patterns over time. Therefore, future research should investigate how deviations from developmental trajectories in child functioning (across multiple levels of analyses, such as brain and behavioral functioning) improve our knowledge of risk for SITBs, rather than a single snapshot of correlations between SITBs and risk factors.

Studies to date suggest that deviations in acute stress responses from developmentally typical patterns have been associated with risk for suicidal ideation and behavior in adolescents (for review, see Miller & Prinstein, 2019), but it is unclear when these deviations first emerge from childhood into adolescence. Thus, investigation into stress responses, including neural, physiological, and behavioral responses, from childhood into adolescence may be a particularly relevant future direction for understanding when risk first emerges for SITBs. Overall, future work needs to understand associations between trajectories of risk factors and associations with onset of SITBs, versus static risk, across childhood and into adulthood.

## Future Direction: Expand Knowledge of How SITBs Dynamically Move Along a Continuum From Typical to Atypical Over Time

Following developmental psychopathology principle 3, a key future direction in SITB research is examining how, why, and when self-injurious related thoughts and behaviors shift over time along the continuum from typical towards worsening and more severe maladaptive behavior (Cicchetti & Rogosch, 2002). This will require research with longitudinal designs following both typically developing and at-risk youth (e.g., family history of suicidal behavior, exposure to adversity) over both short-term (hours, days, weeks) and long-term (months, years) follow-up periods. Future research should focus on how variations in developmentally typical behavior (e.g., more extreme forms of behavior) may move towards more fully developed SITBs. For example, it is possible that behaviors such as extreme emotional reactivity/stress responses in early childhood, or extreme death-related play, may progress towards forms of suicidal ideation later in childhood for some youth. As these early forms of atypical behavior first emerge, it is crucial to study how they may change and progress over time, such as increases in intensity, duration, frequency, or severity, before developing into more maladaptive SITBs, such as suicidal ideation. Moreover, it is important to understand how SITBs continue to change and transition to other SITBs, such as NSSI.

The developmental progression of SITBs may also vary considerably between individuals and across developmental stages. Future research is needed to understand if young children are likely to exhibit a developmental progression of SITBs that differs from older youth who develop SITBs later in childhood or adolescence. For example, it is possible that early forms of injury to the self (e.g., hitting self, which may or may not be NSSI) that are common in early childhood (Belden et al., 2008) may emerge before suicidal ideation in young children, whereas suicidal ideation emerges before NSSI in older youth (Glenn et al., 2017). However, more research is needed to understand how changes and progression of SITBs may vary across developmental periods.

Importantly, developmental psychopathology researchers appreciate that shifts along the continuum from typical to atypical are often nonlinear. We know after youth transition from suicidal ideation to the first onset of NSSI or a suicide attempt, suicidal ideation will often emerge again (e.g., Horwitz et al., 2015; Prinstein et al., 2008; Turner et al., 2019). Yet, we still know little about how this reemergence of suicidal ideation related to continued risk for NSSI or future suicidal behavior. Further, SITBs are often fleeting, lasting anywhere from minutes to weeks and may escalate or transition rapidly when present (Paashaus et al., 2021). Thus, future research is needed to understand when and how these dynamic changes in SITBs occur over time, including cycles characterized by absences and repeated occurrences, as well as escalation or worsening of SITBs.

More research is also needed to understand if, when, and how SITBs such as suicidal ideation and NSSI may change as transitions to other SITBs occur. For example, perhaps after the first onset of NSSI, suicidal ideation that reemerges may be more likely to begin to increase in frequency, intensity, or duration, for some youth, which may in turn increase risk for a repeated occurrence of suicidal behavior. Similarly, suicidal ideation may also change and worsen in some ways for some youth after suicide attempts occur. However, we need more research in this area before we can understand these nonlinear shifts.

Future research on dynamic, bi-directional transactions between an individual and their environment will help sharpen our understanding of how STIBs change and worsen (or improve) over time. Recent work highlights how changes in contextual factors, such as interpersonal stressors, may lead to negative emotional states, and subsequent SITBs (Oppenheimer et al., 2020; Victor et al., 2019). Chronic exposures to interpersonal stressors may result in underlying changes in biological systems supporting acute stress responses, which in turn, lead to failures in biological responses to acute stressors and increased SITB risk (Miller & Prinstein, 2019). Similarly, youth may first engage in NSSI because the behavior is effective at reducing negative emotional states (Hooley & Franklin, 2018; Klonsky, 2009). However, repeated NSSI engagement may become less effective at reducing negative affect, perhaps through habituation (Funkhouser et al., 2019). In turn, the effect of NSSI behavior contributing to lower reductions in negative affect over time may increase the likelihood of future suicidal ideation or suicidal behavior (e.g., Brausch & Muehlenkamp, 2018). Overall, there is a clear need for research to focus on transactions across multiple factors (environment and person-factors across biology and behavior) to understand changes and progressions of SITBs.

Finally, future research is needed on the role of developmental transitions and key life turning points in understanding SITB risk. Suicide research has identified pubertal transitions during adolescence as a particular vulnerable developmental window associated onset of SITBs for some youth (Nock et al., 2013). Promising initial research has identified factors unique to the pubertal transition (e.g., reorganizations across peer social contexts, behavior, and neurobiology) that may relate to increased risk for the development of SITBs during this period (e.g., heightened neural and affective sensitivity to changing peer contexts) (e.g., Harms et al., 2019; Hutchinson et al., 2021; Oppenheimer et al., 2020). However, longitudinal research is needed that follows youth from childhood into adolescence to address remaining critical gaps in knowledge about the processes through which youth may develop SITBs during the pubertal transition. Moreover, more research is needed that follows youth through other developmental transitions that have traditionally received less research attention in the SITB literature (e.g., early to middle childhood) to better understand how risk for SITBs develop, and for whom, during these key developmental windows.

## Future Direction: Advance Suicide Prevention from a Developmental Psychopathology Perspective

Developmental psychopathologists assert that understanding child development and development of psychopathology go hand in hand with prevention and intervention (Cicchetti & Rogosch, 2002). Consistent with Principle 4, the cost of waiting until suicidal behavior develops is exorbitant both from a financial (Babcock et al., 2021) and social perspective. Given that up to 60 percent of individuals who die by suicide do so on the first attempt (Bostwick et al., 2016), waiting until a suicide attempt occurs to intervene quite literally means missing an opportunity to save a life. Even among individuals who never attempt suicide, once suicidal ideation or NSSI develop, they frequently occur repeatedly, worsen over time, and are associated with extensive suffering, impairment, and significant health care costs (e.g., Babcock et al., 2021; Glenn et al., 2017; Miranda et al., 2021).

Future research on SITBs that integrates any of the developmental psychopathology principles outlined here will help identify multiple potential prevention and intervention points along the developmental pathway of SITBs. Moreover, SITB preventions and interventions that are solidly grounded in developmental psychopathology research can be matched to developmental age and to where an individual is along the development of SITBs (e.g., developed precursors to SITBs, suicidal ideation only, suicidal ideation and NSSI, history of suicide attempts). They could be further tailored depending on an individual's known history of dynamic risk factors.

Just as longitudinal research investigating the developmental unfolding of SITBs will inform the creation of more effective suicide prevention efforts, clinical research on treatment and preventive strategies also has potential to break new ground in the understanding of the development of SITBs across the life course. One of the limitations of the typical longitudinal, correlational studies within the area of developmental psychopathology is inferring causality. However, if implementation of a prevention or intervention program is altering the developmental course of children and bends trajectories towards SITBs, such research would have contributed to the causal SITB risk factors in youth.

Future research is needed to test promising interventions that target potentially malleable and developmentally relevant targets within longitudinal studies. For instance, given emerging evidence supporting that certain interventions with family components may be important for reducing SITBs (e.g., Asarnow et al., 2017; Esposito-Smythers et al., 2011; McCauley et al., 2018; Mehlum et al., 2014), future work may include conducting RCTs that involve targeting maladaptive family interactions in childhood, and then investigate potential cascading, beneficial effects into adolescence and adulthood. These positive effects may cascade to areas such as peer social relationships and/or improved emotion regulation abilities resulting in decreased SITB risk. Similarly, given research supporting the effectiveness of skills training in reducing SITBs, future research may use RCTs to test how teaching young children developmentally appropriate skills upstream early in development, such as emotion regulation or distress tolerance skill, may alter developmental pathways towards emergence of suicidal ideation later in childhood, adolescence, and into adulthood (such as effects observed from the Good Behavior Game; Wilcox et al., 2008). Overall, the careful use of developmentally informed RCTs can test potential causal effects of child behavioral, biological, and contextual factors on the emergence and progression of SITBs. This work also will help inform future iterations of interventions and help more effectively tailor interventions to the developmental stage of individuals.

## Future Direction: Move Beyond Identifying Disparities in SITBs and Begin Identifying Mechanisms for Minoritized Youth Within a Developmental Psychopathology Framework

A developmental psychopathology framework holds great promise in beginning to move beyond continuing to point out disparities in SITBs for minoritized youth. A critical future direction for SITB research will be to begin integrating the unique contextual influences in better understanding how risk processes unfold for minoritized youth. Critically, we urge researchers not to simply compare trajectories or processes for minoritized youth versus White, heterosexual, and cisgender youth. This oversimplifies the contextual and

transactional processes that are likely to exist for minoritized youth. For example, Sheftall and Miller (2021) argue for a “ground zero” approach to preventing suicide among Black youth. They argue that we must rethink assumed risk factors and suicide prevention approaches for Black youth to better integrate the context in which Black youth exist. Similarly, researchers have called for greater understanding of the mechanisms driving higher rates of SITBs for individuals with minoritized sexual identities and gender identities (Hatchel et al., 2021). We urge researchers to take these developmental principles that encourage research at the earliest stages in development to understand how SITB risk unfolds *in the context* of minoritized youth’s environment. Future research should explore both external factors (e.g., stigma and discrimination) and internal factors (e.g., internalized homophobia) among youth with minoritized sexual and/or gender identities (Adams & Miller, 2021; Meyer, 2003; Valentine & Shipherd, 2018). Future research in this area may examine whether the emergence and developmental trajectories of SITBs among youth with minoritized sexual and/or gender identities change across critical developmental stages (onset of puberty) and based on family and peer related contextual factors that are specific to youth with minoritized sexual or gender identities (such as parent rejection, or peer victimization, specifically related to youth’s sexual or gender identity) (Burton et al., 2013; C. Ryan et al., 2009). In sum, future research on SITBs among minoritized youth must move beyond simply noting disparities to actively engaging developmental psychopathology principles to uncover mechanisms. This will, in turn, lead to tailored prevention and interventions for minoritized youth. We acknowledge the complexities, and unique experiences and contexts present in other racial and ethnic identities, including youth with multiple minoritized identities. However, we hope that this offers a starting point that sparks future research in this area.

## Conclusions

Suicide remains a leading cause of death for youth. In 2012, Nock laid out future directions in the study of suicide and self-injury among youth (Nock, 2012). Specifically, he called for greater research measuring self-harm, understanding who engages in self-harm and why, and improving prediction, treatment, and prevention of self-harm. In the decade since, we have made great strides in responding to these future directions. We have more assessment tools than before. We understand a bit more about which youth are most at risk for nonsuicidal and suicidal self-injury, as well as some key reasons why youth self-injure. We have at least one well-established treatment for suicidal ideation and deliberate self-harm. Despite these great strides, suicide and self-injury rates have increased and overall progress in research on youth SITBs has been modest.

In order to move SITB research forward, we argue that future research integrate a developmental psychopathology framework to prevent youth SITBs. From the moment youth begin to grasp the concept of death, or possibly even before, a window of opportunity opens for researchers to start tracing developmental pathways to self-injury and suicide rather than waiting until the behaviors already develop. Indeed, conducting research from a developmental psychopathology perspective helps to trace origins of psychopathology back to when risk first emerges, often early in life, and identifies how risk unfolds due to combinations of risk factors interacting over time. Rather than focusing exclusively on

the ideation-to-action transition, future research that expands to focus on the dynamic, developmental continuum of SITBs will pave the way for more targeted and tailored preventive interventions.

## Acknowledgements:

Preparation of this manuscript was supported by grants from the NIMH (K01MH116325 awarded to ABM; K01MH109850 awarded to CWO; R01MH124899 awarded to CRG).

## References

Adams LM, & Miller AB (2021). Mechanisms of mental health disparities among minoritized groups: How well are the top journals in clinical psychology representing this work. Clinical Psychological Science.

Andrews T, Martin G, Hasking P, & Page A (2014). Predictors of Onset for Non-suicidal Self-injury Within a School-Based Sample of Adolescents. Prevention Science, 15(6), 850–859. 10.1007/s11121-013-0412-8 [PubMed: 23812886]

Arnault DS, & Shimabukuro S (2012). The Clinical Ethnographic Interview: A user-friendly guide to the cultural formulation of distress and help seeking. Transcultural Psychiatry, 49(2), 302–322. 10.1177/1363461511425877 [PubMed: 22194348]

Asarnow JR, Baraff LJ, Berk M, Grob CS, Devich-Navarro M, Suddath R, Piacentini JC, Rotheram-Borus MJ, Cohen D, & Tang L (2011). An emergency department intervention for linking pediatric suicidal patients to follow-up mental health treatment. Psychiatric Services (Washington, D.C.), 62(11), 1303–1309. 10.1176/ps.62.11.pss6211_1303 [PubMed: 22211209]

Asarnow JR, Hughes JL, Babeva KN, & Sugar CA (2017). Cognitive-Behavioral Family Treatment for Suicide Attempt Prevention: A Randomized Controlled Trial. Journal of the American Academy of Child and Adolescent Psychiatry, 56(6), 506–514. 10.1016/j.jaac.2017.03.015 [PubMed: 28545756]

Aseltine RH, & DeMartino R (2004). An Outcome Evaluation of the SOS Suicide Prevention Program. American Journal of Public Health, 94(3), 446–451. 10.2105/AJPH.94.3.446 [PubMed: 14998812]

Aseltine RH, James A, Schilling EA, & Glanovsky J (2007). Evaluating the SOS suicide prevention program: A replication and extension. BMC Public Health, 7, 161. 10.1186/1471-2458-7-161 [PubMed: 17640366]

Ayer L, Colpe L, Pearson J, Rooney M, & Murphy E (2020). Advancing Research in Child Suicide: A Call to Action. Journal of the American Academy of Child and Adolescent Psychiatry, 59(9), 1028–1035. 10.1016/j.jaac.2020.02.010 [PubMed: 32145297]

Babcock A, Moussa RK, & Diaby V (2021). Effects, trends, costs associated with readmission in early-aged patients with suicidal ideation. Expert Review of Pharmacoeconomics & Outcomes Research, 0(0), 1–12. 10.1080/14737167.2021.1914593

Barnett MA, Mills-Koonce WR, Gustafsson H, Cox M, & Investigators FLPK (2012). Mother-Grandmother Conflict, Negative Parenting, and Young Children's Social Development in Multigenerational Families. Family Relations, 61(5), 864–877. 10.1111/j.1741-3729.2012.00731.x

Barrocas AL, Hankin BL, Young JF, & Abela JRZ (2012). Rates of nonsuicidal self-injury in youth: Age, sex, and behavioral methods in a community sample. Pediatrics, 130(1), 39–45. 10.1542/peds.2011-2094 [PubMed: 22689875]

Belden AC, Thomson NR, & Luby JL (2008). Temper tantrums in healthy versus depressed and disruptive preschoolers: Defining tantrum behaviors associated with clinical problems. The Journal of Pediatrics, 152(1), 117–122. 10.1016/j.jpeds.2007.06.030 [PubMed: 18154912]

Bell K-A, Gratch I, Ebo T, & Cha CB (2021). Examining Discrepant Reports of Adolescents' Self-Injurious Thoughts and Behaviors: A Focus on Racial and Ethnic Minority Families. Archives of Suicide Research, 1–15. 10.1080/13811118.2021.1925607

Bostwick JM, Pabbati C, Geske JR, & McKean AJ (2016). Suicide Attempt as a Risk Factor for Completed Suicide: Even More Lethal Than We Knew. The American Journal of Psychiatry, 173(11), 1094–1100. 10.1176/appi.ajp.2016.15070854 [PubMed: 27523496]

Brausch AM, & Muehlenkamp JJ (2018). Perceived effectiveness of NSSI in achieving functions on severity and suicide risk. Psychiatry Research, 265, 144–150. 10.1016/j.psychres.2018.04.038 [PubMed: 29709788]

Bridge JA, Asti L, Horowitz LM, Greenhouse JB, Fontanella CA, Sheftall AH, Kelleher KJ, & Campo JV (2015). Suicide Trends Among Elementary School–Aged Children in the United States From 1993 to 2012. JAMA Pediatrics, 169(7), 673–677. 10.1001/jamapediatrics.2015.0465 [PubMed: 25984947]

Bridge JA, Goldstein TR, & Brent DA (2006). Adolescent suicide and suicidal behavior. Journal of Child Psychology and Psychiatry, 47(3–4), 372–394. [PubMed: 16492264]

Bryan CJ, Bryan AO, May AM, & Klonsky ED (2015). Trajectories of Suicide Ideation, Nonsuicidal Self-Injury, and Suicide Attempts in a Nonclinical Sample of Military Personnel and Veterans. Suicide and Life-Threatening Behavior, 45(3), 315–325. 10.1111/sltb.12127 [PubMed: 25256126]

Burton CM, Marshal MP, Chisolm DJ, Sucato GS, & Friedman MS (2013). Sexual Minority-Related Victimization as a Mediator of Mental Health Disparities in Sexual Minority Youth: A Longitudinal Analysis. Journal of Youth and Adolescence, 42(3), 394–402. 10.1007/s10964-012-9901-5 [PubMed: 23292751]

Cicchetti D, & Rogosch FA (2002). A developmental psychopathology perspective on adolescence. Journal of Consulting and Clinical Psychology, 70(1), 6–20. 10.1037//0022-006x.70.1.6 [PubMed: 11860057]

Crone EA, & Dahl RE (2012). Understanding adolescence as a period of social–affective engagement and goal flexibility. Nature Reviews Neuroscience, 13(9), 636–650. 10.1038/nrn3313 [PubMed: 22903221]

Crowell SE, Derbidge CM, & Beauchaine TP (2014). Developmental approaches to understanding suicidal and self-injurious behaviors. In Nock MK (Ed.), The Oxford handbook of suicide and self-injury (pp. 183–205). Oxford University Press.

Cummings LR, Mattfeld AT, Pettit JW, & McMakin DL (2021). Viewing Nonsuicidal Self-Injury in Adolescence Through a Developmental Neuroscience Lens: The Impact of Neural Sensitivity to Socioaffective Pain and Reward. Clinical Psychological Science, 2167702621989323. 10.1177/2167702621989323

Curtin SC, & Heron MP (2019). Death rates due to suicide and homicide among persons aged 10–24: United States, 2000–2017.

Czyz EK, Glenn CR, Arango A, Koo HJ, & King CA (2021). Short-term associations between nonsuicidal and suicidal thoughts and behaviors: A daily diary study with high-risk adolescents. Journal of Affective Disorders, 292, 337–344. 10.1016/j.jad.2021.05.104 [PubMed: 34139406]

De Los Reyes A, Augenstein TM, Wang M, Thomas SA, Drabick DAG, Burgers DE, & Rabinowitz J (2015). The validity of the multi-informant approach to assessing child and adolescent mental health. Psychological Bulletin, 141(4), 858–900. 10.1037/a0038498 [PubMed: 25915035]

De Los Reyes A, & Kazdin AE (2005). Informant discrepancies in the assessment of childhood psychopathology: A critical review, theoretical framework, and recommendations for further study. Psychological Bulletin, 131(4), 483–509. 10.1037/0033-2909.131.4.483 [PubMed: 16060799]

DeVille DC, Whalen D, Breslin FJ, Morris AS, Khalsa SS, Paulus MP, & Barch DM (2020). Prevalence and Family-Related Factors Associated With Suicidal Ideation, Suicide Attempts, and Self-injury in Children Aged 9 to 10 Years. JAMA Network Open, 3(2), e1920956. 10.1001/jamanetworkopen.2019.20956 [PubMed: 32031652]

Dodge KA (2001). The science of youth violence prevention. Progressing from developmental epidemiology to efficacy to effectiveness to public policy. American Journal of Preventive Medicine, 20(1 Suppl), 63–70. 10.1016/s0749-3797(00)00275-0 [PubMed: 11146262]

Eme R (2017). Developmental psychopathology: A primer for clinical pediatrics. World Journal of Psychiatry, 7(3), 159–162. 10.5498/wjp.v7.i3.159 [PubMed: 29043153]

Esposito-Smythers C, Spirito A, Kahler CW, Hunt J, & Monti P (2011). Treatment of co-occurring substance abuse and suicidality among adolescents: A randomized trial. Journal of Consulting and Clinical Psychology, 79(6), 728–739. 10.1037/a0026074 [PubMed: 22004303]

Foley DL, Goldston DB, Costello EJ, & Angold A (2006). Proximal Psychiatric Risk Factors for Suicidality in Youth: The Great Smoky Mountains Study. Archives of General Psychiatry, 63(9), 1017–1024. 10.1001/archpsyc.63.9.1017 [PubMed: 16953004]

Franklin JC, Ribeiro JD, Fox KR, Bentley KH, Kleiman EM, Huang X, Musacchio KM, Jaroszewski AC, Chang BP, & Nock MK (2017). Risk factors for suicidal thoughts and behaviors: A meta-analysis of 50 years of research. Psychological Bulletin, 143(2), 187–232. 10.1037/bul0000084 [PubMed: 27841450]

Funkhouser CJ, Correa KA, Carrillo VL, Klemballa DM, & Shankman SA (2019). The time course of responding to aversiveness in females with a history of non-suicidal self-injury. International Journal of Psychophysiology, 141, 1–8. 10.1016/j.ijpsycho.2019.04.008 [PubMed: 31028756]

Gandhi A, Luyckx K, Baetens I, Kiekens G, Sleuwaegen E, Berens A, Maitra S, & Claes L (2018). Age of onset of non-suicidal self-injury in Dutch-speaking adolescents and emerging adults: An event history analysis of pooled data. Comprehensive Psychiatry, 80, 170–178. 10.1016/j.comppsych.2017.10.007 [PubMed: 29121554]

Gee DG, & Casey BJ (2015). The impact of developmental timing for stress and recovery. Neurobiology of Stress, 1, 184–194. 10.1016/j.ynstr.2015.02.001 [PubMed: 25798454]

Glenn CR, Esposito EC, Porter AC, & Robinson DJ (2019). Evidence Base Update of Psychosocial Treatments for Self-Injurious Thoughts and Behaviors in Youth. Journal of Clinical Child and Adolescent Psychology: The Official Journal for the Society of Clinical Child and Adolescent Psychology, American Psychological Association, Division 53, 48(3), 357–392. 10.1080/15374416.2019.1591281 [PubMed: 31046461]

Glenn CR, Franklin JC, & Nock MK (2015). Evidence-based psychosocial treatments for self-injurious thoughts and behaviors in youth. Journal of Clinical Child and Adolescent Psychology: The Official Journal for the Society of Clinical Child and Adolescent Psychology, American Psychological Association, Division 53, 44(1), 1–29. 10.1080/15374416.2014.945211 [PubMed: 25256034]

Glenn CR, Kleiman EM, Kearns JC, Boatman AE, Conwell Y, Alpert-Gillis LJ, & Pigeon W (2021). Sleep problems predict next-day suicidal thinking among adolescents: A multimodal real-time monitoring study following discharge from acute psychiatric care. Development and Psychopathology, 33(5), 1701–1721. 10.1017/S0954579421000699

Glenn CR, Kleiman EM, Kellerman J, Pollak O, Cha CB, Esposito EC, Porter AC, Wyman PA, & Boatman AE (2020). Annual Research Review: A meta-analytic review of worldwide suicide rates in adolescents. Journal of Child Psychology and Psychiatry, 61(3), 294–308. 10.1111/jcpp.13106 [PubMed: 31373003]

Glenn CR, Lanzillo EC, Esposito EC, Santee AC, Nock MK, & Auerbach RP (2017). Examining the Course of Suicidal and Nonsuicidal Self-Injurious Thoughts and Behaviors in Outpatient and Inpatient Adolescents. Journal of Abnormal Child Psychology, 45(5), 971–983. 10.1007/s10802-016-0214-0 [PubMed: 27761783]

Gonzalez A, Weersing VR, Warnick E, Scahill L, & Woolston J (2012). Cross-ethnic measurement equivalence of the SCARED in an outpatient sample of African American and non-Hispanic White youths and parents. Journal of Clinical Child and Adolescent Psychology: The Official Journal for the Society of Clinical Child and Adolescent Psychology, American Psychological Association, Division 53, 41(3), 361–369. 10.1080/15374416.2012.654462 [PubMed: 22397682]

Gratch I, Fernandes SN, Bell K-A, Pollak OH, Fox KR, Tezanos K, Ebo T, & Cha CB (2021). Self-Injurious Thoughts and Behaviors Interview–Revised (SITBI-R): Reliability, Validity, and Inter-Informant Agreement in an Adolescent Sample. Journal of Clinical Child & Adolescent Psychology, 0(0), 1–11. 10.1080/15374416.2021.1901229

Greene-Palmer FN, Wagner BM, Neely LL, Cox DW, Kochanski KM, Perera KU, & Ghahramanlou-Holloway M (2015). How Parental Reactions Change in Response to Adolescent Suicide Attempt. Archives of Suicide Research, 19(4), 414–421. 10.1080/13811118.2015.1094367 [PubMed: 26452767]

Gulbas L, & Zayas L (2017). Why Adolescent Latinas Attempt Suicide More than Other Females. National Institute on Minority Health and Health Disparities.

Harms MB, Casement MD, Teoh JY, Ruiz S, Scott H, Wedan R, & Quevedo K (2019). Adolescent suicide attempts and ideation are linked to brain function during peer interactions. Psychiatry Research: Neuroimaging, 289, 1–9. 10.1016/j.pscychresns.2019.05.001 [PubMed: 31102892]

Harrington R, Kerfoot M, Dyer E, McNiven F, Gill J, Harrington V, Woodham A, & Byford S (1998). Randomized trial of a home-based family intervention for children who have deliberately poisoned themselves. Journal of the American Academy of Child and Adolescent Psychiatry, 37(5), 512–518. [PubMed: 9585653]

Harrist AW, & Ainslie RC (1998). Marital Discord and Child Behavior Problems: Parent-Child Relationship Quality and Child Interpersonal Awareness as Mediators. Journal of Family Issues, 19(2), 140–163. 10.1177/019251398019002002

Hatchel T, Polanin JR, & Espelage DL (2021). Suicidal Thoughts and Behaviors Among LGBTQ Youth: Meta-Analyses and a Systematic Review. Archives of Suicide Research: Official Journal of the International Academy for Suicide Research, 25(1), 1–37. 10.1080/13811118.2019.1663329 [PubMed: 31597541]

Hennefield L, Whalen DJ, Wood G, Chavarria MC, & Luby JL (2019). Changing Conceptions of Death as a Function of Depression Status, Suicidal Ideation, and Media Exposure in Early Childhood. Journal of the American Academy of Child & Adolescent Psychiatry, 58(3), 339–349. 10.1016/j.jaac.2018.07.909 [PubMed: 30768413]

Herba CM, Ferdinand RF, van der ENDE J, & Verhulst FC (2007). Long-Term Associations of Childhood Suicide Ideation. Journal of the American Academy of Child & Adolescent Psychiatry, 46(11), 1473–1481. 10.1097/chi.0b013e318149e66f [PubMed: 18049297]

Hooley JM, & Franklin JC (2018). Why Do People Hurt Themselves? A New Conceptual Model of Nonsuicidal Self-Injury. Clinical Psychological Science, 6(3), 428–451. 10.1177/2167702617745641

Horwitz AG, Czyz EK, & King CA (2015). Predicting Future Suicide Attempts Among Adolescent and Emerging Adult Psychiatric Emergency Patients. Journal of Clinical Child and Adolescent Psychology: The Official Journal for the Society of Clinical Child and Adolescent Psychology, American Psychological Association, Division 53, 44(5), 751–761. 10.1080/15374416.2014.910789 [PubMed: 24871489]

Huey SJ, Henggeler SW, Rowland MD, Halliday-Boykins CA, Cunningham PB, Pickrel SG, & Edwards J (2004). Multisystemic Therapy Effects on Attempted Suicide by Youths Presenting Psychiatric Emergencies. Journal of the American Academy of Child & Adolescent Psychiatry, 43(2), 183–190. 10.1097/00004583-200402000-00014 [PubMed: 14726725]

Hutchinson EA, Sequeira SL, Silk JS, Jones NP, Oppenheimer C, Scott L, & Ladouceur CD (2021). Peer Connectedness and Pre-Existing Social Reward Processing Predicts U.S. Adolescent Girls' Suicidal Ideation During COVID-19. Journal of Research on Adolescence: The Official Journal of the Society for Research on Adolescence, 31(3), 703–716. 10.1111/jora.12652 [PubMed: 34448297]

Ivey-Stephenson AZ, Demissie Z, Crosby AE, Stone DM, Gaylor E, Wilkins N, Lowry R, & Brown M (2020). Suicidal Ideation and Behaviors Among High School Students—Youth Risk Behavior Survey, United States, 2019. MMWR Supplements, 69(1), 47–55. 10.15585/mmwr.su6901a6 [PubMed: 32817610]

Joiner T (2007). Why People Die by Suicide. Harvard University Press.

Katz C, Bolton S-L, Katz LY, Isaak C, Tilston-Jones T, & Sareen J (2013). A Systematic Review of School-Based Suicide Prevention Programs. Depression and Anxiety, 30(10), 1030–1045. 10.1002/da.22114 [PubMed: 23650186]

Kaufman JPD, Birmaher BMD, Brent DMD, Rao UMD, Flynn CMA, Moreci PMSW, Williamson DMA, & Ryan NMD (1997). Schedule for affective disorders and schizophrenia for school-age children-present and lifetime version (K-SADS-PL): Initial reliability and validity data. Journal of the American Academy of Child, 36(7), 980–988.

Kessler RC, Borges G, & Walters EE (1999). Prevalence of and Risk Factors for Lifetime Suicide Attempts in the National Comorbidity Survey. Archives of General Psychiatry, 56(7), 617–626. 10.1001/archpsyc.56.7.617 [PubMed: 10401507]

Kiekens G, Hasking P, Boyes M, Claes L, Mortier P, Auerbach RP, Cuijpers P, Demyttenaere K, Green JG, Kessler RC, Myin-Germeys I, Nock MK, & Bruffaerts R (2018). The associations between

non-suicidal self-injury and first onset suicidal thoughts and behaviors. Journal of Affective Disorders, 239, 171–179. 10.1016/j.jad.2018.06.033 [PubMed: 30014957]

King CA, Arango A, & Ewell Foster C (2018). Emerging trends in adolescent suicide prevention research. Current Opinion in Psychology, 22, 89–94. 10.1016/j.copsyc.2017.08.037 [PubMed: 28961458]

Kleiman EM, Glenn CR, & Liu RT (2019). Real-Time Monitoring of Suicide Risk among Adolescents: Potential Barriers, Possible Solutions, and Future Directions. Journal of Clinical Child and Adolescent Psychology: The Official Journal for the Society of Clinical Child and Adolescent Psychology, American Psychological Association, Division 53, 48(6), 934–946. 10.1080/15374416.2019.1666400 [PubMed: 31560584]

Kleiman EM, & Nock MK (2017). Advances in Scientific Possibilities Offered by Real-Time Monitoring Technology. Psychiatry, 80(2), 118–124. 10.1080/00332747.2017.1325661 [PubMed: 28767336]

Klonsky ED (2009). The functions of self-injury in young adults who cut themselves: Clarifying the evidence for affect-regulation. Psychiatry Research, 166(2–3), 260–268. 10.1016/j.psychres.2008.02.008 [PubMed: 19275962]

Klonsky ED, & May AM (2015). The Three-Step Theory (3ST): A New Theory of Suicide Rooted in the "Ideation-to-Action" Framework. International Journal of Cognitive Therapy, 8(2), 114–129. 10.1521/ijct.2015.8.2.114

Lawrence HR, Nesi J, & Schwartz-Mette RA (2021). Suicidal Mental Imagery: Investigating a Novel Marker of Suicide Risk. Emerging Adulthood, 21676968211001590.

Leavitt RA, Ertl A, Sheats K, Petrosky E, Ivey-Stephenson A, & Fowler KA (2018). Suicides Among American Indian/Alaska Natives—National Violent Death Reporting System, 18 States, 2003–2014. MMWR. Morbidity and Mortality Weekly Report, 67(8), 237–242. 10.15585/mmwr.mm6708a1 [PubMed: 29494572]

Loeber R, & Hay D (1997). Key issues in the development of aggression and violence from childhood to early adulthood. Annual Review of Psychology, 48, 371–410. 10.1146/annurev.psych.48.1.371

Luby JL, Belden A, Harms MP, Tillman R, & Barch DM (2016). Preschool is a sensitive period for the influence of maternal support on the trajectory of hippocampal development. Proceedings of the National Academy of Sciences, 113(20), 5742–5747.

Luby JL, Tillman R, & Barch DM (2019). Association of Timing of Adverse Childhood Experiences and Caregiver Support With Regionally Specific Brain Development in Adolescents. JAMA Network Open, 2(9), e1911426–e1911426. 10.1001/jamanetworkopen.2019.11426 [PubMed: 31532514]

Luby JL, Whalen D, Tillman R, & Barch DM (2019). Clinical and Psychosocial Characteristics of Young Children With Suicidal Ideation, Behaviors, and Nonsuicidal Self-Injurious Behaviors. Journal of the American Academy of Child and Adolescent Psychiatry, 58(1), 117–127. 10.1016/j.jaac.2018.06.031 [PubMed: 30577927]

Luna B, Paulsen DJ, Padmanabhan A, & Geier C (2013). The Teenage Brain: Cognitive Control and Motivation. Current Directions in Psychological Science, 22(2), 94–100. 10.1177/0963721413478416 [PubMed: 25574074]

Martin SE, Liu RT, Mernick LR, DeMarco M, Cheek SM, Spirito A, & Boekamp JR (2016). Suicidal thoughts and behaviors in psychiatrically referred young children. Psychiatry Research, 246, 308–313. 10.1016/j.psychres.2016.09.038 [PubMed: 27744233]

Masten AS (2006). Developmental psychopathology: Pathways to the future. International Journal of Behavioral Development, 30(1), 47–54.

May AM, & Klonsky ED (2016). What Distinguishes Suicide Attempters From Suicide Ideators? A Meta-Analysis of Potential Factors. Clinical Psychology: Science and Practice, 23(1), 5–20. 10.1111/cpsp.12136

McCauley E, Berk MS, Asarnow JR, Adrian M, Cohen J, Korslund K, Avina C, Hughes J, Harned M, Gallop R, & Linehan MM (2018). Efficacy of Dialectical Behavior Therapy for Adolescents at High Risk for Suicide: A Randomized Clinical Trial. JAMA Psychiatry, 75(8), 777–785. 10.1001/jamapsychiatry.2018.1109 [PubMed: 29926087]

McGillivray L, Shand F, Calear AL, Batterham PJ, Rheinberger D, Chen NA, Burnett A, & Torok M (2021). The Youth Aware of Mental Health program in Australian Secondary Schools: 3- and 6-month outcomes. International Journal of Mental Health Systems, 15(1), 79. 10.1186/s13033-021-00503-w [PubMed: 34674726]

Mehlum L, Tørmoen A, Ramberg M, Haga E, Diep L, Laberg S, Larsson B, Stanley B, Miller A, Sund A, & Groholt B (2014). Dialectical Behavior Therapy for Adolescents With Repeated Suicidal and Selfharming Behavior – A Randomized Trial. Journal of the American Academy of Child & Adolescent Psychiatry. 10.1016/j.jaac.2014.07.003

Meyer IH (2003). Prejudice, Social Stress, and Mental Health in Lesbian, Gay, and Bisexual Populations: Conceptual Issues and Research Evidence. Psychological Bulletin, 129(5), 674–697. 10.1037/0033-2909.129.5.674 [PubMed: 12956539]

Miller AB, & Prinstein MJ (2019). Adolescent Suicide as a Failure of Acute Stress-Response Systems. Annual Review of Clinical Psychology, 15(1), 425–450. 10.1146/annurev-clinpsy-050718-095625

Mills-Koonce WR, Cao H, Heilbron N, & Cox MJ (2020). Marital Relationship and Early Development.

Miranda R, Ortin-Peralta A, Rosario-Williams B, Kelly TF, Macrynikola N, & Sullivan S (2021). Understanding patterns of adolescent suicide ideation: Implications for risk assessment. In Miranda R & Ieglic E (Eds.), Handbook of youth suicide prevention: Integrating research into practice. Springer.

Mishara BL (1999). Conceptions of Death and Suicide in Children Ages 6–12 and Their Implications for Suicide Prevention. Suicide and Life-Threatening Behavior, 29(2), 105–118. 10.1111/j.1943-278X.1999.tb01049.x [PubMed: 10407964]

Morgan JK, Eckstrand KL, Silk JS, Olino TM, Ladouceur CD, & Forbes EE (2022). Maternal Response to Positive Affect Moderates the Impact of Familial Risk for Depression on Ventral Striatal Response to Winning Reward in 6- to 8-Year-Old Children. Biological Psychiatry. Cognitive Neuroscience and Neuroimaging, S2451-9022(22)00020–9. 10.1016/j.bpsc.2021.12.014

Muñoz-Silva A, De la Corte de la Corte C, Lorence-Lara B, & Sanchez-Garcia M (2020). Psychosocial Adjustment and Sociometric Status in Primary Education: Gender Differences. Frontiers in Psychology, 11, 607274. 10.3389/fpsyg.2020.607274 [PubMed: 33363499]

Niederkrotenthaler T, Floderus B, Alexanderson K, Rasmussen F, & Mittendorfer-Rutz E (2012). Exposure to parental mortality and markers of morbidity, and the risks of attempted and completed suicide in offspring: An analysis of sensitive life periods. J Epidemiol Community Health, 66(3), 233–239. 10.1136/jech.2010.109595 [PubMed: 20924054]

Nock MK (2012). Future Directions for the Study of Suicide and Self-Injury. Journal of Clinical Child & Adolescent Psychology, 41(2), 255–259. 10.1080/15374416.2012.652001 [PubMed: 22417198]

Nock MK, Green JG, Hwang I, McLaughlin KA, Sampson NA, Zaslavsky AM, & Kessler RC (2013). Prevalence, Correlates, and Treatment of Lifetime Suicidal Behavior Among Adolescents: Results From the National Comorbidity Survey Replication Adolescent Supplement. JAMA Psychiatry, 70(3), 300–310. 10.1001/2013.jamapsychiatry.55 [PubMed: 23303463]

Nock MK, Profile S, Nock MK, Holmberg EB, Photos VI, & Michel BD (2007). Self-Injurious Thoughts and Behaviors Interview: Development, reliability, and validity in an adolescent sample. Psychological Assessment, 309–317. [PubMed: 17845122]

O'Connor RC (2011). Towards an integrated motivational–volitional model of suicidal behaviour. International Handbook of Suicide Prevention: Research, Policy and Practice, 1, 181–198.

Opara I, Assan MA, Pierre K, Gunn JF III, Metzger I, Hamilton J, & Arugu E (2020). Suicide among Black Children: An Integrated Model of the Interpersonal-Psychological Theory of Suicide and Intersectionality Theory for Researchers and Clinicians. Journal of Black Studies, 51(6), 611–631. [PubMed: 34305168]

Oppenheimer CW, Silk JS, Lee KH, Dahl RE, Forbes E, Ryan N, & Ladouceur CD (2020). Suicidal Ideation Among Anxious Youth: A Preliminary Investigation of the Role of Neural Processing of Social Rejection in Interaction with Real World Negative Social Experiences. Child Psychiatry & Human Development, 51(2), 163–173. 10.1007/s10578-019-00920-6 [PubMed: 31420764]

Oppenheimer CW, Stone LB, & Hankin BL (2018). The influence of family factors on time to suicidal ideation onsets during the adolescent developmental period. Journal of Psychiatric Research, 104, 72–77. 10.1016/j.jpsychires.2018.06.016 [PubMed: 29990669]

Paashaus L, Forkmann T, Glaesmer H, Juckel G, Rath D, Schönfelder A, & Teismann T (2021). From decision to action: Suicidal history and time between decision to die and actual suicide attempt. Clinical Psychology & Psychotherapy, 28(6), 1427–1434. 10.1002/cpp.2580 [PubMed: 33687121]

Parker JG, Rubin KH, Erath SA, Wojslawowicz JC, & Buskirk AA (2006). Peer relationships, child development, and adjustment: A developmental psychopathology perspective. In Developmental psychopathology: Theory and method, Vol. 1, 2nd ed (pp. 419–493). John Wiley & Sons, Inc.

Perepletchikova F, Axelrod SR, Kaufman J, Rounsaville BJ, Douglas-Palumberi H, & Miller AL (2011). Adapting Dialectical Behaviour Therapy for Children: Towards a New Research Agenda for Paediatric Suicidal and Non-Suicidal Self-Injurious Behaviours. Child and Adolescent Mental Health, 16(2), 116–121. 10.1111/j.1475-3588.2010.00583.x [PubMed: 21643467]

Plemmons G, Hall M, Doupnik S, Gay J, Brown C, Browning W, Casey R, Freundlich K, Johnson DP, Lind C, Rehm K, Thomas S, & Williams D (2018). Hospitalization for Suicide Ideation or Attempt: 2008–2015. Pediatrics, 141(6). 10.1542/peds.2017-2426

Polanco-Roman L, & Miranda R (2022). A cycle of exclusion that impedes suicide research among racial and ethnic minority youth. Suicide and Life-Threatening Behavior, 52(1), 171–174. 10.1111/sltb.12752 [PubMed: 33811663]

Pollak OH, Guzmán EM, Shin KE, & Cha CB (2021). Defeat, Entrapment, and Positive Future Thinking: Examining Key Theoretical Predictors of Suicidal Ideation Among Adolescents. Frontiers in Psychology, 0. 10.3389/fpsyg.2021.590388

Posner K, Brown GK, Stanley B, Brent DA, Yershova KV, Oquendo MA, Currier GW, Melvin GA, Greenhill L, Shen S, & Mann JJ (2011). The Columbia-Suicide Severity Rating Scale: Initial validity and internal consistency findings from three multisite studies with adolescents and adults. The American Journal of Psychiatry, 168(12), 1266–1277. 10.1176/appi.ajp.2011.10111704 [PubMed: 22193671]

Prinstein MJ, Nock MK, Simon V, Aikins JW, Cheah CSL, & Spirito A (2008). Longitudinal trajectories and predictors of adolescent suicidal ideation and attempts following inpatient hospitalization. Journal of Consulting and Clinical Psychology, 76(1), 92–103. 10.1037/0022-006X.76.1.92 [PubMed: 18229987]

Reilly TP, Hasazi JE, & Bond LA (1983). Children's conceptions of death and personal mortality. Journal of Pediatric Psychology, 8(1), 21–31. 10.1093/jpepsy/8.1.21 [PubMed: 6842348]

Reinherz HZ, Tanner J, Berger S, Beardslee W, & Fitzmaurice G (2006). Adolescent suicidal ideation as predictive of psychopathology, suicidal behavior, and compromised functioning at age 30. American Journal of Psychiatry, 163(7), 1226–1232. [PubMed: 16816228]

Reynolds WM (1987). Suicidal ideation questionnaire (SIQ). Odessa, FL: Psychological Assessment Resources.

Ribeiro JD, Franklin JC, Fox KR, Bentley KH, Kleiman EM, Chang BP, & Nock MK (2016). Self-injurious thoughts and behaviors as risk factors for future suicide ideation, attempts, and death: A meta-analysis of longitudinal studies. Psychological Medicine, 46(2), 225–236. 10.1017/S0033291715001804 [PubMed: 26370729]

Roberts CM, Kane RT, Rooney RM, Pintabona Y, Baughman N, Hassan S, Cross D, Zubrick SR, & Silburn SR (2017). Efficacy of the Aussie Optimism Program: Promoting Pro-social Behavior and Preventing Suicidality in Primary School Students. A Randomised-Controlled Trial. Frontiers in Psychology, 8, 1392. 10.3389/fpsyg.2017.01392 [PubMed: 29599729]

Ryan C, Huebner D, Diaz RM, & Sanchez J (2009). Family rejection as a predictor of negative health outcomes in white and Latino lesbian, gay, and bisexual young adults. Pediatrics, 123(1), 346–352. 10.1542/peds.2007-3524 [PubMed: 19117902]

Ryan SM, & Ollendick TH (2018). The Interaction Between Child Behavioral Inhibition and Parenting Behaviors: Effects on Internalizing and Externalizing Symptomology. Clinical Child and Family Psychology Review, 21(3), 320–339. 10.1007/s10567-018-0254-9 [PubMed: 29464425]

Scheeringa MS (2016). Validity of Measurement of Suicidal Ideas in Very Young Children. Journal of the American Academy of Child and Adolescent Psychiatry, 55(3), 243. 10.1016/j.jaac.2015.12.004

Schilling EA, Aseltine RH, & James A (2016). The SOS Suicide Prevention Program: Further Evidence of Efficacy and Effectiveness. Prevention Science: The Official Journal of the Society for Prevention Research, 17(2), 157–166. 10.1007/s11121-015-0594-3 [PubMed: 26314868]

Schilling EA, Lawless M, Buchanan L, & Aseltine RH (2014). "Signs of Suicide" shows promise as a middle school suicide prevention program. Suicide & Life-Threatening Behavior, 44(6), 653–667. 10.1111/sltb.12097 [PubMed: 24796660]

Schmaal L, van Harmelen A-L, Chatzi V, Lippard ETC, Toenders YJ, Averill LA, Mazure CM, & Blumberg HP (2020). Imaging suicidal thoughts and behaviors: A comprehensive review of 2 decades of neuroimaging studies. Molecular Psychiatry, 25(2), 408–427. 10.1038/s41380-019-0587-x [PubMed: 31787757]

Sheftall AH, & Miller AB (2021). Setting a Ground Zero Research Agenda for Preventing Black Youth Suicide. JAMA Pediatrics, 175(9), 890–892. 10.1001/jamapediatrics.2021.1112 [PubMed: 34180964]

Singer JB, Erbacher TA, & Rosen P (2019). School-Based Suicide Prevention: A Framework for Evidence-Based Practice. School Mental Health, 11(1), 54–71. 10.1007/s12310-018-9245-8

Slaughter V (2005). Young children's understanding of death. Australian Psychologist, 40(3), 179–186. 10.1080/00050060500243426

Slavin LA, Rainer KL, McCreary ML, & Gowda KK (1991). Toward a multicultural model of the stress process. Journal of Counseling & Development, 70(1), 156–163.

Soole R, Kõlves K, & De Leo D (2015). Suicide in Children: A Systematic Review. Archives of Suicide Research, 19(3), 285–304. 10.1080/13811118.2014.996694 [PubMed: 25517290]

Speece MW, & Brent SB (1984). Children's Understanding of Death: A Review of Three Components of a Death Concept. Child Development, 55(5), 1671–1686. 10.2307/1129915 [PubMed: 6510050]

Sulik MJ, Blair C, Mills-Koonce R, Berry D, & Greenberg M (2015). Early Parenting and the Development of Externalizing Behavior Problems: Longitudinal Mediation Through Children's Executive Function. Child Development, 86(5), 1588–1603. 10.1111/cdev.12386 [PubMed: 26082032]

Tan PZ, Oppenheimer CW, Ladouceur CD, Butterfield RD, & Silk JS (2020). A review of associations between parental emotion socialization behaviors and the neural substrates of emotional reactivity and regulation in youth. Developmental Psychology, 56(3), 516–527. 10.1037/dev0000893 [PubMed: 32077721]

The Trevor Project. (2021). 2021 National Survey on LGBTQ Youth Mental Health. The Trevor Project.

Tremblay RE, Nagin DS, Séguin JR, Zoccolillo M, Zelazo PD, Boivin M, Pérusse D, & Japel C (2005). Physical aggression during early childhood: Trajectories and predictors. The Canadian Child and Adolescent Psychiatry Review = La Revue Canadienne De Psychiatrie De L'enfant Et De L'adolescent, 14(1), 3–9.

Turner BJ, Kleiman EM, & Nock MK (2019). Non-suicidal self-injury prevalence, course, and association with suicidal thoughts and behaviors in two large, representative samples of US Army soldiers. Psychological Medicine, 49(9), 1470–1480. 10.1017/S0033291718002015 [PubMed: 30131080]

Twenge JM, Joiner TE, Rogers ML, & Martin GN (2018). Increases in Depressive Symptoms, Suicide-Related Outcomes, and Suicide Rates Among U.S. Adolescents After 2010 and Links to Increased New Media Screen Time. Clinical Psychological Science, 6(1), 3–17. 10.1177/2167702617723376

Valentine SE, & Shipherd JC (2018). A systematic review of social stress and mental health among transgender and gender non-conforming people in the United States. Clinical Psychology Review, 66, 24–38. 10.1016/j.cpr.2018.03.003 [PubMed: 29627104]

Valiente C, Swanson J, DeLay D, Fraser AM, & Parker JH (2020). Emotion-related socialization in the classroom: Considering the roles of teachers, peers, and the classroom context. Developmental Psychology, 56(3), 578–594. 10.1037/dev0000863 [PubMed: 32077726]

van Eldik WM, de Haan AD, Parry LQ, Davies PT, Luijk MPCM, Arends LR, & Prinzie P (2020). The interparental relationship: Meta-analytic associations with children's maladjustment and responses to interparental conflict. Psychological Bulletin, 146(7), 553–594. 10.1037/bul0000233 [PubMed: 32437177]

Varela RE, Vernberg EM, Sanchez-Sosa JJ, Riveros A, Mitchell M, & Mashunkashey J (2004). Anxiety reporting and culturally associated interpretation biases and cognitive schemas: A comparison of Mexican, Mexican American, and European American families. Journal of Clinical Child and Adolescent Psychology: The Official Journal for the Society of Clinical Child and Adolescent Psychology, American Psychological Association, Division 53, 33(2), 237–247. 10.1207/s15374424jccp3302_4 [PubMed: 15136187]

Victor SE, Scott LN, Stepp SD, & Goldstein TR (2019). I Want You to Want Me: Interpersonal Stress and Affective Experiences as Within-Person Predictors of Nonsuicidal Self-Injury and Suicide Urges in Daily Life. Suicide & Life-Threatening Behavior, 49(4), 1157–1177. 10.1111/sltb.12513 [PubMed: 30159910]

Volling BL, Mackinnon-Lewis C, Rabiner D, & Baradaran LP (1993). Children's social competence and sociometric status: Further exploration of aggression, social withdrawal, and peer rejection. Development and Psychopathology, 5(3), 459–483. 10.1017/S0954579400004521

Whalen DJ, Belden AC, Luby JL, Barch D, & Dixon-Gordon K (2016). Dr. Whalen et al. Reply. Journal of the American Academy of Child and Adolescent Psychiatry, 55(3), 243–245. 10.1016/j.jaac.2015.12.003

Whalen DJ, Dixon-Gordon K, Belden AC, Barch D, & Luby JL (2015a). Correlates and Consequences of Suicidal Cognitions and Behaviors in Children Ages 3 to 7 Years. Journal of the American Academy of Child and Adolescent Psychiatry, 54(11), 926–937.e2. 10.1016/j.jaac.2015.08.009 [PubMed: 26506583]

Whalen DJ, Dixon-Gordon K, Belden AC, Barch D, & Luby JL (2015b). Correlates and Consequences of Suicidal Cognitions and Behaviors in Children Ages 3 to 7 Years. Journal of the American Academy of Child & Adolescent Psychiatry, 54(11), 926–937.e2. 10.1016/j.jaac.2015.08.009 [PubMed: 26506583]

Whalen DJ, Hennefield L, Elsayed NM, Tillman R, Barch DM, & Luby JL (2021). Trajectories of Suicidal Thoughts and Behaviors From Preschool Through Late Adolescence. Journal of the American Academy of Child and Adolescent Psychiatry, S0890-8567(21)01364–2. 10.1016/j.jaac.2021.08.020

Wilcox HC, Kellam SG, Brown CH, Poduska JM, Ialongo NS, Wang W, & Anthony JC (2008). The impact of two universal randomized first- and second-grade classroom interventions on young adult suicide ideation and attempts. Drug and Alcohol Dependence, 95, S60–S73. 10.1016/j.drugalcdep.2008.01.005 [PubMed: 18329189]

Wyman PA, Gaudieri PA, Schmeelk-Cone K, Cross W, Brown CH, Sworts L, West J, Burke KC, & Nathan J (2009). Emotional Triggers and Psychopathology Associated with Suicidal Ideation in Urban Children with Elevated Aggressive-Disruptive Behavior. Journal of Abnormal Child Psychology, 37(7), 917–928. 10.1007/s10802-009-9330-4 [PubMed: 19479370]

YRBSS | Youth Risk Behavior Surveillance System | Data | Adolescent and School Health | CDC. (2020, October 27). https://www.cdc.gov/healthyyouth/data/yrbs/index.htm

Yu EA, & Chang EC (2021). Asian American Youth Suicide: Research and Intervention. In Handbook of Youth Suicide Prevention (pp. 229–239). Springer.

Zayas LH, Lester RJ, Cabassa LJ, & Fortuna LR (2005). Why do so many Latina teens attempt suicide? A conceptual model for research. American Journal of Orthopsychiatry, 75(2), 275–287. [PubMed: 15839764]

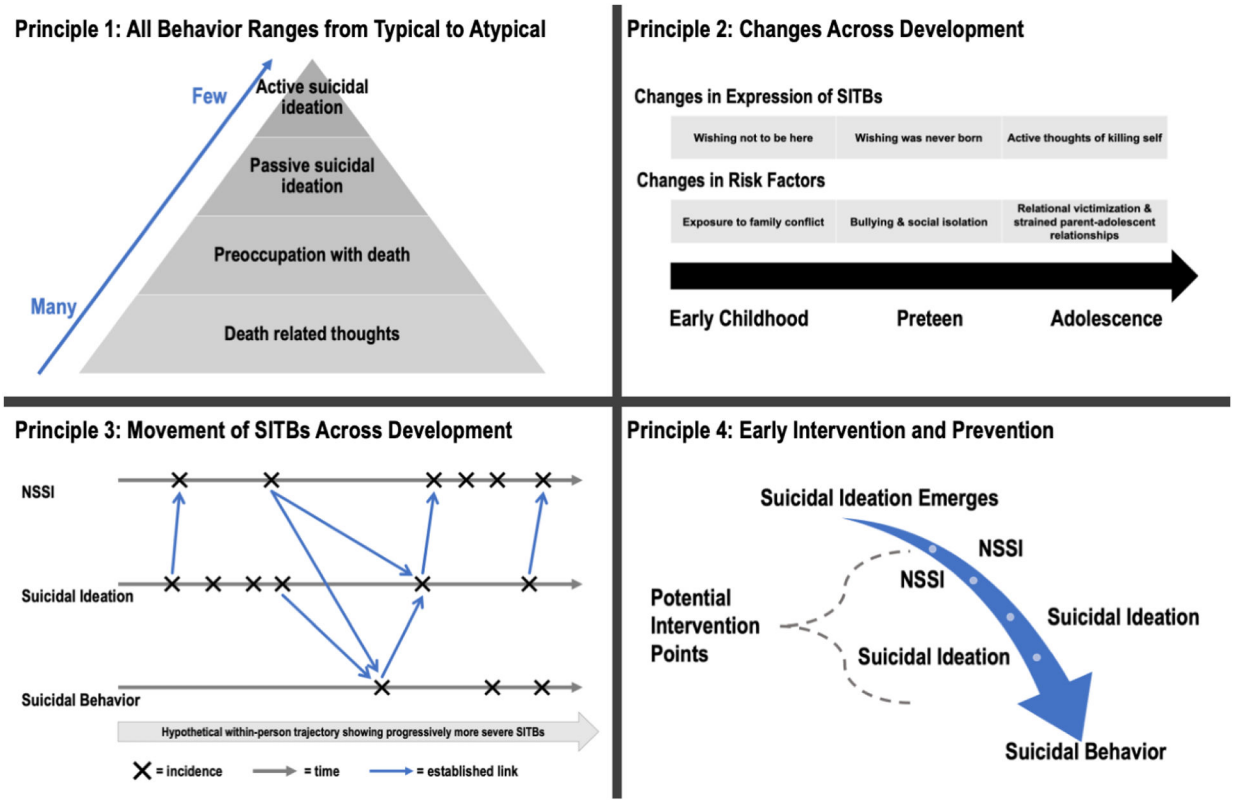


**Figure 1.**

Four key principles of developmental psychopathology that can guide future directions in research on self-injurious thoughts and behaviors (SITBs) in youth. Principle 1 depicts a hypothetical example of a continuum from typical death related thoughts to atypical active suicidal ideation. Principle 2 depicts how expression of SITBs and risk factors may change depending on developmental stage. Principle 3 provides a hypothetical example of an individual's nonlinear, dynamic shifts in SITBs across time in development. Principle 4 depicts how there are multiple possible prevention and intervention points leading up to more sever forms of SITBs. These principles are presented separately but operate in concert with one another.