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2019

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A Mixed-Methods Analysis of Self-Harm in a Longitudinal Study of Young Women with Childhood ADHD

By

Shaikh I. Ahmad

A dissertation submitted in partial satisfaction of the

requirements for the degree of

Doctor of Philosophy

in

Psychology

in the

Graduate Division

of the

University of California, Berkeley

Committee in charge:

Professor Stephen P. Hinshaw, Chair
Professor Sheri L. Johnson
Professor Susan I. Stone

Summer 2019

Abstract

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Objective: Despite over fifty years of research on self-harming behavior, including both non-suicidal self-injury (NSSI) and suicidality, the need for continued research and interventions is imperative, as suicide rates have increased for adolescents and young adults over the past decades. In addition to cross sectional and longitudinal research, laboratory-based and micro-longitudinal studies have furthered our knowledge regarding more proximal, contextual factors that lead to self-harm behaviors. An additional approach, which is well-suited to discovering such proximal and contextual factors, involves qualitative interviews. A small but important literature supports the benefits of integrating qualitative with quantitative methods for mental health care research and practice – an approach termed "mixed-methods" strategies. My overall aim is to perform a mixed-methods investigation to better understand contextual/proximal factors associated with self-harm as well as its onset, persistence, and desistance. In addition, I use existing longitudinal, quantitative data to predict themes and codes generated from qualitative, self-harm interviews of young women with and without childhood attention-deficit/hyperactivity disorder (ADHD). An important goal is to capture participants' unique perspectives, allowing them to describe their self-harm experiences in their own words.

Method: The sample emanates from the Berkeley Girls with ADHD Longitudinal Study (BGALS), comprising the largest sample of girls with childhood-ascertained ADHD in existence. It contains four waves of quantitative data (mean ages of 9.5, 14.5, 19.5, and 26) regarding the sample of 228 women, both with and without childhood diagnosed ADHD. From this larger sample, a subsample of 57 young women, with a range of ADHD symptoms and self-harming behaviors, were recruited to take part in qualitative, semi-structured, conversational interviews. Interviews ranged from 90 minutes to 3 hours, covering a range of topics. Interview questions for this dissertation focused primarily on self-harm behavior. Interviews were electronically recorded, transcribed, and then indexed for thematic content before being coded.

These data were then analyzed on the basis of existing quantitative data, including ADHD diagnostic status, self-harm behavior, and a measure of behavioral impulsivity.

Results: Several self-harm themes were identified a priori, driven by existing research, and additional themes emerged from the qualitative interviews. Inter-rater reliability for coded transcripts was high (kappa > .80 across all coders). Excerpts of interviews are provided to further support richness of participant responses. Of the 39 participants whose interviews were fully coded and analyzed, 22 reported engaging in self-harm behavior. Almost all (20 out of 22) reported engaging in repetitive NSSI, and nine reported making a suicide attempt. Consistent with existing theories, several themes emerged regarding functions of self-harm behavior, including emotional dysregulation, attempts to gain attention from others, personal agency, and a belief that they deserved pain/punishment. Additional themes included reasons for desisting in self-harm, the relation between impulsivity and self-harm, as well as themes more specifically related to suicide. Several patterns emerged regarding the onset and course of self-harm behavior. Four self-harm codes were also identified, whereby numerical values were assigned to participant responses based on extent of response/level of detail provided. Exploratory, mixed-methods analyses were also employed, revealing that adolescent impulsivity was associated with greater severity/impact of later qualitatively-reported self-harm behavior.

Conclusions: Qualitative, mixed-methods approaches offer an important mechanism through which individuals can provide rich context about important life experiences, such as self-harm. Several themes discussed by participants in the present study were complementary to existing research and theories of self-harm. In addition, the present study also describes several patterns in relation to self-harm onset, maintenance, and desistance that are novel. Recent research demonstrates the increased risk of self-harm behavior for girls with ADHD, and the present study underscores the need for earlier screening and intervention, given the nature and course of such behavior in individuals with ADHD and comorbid psychopathology. The present study also supports the crucial need for additional screening and school-based prevention programs, in addition to increased parent-education, suggesting that such programs might be indicated at the middle school-level.

Introduction

Self-harm is one of the most significant public health crises facing youth today – both in the US and worldwide. Self-harm largely consists of two groups of behaviors: non-suicidal self-injury (NSSI), in which cutting, burning, and other acts of self-mutilation occur deliberately but without the intent to end one's life; and suicidal behavior (suicidal ideation, attempts, and completions). Suicide rates have increased for adolescents and young adults over the past two decades, with suicide now documented as the third leading cause of death among US individuals aged 18-24 and the leading cause of death for girls aged 15-19, worldwide (Cash & Bridge, 2009; Hedegaard, Curtin, & Warner, 2018; Moran et al., 2012; World Health Organization, 2014). Amidst this rise in suicidal behavior, NSSI in adolescence is also a significant concern, especially given that NSSI has a higher prevalence than suicide attempts in adolescent and young adult populations (Nock et al., 2013; Plener, Libal, Keller, Fegert, & Muehlenkamp, 2009). Although a large heterogeneity of NSSI prevalence estimates exists, one meta-analysis found an estimated pooled prevalence in non-clinical samples of 17.2% (Swannell, Martin, Page, Hasking, & St John, 2014). In addition, NSSI is one of the strongest predictors of later suicidal behavior (Muehlenkamp, Claes, Havertape, & Plener, 2012; Nock, 2009b; Nock, Joiner, Gordon, Lloyd-Richardson, & Prinstein, 2006a; Swannell et al., 2014). Self-harming behavior is a complex, heterotypically continuous phenomenon (Prinstein, 2008). Despite a number of theories on self-harming behavior and over five decades of increasing research in this area, the need for additional research – and especially intervention strategies for youth – is critical. A growing body of research suggests various proximal and environmental factors that influence why adolescents engage in these harmful behaviors (see Brunner et al., 2007; Rodríguez-Blanco, Carballo, & Baca-García, 2018). Still, more fully understanding the context within which individuals initiate, maintain and desist in self-harm would be both elucidating and inform targeted prevention strategies. The purpose of the present dissertation is to more closely examine such contextual factors of self-harm via qualitative interviews using a longitudinal sample of young women both with and without childhood diagnoses of attention-deficit/hyperactivity disorder (ADHD).

Onset, Prevalence and Risk Factors for Self-Harm

For most, NSSI behavior starts in early to middle adolescence but it can emerge as early as childhood. Prevalence estimates vary widely (from just under 2% to over 50%), with over half of these differences attributable to methodological differences (e.g., if NSSI was measured via a single yes/no item, or a multi-item measure/checklist). Overall, two systematic reviews revealed that NSSI prevalence in non-clinical adolescent samples was between 17%-18% (Muehlenkamp et al., 2012; Swannell et al., 2014). Two important factors should be taken into consideration. First, previous studies have emphasized the importance of differentiating between one-time, or infrequent self-harm vs. repetitive/chronic self-harm. Although less prevalent in community samples, repetitive self-harm is more strongly associated with clinical samples and increases risk of suicidal behavior (Brunner et al., 2007; Manca, Presaghi, & Cerutti, 2014; Nock, Joiner, Gordon, Lloyd-Richardson, & Prinstein, 2006b; Plener et al., 2009; Whitlock et al., 2013). Second, self-harm prevalence rates are noticeably higher for clinical samples of adolescents and young adults, with some studies finding prevalence rates of over 50% in psychiatric inpatient populations (Andover & Gibb, 2010; Glenn & Klonsky, 2013; Jacobson &

Gould, 2007; Klonsky & Muehlenkamp, 2007; Nock & Prinstein, 2004; Wilkinson, Kelvin, Roberts, Dubicka, & Goodyer, 2011).

Risk factors for engaging in NSSI are numerous. Studies consistently find that prior NSSI and suicidal thoughts/behaviors, female gender (especially among clinical samples), numerous psychiatric disorders, such as depression (especially feelings of hopelessness) and anxiety, childhood trauma (e.g., abuse), maladaptive parent/child relationships, externalizing problems, and emotion/affect dysregulation each predict later NSSI (Bresin & Schoenleber, 2015; Fox et al., 2015a; Gratz, 2003). Women are more likely to use cutting than men (Bresin & Schoenleber, 2015; Klonsky & Muehlenkamp, 2007). The relation between NSSI and suicidal behavior is also complex. Both have shared risk factors (and are often comorbid within the same individual), and NSSI itself is a strong risk factor for subsequent suicidal behavior. Some view NSSI as a "gateway" to later suicidal behavior, while others view NSSI as existing on a continuum of self-harm behavior (Asarnow et al., 2011; Grandclerc, De Labrouhe, Spodenkiewicz, Lachal, & Moro, 2016; Whitlock et al., 2013).

Additional risk factors for suicidal behavior include several mental health disorders, including depression (especially hopelessness), bipolar disorder, schizophrenia, Cluster B disorders (borderline personality disorder, antisocial personality disorder), as well as emotion dysregulation, impulsivity, lack of social support, perceived burden, and lack of belongingness (Joiner, Ribeiro, & Silva, 2012; Muehlenkamp & Gutierrez, 2007; Nock et al., 2006a). In addition, several studies have found that individuals with childhood ADHD are at increased risk for both NSSI and suicidal behavior compared to non-diagnosed peers, and among those with ADHD, women are at higher risk than men (Allely, 2014; Chronis-Tuscano et al., 2010; Hinshaw et al., 2012). Longitudinal research findings regarding self-harm are complementary, also highlighting a number of common risk factors: prior NSSI or suicide attempts, depression/hopelessness, maltreatment, personality disorder diagnoses, and prior psychiatric hospitalizations (Franklin et al., 2017). More recently, micro-longitudinal methods, such as ecological momentary assessments (EMA) and daily diaries, have also highlighted the important roles of interpersonal stress, emotion dysregulation, impulsivity, rumination, and lack of social support as more proximal risk factors for self-harm (Bresin, Carter, & Gordon, 2013; Hamza & Willoughby, 2015; Rodríguez-Blanco et al., 2018; Selby, Franklin, Carson-Wong, & Rizvi, 2013; Turner, Cobb, Gratz, & Chapman, 2016; Victor & Klonsky, 2014). For example, on days in which individuals reported self-harm, they were more likely to be experiencing more negative emotions or to have experienced an interpersonal conflict.

Theories of Self-Harm

A number of theories of self-harm have been proposed, ranging from social and interpersonal to psychological (cognitive, behavioral, and emotional) and biological. One of the earliest theories of suicide comes from Durkheim's sociological theory, which viewed suicide in the context of a lack of social connectedness/integration (Durkheim, 1897). Several psychological and cognitive theories have been suggested for why people engage in suicidal behavior, including (a) hopelessness, (b) a means of escape (from self-awareness), and (c) significant emotional dysregulation (Baumeister, 1990; Beck, Steer, Kovacs, & Garrison, 1985; Linehan, 1993). Joiner's interpersonal theory, for example, asserts that suicidal behavior is made up of two components: a *desire* to die (which driven by a lack of belongingness and being a perceived burden to others), and acquiring the *capability* to die (e.g., by habituating and

developing a lack of fear of death)(Joiner, 2005; Van Orden et al., 2010). Potentially underlying these theories, a biological framework highlights the important roles of various inflammatory markers, neural development/plasticity, the hypothalamic-pituitary-adrenal axis, and the serotonergic system in managing stress responses (Oquendo et al., 2014).

Multiple theoretical models have also been suggested for NSSI (see Klonsky, Victor, & Saffer, 2014; Suyemoto, 1998), with some overlap existing with theories of suicidal behavior. For NSSI, especially given the lack of an intent to die, key theories suggest that individuals engage in NSSI as a means of regulating affect/emotion and/or by experiential avoidance, whereby individuals are negatively reinforced by engaging in NSSI to temporarily "escape" from negative emotional experiences (Chapman, Gratz, & Brown, 2006; Hasking, Whitlock, Voon, & Rose, 2017; Nock, 2009a). In addition, for some an "automatic positive reinforcement" of feeling "satisfied" or "better" immediately after engaging in NSSI has also been found (Selby, Nock, & Kranzler, 2014). Thus, self-harm can become repetitive due to its automatically self-reinforcing nature (both positive and negative reinforcement). Also, the "defective self-model" of self-harm proposes that some individuals harm themselves out of a desire for self-punishment, largely due to a cognitive style that leads to negative, self-directed thoughts and emotions (Hooley, Ho, Slater, & Lockshin, 2010; Lear, Wilkowski, & Pepper, 2019).

Two key interpersonal/social theories of NSSI have also been discussed. First, the potential for a positively reinforcing social component may lead engagement in self-harm as a means of gaining attention from others (Lloyd-Richardson, Perrine, Dierker, & Kelley, 2007). Second, and especially relevant for adolescents, self-harm has also been viewed from a social modeling/learning theory, wherein such behavior might be modeled and influenced by peers (Heilbron & Prinstein, 2008; Jarvi, Jackson, Swenson, & Crawford, 2013; Nock & Prinstein, 2004). Similarly, a social contagion theory of self-harm suggests that adolescents who know others who self-harm (and who discuss their behaviors with peers) are themselves at risk for engaging in self-harm (Hasking, Andrews, & Martin, 2013; Victor & Klonsky, 2018)—perhaps more so for girls than boys (Prinstein et al., 2010).

More recently, an integrated, cognitive-emotional model has been suggested, which combines aspects of emotional reactivity/dysregulation and experiential avoidance with core underlying negative cognitions (about the individual and the future), all of which play a role in maintaining NSSI behavior (Hasking et al., 2017). A robust literature exists regarding the relation between impulsivity and self-harm, which suggests that emotional/mood-based impulsivity might play a relatively large role in the onset of self-harm behavior, whereas cognitive aspects of impulsivity in the form of reduced cognitive control (e.g., lack of planning/forethought) might play a relatively strong role in the maintenance of such behavior (Lockwood, Daley, Townsend, & Sayal, 2017). Another meta-analysis found similar evidence, which indicated that the "negative urgency" component of impulsivity, defined as the "strong and immediate need to avoid undesirable stimuli, such as negative emotions or physical sensations," was the most robust predictor of self-harm behavior (Berg, Latzman, Bliwise, & Lilienfeld, 2015).

Functions of Self-Harm

In the past 15 years, researchers have empirically examined the functions of self-harm to better understand the various reasons individuals engage in such behaviors. In a critical review of the literature, Klonsky (2007) identified seven core functions of self-harm behavior: (a)

emotion/affect regulation, (b) anti-dissociation (or to feel physical pain), (c) personal agency/autonomy (asserting control over one's body), (d) avoidance of making a suicide attempt, (e) interpersonal influence (seeking help from or manipulating others), (f) self-punishment, and (g) sensation seeking. All of these have received some support from both retrospective clinical interviews (e.g., with individuals receiving services in outpatient or inpatient settings), as well as cross-sectional empirical studies that largely use retrospective questionnaires (Edmondson, Brennan, & House, 2016; Gratz, 2003; Hamza, Willoughby, & Good, 2013; Nock, 2009b; Suyemoto, 1998). Fewer longitudinal studies have examined functions of self-harm (Taylor et al., 2018; Wilcox et al., 2012), but emotion regulation was the most common function identified from these. Although a growing body of research indicates that most individuals engage in self-harm behavior for multiple reasons (Lloyd-Richardson et al., 2007; Victor, Styer, & Washburn, 2016), the most common reason, and the most widely-researched, is emotion/affect regulation – which has received longitudinal support and support from several EMA, lab-based, and/or daily diary studies (Bresin, 2014; Hamza & Willoughby, 2015; Prinstein, 2008; Rodríguez-Blanco et al., 2018; Taylor et al., 2018; Victor & Klonsky, 2014; Wilcox et al., 2012). Several lab-based studies have found that individuals who are self-critical or believe they deserve punishment are prone to self-injury, with the potential for developing higher pain thresholds (Fox, O'Sullivan, Wang, & Hooley, 2019; Gratz et al., 2011; Hamza & Willoughby, 2018; Hooley et al., 2010). Such an association between self-criticism and self-injury is not consistent, however (Daly & Willoughby, 2019; Lear et al., 2019). Regarding interpersonal influence, a daily diary study found that attention-seeking and increased social support can serve as interpersonal reinforcers for maintaining NSSI behavior (Turner et al., 2016). Taken together, these studies suggest that potential functions of self-harm are consistent across various clinical populations (with the most common diagnoses being major depressive disorder, borderline personality disorder, bipolar disorder, and some form of an anxiety disorder).

Some have proposed a two-factor structure regarding the functions of self-harm: an intra-personal factor (e.g., affect-regulation, anti-dissociation), and a social/inter-personal factor (e.g., interpersonal influence, peer bonding) (Klonsky, Glenn, Styer, Olino, & Washburn, 2015; Nock, 2010). These two factors can be crossed with whether the intra-personal or interpersonal factor is positively or negatively reinforcing (see also Taylor et al., 2018).

Self-Harm and ADHD

Developmental pathways leading to adolescent self-harm are equifinal and complex. One clear risk factor is childhood manifestations of psychopathology, in particular ADHD and internalizing problems, such as depression and anxiety (Allely, 2014; Chronis-Tuscano et al., 2010; Hurtig, Taanila, Moilanen, Nordström, & Ebeling, 2012; Swanson, Owens, & Hinshaw, 2014). Although very little longitudinal research of self-harm with ADHD samples exists, current evidence strongly suggests that children/adolescents with ADHD (especially girls) are at high risk (Hinshaw et al., 2012). In addition, several risk factors for self-harm are especially relevant for children/adolescents with ADHD. First, impulsivity – which is highly correlated with the combined presentation of ADHD (ADHD-C; i.e., those who display both inattention and hyperactivity/impulsivity) – is a significant risk factor for self-harm (Auerbach, Stewart, & Johnson, 2017; Berg et al., 2015; Glenn & Klonsky, 2010; Hawton, Saunders, & O'Connor, 2012; McMahon et al., 2018). Second, and relatedly, individuals with ADHD-C, rather than the inattentive presentation alone, are likely to have comorbid depression, anxiety, externalizing

problems, as well as problems with emotion regulation (Graziano & Garcia, 2016; L. Hechtman et al., 2016; Hinshaw, Owens, Sami, & Fargeon, 2006; MTA Cooperative Group, 1999; Owens, Zalecki, & Hinshaw, 2016; Shaw, Stringaris, Nigg, & Leibenluft, 2014), all of which are previously-noted risk factors for self-harm. In addition, children with ADHD are also at significant risk for social/interpersonal difficulties (especially problems with family and peers), another salient risk factor for self-harm (Barker, Arseneault, Brendgen, Fontaine, & Maughan, 2008; Hawton et al., 2012; Johnson et al., 2002). For individuals with comorbidities, as well as significant social/environmental risk, there are undoubtedly multiple transactional processes involved. Indeed, research from our own lab documents the importance of childhood predictors (including childhood ADHD diagnoses, trauma, and severity of impulsivity) and adolescent mediators (including peer relationships, externalizing problems, and depressive symptoms) in its developmental course in a clinical sample (Guendelman, Owens, Galán, Gard, & Hinshaw, 2015; Meza, Owens, & Hinshaw, 2016; Swanson, Owens, & Hinshaw, 2014). More work is clearly needed to uncover whether hypothesized functions of self-harm (discussed above) apply to youth with ADHD.

Opportunities for Additional Research

Crucial to enhanced understanding of self-harm are (a) knowledge of interactions between individuals and their environments, (b) thorough examination of intrapersonal/interpersonal events that precede such behaviors, and (c) comprehension of how changes in affect are associated with self-harm (Fliege, Lee, Grimm, & Klapp, 2009; Franklin et al., 2017; Gratz, 2003; Nock, 2010). Yet many of these processes are difficult to assess via self-report rating scales. Longitudinal studies of self-harm have provided important information on both risk factors as well as outcomes of self-harm; however, none has employed more context-sensitive methods to obtain information on self-harm behavior. Micro-longitudinal studies, such as EMA and daily diaries, have provided critical contextual information that has greatly increased our understanding of more proximal factors associated with self-harm (Hamza & Willoughby, 2015; Rodríguez-Blanco et al., 2018). An additional approach, which has been much less frequently used, involves open-ended, qualitative interviews – which can also ascertain more proximal, environmental factors and further elucidate an individual's activities, thoughts, and beliefs that may trigger self-harming behaviors in vulnerable individuals.

The Benefits of Qualitative and Mixed-Methods Research in Social Sciences

Qualitative research studies have been used in the social sciences for precisely this reason: to gain a deeper understanding of environmental, contextual, and individual factors, which can then be translated into clinical strategies for the alleviation of human suffering (King, 1978; Kleinman, 1988a; Kleinman, Eisenberg, & Good, 1978; Regeser, Pez, & Guarnaccia, 2000). Elliott and colleagues (1999) describe the aim of qualitative research as an attempt to "understand and represent the experiences and actions of people as they encounter, engage, and live through situations." The benefits of integrating qualitative research into theory, practice, and policy are numerous, including improved integration of culturally informed research in psychopathology, improved cross-discipline collaborations between social sciences and medical sciences, additional guidance regarding diagnosing several DSM disorders, and improved health services delivery (Kleinman, 1988b; López & Guarnaccia, 2000; Malterud, 2001; Pope & Mays,

1995; Sullivan, 1998; Weisner, 2002, 2011a). Qualitative methods can, additionally, suggest important variables and processes to investigators, for subsequent inclusion in quantitative research. These data can then further inform additional hypothesis-testing and quantitative analysis. Although quantitative methods are useful for obtaining risk factors or diagnostic information, they may fall short in fostering understanding and representing the lived experiences of individuals. Per Weisner and colleagues (2017), "qualitative methods incorporating the beliefs and accounts of young adults (YAs) themselves can discover important setting and context-level influences for those with a variety of mental illnesses, capture the experiences and perspectives of the YAs, and identify triggers or turning points that often are missed in questionnaires." Activities that are either related to an individual's daily living and/or culture provide salient units of analysis, as they are most often meaningful to the individual, providing potential insight into participants' values, goals, and beliefs (Weisner, 2002).

Although qualitative and quantitative research share a number of objectives (e.g., an explicitly scientific purpose, appropriate/specified methods, respect for participants, informing policy and practice), qualitative research is uniquely poised to provide a coherence of situation/response, foster the importance of context, and ground information in relevant life examples (Brannen, 2005; Elliott et al., 1999). Longitudinal investigations of risk factors, mediators/moderators, and outcomes in the development of psychopathology, for example, primarily feature rating scales and structured interviews, given their repeatability and generally high content validity. Yet more open-ended, qualitative interviews have proven useful in social sciences research, including domains of education, sociology, and cultural/psychological anthropology (Camic, Rhodes, & Yardley, 2003; Eisner, 1991; Mertens, 2014; Morrow & Smith, 2000; Weisner, 2014). Applications to the understanding of psychopathology are also established (Regeser et al., 2000; Suldo et al., 2009; Sullivan, 1998).

Qualitative methods may have key advantages for self-harm research (see Biddle et al., 2013; Coggan, Patterson, & Fill, 1997; Roen, Scourfield, & McDermott, 2008; Sinclair & Green, 2005). For example, Sinclair and Green (2005) interviewed 20 individuals who had previously made a suicide attempt via poisoning and then received hospital treatment. Three key themes emerged from the interviews, each associated with later desistance from these behaviors: resolution of adolescent distress, realization and recognition of the role of alcohol use as both a precipitating and maintaining factor, and eventual understanding that self-harm was a symptom of an underlying/untreated illness. Such information, gleaned directly from participants, can inform intervention and prevention strategies. Additionally Roen and colleagues (2008) found that relevant themes for individuals who engaged in self-harm included: (a) relationships with oneself and (including being perceived as "different"), (b) the accessibility of suicidal means, and (c) a lack of participant knowledge of available mental health services. Existing qualitative research regarding functions of self-harm is similarly lacking. Yet, Polk & Liss (2009) found that the two most common reasons for engaging in self-harm were (1) emotional release and (2) anti-dissociation, with less common reasons listed as (3) asserting control, (4) self-punishment, and (5) avoiding suicide. However, this study took the form of an online survey, with a single, open-ended question about self-harm, which allowed no follow-up questions, or a discussion of additional contextual factors or developmental course. In other words, additional contextual information could help elucidate answers not only to questions such as: "How were you feeling that day/what was going on that led you to start cutting?" or "What was going on that led up to you making a suicide attempt on that day?" but also to why such behaviors might have persisted over time, what they meant to the individual, why the individuals stopped such behaviors, and

how they think these patterns could have been prevented in the first place. In other words, part of the "story" is still missing. A key benefit of qualitative approaches is that they allow investigators to ask these very questions, giving participants the opportunity to provide a rich context for essential behavior patterns.

Even more, qualitative research can and should be integrated with quantitative methods in what is termed "mixed methods" paradigms (Weisner, 2014; Weisner & Fiese, 2011). Incorporating both quantitative and qualitative data into a mixed-methods approach may be a particularly powerful approach in longitudinal designs. That is, investigators can use quantitatively assessed risk factors and mediating factors but also take into account critical proximal, environmental, and contextual variables that would otherwise be ignored. Especially when combined with prior quantitative information (including diagnostic status and dimensional ratings of psychopathology), qualitative data can help to (a) inform both theory regarding risk and resilience at a critical time in development (adolescence and early adulthood) and (b) influence more effective and salient interventions. Qualitative data may be particularly valuable for yielding dynamic, person-specific content and highlight potentially critical underlying factors that might be missed with quantitative data alone. For example, a focus-group study examining bullying and victimization among youth highlighted key themes underlying victimization, such as emerging sexuality, which would otherwise have gone unnoticed (Guerra, Williams, & Sadek, 2011). In short, a mixed-methods framework has the potential to provide insights that might otherwise not be found, also yielding new information that can be added to predictive models.

The MTA Qualitative study as a model for mixed methods research

Such a mixed methods approach was recently undertaken by the largest available clinical trial and longitudinal follow-up of children diagnosed with ADHD (Jensen et al., 2018; Lasky et al., 2016; Mitchell et al., 2019, 2018; J. M. Swanson et al., 2018; Weisner et al., 2018). The Multimodal Treatment Study of Children with Attention-Deficit/Hyperactivity Disorder (MTA; MTA Cooperative Group, 1999) began in 1994 as a randomized clinical trial (RCT) of various treatment options for 579 children with ADHD. The participants completed follow-up quantitative assessments roughly every other year for 16 years (L. Hechtman et al., 2016; Molina et al., 2009). Toward the end of this study, an additional project was initiated: the Qualitative Interview Study (QIS), which used an ecocultural family interview approach (see Weisner, 2002, 2014) to conduct open-ended, semi-structured, conversational interviews with study participants (and a parent) on a number of topics, including ADHD, substance use, work, and family, as well as key "turning points" in their lives. These interviews allowed participants to provide narrative accounts of their attitudes and opinions about ADHD, substance use, and other topics of theoretical and clinical interest (Jensen et al., 2018; Lasky et al., 2016; Mitchell et al., 2018; Weisner et al., 2018). The researchers then used multiple waves of prior quantitative data, combined with these qualitative interviews, to conduct mixed-methods analysis regarding a variety of outcomes, including reasons for the initiation, persistence of, and desistance from substance use (Mitchell et al., 2018). The QIS was structured to allow comparison and analyses along two key dimensions, based on theoretical areas of interest: (a) participants with childhood ADHD vs. non-diagnosed peers; and (b) those with persistent substance use in adolescence/early adulthood vs. those without such behavior patterns (Weisner et al., 2018). Individuals were recruited from the larger MTA sample to fill a 2 x 2 matrix a priori, crossing ADHD history/non-history with substance use history/non-history (over-representing the 'positive' cells of each

dimension). For the present dissertation, a parallel method was employed, adapted here to emphasize motivations for and explanations of self-harm.

Study Aims and Initial Hypotheses

The overall aim is to leverage an existing, longitudinal dataset and employ a novel, semi-structured, qualitative interview–modeled after the MTA QIS–to examine the relation between predictors/antecedents of self-harm and intrapersonal/interpersonal, contextual factors regarding self-harm, and to explore how this relates to the onset, maintenance and desistance of self-harm behaviors in a sample of young women with and without childhood-diagnosed ADHD. As previously discussed, the topic of self-harm is of particular importance in terms of public health, underlying theory, and clinical relevance with the present study sample. As qualitative data of this nature are quite sparse, research questions fall into two overall aims: (a) descriptive (explaining qualitative findings, presenting key themes), and (b) addressing initial hypotheses. Similar to the MTA QIS, an a priori 2 x 2 matrix was created based on core aims of the present study, in order to guide participant selection/recruitment and inform analyses. Here, one dimension pertains to childhood ADHD diagnosis vs. non-diagnosed peers, and the other to those who reported self-harm behavior on quantitative measures vs. those who did not.

Specific Research Aims:

1. In qualitative studies, "themes" generally emerge during participant interviews (Mitchell et al., 2019; Weisner, 2014; Weisner et al., 2018). Although they cannot be fully predicted, I expect to find different qualitative themes/descriptions of life histories between groups of the 2 x 2 matrix during qualitative interviews: for those with vs. without childhood ADHD diagnoses, as well as those who have vs. have not engaged in self-harm. Because unanticipated themes are likely to emerge from the interviews and preliminary analyses, this aim is largely exploratory.

2. Based on questions included in the qualitative interview that explore the functions of self-harm with study participants, and given consistencies in existing research regarding functions of self-harm across clinical populations, I expect that the themes provided by participants will be consistent with those previously identified. I therefore predict that emergent themes from qualitative interviews will largely align with the seven functions of self-harm discussed by Klonsky (2007): (1) emotion/affect regulation, (2) anti-dissociation (or to feel physical pain), (3) personal agency/autonomy (asserting control over one's body), (4) avoidance of making a suicide attempt, (5) interpersonal influence (seeking help from or manipulating others), (6) self-punishment, and (7) sensation seeking. In addition, also informed by prior research, I expect that the most common theme will be related to emotion/affect regulation.

3. Regarding the ADHD dimension more broadly: informed by prior quantitative research, I anticipate that individuals in the childhood ADHD group will be more likely to discuss themes regarding behavioral and emotional problems, as well as peer and family relationship problems, within the context of self-harm, compared to those in the non-

ADHD group (i.e., those without childhood ADHD diagnoses).

4. Regarding the self-harm dimension: I anticipate that individuals who report engaging in self-harm will highlight themes regarding depression/loneliness, emotional dysregulation, and lack of perceived control of their life, compared to those who have not engaged in such behavior. In addition, I plan to examine potential differences in themes/codes between those who engage in NSSI only and those who reported making a suicide attempt.

5. From a mixed-methods perspective, I explore three key theoretically informed quantitative predictors of self-harm behavior in relation to anticipated qualitative codes (themes that are assigned numerical values):
    a. Childhood ADHD diagnostic status (ADHD vs. non-ADHD), as well as dimensionally measured behavioral impulsivity in childhood/adolescence
    b. Childhood/adolescent internalizing symptoms (depression/anxiety)
    c. Childhood/adolescent peer relations

   Although exploratory in nature, I expect that these risk factors will predict differences in information provided by participants during the qualitative interview, especially with regard to the coded themes related to self-harm, such that those with a given risk factor will experience more significant/adverse outcomes, compared to those without the risk factor.

Method

Participants and Procedure

Regarding the "parent study," this dissertation uses data from the Berkeley Girls with ADHD Longitudinal Study (BGALS; see Hinshaw, 2002; Hinshaw et al., 2012; Hinshaw, Owens, Sami, & Fargeon, 2006; Owens et al., 2017). The overall sample consisted of 228 girls (140 diagnosed with ADHD, and 88 age and ethnicity-matched comparison) who were recruited between 1997 and 1999 for naturalistic, research-based 5-week summer camps and who were then followed prospectively 5, 10, and 16-years later. Mean ages were 9.5 at Wave 1 (baseline), 14.2 at Wave 2, 19.6 at Wave 3, and 25.6 at Wave 4 (retention rates range from 92-95% across waves). The sample was diverse and generally representative of the greater San Francisco Bay Area in terms of ethnicity, income, and parental education. Participants underwent a rigorous screening process, including clinical interviews, and rating scales were obtained from multiple informants. After Wave 1, families were invited to participate in follow-up assessments roughly every five years, which included a 4- to 8-hour visit, using structured interviews, questionnaires, and information from multiple informants. Assessments covered multiple domains of functioning, including psychopathology, health, relationships, education, work, functional impairment, and service utilization. The quantitative data for the present study used information from these four waves of visits.

For the present qualitative study, I created the BGALS Turning Points (BGALS TP) interview, paralleling the approach and methodology used for the MTA QIS, described previously. Specifically, participants were invited to participate, between 1-4 years after their

Wave 4 visit, in an open-ended, qualitative interview (see Table 1 for BGALS TP sample demographics). These semi-structured interviews ranged from 90 minutes to 3 hours and covered the following topics: ADHD, friends/family, relationships, school, employment, self-harm, and key "turning points" in their lives. Each topic consisted of open-ended questions (refer to Table 2 for interview topics and sample prompting questions). The interview script was modeled after the MTA QIS, enriched for content based on recent findings and theoretical areas of interest related to developmental pathways of young women with childhood ADHD, particularly related to self-harm. Of note, if the participant was not diagnosed with childhood ADHD, this topic was skipped by the interviewer.

Participants were queried about the topic of self-harm, (e.g., "Why do you think people might engage in this type of behavior?"). At some point during this conversation, some participants spontaneously disclosed having engaged in self-harm. If they did not self-disclose but quantitative data indicated that they had previously reported engaging in self-harm, the interviewer asked a follow-up question in order to ascertain whether the participant remembered previously reporting self-harm behavior. With this approach, even those who had not reported engaging in self-harm could discuss why they think other people might engage in this behavior and if they knew anyone who had previously done so.

For those who endorsed engaging in self-harm during the interview, interviewers asked open-ended, follow-up questions and in general encouraged participants to tell their story about self-harm, which generally included discussing the development and trajectory of their behavior. Follow-up prompts included questions such as: "Do you remember what led you to harming yourself the first time?"; "Was there a particular event or feeling that led up to that situation?"; "What about later times when you hurt yourself?"; and "Do you think there was anything (or any person) that might have been able to prevent you from engaging in this behavior?" Participants who reported engaging in self-harm were also asked about key reasons for persisting in and/or desisting from such behaviors, along with factors that might have influenced or affected engagement or desistence. For participants who endorsed both NSSI and suicide attempts, they were queried separately for each of these behaviors, with similar questions for each (e.g., when did it first happen, reasons why they engaged in the behavior, etc.).

As noted above, a 2 x 2 matrix was created for the present study for study recruitment, based on two key theoretically informed dimensions: (a) those with childhood ADHD vs. non-ADHD, and (b) those who had previously reported engaging in self-harming behavior (either NSSI or suicidality) at either Wave 3 or Wave 4 (see below for further details) vs. those who had not. Based on quantitative data obtained between Waves 1-4, all participants were a priori assigned to one of four cells: (a) ADHD/self-harm, (b) ADHD/no-self harm, (c) Non-ADHD/self-harm, (d) Non-ADHD/no self-harm. Participants were randomly recruited to fill these cells in an unbalanced design, emphasizing cells A, B, and C. Overall, 78 participants were contacted: 3 declined to participate and 18 were no longer living in the area with no plans to return/visit during the interview timeline. A total of 57 participants completed qualitative interviews between 2016-2017 (refer to Table 3a for breakdown of participants in the full-sample recruitment matrix). Thirty-nine interviews were available for analyses (fully transcribed and coded/analyzed); see Table 3b for a breakdown of these participants. Approval for the study was provided by UC Berkeley's Committee for the Protection of Human Subjects.

Measures – Quantitative Data

Key measures used from the four waves of BGALS quantitative data to inform the 2 x 2 matrix for BGALS TP recruitment (ADHD diagnostic status; prior self-harm) were as follows:

Wave 1 ADHD Diagnostic Status: At Wave 1, parents were administered the Diagnostic Interview Schedule for Children, 4th ed. (DISC–IV; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000) for ADHD as well as common comorbid diagnoses (such as ODD, CD, anxiety, and depression). This is a well-validated structured clinical interview used widely for childhood diagnoses of psychopathology. Participants were either diagnosed with ADHD–Inattentive (ADHD-I), or ADHD—Combined type (ADHD-C) – or were assigned to the non-ADHD group (see Hinshaw, 2002). I collapsed those with either ADHD-C or ADHD-I into the ADHD group.

Wave 3 Self-Harm Behavior: I used self-harm data obtained at both Wave 3 and Wave 4 to assign participants to either a "self-harm" group or a "non-self-harm" group. For NSSI at Wave 3, participants were administered the Self-Injury Questionnaire (SIQ; Claes, Vandereycken, & Vertommen, 2001; see also Hinshaw et al., 2012; Swanson et al., 2014), wherein they were asked if they had deliberately harmed themselves using various methods, while also assessing frequency (e.g., "only once" up to "multiple times a day") and severity (e.g., picking at scabs or pulling hair, to cutting, scratching skin until it bleeds, or burning). Using a similar approach to Swanson and colleagues (2014), I created a 4-point, severity score based on the highest level of severity of SIQ-endorsed NSSI. A score of 0 = no endorsement; 1 = endorsement of low-severity NSSI (such as 'constantly pick at scabs until they scar' and/or 'pull or play with your hair so much that it comes out'); 2 = mild to moderate severity NSSI (e.g., 'cut, scratch, or poke skin with pins or other sharp objects until you bleed/scar on purpose,' 'cut words, shapes or initials into your skin,' 'hit yourself so hard or so frequently on purpose to the point of bruising'); and 3 = the highest level of severity (e.g., 'burn yourself on purpose'). For the present study, individuals met criteria at Wave 3 for NSSI if either (a) they endorsed a severity score of 1 and reported engaging in this behavior more than once, or (b) if they endorsed a severity score of 2 or 3. The objective was to exclude individuals from the self-harm group who engaged in infrequent, less severe behaviors. Suicide attempts at Wave 3 were obtained from a self-report, the Barkley Suicide Questionnaire (Barkley & Murphy, 2006) and a study-generated Family Information Packet (FIP; see Hinshaw et al., 2012), in which parents reported whether their child had made a suicide attempt since the last study visit. I used an "or" algorithm, such that either self-report or parent-report counted as positive for suicide attempts.

Wave 4 Self-Harm Behavior: Here, both NSSI and suicide attempts were assessed from the well-validated Self-Injurious Thoughts and Behaviors questionnaire (SITBI; Nock, Holmberg, Photos, & Michel, 2007). Two dichotomous variables were created, which assessed lifetime self-harm. Parallel to Wave 3, if a participant endorsed engaging in an NSSI behavior deemed severe at least once (e.g., cutting or burning), or less severe (inserting object into skin, hitting, picking, hair-pulling, or scratching) more than once, then NSSI was considered present (otherwise absent). Similarly, if by Wave 4 the participant or their parent endorsed that they had made a suicide attempt at least once in their life, then the suicide attempt variable was present (otherwise absent). Regarding the 2 x 2 matrix for study recruitment, if either NSSI or suicide

attempt was endorsed at either Wave 3 or 4, the participant was assigned to the "self-harm" group, otherwise they were assigned to the non-self-harm group.

To facilitate analyses of predictors of self-harm and to examine key quantitative data in relation to qualitative themes and codes, the following BGALS quantitative data were used:

***Wave 1-Wave 3 Impulsivity*:** Behavioral impulsivity was assessed via a repeated measure that was used at Waves 1, 2, and 3: the Conners Continuous Performance Task (CPT; Conners, 1995). The CPT is a computerized test that measures sustained attention, vigilance, and impulsivity/response inhibition by having the participant react to stimuli (i.e., a letter presented on a computer screen) over a 14-minute period, during which she is asked to press a space bar whenever she sees a letter (except for the letter "X", after which she should not press the space bar). When a participant fails to inhibit a response and presses the spacebar after the letter "X" is presented, this is counted as an error of commission, used as a measure of impulsivity (Epstein et al., 2003; Hervey, Epstein, & Curry, 2004; Meza et al., 2016). For the purpose of this study, the percentage of commission errors was used as the measure of impulsivity. Criterion validity data for commission errors based on known group differences (Conners, 1995).

Qualitative Interview and Methodology

Interview Development: The qualitative interview was based on the MTA QIS (Weisner et al., 2018) and the Ecocultural Family Interview (Duncan, Huston, & Weisner, 2007; Weisner, 2002, 2011). The purpose was to guide a discussion regarding various topics of interest but not to obtain forced-choice (i.e., yes or no) or rank-order responses. Participants were encouraged to respond in their own words and told that their answer was the only "correct" answer. BGALS TP interviewers asked open-ended questions on a range of topics (Table 2), using initial guiding questions as prompts, but then allowed participants to "tell their story" using their own words, thoughts, feelings, and beliefs. Interviewers included the first author plus two post-baccalaureate research assistants (RAs), each of whom received over 40 hours of training, including practice interviews, shadowing, direct observation, and feedback from the first author. Most interviews were conducted at UC Berkeley, but five were conducted at the home of the participant (because of childcare needs/lack of transportation). All interviewers used the same interview script for each interview, and a printout of the interview topics was provided to the participant during each interview. Each interview was digitally audio-recorded.

Interview Transcription: The recorded interviews were transcribed into Microsoft Word. A transcription manual was first developed and tested by a small pilot team consisting of the first author and 2 RAs in 2016, including a process to de-identify transcripts and standardize formatting. Interview transcription underwent a 2-stage process to ensure high quality. The first transcription was by an RA, who listened to the interview recording and typed the dialog into Microsoft Word. A program called Express Scribe was used to slow down the audio, so as to facilitate more efficient transcriptions. The interview was then reviewed by a second RA, who listened to the interview while editing the initial Microsoft Word transcription, to ensure accuracy. RAs involved in the transcription process received over 20 hours of training, practice, and feedback. Transcripts were then uploaded to an online qualitative analysis system (Dedoose; www.dedoose.com) to capture interview excerpts for indexing, grouping, coding, and analysis.

Coding Manual Development: A coding manual was created after (a) reviewing a subset of interview transcripts for common themes, (b) reviewing the coding manual for the MTA QIS (given overlap in the topic of ADHD was discussed during both the MTA QIS and BGALS TP interviews), (c) theoretically informed themes regarding self-harm based on extant literature (noted below), and (d) review and consultation with Weisner's team regarding qualitative methods. Four core topics were initially included in the coding manual: ADHD (including severity, interventions, and changes over time); psychopathology/mental health more broadly; potential coping mechanisms; and self-harm (including initiation, persistence/ desistance, and relevant environmental factors). For this dissertation, only the section on self-harm will be discussed (refer to Appendix 1 for coded themes regarding self-harm, as well as descriptions of numerical values). Excerpts from qualitative interviews regarding self-harm were identified and then "tagged" (i.e., the relevant portion of the interview was selected).

Two key types of data were identified as part of this coding process. First, in line with qualitative study design and theory (Boyatzis, 2009; Elliott et al., 1999; McAdams, 2001; Strauss, 2010), several "themes" emerged across participants. A theme is a more specific idea or phrase that emerges within a given interview topic. For example, after an initial review of several transcripts of young women with prior self-harm behavior, a key theme arose in relation to engaging in NSSI behavior to physically express emotional pain. As another example, some participants discussed how their self-harm behavior occurred impulsively. Using the Dedoose system, themes can be "tagged" (identified) and indexed (categorized) for later grouping and analysis (i.e., in how many transcripts did a particular theme emerge?).

Second, a subset of key themes of particular interest was then more carefully reviewed and "coded" (refer to Appendix 1). A code is a numerical value assigned to a theme within a given transcript based on the level of detail/specificity provided. Codes were generally assigned on a scale from 0-3 (with usually 0 being "not at all" relevant/important/severe and 3 being "very" relevant/important/severe). For example, a code was applied to indicate the extent to which an individual reported that self-harm behavior was influenced by other people in their lives or by TV/movies/media. Using Dedoose, numerical values were then assigned to transcript excerpts, similar to how excerpts were "tagged," for later grouping and analysis.

The coding manual then went through several iterations after being tested on multiple transcripts and reviewed by a team composed of the first author and two senior RAs. Participant excerpts are presented below to elucidate common themes; IDs are used to identify unique participants. For the qualitative portion, I consulted with Thomas Weisner, PhD, Professor Emeritus in the Departments of Anthropology and Psychiatry at UCLA, chief consultant for the MTA QIS and co-creator of the Ecocultural Family Interview. Weisner and his team consulted on the qualitative interview, transcription and coding portions of the study, including the use of Dedoose. Thus, qualitatively generated information was subject to the generation of reliable codes, exemplifying mixed-method research (Mitchell et al., 2018; Weisner et al., 2018).

Data Analyses

Fifty-seven BGALS participants took part in qualitative interviews. At the time of this writing, a total of 39 interviews have been fully reviewed, coded, and analyzed. Thus, data are presented for only the 39 interviews for which complete qualitative data is available. The following analyses were conducted. For analyses that compared differences in outcomes

between those who reported NSSI vs. those who reported making a suicide attempt, individuals who reported both NSSI and a suicide attempt were assigned to the suicide attempt category for purposes of analyses, as this was considered to be the more severe category. First, differences in the four self-harm codes were assessed between individuals who reported engaging in NSSI only vs. those who made a suicide attempt, using independent samples *t* tests (4 tests total; Table 5). Next, differences in the same four codes were also assessed between individuals with childhood ADHD vs. their non-ADHD peers, using independent samples *t* tests (4 tests total; Table 6). Finally, linear regression analysis was used to assess the relation between behavioral impulsivity (CPT commission errors) at Wave 1, Wave 2, and Wave 3, and the four codes identified (12 tests total).

Results

Rating, Coding, and Reliability

Initial coding reliability was established during the training and development of the coding manual, with Kappa coefficients across all 3 reviewers > .80. Once the Dedoose system was operational with the finalized themes and codes, inter-rater reliability was again assessed across all three raters, via a randomly selected subset of transcripts. Inter-rater reliability was again high, with Kappa coefficients across all 3 reviewers > .85. Overall, 1449 interview excerpts were generated for the 39 interviews, with an average of 37 excerpts per interview across all topics indexed. Of these, 379 excerpts were associated with the topic of self-harm. The following review/analyses are based on these 39 interviews and focused on the topic of self-harm. All themes/codes discussed below are based on the 379 excerpts related to self-harm.

Twenty-two of the 39 participants reported engaging in some form of self-harm behavior in their qualitative interview (see Table 4), compared to 26 out of 39 endorsing self-harm based on prior quantitative data. Two participants reported engaging in self-harm during qualitative interviews who did not endorse such behavior previously, while six participants did not report self-harm during qualitative interviews who did endorse self-harm previously (Cohen's Kappa = .571). Of the six who did not endorse self-harm during qualitative interviews, 4 of them had previously reported only low-severity NSSI. For the remaining two participants, although both previously reported suicide attempts, during qualitative interviews they reported that these were closer to suicidal ideation (which did not require intervention), and that they did not consider them actual attempts.

Of the 22 individuals who endorsed self-harm during qualitative interviews, 17 had childhood ADHD diagnoses (four with ADHD-I, and 13 with ADHD-C), and five were non-ADHD participants. Of the 17 from the ADHD group who reported self-harm, 10 reported engaging only in NSSI, one reported only making a suicide attempt, and six reported both NSSI and a suicide attempt. Of the five from the non-ADHD group, three reported NSSI only, and two reported both NSSI and at least one suicide attempt. Of the 21 participants who reported engaging in some form of NSSI, the vast majority (19) reported cutting themselves with a sharp object or scratching on purpose to the point of bleeding, but very few (N=3) reported requiring stitches. Most reported starting to engage in NSSI between 7th-9th grade, although two reported hair-pulling or hitting themselves in elementary school (which generally turned into cutting by middle school or early high school). Two individuals reported starting as late as 11th/12th grade. All but one participant who reported NSSI reported doing it repetitively. Most reported

engaging in repetitive self-harm for over a year (some as many as 6-8 years). Three reported engaging in NSSI for more than three months but less than one year. Of the nine who reported making a suicide attempt, five reported using some form of over-the-counter medication, two tried to cut themselves with the intention of dying, one tried to hang herself, and one tried to jump off a cliff. All but one reported making their first attempt between ages 12 and 15; the other reported making her first attempt in her mid-20s. Most (N=6) who reported making a suicide attempt went to the emergency department, and five out of nine were hospitalized in a psychiatric inpatient unit briefly (between 3-10 days). In comparison, of the 13 individuals who reported engaging only in NSSI, only one was hospitalized. Of note, of the 17 who reported not engaging in some form of self-harm, all but two reported that they knew a friend or family member who had either engaged in serious NSSI or had made a suicide attempt.

Based on prior literature and a post-hoc review of interviews, several themes and codes (recall that codes are themes with numerical values assigned) emerged. I first review self-harm themes and then present self-harm codes.

Qualitative Review - Self-Harm *Themes*

Theme 1: Reasons for engaging in self-harm

One of the most important themes identified a priori was the function of self-harm: the reasons for which individuals initiate and continue engaging in various self-harm behaviors. The reasons identified below were derived from the seven (identified previously) by Klonsky (2007), and were subsequently informed by an initial review of several interview excerpts. The following applies primarily to NSSI, but I also discuss the context in which suicide attempts were made. For this theme, six initial, specific reasons were identified, each of which will be treated as a sub-theme: (1A) emotional dysregulation or as a physical expression of emotional pain, (1B) attempts to gain attention from others (family, peers, other authority figures), (1C) attempts to assert control over some aspect of their life (personal agency), (1D) belief that they deserved pain/punishment for some reason, (1E) attempts to purposefully manipulate others (generally loved ones), and (1F) engaging in NSSI as a method of preventing an actual suicide attempt. Of these six specific reasons (or sub-themes) 1E and 1F were not endorsed in any of the 22 interviews. Importantly, and as will be evident in many excerpts below, all but two participants endorsed more than one sub-theme when discussing their reasons for engaging in self-harm. In addition, their descriptions typically imply that the various reasons co-occur.

Sub-Theme 1A (emotional regulation/physical pain): The most common reason for engaging in self-harm behavior, which was endorsed by 20 out of 22 participants, was 1A: to help regulate their emotions or as a physical expression of emotional pain. The most common emotions discussed were loneliness, sadness, or feeling frustrated/overwhelmed. In the words of one participant:

> (9836): I think the biggest thing is a lot of kids think they're alone in their thoughts. They just assume they're the only one that's going through whatever situation or experience they're going through. And I mean I know that for me, when I was growing up, a lot of what I was telling myself is, 'You're doing it wrong,' or, 'You look wrong,' or— just very nit-picky about everything to do with myself. And so, I remember the first time that I cut myself I just kind of thought like, 'This does help the pain.'

Similarly:

> (9772): With me, the reason I did it… when I was an adolescent through like teens… I did it because the physical pain was easier to deal with than the emotional. So like, if I felt like if I had a gash in my soul, it would, it's easier to deal with a gash on my arm. It's physical, it hurts, it's bleeding. I can take care of it. I can show somebody and be like, hey look what I did. 'Cause part of it was for attention. That's why I did it. I was like there's something wrong with me inside. But I can't explain what it is. So look at this physical thing on me… It was more like surface harm. Just so I can, I mainly caused like physical pain. So I could register, so my body registered as something real. 'Cause emotional pain was just too hard to deal with 'cause I didn't understand why I was feeling like that.

> (9706): I did it like as a release… It was therapeutic in a scary way to me. Like you'd just start with a little cut and then you just keep going and going and it was just like a release… like took your mind off of everything for a minute. You didn't have to focus on the inside of your head. You could get out of your body, if that makes sense… I think I was literally just sitting in my room and like it was dark and quiet and I was like alone in my thoughts—and I just remember seeing scissors on my desk and schoolwork or something and I was like, 'Those look good' and I just, I don't even know… Yeah, like this is, this gives you immediate relief and I think when you get to that point, you're searching for anything, you know? You'll do anything and everything for immediate relief and not think about the long-term consequences or aspects of what you're doing.

Further expanding on this sub-theme of emotional pain, these participants described engaging in self-harm to be able to *make sense of, or make visible*, the pain that they were feeling inside, or as a *means to feel something* (physically), but often had a hard time putting these feelings into words. As described in the previous quote, by engaging in this behavior, they felt some sort of a *relief* or *release* (often described as a physiological response). Most individuals who engaged in self-harm because of this sub-theme of emotional pain endorsed that they felt *alone* and could not talk with anyone about these feelings (a total of 12).

Sub-Theme 1B (gain attention from others): The second most common reason for engaging in self-harm behavior, endorsed by 13 out of 22 participants, was as a method of gaining attention from others. Of note, all participants who endorsed this sub-theme also endorsed the previous one (emotional pain). Indeed, most who described the desire to gain attention from others were doing so because of emotion dysregulation or because of their desire to express their emotional pain physically. Some described this as "cry for help" – usually directed at parents or authority figures, such as in the following excerpt:

> 9914: I think I was doing very poorly in school and I think I was getting bad grades and was so overwhelmed with these projects. And I didn't feel like my mom was listening to me and I just felt like I was so unhappy and no one was listening and I couldn't… like I was starving for attention and I couldn't get any attention, even though I always had a lot of attention, it was… a different kind of attention… I was getting this negative type of

> attention when I really needed—I don't even know what kind of attention I needed, I just knew that I wasn't getting the attention that I needed instead of the attention I was getting.

Others described the need for attention as more of a peer/social process, especially for those who had friends who also engaged in NSSI. As one participant recalls:

> (9915): I think after I did it once… Maybe because I got attention for it… and my friend was like 'Oh, you did that, we need to go talk to somebody.' I was like 'No.' And then everybody made a big deal about it. And then it became a thing… I think, if anything I didn't get – for most of the time that I was cutting – I didn't get attention from teachers and my parents. I think the attention that I was getting was social so like from my friends. Like I said, I would cut and all my friends would cut and we would come together and be like 'Oh sob story.' It was like we – it almost became like a social thing. We would all kind of like bond over it. So it was almost like relief, the cutting became a relief through a social bonding.

Sub-Theme 1C (assert control): A number of participants (10 out of 22) discussed experiencing a *lack of perceived control* over their life/environment, stating that engaging in NSSI was an attempt to *assert control* over something (in this case, their own body). For most of them, this desire was often borne out of a feeling of *frustration* regarding their life, the present situation, or with others in their life – often in relation to parents, as described below:

> (9927): I felt completely out of control of my whole life. It really started after my parents split up and… everything around me felt like falling apart. And so for me, it was like I can take all of this pain that I'm feeling and all of these uncontrollable, everything going on in the world, and I can channel it into something that I'm in control of… I know what's going on that I can choose what I'm doing… especially because, you know, my mom would watch when I was taking my medication. Everything about my life felt dictated, and it was like, when I am in the shower, I can cut myself, and no one will know until afterward. That was the time that I could just do whatever I wanted to do. I mean it felt much more like, obviously it physically hurt, and then there was an element of… It felt good to sort of have some sort of an actual physical representation of, you know, sort of what's going on inside. But partly for me, it just felt like a way to have control of something that was going on.

Similarly:

> (9706): I think I just remember being so frustrated and I felt like I wasn't being heard by my parents, like how unhappy I was. My dad had a really hard time believing that depression was a thing and that, 'She's just a girl, she'll get over it.' Yeah, and so I felt like we had like gotten into a fight or something happened at home and I reverted back to cutting just because I was like, 'Screw this, screw you. I'll show you,' kind of a thing.

Sub-Theme 1D (deserving pain/punishment): Although similar to sub-theme 1A (emotional pain), the final sub-theme was more punitive in nature: A subset of participants (six out of 22)

articulated that the key emotion driving their behavior was *anger directed at themselves*. These individuals usually reported feeling frustration, with an added component of anger, which became associated with self-blame. They often thought that they *deserved pain/ punishment*, seemingly because they thought something wrong with them or believed they were responsible for events occurring in their environment. Of import, all but one of these individuals were diagnosed with both ADHD and at least one comorbidity (sometimes multiple comorbidities), most often depression or anxiety. For one participant:

> (9927): It was more intending to harm myself instead of just cutting 'cause it felt good. I was still cutting because it felt good but part of the reason it felt good was because I was harming myself… Again, this is a little bit of the ADD thing, sort of having grown up thinking I'm different, I'm wrong, there is something wrong with me. Sort of having the feeling that I need to be fixed and hitting this point where I'm like, well what if I can't be fixed? I've been dealing with this for how many years of my life. It's not getting better. Maybe I just shouldn't continue going if is not going to get better. I would see myself, because my family was falling apart, I saw myself as the source of that, and I just looked at it and thought, 'Well, look at all those bad stuff that I'm contributing to the world.' I'm not even getting anything positive out of it. I'm not getting better and I'm still continuing.' I have to do therapy and I have to do meds… So it's kind of, what's the point in continuing if no one is getting anything out of it. I'm not getting anything good, no one else is getting anything good, so at that point it really became more of, I want to hurt myself, to make myself feel like, I guess in a sense it was like a punishment sort of thing. So it's like the world is falling apart around me; everyone hates me; I hate myself. Here is something again, the sort of physical manifestation I can do to show that.

Similarly:

> (9967): From the outside, a lot of people can't understand, but there can be a lot of anger towards oneself when you have a diagnosis of a disorder. And it's had a huge impact on your life, and you feel like it's had a huge negative impact on your life. And so, you start hating yourself because of what's happened to you because you think it's your fault. You look at your life, and you see all these problems in your life… forming relationships with people… problems having the career you want, you just feel unhappy. And there's this chronic background noise of unhappiness that just won't go away. And sometimes… it almost feels like a punishment or it feels like a way of getting control of yourself. Or being suicidal because they just don't want to have another day in this life where they—just having this life that you just don't enjoy, or you just feel miserable all the time… What I recently realized is, it started back in elementary school. I would hit myself, and I didn't realize until now that that was self-harm. And that was me acting out my own anger onto myself.

With regard to the above four sub-themes – emotional pain, gaining attention, asserting control, deserving pain/punishment – for most participants, the self-harm usually turned into a cycle. That is, events would generally trigger an emotional reaction; the participant would self-injure (which participants often recognized did not help their situation but still provided short-term relief); and the self-harm then brought about additional emotions, which triggered

additional self-harm behavior. For a number of participants, self-harm thus became a negatively-reinforcing pattern (e.g., trying to temporarily "escape" from their negative feelings by harming themselves), much like a stress response (often coupled with anxiety), where the self-harm took on a feeling of a "habit," "ritual," or "compulsion" that was difficult to resist.

> (9810): So my self-harming behavior started in middle school as attention-seeking behavior, which is often how it is. And often one of the reasons why it's overlooked. It's just like 'Oh you just want attention. Oh you're just a teenager. Oh you're just, whatever.' All of those excuses, that really come from people being afraid of what it means to see their friend cutting themselves or scratching themselves or pulling their hair out or banging their head or whatever. So it was, it absolutely started as attention seeking behavior and then moved into something that was really cathartic. And that it was the only way that I could truly actually express what it felt like in the inside of my head, you know, was just to have it show on the outside. The only way I could manage was through - I cut and I scratched… After a certain point… it then would kind of became an anxiety response. You know like I would be in a situation that would be really difficult for me. And I would look down and realize I was like compulsively scratching my arm. Like oh wow, but that was like a year into it. Or more than a year into it.

> (9819): I think… honestly, this has been a recent discovery about myself… I chew my cheeks *a lot*. I chew them to the point of bleeding and stinging basically, so to the point that they hurt. And I've kind of realize that this is a reaction to when I'm stressed. Just being more aware of myself recently over the years, I'm realizing, 'Okay, when you're really stressed, you do inflict some kind of pain to yourself because you're sitting here gouging out the inside of your cheeks and gums and stuff.' So, I guess that would be one little thing that I do that would be pain-oriented, but I had never even thought of it until I paid attention to myself when I do when I'm stressed and everything… It almost becomes like OCD: I can't stop. I could be in the middle of having to do anything and I will not stop doing it. It's ridiculous. It's a habit I'm hopefully trying to break right now.

For four out of 22, self-harm started because of *Sub-Theme 1A* (a need to feel something or manifest emotional pain in a physical way) and then turned into the aforementioned cycle, but became further reinforced because of attention from others (usually peers). For instance, a friend or classmate would notice a scratch or see a bandage and inquire about it. In some cases, these individuals also reported being part of a friend group in which a number of girls cut.

Although not initially identified as a theme during development of the coding manual, an interesting post-hoc finding was noticed during review and analysis. Half of those who reported engaging in self-harm (11 participants) noted that they often ended up self-harming in such a way that it was not obvious or visible to others: they often did not want anyone to know. One, for example, noted that she cut the bottom of her feet (even to the point of not being able to walk) so that others would not notice cuts on her arms or legs. Most in this group acknowledged that the behavior was not generally viewed as healthy/socially acceptable, and discussed a sense of shame or embarrassment because of engaging in self-harm – which was associated with a desire to keep both their feelings and their behavior to themselves. In addition, some thought at the time that "something was wrong" with them, because they believed that the self-harm still

helped them in the moment and therefore had a desire for others not to find out–as this would only make the shame worse and may stop the cycle of self-harming.

Theme 2: Reasons/methods for desisting from or preventing self-harm

An additional qualitative theme pertains to reasons that participants endorsed for desisting from self-harm behavior. Three patterns emerged in relation to desistance. First, for some individuals, self-harm reached a point where they experienced a significant turning point, such as making a suicide attempt and/or being admitted to an inpatient psychiatric unit—or having someone close to them kill himself or herself. This change often involved starting therapy and/or psychotropic medication, which was usually a significant contributor to desisting in self-harm behaviors. Almost one-half of participants who reported self-harm noted that they subsequently received some form of intervention, which almost always included psychotherapy. All of this group noted that such intervention was helpful in relieving potential desires to self-harm, either in the form of simply talking with someone or because of coping skills (such as mindfulness and other cognitive-behavioral techniques) learned in therapy.

> (9810): *Interviewer*: Why did you stop?
> *Participant:* 'Cause I got help. 'Cause it, it hit a certain point where it had, it had escalated as much as it was going to escalate. I had tried to kill myself. I was institutionalized. And, I mean, you know, you try and fail to kill yourself. You either come away with it with a new lease on life. Or exactly the same behavior. And I was fortunate enough to come away with it with a new lease on life kind of feeling. Even though it didn't last very long. And even though I still struggled and still fell back into old habits. There was a little bit more of a desire to continue on. And I was like, 'Well maybe the universe has a plan for me. Maybe there isn't – maybe I wasn't supposed to die' kind of thing.
> *Interviewer*: So where did this thinking come from?
> *Participant*: Help? Came after a lot of the therapy that I had. And a lot of the interventions that worked and a lot of those things. But you know. I've always, there's always been a part of me that's thought that way. But for a long time the depression was a lot stronger than that voice.

> (9968): Well, cutting is what lead me up to going to [psychiatric hospital] and I think I never wanted to be in that place where I would be like that again. So, I think, in my mind, if cutting is what led me to that space because I was – I mean, once you started, it's pretty – I felt like it was pretty hard to stop. But I never wanted to go back a place where you feel so out of control and not be in control of your own life. It was motivation enough to not do it again.

One participant commented that, once her parents found out that she was cutting, their involvement was instrumental in limiting the amount of time during which she cut.

> (9706): It didn't last very long and because that's kind of when I started going to therapy three times a week and then seeing a psychologist and my parents took the door off my hinges, so like, I never was alone… Yeah, it didn't last very long.

Similarly, for another individual:

> (9903): *Interviewer*: So, when did you stop? Or like, what do you think the reasons were why it stopped?
> *Participant:* I know what the reasons are, my mom told me that if I can't love myself enough to not do it, to love her enough to not do it. Because it breaks her heart to feel like she is losing me, and she sat down and got real with me and turns out that was what I needed, somebody to understand.
> *Interviewer*: And how old where you when that happened?
> *Participant*: I was 15.
> *Interviewer*: So it was about a year?
> *Participant*: No, I started in October and by December she had caught me and was putting me into a mental ward through my rehab and then they talked me out and I didn't do it again.

In the second pattern, six participants reported that desistance was not an immediate or active process/decision. Rather, they often continued self-harming, sometimes for years, and then discovered that they no longer needed to engage in this behavior. This sense was often associated with improvement in social/environmental factors (such as making more meaningful or supportive friendships) or "just growing up." Others also discussed that they became better able to use other coping mechanisms or outlets (such as self-care or spending time with others):

> (9772): I pretty much stopped doing that after I went to high school and like, 'cause it just didn't matter as much anymore… I was getting more friends. I was getting more, like, comfortable with myself. And was looking for jobs and stuff like that more. And I was getting into like my 20's and older teens. Like, you know, 17 and up… It didn't seem like there would be much of a point anymore. I was already diagnosed with all of those other things. So I was like, 'ok so that makes sense.'"

Also within this second pattern, three participants noted that their social situations changed and that they were able to make more friends going into either high school or college, helping them to cope more effectively. Others acknowledged, as the last participant noted, coming to terms with their mental health diagnoses.

In the third pattern, four individuals noted that, instead of engaging in self-harm, they would get tattoos or piercings, which still had a physical sensation component, as well as a self-expression component, but was not as harmful and was more socially accepted.

Finally, two individuals reported that they had recently engaged in self-harm (so had not desisted), but one of them noted that the frequency in which they engaged it in now (in their mid-20's) was much less than what they did in their teen years.

Theme 3: Impulsivity and self-harm

The third theme relates to the context in which some participants noted that their self-harm either started or persisted. In particular, these individuals (12 total) described their behaviors as occurring *impulsively*, in the sense that they reported lacking control over engaging in the behavior. In line with existing research, this was discussed in relation to either *negative urgency* (acting rashly when feeling strong negative emotions) or a lack of *premeditation* (simply engaging in the behavior "without thinking"). Not surprisingly, nine out of 12 of these individuals had received an ADHD-C diagnosis in childhood (signifying high levels of impulsivity). As one participant noted:

> (9706): I feel like that was like, 'Oh you can cut and like it makes you, makes it feel better.' I want to say it was like something to do with that movie 'cause, I just remember watching that movie… like this is, this gives you immediate relief and I think, when you get to that point, you're like searching for anything, you know? Like… you'll do anything and everything for immediate relief and not think about the long-term consequences or aspects of what you're doing… It's like an impulse, totally.

Similarly:

> (9746): So, another day shortly thereafter, I got into another fight with my mother because, again… I was a hormonal, going-into-puberty preteen and she was going through menopause… so we're constantly butting heads and you know, kids fight with their parents. So, I was in my room and didn't know what to do and in my frustration, I kinda just grabbed on to my thigh and like ripped through my skin and it was that rush again and I was like, 'Huh! Thank god for something.' And then, I just started kind of like obsessively scratching myself and then that kind of led to that chapter. So, it was just kind of like an evolution of self-harm, I guess.

Themes related to suicide attempts

Although the number of individuals who reported making a suicide attempt or a serious suicidal gesture was smaller (9 total), three common, (sometimes overlapping) themes arose, most of which have been previously discussed. First, some individuals (4 total) endorsed feelings of anger often directed toward themselves, expressing belief that they deserved punishment/pain (*Theme 1D*) as part of the reason for making a suicide attempt. Second, a few participants endorsed that their suicide attempt was more impulsive (*Theme 3*), either in the context of having feelings of *high negative urgency* or simply having a *lack of premeditation*. Third, and less common than for those who only endorsed NSSI, several participants (5 total) endorsed feelings of *hopeless*: being "overwhelmed" in their situation, and feeling as if there was "no way out" – and that this was a key reason for making a suicide attempt. For a hopelessness (and self-directed anger) example:

> (9827): Just all hopelessness. Yeah. Just all hopelessness that, like, nothing's ever really gonna change. In the grand scheme of things. Yeah. Things just – that kind of helpless, that there's no way out. And nothing that you ever do in your life is gonna

> change that. Like, I've been in therapy since I was 13. And it has helped and I'm a lot happier than I used to be. But there are things about my mind that I don't think anything that I ever do will change. And just like, the weight of having to live with that, is just something that the people who say 'Well don't kill yourself, what about your friends? Live for your friends.' Those are the things that those people don't understand. And it's just almost insulting. Don't you think that I want to live for my friends? Don't you think that I want to do this? And you have no idea that I'm not like - daily exhaustion that I feel, just because of my mind. That's another thing. It's yourself. It makes you hate yourself.

Finally, for the 17 participants who did not endorse engaging in self-harm, when asked why others might do so, many touched on key themes discussed above, including emotional pain, seeing self-harm as a sensation-seeking activity "for the endorphins," or as a result of a lack of social/environmental support. For others, it was thought of as an attempt to seek attention. Many reflected that such behavior "didn't make sense" to them and that they could never do it because they "do not like pain." They reported that they would talk with someone or engage in self-care instead. Still, almost all reported knowing people who had either engaged in NSSI or who had made a suicide attempt. As one observed:

> (9825): It's interesting to talk about this 'cause I actually never engaged in any kind of self-harming behavior, but I have many friends who have – whether it be cutting or, I don't even know if eating disorders is considered self-harm, but I also have friends who have eating disorders. Friends who were cutting themselves while we were teenagers, people that are engaged in that behavior to this day. Friends with depression and anxiety. I mean it's just really – it's a pervasive thing. I think there's a lot of shame around it even just with my friends, feeling comfortable enough to confide in me, I just see how much courage it takes to admit to someone that they're engaging in these kinds of behaviors and I think it's perpetuated by a lot of the things that we already talked about, like families that have really high expectations, not feeling like you can meet their expectations, like your life is out of control and so for my friends that were or are engaging in these activities, for them it was a way to control their – try to have a sense of control over their lives. I think our culture these days just has put out a certain image that you need to look a certain way, act a certain way to be considered acceptable to society and if you – I think it's really screwed up. I've seen how it's hurt my friends, fucked with their sense of self.

Even those who did not report engaging in self-harm expressed understanding of the difficulty for those who do engage to open up and share this with others (including friends). Some participants discussed not knowing that their friends were going through such challenging circumstances at the time, finding out only later.

Qualitative Review - Self-Harm *Codes*

In addition to the themes described above, four self-harm topics were identified that were then subsequently *coded* (i.e., received numerical values). The following four codes only apply to the 22 participants who reported engaging in self-harm during qualitative interviews (Refer to Coding Manual in Appendix 1 for description of codes and numerical values). Table 5 displays

differences for all 4 codes below between those who reported NSSI only and those who reported making a suicide attempt.

Code 1: Extent to which participant was negatively impacted by self-harm: The purpose of this code was to assess the extent to which engaging in self-harm behavior interfered in the participant's life and also considered the extent to which participants described the level of detail for such consequences (with "0" being "no impact" and "3" being "significant/substantial impact"). Of the 22 participants who reported engaging in self-harm, on average they reported experiencing "mild to moderate" impact ($M = 1.5$, $SD = 0.86$), with those making a suicide attempt reporting more significant impact ($N = 9$, $M = 2.1$) compared to those who engaged in NSSI only ($N = 13$, $M = 1.0$): $t(20) = 3.8$, $p < .001$, with a very large effect size (Cohen's $d = 1.6$). The impact was generally more severe for those who made a suicide attempt because they often required medical attention (with hospitalization often required), or other people became emergently involved. For an example of a "1" (low impact):

> (9772): As I said, when I came to school, when I like freaked out, and like, you know, I would shut down. I would do this thing in school, what they called, shut down. Where I would basically just like put a hoodie on, or something like that… and just like scratch myself or just like sit there and like say nothing and not move. And it was just basically, it was basically a reset for me. And it's like, the more you try to get me to interact, the more you try to cut me out of my shell, the deeper I'll go. So what the teacher never understood is that if I get to that stage, just leave me alone. Let me reset. I'll come back out.

Code 2: Extent to which self-harm was effective in decreasing negative thoughts/feelings: The aim of this code was to assess the extent to which engaging in self-harm behavior was perceived as effective or useful (e.g., improving mood) (with "0" being "not effective/no utility" and "3" being "substantial effect/high utility"). This code did not cover any social utility or attention-seeking behavior – it was focused on the individuals own experience after engaging in the activity. Overall, most did not endorse that engaging in self-harm was effective or useful ($M = 0.9$, indicating low/mild effectiveness), yet there were a range of responses (0-2), with several qualitative patterns emerging. First, for those who did endorse at least mild-to-moderate effectiveness, they generally described the negative reinforcement pattern previously discussed. Participants acknowledge a "release" or "relief" (in terms of having a physical manifestation of pain, or experiencing a physiological response) that was short-term in nature. Yet, as noted above, participants generally acknowledged that the underlying problem was not resolved. Two individuals reported engaging in self-harm close to the time of the interview, but most had desisted and noted that, longer term, self-harm ultimately was not helpful/did not solve the problem or in fact made things worse. For an example of a "2" (moderate utility):

> (9827): Because it wasn't about trying to kill myself, it was the endorphins of trying to make yourself feel better. It was like, "I'm feeling really shitty right now and I know that if I do this, I'm gonna feel better." It's just a security blanket. … And then realize, what probably perpetuated it, was realizing that I did actually get endorphins and that it did do something. If I had just cut myself and didn't do anything, I would have hoped I would have been like, oh maybe not do this. You know. But you know, getting something. … I

> don’t think that it was ever insanely frequent. I think it was whenever I reached a certain point in a little breakdown or emotional spell.

Similarly, for an example of a “1” (low utility):

> (9830): I would do it [cut] when I was a lot younger… It’s embarrassing now that I have fuckin’ scars on my arms and my legs like that’s really embarrassing. But I just — I don’t know at the time, like I would zone out and just do it, and like — I remember I would just do it really fast and it would feel good because it was sore and like I would be frustrated or whatever, but… it wasn’t like it helped anything.

Although those who reported making a suicide attempt did endorse slightly higher levels of effectiveness of self-harm, relative to those who only engaged in NSSI, the difference was not significant, and the effect size was small (Cohen’s $d = .25$).

Code 3: Extent to which others influenced self-harm: This code was used to assess the extent to which participants report influence by others (either people they knew or movies/media/internet) in engaging in self-harm behavior (with “0” being “no influence/ awareness of others” and “3” being “significant influence/awareness of others”). Across the 22 participants who reported self-harm behaviors, responses were variable, with an average of at least mild awareness/influence of others ($M = 1.4$). No significant difference regarding influence of others between those who made a suicide attempt compared to those who only engaged in NSSI was found, and the effect size was small (Cohen’s $d = .20$). Three main groups emerged for this code. First, participants who reported engaging in self-harm early (often before age 13) were less likely to report being influenced by others. A second group reported having peripheral awareness of, or connection to, individuals who might have engaged in such behavior (peers in their social group, non-first-degree family members) but did not endorse that those situations influenced their own self-harm. The final and largest group (10 out of 22) detailed greater influence of others’ self-harm behavior on themselves (scores of 2 or 3). This influence was either through classmates/peers, their immediate friend group, or from the internet/movies. Interestingly, three participants explicitly recalled seeing it for the first time, or getting the idea of self-harm, from the movie “Thirteen” (of note, the main character in this movie was similar in age to participants from the present study). Roughly half of the participants (including those who did not engage in self-harm) reported knowing of other girls in middle school or high school who would cut; however, they also noted that many of these girls primarily did it as a means to get attention. As one participant noted (an example of a “3,” significant influence):

> (9906): I don’t know, I went through the whole dark emo goth whatever phase, and I don’t know— just like one of my friends came over and she showed us, “Oh, you know, look what I did.” And I don’t know, for whatever dumb reason we both tried it. And my other friend was like, “Oh this is stupid.” And then that kinda sent me in a— just downward spiral I guess for the next couple years.

Code 4: Extent to which self-harm could have been prevented: This code was designed to assess whether participants believed that their self-harm behavior was preventable (with “0” being “very preventable” and “3” being “not possible to prevent”). Participants were asked: (a),

if it was possible for some person to help prevent it, or (b) if there had been a change in their situation/environment, do they think they would not have engaged in such behavior. Responses were again variable, but on average, participants thought it was more likely than not that they would have engaged in the self-harm behavior even if things had been different (M = 2.1, SD = 0.85).

Three common responses emerged. First, some individuals stated that, had they not experienced as much bullying or peer rejection, or had they not had as much family conflict (especially with parents), they believed they would not have engaged in self-harm. As one participation reported (an example of a "0" or "very preventable"):

> (9927): Well, family dynamic for sure was a huge contributing factor. Guaranteed if that was different, I would have almost, guaranteed, never would have started cutting… Probably just my dad being more engaged. Because I kind of grew up with the thinking like, 'Well if your own parent doesn't want you, who else would want you?" That sort of in the back of my mind. So it just felt like the sort of, no matter what I'm just any worthlessness sort of thing, so I think if I didn't have that literally from day one, I think it probably would have been easier for me to deal with the feeling of anxiety and depression and everything that came up. Because when I started getting those feelings of, you know, 'Well I'm depressed I don't like myself,' if I was able to then say, 'But that's okay, I have a great family, a supportive family, so it's not so bad,' you know? My next step wouldn't be, 'Well I can cut myself.' But when I think I don't really like myself, I'm unhappy with my weight, I'm unhappy with my face, all those standard things that started when you are a young girl. When I have all those things going on, and then I'm thinking, 'But even my family doesn't like me,' it's much harder to come back from that and think 'Okay, well, I can still be okay, it's fine.'

Second, as previously noted, a full third of self-harming participants described feeling loneliness/worthlessness, and described their self-harm as a very private activity. For these individuals, they believed it was *less* likely to have been preventable (an example of a "2" or "low preventability"):

> (9706): I don't know. I don't know… like maybe had I not been so depressed or felt so alone or felt like I could talk to somebody about it, like maybe I could have used that as an outlet. Like express my feelings and like get out of my head instead of like holding it all in, you know? I just didn't feel like I had a safe place, like a safe environment, at that time to like talk about how I was feeling. Yeah, and my mom, you know, she was kind of going through her own stuff too. I don't know. I think like I had isolated myself too, and so then there's like that guilt and like, I had nobody but it's my fault so like I will bear this on my own.

Finally, just over a third of self-harming participants (eight out of 22) reported that nothing was going to prevent their self-harm (a score of "3"). For example:

> (9903): No. I never even gave anybody a chance… I didn't tell anybody that I was doing it, you know? I was secretive. For a child that is harming themselves and when it's on your wrist you're looking to get caught because somebody's guaranteed to see it. Give

> them the attention. Don't just get them counseling, but go to counseling with them, you know? Give them the first half of the session and then sit in the second half so that they can communicate with you because there's obviously something being missed in that relationship. For me something wasn't being missed, I was angry at myself. I had gotten myself into that situation, me and my uncle had gotten in a huge fight 3 months before he died, and I knew that he was gonna die and I chose to not call him and apologize so that messed me up for a lot of years. Like, my pride got in the way of me rectifying a crappy situation with somebody that I very much cared for. Yeah, mine was self-punishment and guilt related. Something that's attention—the need for attention, I think that can definitely be prevented, but…

Of note, 7 of these 8 individuals had childhood ADHD. Most of them described a collection of factors, both internal (such as mental health) and psychosocial stressors, fueled by isolation or guilt, adding up to what they perceived to be an inevitable outcome. Some believed that it might have been postponed, but, as one participant noted, "It was coming down the pipeline regardless" (9819), and another reported "No. No… uh-uh… I would have found it either way" (9836).

Mixed Methods Analyses

Here, previous quantitative data collected as part of the BGALS project – Wave 1 ADHD diagnostic status (ADHD vs. Non-ADHD), and Wave 1-Wave 3 impulsivity (CPT commission errors) – were used to predict the four self-harm codes described in the previous section. These analyses were conducted for the 22 participants who reported engaging in self-harm behavior. Given the small size of this partial sample, statistical significance and effect size will be noted.

Childhood/Adolescent ADHD and Measures of Impulsivity Predicting Self-Harm: Wave 1 ADHD diagnostic status (ADHD vs. non-ADHD) was examined as a potential predictor of later qualitatively reported self-harm behavior (see Table 6). For all four outcome variables, differences between childhood ADHD and non-ADHD participants were not statistically significant. However, a medium effect size was found with regard to the effectiveness of self-harm in decreasing negative feelings, with non-ADHD participants endorsing slightly more effectiveness in decreasing negative feelings, compared to ADHD participants (Cohen's d = .50). In addition, ADHD participants endorsed that self-harm was less likely to be preventable compared to Comparison participants, with a sizeable effect (Cohen's d = .74).

With regard to a dimensional measure of behavioral impulsivity, Wave 1 (childhood) CPT commission errors marginally predicted participants being more negatively impacted by self-harm (4A): (R^2 = .18, F(1,19) = 4.12, p = .057). Similarly, Wave 3 (late adolescent) CPT commissions were significantly associated with participants being more negatively impacted by self-harm (R^2 = .34, F(1,14) = 7.33, p = .017). There was no significant associated between Wave 2 CPT commission errors and the four self-harm codes.

Discussion

Self-harm, especially among youth, is a significant and growing concern (Burstein, Agostino, & Greenfield, 2019). My aim was to use a longitudinal dataset, coupled with a novel, semi-structured, qualitative interview format, to obtain a deeper understanding critical,

intrapersonal and contextual factors, as well as thoughts/beliefs of important events in the lives of young women (both with and without childhood-diagnosed ADHD) regarding self-harm. In a conversational-style, open ended interview, generally lasting between 2-3 hours, these young women were encouraged to describe their thoughts, beliefs, and experiences across a range of topics and to tell their story *in their own words,* with the goal of providing rich understanding of their experiences – especially with regard to self-harm. A further aim was to leverage existing quantitative data as predictors of various self-harm topics that were discussed during qualitative interviews and subsequently coded (i.e., assigned numerical values).

Qualitative Findings

First, of the 22 participants who reported engaging in self-harm, the core reasons they described were quite consistent with existing research (Edmondson et al., 2016; Klonsky, 2007, 2009; Polk & Liss, 2009; Taylor et al., 2018): Emotion/affect regulation, assertion of control/personal agency, gaining attention from others, and self-punishment. No participant endorsed manipulation of others or using NSSI as a method of preventing a suicide attempt, though these two are less frequently found in extant literature, and manipulation in particular might be more commonly seen in personality disorders or in forensic populations (Chowanec, Josephson, Coleman, & Davis, 1991; Edmondson et al., 2016; Jeglic, Vanderhoff, & Donovick, 2005; Taylor et al., 2018). In addition, a number of individuals reported self-harm in the context of impulsivity (both negative urgency and lack of premeditation).

Second, parallel to existing theories and research regarding self-harm and affect/physiology, many individuals reported temporary relief (or physiological arousal), which was experienced as reinforcing. For many, this turned into a negatively-reinforcing cycle, becoming a "habit," "ritual," or "compulsion." From a clinical perspective, this pattern presents a challenge, as many then reported engaging in self-harm in private, unwilling to disclose to others. Indeed, one of the challenges in preventing or identifying and treating self-harm is that many describe it as comforting in some way (Edmondson et al., 2016; Hawton et al., 2012). Not surprisingly, as most of those who reported self-harm received childhood diagnoses of ADHD, a number of individuals reported engaging in such behavior in the context of impulsivity or sensation-seeking behavior.

Third, potentially constituting a novel finding, two contextually sensitive stories emerged regarding changes in reasons for self-harm. First, some started out self-harming to regulate affect or as a physical manifestation of emotional pain but then *continued* it in order to gain attention from others. This pattern was less common, and was generally found when individuals were part of a friend group where others also self-harmed. Second, and more common, a number of individuals either started self-harming for attention or in relation to strong affect/negative urgency, but then continued as it turned into a more automatic stress-relief – almost as if their threshold for engaging in self-harm was lowered such that strong negative affect did not need to be present. For those who reported making a suicide attempt, most discussed experiencing depression (specifically hopelessness), often accompanied by low self-worth – which is also consistent with prior findings (Fox et al., 2015b). Others endorsed self-directed anger and a belief that they deserved pain/punishment, while almost half reported making a suicide attempt in the context of impulsiveness. This finding demonstrates one of the strengths of qualitative approaches, as such information would be nearly impossible to assess in quantitative scales, or even micro-longitudinal approaches.

Fourth, regarding desistance of self-harm, three patterns emerged. In the first, individuals reported never receiving intervention/treatment of some form and desisted either because of improved environmental factors or just "growing up" and not needing to engage in such behaviors any longer. This pattern is consistent with prior findings regarding a largely "adolescent-limited" nature of self-harm (Sinclair & Green, 2005; Whitlock, Kovack, Weissman, Townsend, & Gallop, 2010). A larger group, however, included those whose self-harm reached the point of requiring interventions – either secondary to a suicide attempt or because others found out (usually teachers/parents). These individuals subsequently received mental health interventions, which they generally believed essential to their subsequent self-harm desistance. This pattern complements other studies, as adolescents may not realize that self-harm is an indication of other mental health problems (Sinclair & Green, 2005), which is a further indication of the importance of mental health education for youth. In the third pattern, a smaller number of individuals endorsed transitioning from more harmful methods (i.e., cutting) to engaging in less harmful, more socially acceptable behaviors such as tattoos and piercings instead of self-harm. Again, the richness in participant responses was made possible by open-ended questions, which also allowed for immediate follow-up. An interesting aspect of these findings is that some participants are still engaging in some form of self-expression (which, for many, was part of the goal of self-harm behavior), but obviously not a form that has significant public health concerns. This again, provides a potential opportunity for intervention: instead of asking adolescents to entirely take away something that many unfortunately find beneficial or helpful in the short-term, encouraging them to use other creative outlets or means of self-expression bears further study.

Of the 17 participants who did not endorse engaging in self-harm behavior, most were still able to articulate at least some of the same reasons identified previously as to why others engaged in the behavior. Importantly, all but two reported knowing someone who either engaged in serious NSSI or had made a suicide attempt.

Mixed methods findings

Regarding the exploratory mixed-methods analyses, findings were largely non-significant with respect to prediction of qualitatively-reported self-harm from existing quantitative measures. One finding of interest was that individuals who reported engaging in NSSI only (but not suicidal behavior) endorsed significantly less perceived impact in their lives from self-harm than those who endorsed engaging in a suicide attempt. This result is not surprising, as these individuals rarely required hospitalization and were less likely to be "caught" by others or obtain treatment on their own. Another key finding was that increases in a measure of childhood (and adolescent) behavioral impulsivity significantly predicted more severe negative impact due to self-harm. This finding is consistent with other research on this sample (Meza et al., 2016; Swanson et al., 2014).

Next, most endorsed that their self-harm was at least in part influenced by others, but those who started self-harming when they were younger were less likely to report such an influence. This is a more nuanced finding that has not been previously reported. One possible reason for this age-related difference might be that these were individuals with childhood ADHD-C diagnoses, and were therefore more likely to experience emotion-related impulsivity (negative urgency) and/or a lack of premeditation in early childhood. Children with more severe childhood ADHD are also prone experiencing oppositionality, frustration, and emotion

dysregulation, which could better explain earlier manifestations of self-harm such as hitting (which was generally reported by these participants). This point underscores the risk that a childhood ADHD diagnosis bears with regard to self-harm, supporting the importance of early screening and intervention with this clinical population. Almost half did endorse moderate to significant influence by others, either movies/internet, or peers. This finding highlights concerns regarding social contagion and social learning theory, as well as the important role that media plays in the lives of youth.

One concerning finding was that fully a third of those who self-harmed reported a perceived inevitability of their experience. In other words, they did not believe anyone could have prevented them from engaging in this behavior. This pattern also appears to be a novel finding, and it was more often the case for young women with childhood ADHD and comorbid diagnoses—again underscoring the need for thoughtful, early, screening and intervention, as these children/adolescents might also be less likely to share their self-harm behaviors with peers or adults.

Limitations are noteworthy for the present study. First, although the size of the subsample who actually reported engaging in self-harm (22)—as well as the overall sample size (57)—was considerable for a qualitative study, quantitative analyses were certainly limited and underpowered. Indeed, only 39 of the 57 interviews were available for data analysis. Second, given that these interviews were conducted with the participants in their mid-20s who were describing some behaviors, thoughts, and experiences that occurred up to 10 years earlier, the concern regarding retrospective recall of events is salient. Within the current sample, three participants with childhood ADHD did not endorse engaging in self-harm behaviors during the qualitative interviews but had reported such quantitatively during prior waves of data collection. However, all three had previously reported low severity self-harm (such as hair pulling or picking at scabs), which is likely less memorable than cutting or severe scratching. Although long-term memory is certainly a concern, some evidence suggests that certain experiences (including more highly emotional ones) might be more strongly encoded and easily recalled later (Cahill et al., 1996).

In addition, what might stand out to the reader is the level of detail and specificity participants often provided as they recounted their experiences. Indeed, a striking robustness to their personal stories was notable, and sometimes with considerable detail – despite the fact that some of these behaviors occurred years prior. Many provided keen insights into why they engaged in self-harm behavior, were able to discuss their prior experiences and factors that they believe contributed to such behaviors, discuss the trajectory/developmental course of their behavior, as well as provide reasons why they no longer engaged in it. In contrast, a smaller study that explored the narrative of six adolescents (aged 13-18) with a recent history of self-harm found that participants' overall stories about their self-harm behavior were less coherent and integrated (Hill & Dallos, 2012). This finding might suggest that additional time for maturation, identity development, and retrospection could be beneficial for such a qualitative approach regarding self-harm, despite the longer time between the behavior and interview (see also Sinclair & Green, 2005). Also, especially in relation to quantitative analyses, a key predictor variable included behavioral impulsivity/response inhibition, but the more relevant measure might well be emotional impulsivity (see Berg, Latzman, Bliwise, & Lilienfeld, 2015; Whiteside & Lynam, 2001). Such a measure was not available for the present study.

Implications/Next steps

The present study highlights several benefits conferred by qualitative and mixed-methods approaches in psychopathology research and demonstrates how such approaches can be complementary to cross-sectional, longitudinal, as well as micro-longitudinal designs. With regard to self-harm, the present findings demonstrate how qualitative approaches can provide more nuanced, contextual information regarding proximal factors, as well as key aspects of self-harm maintenance and desistance.

From an intervention and treatment perspective, there is presently a lack of evidence-based interventions specifically aimed at the treatment of self-injury (Nock, 2010; Ougrin, Tranah, Leigh, Taylor, & Asarnow, 2012). Per Nock (2010), "This means that there currently is no compelling evidence for the effectiveness of any of the psychological intervention or prevention programs being provided to those who engage in self-injury. This is among the most essential directions for future research on this topic." Treatment is most commonly reactionary, and occurs once adults (parents, teachers, emergency department) become aware of self-harm, at which point (and depending on the severity/urgency of the situation), adolescents present to the emergency department, are either placed in a psychiatric inpatient unit, or start to receive regular outpatient treatment – which can include intensive group therapy, family therapy, and/or individual therapy, as well as pharmacotherapy. Programmatic, school-based mental health prevention programs are critically important (for a review, see Weare & Nind, 2011).

With regard specifically to self-harm, less research is available, however Muehlenkamp and colleagues (2010) did find effectiveness for a pilot study among high school students. Of note, a growing body of literature highlights that girls with ADHD are at significantly greater risk for self-harm, compared to same-aged, non-diagnosed peers (e.g., Hinshaw et al., 2012; Owens et al., 2017). One important implication, supported by the present findings, deals with timing of intervention. Most participants reported starting to engage in self-harm between 7th and 9th grade. Indeed, three individuals with ADHD reported making their first suicide attempt in middle school. Programmatic, potentially school-based interventions that start in high school may well be too late for some, especially those with childhood psychopathology. The role of school mental health professionals in this process, however, is crucial (Romer & McIntosh, 2005; Weare & Nind, 2011).

In addition, just as core treatments for children with ADHD focus more on parent/family interventions than the child per se (Pfiffner & Haack, 2014), education of parents as part of such evidence-based interventions (e.g., helping parents understand risks and warning signs of self-harm) is certainly one avenue for prevention efforts. Indeed, as two of the present study participants articulated, direct parental involvement/intervention was critical in their desistance from self-harm. Education for parents on how best to discuss this topic will be crucial. Prior studies, as well as feedback from adolescents themselves, have identified that the use of focus groups, structured group activities, and more informal social activities might also be beneficial methods of prevention (Coggan et al., 1997; Fortune, Sinclair, & Hawton, 2008).

In all, such actions appear to be indicated even at the middle school level - although contact-based promotion of mental health awareness certainly requires care for younger individuals (see Chisholm et al., 2016). Middle school mental health professionals might be able to use depression screeners, or schedule check-in visits – especially for children with known emotional or behavioral problems.

Finally, based on present findings, improved measures on self-harm that assess whether or not functions of self-harm change over time might further clarify progressions of self-harm behavior and identify additional opportunities for intervention/desistance.

In the end, having open and honest dialogue about self-harm is certainly an area that requires further study. Especially considering some of the personal stories told by participants in the present study, mental health awareness/education and fighting stigma related to mental illness are areas that continue to require more resources and interventions. Given that information is already being obtained by youth from TV/movies, the internet, and social media, it becomes increasingly important to carry a stronger voice from mental health providers, schools, parents/families, and loved ones. I conclude with an extended quote from a participant:

> (9810): As a person that struggles [with ADHD and depression], it gets overwhelming. It takes over your life. And it can basically happen overnight... It is a really real thing… it's an incredibly real thing. And I don't think that our society equips you - equips any adult - for how real it is. We don't talk about it. It's very glossed over in media. I mean, like you see depressed people in movies and whatever. And they're all ready to kill themselves or leap off a building or are drug addicts or are totally non-functional. The reality of it is the types of anxiety and depression that exist, more often than not, are really functional. They're people that are total go-getters. They're people that are, you know, honors students - everything. They put this insane amount of pressure on themselves and then snap and totally lose it. And it's really unfortunate. Because we are not taught self-care… It's taught that… people who are depressed have a mental illness. And that is the reality of it. Totally not the case. So that's my view… that it needs to be, like if you even suspect that someone that you know is struggling with depression, that it's not just sadness. Talk to them. Help them. Let them know that there are resources out there for them… Because it's so invalidating by our society. Just the way that we function, it's so stigmatized. And people that get caught into it feel so alone. And there's no amount of saying 'other people have gone through this too' that will help them get out of it. It's a very like, holding hands one step at a time. Just get through the next hour… until you can find the help that's going to work for you… Because it really did - it got to a point in my life where it really did almost end. I totally did not picture a life past like 20. Just didn't picture it. Was not prepared, was not expecting, was almost not willing at certain points to live past that point in my life. Had a suicide attempt in my first year of high school. Was a habitual self-harmer. I cut, I did all that kind of stuff. And I'm incredibly thankful that all those things failed. You know. But it just, it is a really real issue and it's really not looked at and really not talked about in the way that it should be.

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Table 1

Qualitative Study Demographic Information – Full Sample

Age (years)	27.6 (1.8)[a]
Age at Wave 4 Interview (years)	25.3 (1.8)[a]
Baseline Diagnostic Group	
ADHD	32 (56%)
Comparison	25 (44%)
Race/ethnicity	
White	34 (60%)
African American	10 (18%)
Hispanic/Latina	6 (10%)
Asian American	6 (10%)
Native American	1 (2%)
Education	
High school diploma/GED	25 (44%)
Associates degree	2 (3%)
Trade program/certificate	5 (9%)
Bachelors degree	21 (37%)
Master's degree	4 (7%)

[a] Mean (standard deviation)

Table 2

Interview Topics and Sample Prompts – Full Topic List

Topics	Sample Interviewer Prompts
General/ Introduction	What's going on in your life right now (school, family, work, your living situation)? What does a typical day look like for you these days?
Perceptions about the Study and ADHD (if relevant)	What do you remember about the girls study and the summer camps? What does ADHD mean to you? How do you think about this today? Do you think it still affects you now? Did you ever take medication for ADHD? How was that? What do you think might be the good parts/benefits of having ADHD, if there are any?
Family	What were your parents like growing up? How would you describe your relationship with your family growing up? What about these days?
Peers/ Friends/ Romantic Relationships	How would you describe your relationships with your peers [or friends] as a child? What about during your teen years/in your 20s? What has dating been like for you? How would you describe your romantic relationships? How do you think your romantic relationships have affected you, if at all, as a person?
Self-harm	What do you think about people who might try to hurt themselves (or try to kill themselves). Why do you think people may do that? Do you have any friends/peers/family members who tried to hurt themselves in the past? Have you ever harmed yourself on purpose or thought about doing that? Do you remember what led you to harming yourself the first time? Was there a particular event or feeling that led up to that situation? What about later/subsequent times? Do you think there was any thing (or any person) that might have been able to prevent you from engaging in this behavior?
School/Work	If you think back to grade school (K-12), what was that experience like for you? Did you want to go further in school than you did? Tell me about your college/graduate school experience (if relevant) Is there anything you'd do differently, now as you look back at your school experience?
Turning Points	Was there any significant experience/event, or person, that really influenced your life? How do you think it impacted you? How do you think things would be different if that had not happened?

Current functioning, mental health	How are you doing these days in general, as far as your mental and emotional health? Was there a period of time in your life when things were particularly tough for you, as far as your mental or emotional health? Overall what is your satisfaction with how things are going now? When you think about well-being in your life these days, what kinds of activities, people, or things come to your mind?
Self-identity, Future goals	How would you describe yourself now, as far as what kind of person you are? Compared to 5 or 10 years ago? What are your hopes/plans/concerns for the future?

Table 3a (FULL SAMPLE)

Self-Harm as Reported by Participants via Quantitative Data at Wave 3/4

		ADHD		Totals
		Yes	No	
Self-Harm	Yes	20	10	**30**
	No	12	15	**27**
Totals		**32**	**25**	**57**

Note: This table reflects all 57 individuals who participated in qualitative interviews, and indicates if they were diagnosed with ADHD at Wave 1, and if they reported non-suicidal self-injury or suicide attempts via quantitative measures at either Wave 3 or Wave 4.

Table 3b (DISSERTATION SAMPLE)

Self-Harm as Reported by Participants via Quantitative Data at Wave 3/4

		ADHD		Totals
		Yes	No	
Self-Harm	Yes	20	6	**26**
	No	7	6	**13**
Totals		**27**	**12**	**39**

Note: This table contains the same information as Table 3A, however the numbers in this table reflect only those participants whose interviews were coded and analyzed (in Method/Results – 39 total) by the time of this dissertation submission.

Table 4 (DISSERTATION SAMPLE)

Self-Harm as Reported by Participants During Qualitative Interviews

			ADHD		Totals
			Yes	No	
Self-Harm	Yes	NSSI Only	10	3	**13**
		SA Only	1	0	**1**
		SA and NSSI	6	2	**8**
	No		10	7	**17**
Totals			**27**	**12**	**39**

Note: This table reflects all 39 individuals who participated in qualitative interviews and have had their interviews analyzed/coded, and indicates if they reported engaging in self-harm during the qualitative interview. NSSI = non-suicidal self-injury; SA = either suicide attempt, or serious suicidal gesture that led to intervention by others.

Table 5

Differences Between NSSI and Suicide Attempts by Self-Harm Code

	NSSI only		Suicide Attempt				
Self-harm Coded Topics	Number of Interviews (13 total)	Coded score[a] (0-3)	Number of Interviews (9 total)	Coded score[a] (0-3)	*t*-test (*df*)	*p*-value	Cohen's *d*
1 - Participant negatively impacted by self-harm[b]	**13**	**1.0 (0.58)**	**9**	**2.1 (0.78)**	**3.84 (20)**	**< .001**	**1.6**
2 – Self-harm effective in decreasing negative thoughts/feelings[c]	13	0.8 (0.72)	9	1.0 (0.87)	0.68 (20)	.51	.25
3 – Self-harm influenced by others[d]	13	1.4 (0.96)	9	1.6 (1.01)	0.40 (20)	.69	.20
4 – Was self-harm was preventable[e]	12	1.9 (0.90)	9	2.3 (0.87)	1.07 (19)	.30	.45

Note: NSSI = non-suicidal self-injury. Those who reported both NSSI and a Suicide Attempt were coded into the Suicide Attempt category for purposes of analyses

[a] Mean (SD)

[b] Higher score = more severely impacted

[c] Higher score = more effective

[d] Higher score = more influenced by others (including TV/movies/media)

[e] Higher score = less likely to be prevented

Table 6

Differences Between ADHD and Comparison participants by Self-Harm Code

Self-harm Coded Topics	ADHD Number of Interviews (27 total)	ADHD Coded score (0-3)[a]	Comparison Number of Interviews (12 total)	Comparison Coded score (0-3)[a]	*t*-test	*p*-value	Cohen's *d*
1 - Participant negatively impacted by self-harm[b]	17	1.4 (0.87)	5	1.6 (0.89)	-0.42	.68	.22
2 - Self-harm effective in decreasing negative thoughts/feelings[c]	17	0.8 (0.75)	5	1.2 (0.84)	-1.11	.28	.50
3 - Self-harm influenced by others[d]	17	1.4 (1.0)	5	1.6 (0.89)	-0.38	.71	.21
4 - Was self-harm was preventable[e]	16	2.3 (0.70)	5	1.6 (1.14)	1.70	.10	.74

[a] Mean (SD)

[b] Higher score = more severely impacted

[c] Higher score = more effective

[d] Higher score = more influenced by others (including TV/movies/media)

[e] Higher score = less likely to be prevented

Appendix 1

BGALS Turning Points Coding Manual

Self-harm Coded Themes and Numerical Values

Code 1: Extent to which Young Adult (YA) has been negatively impacted by self-harm

0 = Not applicable/No impact. Although YA may or may not express a negative *perception* of self-harm, YA does not mention negative consequences or impact of their self-harm experience (either direct or indirect) on other areas of functioning.

1 = Low impact. YA expresses a negative impact of self-harm, either directly (by linking it to their own experience) or indirectly (linking it that of someone they know); mentions consequences in one domains of functioning (including but not limited to: school/work, family, or peer/romantic relationships), but might not provide a concrete example.

2 = Moderate impact. YA expresses a negative impact of their own self-harming behavior (linking it to their own experience); mentions consequences in two or more domains of functioning (including but not limited to: school/work, family, or peer/romantic relationships), and provides at least one concrete example. A value of 2 can also be obtained if they mention a *serious* consequence in only one domain of functioning and provides a concrete example (e.g., going to the emergency department, but not being admitted to the hospital, and not missing school, or significant impairment at home or at school).

3 = Substantial impact. YA expresses a *substantial* negative impact of self-harm (e.g., use of strong language), directly linked to their own experience, and mentions consequences in two or more domains of functioning (including but not limited to: school/work, family, or peer/romantic relationships), and provides at least one well-articulated example of severe impairment (e.g., being placed on an inpatient unit).

In general, to obtain a "3", participant will need to describe significant impairment or disruption (e.g., admitted to hospital/psychiatric inpatient unit)

NOTE: If YA reported not engaging in any self-harm behavior, only code 1 above, and skip the rest of the self-harm codes.

Code 2: Extent to which self-harm was effective in decreasing negative thoughts/feelings

0 = Not effective/no utility. YA does not mention engaging in self-harm for the purpose of decreasing negative feelings or thoughts or mentions that it was not effective in decreasing negative feelings/ thoughts.

1 = Low utility. YA states that engagement in self-harm is a potentially effective method (e.g., they might use weak or vague language like "somewhat" or "a little bit" or "kind of") to decrease negative feelings or thoughts, but provide little detail or specific examples.

2 = Moderate utility. YA endorses a moderate to substantial decrease in negative feelings or thoughts when engaged in self-harm, and provides some detail explaining *how* self-harm behavior leads improved thoughts or feelings.

> Participant: Because it wasn't about trying to kill myself, it was the endorphins of trying to make yourself feel better. It was [INDISTINCT] I'm feeling really shitty right now and I know that if I do this, I'm gonna feel better. It's just security blanket. … And then, and then realize, what probably perpetuate it, was realizing that I did actually get endorphins and that it did do something. If I had just cut myself and didn't do anything, I would have hoped I would have been like, oh maybe not do this. You know. But you know, getting something. … I don't think that it was ever insanely frequent. I think it was whenever I reached a certain point in a little breakdown or emotional spell.

3 = Substantial utility. YA strongly endorses (e.g., use of strong language) decrease in negative feelings or thoughts by detailing how it was effective, or discuss reducing negative thoughts/feelings as the *primary* effect of/reason for engagement in self-harm activities. To receive a 3, YA must provide at least one thoroughly articulated example or details on how it decreases negative thoughts/feelings.

Code 3: Extent to which other people influenced self-harm behavior (e.g. mentioning family members, friends/peers, and/or society/media/print/film).

0 = No mention of witnessing or awareness of others hurting themselves or attempting suicide. When prompted, does not identify any external influences related to others' engagement in self-harm, real or fictional, on their own self-harm engagement.

1 = Low influence. Awareness of or witnessing others' engagement in self-harm, or viewing self-harm in film or the media, is mentioned, but YA doesn't connect this to her own experience of self-harm.

2 = Moderate influence. Awareness of or witnessing others' engagement in self-harm, or viewing self-harm in film or the media, is mentioned, and YA identifies or suggests this as a possible negative influence or relates this in some way to their own decision to try/engage in self-harm activities; provides one minimally articulated example.

> Participant: I feel like I was probably in high school, because, also the thing about cutting, is like, not to say it was cool. I hung out with other people who were depressed. And it is, there is a social, there is – I learned about it from someone else. I wasn't like, ooh I'm just gonna inflict harm – it was something that I heard about from somebody else.

3 = Significant influence. YA acknowledges the direct influence of either the awareness or witnessing of others' engagement in self-harm, or viewing self-harm in film or the media, had on her own self-harm experience and decision to try/engage in self-harm; provides a well-articulated example or multiple minimally articulated examples.

Code 4: Extent to which YA thinks other people could prevent her from engaging in self-harm behaviors (e.g., if the situation had been different)

0 = Substantial/very preventable. YA thinks engagement in self-harm activities was clearly preventable with two or more specific examples or details of how other people could prevent her from engaging in self-harm behavior or how she would not engage in self-harm activities if the situation with other people was different.

1 = Moderately preventable. YA thinks engagement in self-harm activities was preventable if the situation with other people was different with one specific example.

> Interviewer: do you think that there was anything that any person might have done, or anything if the situation might have been different that you might not have engaged in either the self-harm behavior or with the pills? Do you think someone could have – if something had been different, that might have not happened?
> Participant: Yeah. I mean I think that, I think that having people there. If I had just called my friends. Which is – it's nice just having someone could stop something like that. But it also takes a person to call somebody.
> Interviewer: To call someone?
> Participant: Yeah, to call somebody, yeah. 'cause yeah. I live alone right now. Something I'm realizing is that sometimes I just go too long without seeing someone and I can get really depressed. I have to go see somebody and it's really just having another body in the room can really just make you feel different. Automatically start making you feel better.
> Interviewer: So for you, that would be the case?
> Participant: Yeah
>
> Note: This is marked as "1" because the YA thinks having someone to call/talk to would make her feel different and accordingly would stop her from engagement in self-harm activities.

2 = Low preventability. YA thinks engagement in self-harm activities was likely, or was not very preventable if the situation with other people was different, but uses weak language or the process is unclear (no specific examples of how this could happen).

3 = Not preventable. YA thinks no one could prevent her from engaging in self-harm activities, based on strong language use ("very," "definitely," "no way").

> Interviewer: Do you think that there, was anything or any person that if the situation was different, might have prevented that from happening?
>
> Participant: I don't know. Cause there's no one in my life at the time that could have been there for me. I mean, my mom was there but she was doing all she could. Which wasn't enough of getting these kids to stop (i.e. from bullying). We couldn't change schools cause they weren't going to put me in public school because then I just would've been lost in the system and that wouldn't have been any better. There was no teacher at the time that could've helped me. I mean, the counselors that I'd had at camp, you're with them for a week at a time

and they're, they were high school and college students. Right? Like how much were they supposed to know and help, you know, a middle school student go through something like this? Like it wasn't there position. And, I mean, I didn't have anyone.