

Emotion Regulation as a Risk Factor for Suicidal Thoughts and Behaviors in Adolescents

Engaging in NSSI

Abstract

Suicidal behaviours amongst adolescents represents a major health concern. Adolescence embodies a particularly sensitive time period in which increased self-harm and suicidal thoughts and behaviours (STBs) are evidenced. Specifically, emotion dysregulation in adolescents is linked to a higher likelihood of STBs, particularly suicide ideation and NSSI (nonsuicidal self-injury). Notably, the adolescent population exhibits the highest rates of NSSI, which is one of the strongest predictors of suicide ideation and attempted suicide. As such, NSSI can serve as both a precursor and cooccurring behavior with respect to STBs. Nonetheless, a gold standard treatment for treating adolescents exhibiting emotion dysregulation and engagement in NSSI has yet to be established. This paper discusses the critical role of emotion regulation as a risk factor for adolescent engagement in NSSI and subsequent STBs. In particular, improving emotion regulation skills should be the primary focus of treatment for adolescents engaging in NSSI in order to reduce STBs. To support this assertion, the link between adolescent emotion dysregulation and NSSI will be examined with respect to increased STBs, emotional self-efficacy and the acquired capability for suicide.

Keywords: adolescence; emotion regulation; STBs; NSSI; acquired capability; DBT

Emotion regulation constitutes a set of intrinsic and extrinsic regulatory processes responsible for maintaining emotional equilibrium and ensuring psychological wellbeing (Ong & Thompson, 2018; Loevaas et al., 2018). While encompassing a broad domain of processes, emotion regulation is characterized by emotional awareness and the management of emotional responses using regulation strategies (De Berardis et al., 2020). Particularly, emotion regulation involves adaptive strategies including problem-solving and positive reappraisal, and maladaptive strategies such as self-blame and rumination (Theurel & Gentaz, 2018). Successful emotion regulation is determined by the ability to confront situational demands by utilizing adaptive emotional responses including conscious awareness, monitoring, understanding, evaluating and actively modifying emotions (Theurel & Gentaz, 2018; Loevaas et al., 2018; Grant et al., 2018).

Research has shown that emotion regulation is particularly important during adolescence (ages 12-17) (De Berardis et al., 2020). Adolescence is a period characterized by rapidly changing and intense emotional states and thus embodies a high-risk period for the development of psychopathology (De Berardis et al., 2020). The consistent inability to adequately counterbalance negative emotional reactions with positive emotions contributes to dysfunctional emotion regulation (De Berardis et al., 2020). Untreated emotion dysregulation in adolescents is associated with a range of issues, most notably, non-suicidal self-injury (NSSI) (Heffer & Willoughby, 2018). Typically beginning during mid-adolescence, NSSI is the intentional destruction or harm of one's bodily tissue in the absence of suicidal intent (Heffer & Willoughby, 2018; Buelens et al., 2019). Together, NSSI and suicidal behaviour are categorized as self-injurious behaviours in which individuals directly and intentionally inflict harm upon themselves (Nock et al, 2006). However, it should be noted that the aforementioned behaviours exemplify distinct disorders as established by diagnostic criteria within the DSM-5 (Chartrand et

al., 2015). The emotion regulation model of NSSI holds that self-harm can function as a form of emotion regulation wherein physical pain serves to reduce emotional pain (Zhou et al., 2020). According to researchers, adolescent emotional dysregulation elicits engagement in NSSI as well as suicidal behaviour (Buelens et al., 2019). Between 40% and 85% of individuals performing NSSI also report having attempted suicide (Chesin et al., 2017). This is concerning given that the second largest contributor to death amongst adolescents is suicide (Statistics Canada, 2021).

The role of emotion regulation in promoting STBs can further be understood with respect to the interpersonal theory of suicide (IPTS) (Van Orden et al., 2010; Per et al., 2022). According to the IPTS, three key elements are integral to suicidal behaviour: thwarted belongingness, stemming from unfulfilled social connectedness; perceived burdensomeness, perpetuated by low self-esteem; and acquired capability, implicating reduced fear of death and increased pain tolerance (Van Orden et al., 2010). The former two aspects pertain to the desire to attempt suicide whereas the latter aspect concerns capability to act (Van Orden et al., 2010). This analysis will focus on the third. Acquired capability is a necessary component in the transition from suicide ideation to suicide attempts, as illustrated within the ideation-to-action framework (Klonsky & May, 2015). Acquired capability can be fostered by habituation of painful and provocative events (PPEs) (Burke et al., 2018). PPEs are largely characterized by repetitive self-injury, as evidenced in NSSI, and represent a driving force of suicidal behavior (Burke et al., 2018). Accordingly, acquired capability serves to elucidate the progression of NSSI to suicide attempts in adolescents (Klonsky & May, 2015).

Ultimately, adolescents exhibiting unaddressed emotion dysregulation may turn to NSSI which successively elevates STBs (Buelens et al., 2019; Heffer & Willoughby, 2018). This underscores the importance of emotion regulation as a critical target within adolescent treatment

interventions (Zhou et al., 2020). Currently, researchers have not acknowledged a gold standard treatment for adolescents exhibiting emotion dysregulation and NSSI (Wolff et al., 2019; Turner et al., 2014). A growing body of research highlights the vital role of emotion regulation in adolescent psychopathology which has incited the inclusion of emotion regulation within some treatment interventions (Moltrecht et al., 2020; Bjureberg et al., 2018; Zhou et al., 2020). For instance, individual/group supportive therapy (IGST), mindfulness-based cognitive therapy and compassion focused therapy (CFT) implicate varying degrees of emotion regulation (Deplus et al., 2016; Adrian et al., 2019; Van Vliet & Kalnins, 2011). In addition, Dialectical Behavioural Therapy (DBT) is a particularly promising intervention (Midkiff et al., 2018). DBT centers treatment efforts on addressing emotion regulation and coping skills amongst adolescents to attenuate NSSI and suicide risk (Midkiff et al., 2018; Hatkevich et al., 2019). Although DBT may be effective for facilitating emotion regulation in adolescents, its origins are grounded in supporting adults with borderline personality disorder and thus lacks specified treatment outcomes solely catered to emotion regulation in adolescents (Cavicchioli et al., 2019).

Current interventions developed for adolescent emotion dysregulation and NSSI neglect to consider the multifaceted role of emotion regulation in provoking NSSI and STBs.

Accordingly, improving emotion regulation skills should be the primary focus of treatment for adolescents engaging in NSSI, in order to reduce STBs. To support this assertion, the link between adolescent emotion dysregulation and NSSI will be examined with respect to increased STBs, emotional self-efficacy and the acquired capability for suicide.

The Link Between Emotion Dysregulation and NSSI

According to researchers, individuals experiencing difficulty exercising emotion regulation exhibit increased frequencies of NSSI (Midkiff et al., 2018). This supports the notion

that emotion dysregulation in adolescents fosters engagement in NSSI (Turner et al. 2014). As NSSI involves self-harm in the absence of suicidal intent, adolescents largely employ methods of low-lethality to avoid enacting detrimental injuries requiring medical attention (Kiekens et al., 2018). In particular, NSSI typically constitutes socially unacceptable behaviours including burning, self-hitting, scratching and skin-cutting (Kiekens et al., 2018; Turner et al., 2014). NSSI can serve varying functions for individuals, therefore diverse reasons may account for adolescent performance of NSSI (Buelens et al., 2019). The most commonly cited function of NSSI amongst adolescents is alleviating overwhelming negative emotions, such as anxiety and anger (Klonsky et al., 2014). With this, negative emotionality and emotional distress constitute the precipitating factors of NSSI (Buelens et al., 2019). Research reveals that performing NSSI following overwhelming negative emotions effectively reduces negative emotionality while eliciting relief (Klonsky, 2014). Thus, adolescents struggling to exercise emotion regulation resort to NSSI when confronted with overwhelming negative emotions (Buelens et al., 2019).

The persistence of such unaddressed emotional imbalances results in emotion dysregulation, which facilitates the long-term adoption of maladaptive emotion regulation strategies such as NSSI (De Berardis et al., 2020). However, prolonged engagement in NSSI in the absence of healthy coping mechanisms can result in NSSI becoming ineffective (Taliaferro et al., 2019). Consequently, adolescents seek alternative means to elicit relief and may adopt self-harm methods exhibiting high lethality, thus increasing suicide risk (Taliaferro et al., 2019). Research supports the notion that NSSI is one the strongest predictors of the transition from suicide ideation to suicide attempts in adults (Glenn et al., 2017; Mars et al., 2019). Moreover, NSSI is a greater predictor of suicide attempts than hopelessness, symptoms of borderline personality disorder and depressive symptoms (Taliaferro et al., 2019). This reinforces the

strength of the relationship between NSSI and STBs (Taliaferro et al., 2019). Together, these findings illuminate the overlap between emotion dysregulation and NSSI, and the resulting relationship between NSSI and STBs (Taliaferro et al., 2019; Glenn et al., 2017; Mars et al., 2019).

These findings hold considerable implications for addressing STBs within treatment (Taliaferro et al., 2019; Glenn et al., 2017; Mars et al., 2019). Addressing emotion regulation within treatment is a fundamental first step in ascertaining adolescents are equipped with the adaptive mechanisms necessary to manage negative emotionality (Mars et al., 2019). In this way, treatment interventions will attenuate maladaptive behaviours, namely NSSI, which is the contributing factor in the transition from NSSI to suicide attempts thus reducing STBs (Mars et al., 2019). Notably, DBT interventions geared toward adolescents display marked decreases in emotion dysregulation, NSSI and suicide ideation (MacPherson et al., 2013). Emotion dysregulation in adolescents fosters elevated NSSI and the consequent escalation to STBs and thus should be prioritized to reduce STBs.

The Role of Emotional Self-Efficacy

Adolescents perform NSSI primarily to achieve emotional stability and relief during instances of negative emotionality (Midkiff et al., 2018). As such, adolescent engagement in NSSI stems from a perceived inability to manage and exert control over negative emotions (Andover & Morris, 2014). This suggests that emotion regulation exists on a continuum that determines the recurrence of NSSI (Midkiff et al., 2018). Low levels of emotional self-efficacy in adolescents elicit feelings of hopelessness and psychological pain which are significant predictors of increased suicide ideation (Rajappa et al., 2012). Accordingly, interventions

focused on teaching adolescents specific emotion regulation skills should be implicated in treatment (Rajappa et al., 2012; Valois et al., 2013).

Emotional self-efficacy, a construct of emotion regulation, refers to individuals' perceived capability of enacting emotion regulation to cope with distress (Midkiff et al., 2018). In practice the effects of emotional self-efficacy involve both avoiding negative emotionality as well as attempting to recover from emotional distress (Valois et al., 2013). Nonetheless, adolescents with diminished emotional self-efficacy lack the adaptive emotion regulation strategies needed to cope with negative emotionality (Valois et al., 2015). This elicits psychological pain and hopelessness, resulting in adolescents seeking alternative coping mechanisms such as NSSI (Klonsky & May, 2015; Midkiff et al., 2018).

According to Klonsky and May (2015), the impact of such psychological pain and hopelessness can be understood by examining their intricate relationship. The authors assert that in isolation, day-to-day psychological pain can be accompanied by hope that the situation can improve and one day pain will be alleviated. However, they suggest psychological pain alone is not sufficient to elicit suicide ideation. Conversely, the authors support the notion that psychological pain in concert with hopelessness can diminish such optimism. In addition, they suggest that when psychological pain dominates one's daily life, the hope of pain diminishing is abandoned and replaced by feelings of hopelessness which leads to the consideration of suicide. With this, the combination of psychological pain and hopelessness are instrumental in eliciting suicide ideation. In these circumstances, adolescents may perceive suicidal thoughts to be the most effective problem-solving method to escape stressors and the accompanying negative emotions (Hatkevich et al., 2019). Together these findings highlight that limited access to emotion regulation strategies, specifically, low emotional self-efficacy, significantly predicts

suicide ideation which is mediated by hopelessness and psychological pain (Valois et al., 2015; Midkiff et al., 2018; Klonsky & May, 2015). Evidently, diminished emotional self-efficacy alongside psychological pain and hopelessness are markedly predictive of suicide ideation thus provide specific targets to be addressed in treatment (Rajappa et al., 2012; Klonsky & May, 2015).

With this, Dialectical Behavioural Therapy (DBT) offers an evidence-based approach that specifically concentrates treatment efforts on addressing emotion regulation and problem-solving skills in order to attenuate suicide risk (Midkiff et al., 2018; Hatkevich et al., 2019). Although DBT is primarily used to treat borderline personality disorder, similarly, the underlying issues are rooted in emotion dysregulation and thus can be effective for treating emotion regulation alone (Berk et al., 2019). As NSSI stems from emotion dysregulation, decreases in NSSI should also be evidenced following DBT (Midkiff et al., 2018). For instance, one study utilized a DBT approach catered to adolescents, comprising four adult DBT modules alongside an additional module specifically for adolescents (Berk et al., 2019). The results revealed that DBT treatment effectively decreased emotion dysregulation and impulsivity and elevated reasons for living (Berk et al., 2019). Thus, DBT interventions focused on teaching adolescents' specific emotion regulation skills can enhance emotional coping skills whilst decreasing maladaptive coping techniques such as NSSI (Berk et al., 2019). Evidently, reduced emotional self-efficacy mediated by hopelessness and psychological pain, increase suicide ideation in adolescents.

Elevated Acquired Capability for Suicide

Emotion dysregulation and the associated propensity to engage in NSSI elevates the acquired capability to attempt suicide (Van Orden et al., 2010). The acquired capability for

suicide embodies an essential factor in predicting suicide attempts within the IPTS and the ideation-to-action framework (Van Orden et al., 2010; Klonsky & May, 2015).

As per the IPTS, individuals must first become conditioned to suicidal behaviours, particularly, by reducing their fear of suicide and by exhibiting a heightened pain tolerance (Van Orden et al., 2010). Suicide ideation in isolation is not predictive of suicide attempts, rather, suicide ideation in combination with reduced fear of suicide must be evidenced (Van Orden et al., 2010). Moreover, given that death by suicide involves painful and lethal methods, an elevated pain tolerance is also necessary in predicting suicide attempts (Van Orden et al., 2010).

The IPTS further highlights the role of habituation in developing the acquired capability for suicide (Van Orden et al., 2010). Habituation is based upon opponent process theory, wherein a strengthening of opponent processes occurs (Van Orden et al., 2010). Specifically, repeated exposure to a stimulus results in the emotional effects of the opposite process becoming exaggerated, whilst the primary emotional effects maintain stability (Van Orden et al., 2010). For instance, the initial response to cutting oneself is likely to be fear and pain, however following repeated exposure and engagement in the behaviour, the primary process effects of fear remain stable while the opponent processes effects of emotional release become exaggerated (Van Orden et al., 2010). In turn, reduced fear characterizes the net emotional response of this process (Van Orden et al., 2010). Moreover, habituation is also manifested in PPEs (Burke et al., 2018). Thus, NSSI is a crucial PPE that fosters the key elements of developing the acquired capability and therefore the capacity for suicide including, reduced fear of death, enhanced pain tolerance and habituation (Burke et al., 2018). Additionally, acquired capability serves as a critical factor implicated in the transition from suicide ideation to suicide attempts within the ideation-to-action framework, thus reinforcing the role of NSSI in increased STBs (Klonsky & May, 2015). As

evidenced, emotion dysregulation heightens adolescent engagement in NSSI, a critical PPE, that fosters the acquired capability for suicide. Thus, emotion dysregulation by way of NSSI, supports the psychological mechanisms necessary to transition adolescents from suicide ideation to suicide attempt. As such, treatment catered to suicide ideators should occur within a DBT approach emphasizing emotion regulation. In turn, maladaptive coping strategies, namely, NSSI will be discontinued as will the potential transition from suicide ideation to suicide attempt.

Potential Limitations of Targeting Emotion Regulation within a DBT Framework

According to Gonzales and Bergstrom (2013), as compared to treatment as usual (TAU), DBT does not exhibit elevated efficacy in reducing NSSI. Specifically, one study examining a pediatric population revealed reductions in NSSI one year post treatment, equivalent to those resulting from TAU (Gonzales & Bergstrom, 2013). DBT may be effective for facilitating emotion regulation and thus reducing subsequent NSSI in adolescents, however its origins are grounded in supporting adults with borderline personality disorder (Cavicchioli et al., 2019). Consequently, the DBT framework lacks specified treatment interventions specifically geared toward targeting emotion regulation for adolescents engaging in NSSI (Cavicchioli et al., 2019). Moreover, DBT may not be feasible for adolescents in a hospital setting as one of the main components of DBT involves generalizing learned skills to daily life (Cavicchioli et al., 2019). Thus, DBT does not exhibit equal efficacy across settings, and is generally more beneficial in outpatient settings (Cavicchioli et al., 2019). Nevertheless, DBT still remains both feasible and effective albeit to a slightly lesser degree, as accommodations can be made within the DBT framework. That is, DBT exemplifies a relatively flexible framework as it has been adapted from its original establishment to be utilized in numerous contexts (Hatkevich et al., 2019). However,

applying a DBT treatment approach to adolescents engaging in NSSI neither prioritizes emotion regulation, NSSI or their complex interplay (Hatkevich et al., 2019; Cavicchioli et al., 2019).

Future Directions

This paper demonstrated the importance of interventions focused on emotion regulation in helping adolescents engaging in NSSI and reducing the potential progression to suicidal behavior. As it stands, limited research exists to support the efficacy of DBT in reducing NSSI within the adolescent population, particularly in the long term (Gonzales & Bergstrom, 2013). Nonetheless, the literature supports the notion that DBT holds the potential to reduce the incidence of NSSI in adult populations (Gonzales & Bergstrom, 2013). Accordingly, a DBT framework with an emphasis on emotion regulation can indeed serve as an effective launchpad for future interventions catered towards adolescents engaging in NSSI. However, such interventions should be informed by the IPTS and the three-step theory provided its pivotal role in emotion regulation (Van Orden et al., 2010; Klonsky & May, 2015). Moreover, further research is needed to identify how such interventions can be applied to adolescent minority groups such as cultural minorities (Yeo et al., 2020).

Conclusion

It is paramount to ensure effective treatment interventions for adolescents performing NSSI given the diverse developmental changes they are experiencing and the heightened risk of developing psychopathology in adolescence. As noted, emotion dysregulation in adolescents contributes to engagement in NSSI thus elevating STBs. Specifically, the prolonged use of NSSI for emotion regulation reduces its effectiveness, subsequently increasing STBs. Moreover, engagement in such maladaptive behaviours is fundamentally grounded in diminished emotional self-efficacy which mediates psychological pain and hopelessness. In turn, this limited access to

adaptive emotion regulation strategies elicits the performance of NSSI yielding suicide ideation. Further, emotion dysregulation fosters NSSI which embodies a critical PPE, thus elevating the acquired capability for suicide. Notably, adolescent treatment within a DBT framework has been seen as efficacious in facilitating healthy emotion regulation, discontinuing NSSI and diminishing STBs, respectively, however a majority of research emphasizes the adult population. Moreover, DBT exhibits potential limitations and may restrict treatment options for adolescents struggling with NSSI and STBs. All things considered, DBT embodies a promising foundation from which tailored treatment interventions can be developed for adolescents engaging in NSSI. Ultimately, by addressing such psychological issues in adolescence, both improved psychosocial functioning and life-long healthy coping mechanisms ensue.

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