

# Cognitive Constructs and Personality Profiles in Youth with Deliberate Self-Harm Behaviours: A Scoping Review

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## Abstract

This scoping review explored the relationship between cognitive constructs and personality profiles in deliberate self-harm among youth, with the objective of proposing preventive and intervention strategies based on the findings. The review analysed the correlation between cognitive constructs and Deliberate Self-Harm behaviors in youth with diverse personality profiles. It investigated the role of cognitive distortions, emotional regulation, reasoning, and executive functioning in youth engaged in deliberate self-harm. A comprehensive search using the Scopus database yielded 72 relevant articles for analysis. The prevalence rates of deliberate self-harm among youth range from 7.5% to 46.5%, emphasizing the need for targeted interventions. Promising approaches include cognitive restructuring, mindfulness-based therapies, and interventions focusing on challenging cognitive distortions to promote adaptive thinking patterns. Training interventions addressing executive functioning skills can effectively target impulsive and risky behaviors. Personality traits such as neuroticism, sensation seeking, borderline personality disorder, and perfectionism require interventions focused on emotional resilience, coping strategies, risk assessment, self-control, and impulse management.

**Keywords:** Cognitive Factors, Deliberate Self-Harm, Personality Profiles, Youth.

## Introduction

Deliberate self-harm, which includes non-fatal self-poisoning or self-inflicted injury irrespective of suicidal intentions, is often underestimated in its occurrence and can be a repetitive behaviour. It is believed to be significantly more prevalent than self-inflicted death, with reported lifetime prevalence rates ranging from 17% to 39% during adolescence and 13.4% in early adulthood (1). Deliberate self-harm (DSH) is a common occurrence not only within hospital settings but also in the general population.

In a European study focusing on deliberate self-harm (DSH) among adolescents, a prevalence rate of 27.6% was observed, ranging from 17.1% in Hungary to 38.7% in France (1). Gandhi et al., in their review of self-injurious behaviour in India, reported a lifetime prevalence of 31% among emerging adults (1). Another study conducted among 1571 male and female school and college students in India found the prevalence of non-suicidal self-injury (NSSI) to be 33.8% (1). On average, prevalence rates of Deliberate self-harm

in adolescents range from 7.5% to 46.5%, with rates increasing to 38.9% among university students and ranging from 4% to 23% among adults (2).

Deliberate self-harm (DSH) behaviours among youth have become a growing concern in recent years, necessitating a deeper understanding of the underlying cognitive constructs and personality profiles associated with these behaviors. This literature review aims to explore the existing research on cognitive constructs and personality profiles in relation to Deliberate self-harm in youth. By examining relevant studies, theoretical frameworks, and empirical evidence, we can gain insights into the factors that contribute to deliberate self-harm and inform effective prevention and intervention strategies.

Notwithstanding the numerous studies and interventions in the area of deliberate self-harm, this behaviour among the youth is on the ascendancy; this has necessitated the need for a deep understanding of the underlying cognitive

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constructs and personality profiles associated with these behaviours. This literature review is designed to explore existing research on cognitive constructs and personality profiles concerning deliberate self-harm in youth. A thorough examination of the relevant studies, theoretical frameworks, and empirical evidence, will help us to arrive at the factors contributing to deliberate self-harm, this ultimately will guide and inform the development of effective prevention and intervention strategies.

We begin this review by initiating efforts toward understanding the correlation between cognitive constructs and deliberate self-harm behaviors in youth. This not only establishes a basis for our inquiry but also prompts two pivotal research questions: firstly, exploring the connection between cognitive constructs and deliberate self-harm in diverse youth populations, and secondly, figuring out the specific cognitive processes associated with deliberate self-harm in youth characterised by varied cognitive constructs.

## Literature Review

In conducting this scoping review, our aim was to provide a comprehensive overview of the existing literature on the topic under review. Unlike systematic reviews that follow a stringent set of criteria for study selection, a scoping review allows for a more exploratory and inclusive approach to mapping the available evidence. This methodology was chosen to capture the breadth of research on the research topic under review and to identify key themes, concepts, and research gaps across diverse studies.

The methodology of this review has been designed to meet two primary objectives. Firstly, to examine the association between cognitive constructs and deliberate self-harm behaviors in youth, considering their diverse cognitive constructs and personality profiles. Secondly, to probe into the role of cognitive distortions, emotional regulation, reasoning, and executive functioning in youth who engage in deliberate self-harm behaviours, taking into account their distinct cognitive constructs and personality profiles. These research objectives were formulated to address the two fundamental research questions raised.

Building on the foundation outlined in the introduction, the methods section systematically explains our approach to tackling the research questions. We provide a detailed account of the

three phases comprising the search strategy conducted in the Scopus database, with a specific focus on the keywords and phrases utilized, such as "deliberate self-harm," "youth," "cognitive factors," and "personality profiles."

Our decision to rely on the Scopus database is because this database serves as a comprehensive and widely recognized platform for scholarly data, ensuring a thorough and inclusive exploration of the existing literature on deliberate self-harm behaviours in youth.

We recognise the significance of the Scopus database in providing a comprehensive overview, however, it's important to note that, akin to any database, it may not capture every piece of relevant data. Therefore, our study acknowledges the potential limitations in database coverage and aims to provide a well-rounded understanding within the scope of available literature.

## Search strategy

The process of obtaining the dataset for this review involved three distinct phases; all conducted using the Scopus database. In the first phase, we used the Boolean operator "AND" with specific keywords such as "deliberate self-harm," "youth," "cognitive factors," and "personality profiles." This initial search generated a total of 60 articles as results.

Moving on to the second phase, we employed two different phrases, namely "personality profiles" and "self-harm behaviors" together with the Boolean operator "AND". This subsequent search yielded 42 articles as results.

Finally, in the third and last phase, we used the phrases "cognitive factors" and "deliberate self-harm" with the Boolean operator "AND". This final search produced three articles as results. Overall, the search strategy consisted of these three phases, all conducted within the Scopus database, resulting in a cumulative dataset for the review.

## Search inclusion criteria

During the initial search phase, we set specific parameters to narrow down the selection. We focused on articles published from 2013 to 2023, exclusively considering journal articles. Our attention was directed solely towards final published articles, and we concentrated on the fields of medicine, psychology, social sciences, and nursing. Additionally, we included studies conducted in the United Kingdom, United States, Ireland, Australia, Spain, Canada, Malaysia, Israel, India, and the Netherlands. After applying these

criteria, we ultimately identified 52 articles that met our requirements.

In the subsequent search phase, we refined our inclusion criteria. We limited the publication period to articles released between 2010 and 2023, concentrating on review articles and final published articles. Consequently, we obtained a total of 42 articles that satisfied these criteria.

In the third search phase, we retrieved three articles that fulfilled our requirements as they were all published articles. These three articles were selected to be included in our dataset.

To ensure data integrity, we exported the results of all three search phases to an Excel file and examined it for duplications. We discovered six duplicates, which were subsequently removed. Following these steps, we obtained a final dataset comprising 72 articles that served as the foundation for our review.

### **Data synthesis**

We perused through the abstracts of these articles to uncover those studies that can be helpful to our course of meeting our research objectives and answering our research questions. These articles were carefully mapped out and employed in the review process. It is instructive to add that we went beyond the articles we gathered before the commencement of the review process to search different databases such as Google scholar, and PubMed to buttress our arguments during the discussion stage of the review.

### **Cognitive Constructs and Deliberate Self-harm**

Cognitive constructs play a vital role in understanding the cognitive processes that contribute to DSH behaviours in youth. Several studies have investigated the relationship between cognitive constructs and DSH, shedding light on specific factors that are relevant in this context. Beck defines cognitive constructs as "the content and structure of an individual's thoughts, beliefs, and expectations that shape their perception, interpretation, and understanding of the world around them" (3). Similarly, Bandura describes cognitive constructs as "the mental representations and cognitive processes that individuals use to organize, interpret, and respond to information in their environment" (4).

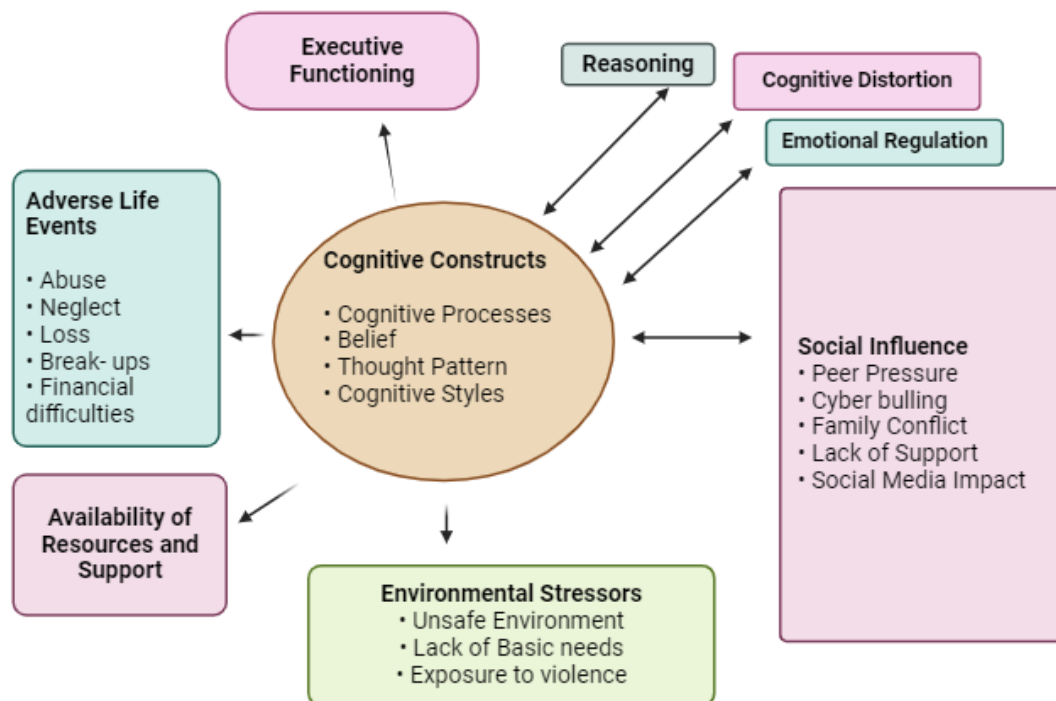
Cognitive constructs related to problem-solving and emotion regulation are also relevant in the

context of DSH. Difficulties in problem-solving skills, such as generating effective solutions and evaluating their outcomes, can contribute to a sense of helplessness and a lack of adaptive coping strategies (4). Inadequate emotion regulation skills, characterized by difficulties in recognizing, understanding, and effectively managing emotions, can lead to emotional dysregulation and an increased vulnerability to engage in DSH (5).

It is important to note that cognitive constructs do not operate in isolation but interact with other factors. For instance, the interaction between cognitive constructs and environmental factors, such as adverse life events or social influences, can further influence the development and maintenance of DSH behaviors other factors; environmental stressors and availability of resources and support (mental health services, counselling or therapy, coping strategies, adaptive problem-solving stable relationship and more). Fig. 1: gives a pictorial description of these interactions with these factors.

Understanding the role of cognitive constructs in DSH has significant implications for intervention and prevention efforts. Cognitive-behavioural therapy (CBT) has been widely used as an effective therapeutic approach for individuals with deliberate self-harm, targeting cognitive distortions, problem-solving skills, and emotion regulation (3). By challenging and modifying cognitive distortions, individuals can develop more adaptive ways of thinking and responding to emotional challenges. The various forms of cognitive constructs are discussed in the ensuing paragraphs:

**Cognitive distortion:** One important cognitive construct associated with Deliberate Self-harm is cognitive distortions. Cognitive distortions refer to biased or irrational patterns of thinking that contribute to negative emotions and maladaptive behaviors (6). These distortions may involve negative self-perceptions, such as feeling unworthy or undeserving of love and support. They may also include distortions in interpreting social interactions, such as perceiving rejection or criticism where it may not exist (3). These cognitive distortions can intensify negative emotions, exacerbating the risk of engaging in DSH as a maladaptive coping mechanism.



**Figure 1:** An interaction between cognitive constructs and environmental factors

Adolescents who engage in DSH often exhibit higher levels of cognitive distortions, including negative automatic thoughts and maladaptive attributions (6). These distorted thought patterns may contribute to emotional distress and increase the likelihood of self-harming behaviors. Individuals who engage in deliberate self-harm often experience distorted thoughts about themselves, others, and the world around them. These distortions may involve negative self-perceptions, such as feeling unworthy, undeserving of love and support, or having a negative self-image. For example, individuals may perceive themselves as flawed, worthless, or beyond help. They may also engage in black-and-white thinking, viewing situations as all good or all bad without recognizing the shades of gray.

The interaction between cognitive constructs and other factors is a dynamic and reciprocal process that influences an individual's thoughts, emotions, behaviors, and overall functioning. Cognitive constructs, such as thoughts, beliefs, and expectations, can be influenced by various external and internal factors, and in turn, they can shape and influence how these factors are experienced and interpreted as indicated in (Figure 1).

One important factor that interacts with cognitive constructs is the environment. Environmental factors, such as adverse life events or social

influences, can impact the development and maintenance of cognitive constructs. For example, experiencing traumatic events or being exposed to negative social interactions can contribute to the formation of negative beliefs and distorted thinking patterns.

The influence of environmental factors on cognitive constructs can further impact an individual's cognitive processes and emotional well-being. Cognitive constructs mediate the interpretation and appraisal of environmental stimuli, affecting how individuals perceive and respond to situations. For instance, someone with negative cognitive constructs may interpret a neutral situation as threatening or perceive criticism where none exists.

Additionally, cognitive constructs can interact with emotional states. Emotions can influence the activation and accessibility of cognitive constructs, shaping how individuals process information and make decisions. In turn, cognitive constructs can impact emotional experiences by influencing the interpretation and appraisal of emotions.

The interaction between cognitive constructs and other factors is bidirectional. While cognitive constructs can be influenced by environmental factors and emotions, they also have the ability to influence and shape an individual's perception, interpretation, and response to these factors.

Cognitive constructs can serve as filters through which individuals process information, leading to biased or distorted perceptions of themselves, others, and the world.

Understanding the interaction between cognitive constructs and other factors is crucial in comprehending the complex nature of human cognition and behaviour. It highlights the interplay between internal cognitive processes and external influences, emphasising that cognitive constructs are not static entities but are influenced and shaped by various factors in the individual's environment and internal experiences.

Cognitive distortions can also affect how individuals interpret and respond to social interactions. They may perceive rejection or criticism even when it may not exist or misinterpret the intentions of others. These distorted thought patterns can lead to a negative bias in perceiving social situations, contributing to feelings of isolation, alienation, and distress.

**Some distorted thought patterns:** *All or nothing thinking* – It is also known as black-and-white thinking refers to a cognitive distortion where an individual perceives situations or themselves in extreme and polarized terms. It involves a rigid belief that things are either perfect or a complete failure, with no middle ground or shades of gray. This applies mostly to performance (7).

*Overgeneralizing* – It is a cognitive distortion in which individuals draw broad and sweeping conclusions based on limited experiences or evidence. It involves making generalizations or assumptions about a specific event, situation, or group of people based on one or a few instances. This distortion often involves overlooking nuances and variability, leading to an exaggerated or distorted perception of reality (8).

*Mind reading* – This is a cognitive bias where individuals believe they know the thoughts, intentions, or feelings of others without sufficient evidence or direct communication. It involves making assumptions about what others are thinking or feeling based on one's own perceptions, interpretations, and beliefs, rather than relying on objective information or clear communication (8).

*Catastrophising* – This is the tendency to exaggerate the potential negative outcomes of a situation or to interpret ordinary situations as extremely threatening or catastrophic. It involves

an irrational thought pattern where individuals anticipate the worst possible outcomes, even when there is little or no evidence to support such beliefs. When someone engages in catastrophising, they often focus on the worst-case scenarios and envision the most severe consequences of a situation (7).

*Emotional reasoning* - This is when individuals rely heavily on their emotions as evidence or proof for the validity of their thoughts and beliefs. It involves drawing conclusions and making judgments based primarily on subjective feelings rather than objective evidence or logical reasoning. When someone engages in emotional reasoning, they assume that their emotions reflect reality and treat them as factual information (9).

*Labeling* – This occurs when individuals assign a single characteristic or behaviour to themselves or others, using a simplified and generalized label to define them. This labeling process overlooks the intricate nature and uniqueness of the person or situation. In labeling, individuals tend to attach a rigid and frequently negative label to themselves or others, relying on limited information or a solitary action as a basis (10).

*Mental filtering* – It is also known as selective attention or cognitive filtering, is a cognitive distortion where individuals focus only on certain aspects of a situation while ignoring or discounting other relevant information. It involves filtering out positive or neutral elements and selectively attending to negative aspects of an experience. Some people highlight their mental filtering through defensiveness, this they do by highlighting their own virtues and belittling other peoples attributes (11).

*Personalisation* – This is where individuals blame themselves excessively for negative events, disregarding other factors. They interpret situations as solely connected to themselves, even when there are alternative explanations or external influences. It involves assuming personal responsibility without sufficient evidence or considering other contributing factors (10).

*Unreal-ideal* – This is where individuals hold unrealistic and idealistic expectations for themselves or others. It involves setting exceedingly high standards or expectations that are difficult or impossible to meet in reality. People with this bias may constantly strive for perfection or compare themselves unfavourably to an

unrealistic standard, leading to feelings of inadequacy, dissatisfaction, and self-criticism (12). *Imperative thinking* – It is also known as "should statements," involves rigid beliefs and unrealistic expectations about how things should be. It includes imposing strict rules and standards on oneself or others. Those who engage in imperative thinking use words like "should," "must," or "have to" when evaluating themselves, others, or situations. They believe that specific outcomes or behaviors are absolutely necessary and deviations from these expectations are seen as failures (13).

### **Emotional dysregulation**

Emotional dysregulation is a result of the interplay between a person's biological inclination towards difficulty in regulating emotions and an environment that amplifies this susceptibility (14). Difficulties in emotion regulation, including poor emotional awareness and limited regulation strategies, are prevalent among adolescents who engage in self-harm. The inability to effectively manage and regulate emotions may lead to increased emotional distress, prompting individuals to resort to self-injurious behaviors as maladaptive coping (14).

A study was conducted to explore the role of emotion dysregulation in deliberate self-harm (DSH) among female undergraduate students. Their findings indicate that emotion dysregulation independently contributes to DSH and differentiates women with frequent DSH from those without a history of self-harm. Emotion dysregulation also mediates the relationship between emotional inexpressivity and DSH frequency (15).

Research supports the association between emotion dysregulation and DSH. It is a significant predictor of self-harming behaviors among male undergraduates, differentiating those with frequent DSH from those without (15). Lower levels of emotional awareness and clarity are also linked to DSH (15). According to Linehan's perspective, emotion dysregulation acts as a mechanism that connects risk factors, such as childhood maltreatment and emotional vulnerability, to the occurrence of deliberate self-harm (14).

Understanding the role of emotion dysregulation in DSH is crucial for intervention and prevention efforts. By addressing emotion dysregulation and providing individuals with effective emotion

regulation strategies, professionals can help reduce self-harming behaviors and promote emotional well-being.

### **Executive functioning**

Executive function (EF) encompasses processes such as awareness, planning, task execution, and self-regulation (16). It serves as a central control system, overseeing cognitive operations without specializing in any specific domain. Impairments in executive functioning can impact various cognitive variables, including attention, problem-solving, and decision-making. Executive functioning difficulties are associated with deficits in cognitive flexibility, as seen in individuals with deliberate self-harm (17). These impairments hinder adaptive problem-solving and coping strategies, increasing vulnerability to self-harm. Neurological disorders, such as frontal lobe damage, Alzheimer's disease, and ADHD, are linked to deficits in executive functioning (18). Addressing executive functioning is crucial for optimizing cognitive abilities and promoting adaptive behavior in academic, occupational, and social contexts. Strategies like cognitive training programs, behavioral interventions, and environmental modifications can support individuals with executive functioning difficulties. Although the assessment and understanding of executive functioning remain complex, recognizing its significance enables researchers, educators, and clinicians to develop effective interventions and enhance overall functioning.

### **Reasoning**

Reasoning is a crucial cognitive process in understanding the link to deliberate self-harm (DSH) among individuals (19). It involves logical thinking, judgment, and evaluating information. Impairments in reasoning abilities have been observed in individuals who engage in DSH. For instance, they may exhibit dichotomous thinking, perceiving situations as all-or-nothing without considering alternative perspectives. This rigid reasoning style hinders the generation of alternative solutions and consideration of consequences. Cognitive biases, systematic errors in thinking and judgment, also influence reasoning in the context of DSH. They affect how individuals perceive, interpret, and remember information, potentially shaping their attitudes, beliefs, and behaviors.

In DSH, cognitive biases can reinforce negative beliefs, self-perceptions, and emotional states (19). Confirmation bias, for example, leads individuals to selectively attend to and interpret information that supports their negative self-perceptions, while disregarding contradictory information. This bias perpetuates distorted thoughts, contributing to feelings of hopelessness and the belief that self-harm is the only solution. Understanding these reasoning processes is essential for effective intervention and prevention strategies in DSH. By addressing impairments in reasoning and challenging cognitive biases, professionals can help individuals develop more adaptive thinking patterns and reduce the risk of self-harm (1, 19).

### **Personality profiles/traits and deliberate self-harm**

Personality profiles, including specific traits and characteristics, have been extensively studied in relation to deliberate self-harm behaviours among youth. Understanding the role of personality can provide insights into the predispositions and vulnerabilities that contribute to deliberate self-harm. Costa and McCrae define personality profile as "a unique configuration of personality traits that reflects an individual's characteristic patterns of thinking, feeling, and behaving across various situations and over time" (20).

#### **The role of different personality traits are described as follows:**

**Borderline personality:** Borderline personality traits have consistently emerged as significant predictors of deliberate self-harm in youth. Adolescents with borderline personality disorder (BPD) traits were at a higher risk of engaging in self-harm compared to those without these traits. Borderline traits, such as emotional dysregulation, identity disturbance, and interpersonal difficulties, may increase the likelihood of resorting to self-harm as a means of managing overwhelming emotional distress (21).

**Impulsivity:** Impulsivity is another personality trait strongly associated with deliberate self-harm in youth. A group of researchers, reported a robust association between impulsivity and self-harm among adolescents (22). High levels of impulsivity characterized by acting without thinking and engaging in risky behaviors, may predispose individuals to impulsive acts of self-injury as a means of seeking relief or coping with emotional turmoil.

Research consistently supports the significant role of impulsivity in understanding self-harm among youth (22). The impulsive nature of self-injury is influenced by impulsivity, as individuals may act on their impulses without fully considering the potential consequences or long-term effects.

Furthermore, impulsive behaviours often serve as maladaptive coping mechanisms for managing emotional distress. By engaging in self-injury, individuals may temporarily experience relief or a sense of control over their emotions (22). This temporary relief reinforces the behaviour and increases the likelihood of repeated self-harming acts in the future.

To effectively address self-harm in youth, it is crucial to understand the association between impulsivity and self-harm. Professionals can develop interventions and prevention strategies by addressing underlying impulsivity and providing alternative coping strategies. Incorporating evidence-based interventions focused on emotional regulation and impulse control is essential in reducing the risk of self-harm among youth (22).

**Sensation seeking:** Sensation seeking, the desire for novel, exciting, and intense experiences, has also been identified as a relevant personality trait in understanding deliberate self-harm behaviors among youth (23). Individuals high in sensation seeking tendencies may engage in self-harm as a way to seek stimulation or as an impulsive response to emotional dysregulation. It is worth noting that although there is an association between sensation seeking and deliberate self-harm, it is crucial to recognize that sensation seeking is merely one factor among a multitude of contributors to these behaviours. Understanding self-harm among youth requires considering other significant factors such as psychological, social, and environmental influences. A brief description of how these factors play their influential roles is described as follows:

- **Psychological Factors:** Psychological factors that contribute to self-harm among youth include mental health issues such as depression and anxiety, distorted thinking patterns, poor emotion regulation skills, and low self-esteem. These factors can increase vulnerability to self-harm as maladaptive coping mechanisms.
- **Social Factors:** Social influences play a significant role in self-harm among youth, with peer

influence and dynamics, family environments, and social isolation being key factors. Peer pressure, dysfunctional family dynamics, and a lack of supportive relationships can contribute to self-harm behaviors.

- **Environmental Factors:** Environmental factors that contribute to self-harm in youth include the school environment, media influence, and cultural/societal norms. Academic stress, bullying, exposure to graphic portrayals of self-harm, and cultural attitudes towards discussing mental health can impact the occurrence of self-harm behaviors.

**Perfectionism:** Perfectionism, characterized by striving for flawlessness and setting excessively high standards for oneself, has been identified as a relevant factor in understanding deliberate self-harm behaviors (24). Research suggests that individuals with high levels of perfectionism may be more prone to engaging in self-harm as a maladaptive coping mechanism.

Perfectionists often experience intense self-criticism and a fear of failure, leading to a persistent sense of dissatisfaction with their own performance or achievements. These individuals may engage in deliberate self-harm as a way to alleviate emotional distress, gain a sense of control, or punish themselves for perceived failures or shortcomings. Self-harm may serve as a visible expression of their internal struggle for perfection and a means to cope with the overwhelming pressure they impose on themselves.

Several studies have examined the association between perfectionism and deliberate self-harm. For example, (23) conducted a study exploring the relationship between perfectionism and self-harm among college students. The findings revealed a positive correlation between perfectionism and self-harm, suggesting that higher levels of perfectionism were associated with increased engagement in self-harming behaviors.

It is important to note that perfectionism is just one contributing factor among various psychological, social, and environmental influences that contribute to deliberate self-harm. Factors such as emotional distress, interpersonal difficulties, and other underlying mental health conditions also play significant roles in understanding self-harm behaviours (24).

**Neuroticism:** Neuroticism consistently correlates with deliberate self-harm behaviors, as individuals high in neuroticism tend to experience emotional instability and psychological distress (25). Their difficulties in managing emotions may drive them to engage in self-harming behaviors as a maladaptive coping mechanism (26). The association between neuroticism and self-harm can be attributed to intense negative emotions and a reduced ability to regulate emotions effectively (25). In response to emotional turmoil, individuals may resort to self-harm for temporary relief and a sense of control. Recognizing the role of neuroticism is vital for developing targeted interventions and prevention strategies. If emotional vulnerabilities are addressed and alternative coping mechanisms provided, professionals can help individuals with high neuroticism levels develop healthier strategies to manage distress and reduce reliance on self-harm behaviors.

### **Research gap and how it is addressed**

One notable gap in the body of knowledge surrounding deliberate self-harm (DSH) among youth is the lack of comprehensive exploration into how cognitive constructs, personality profiles, and environmental factors affect DSH. Available literature examines individual aspects such as cognitive distortions, emotion dysregulation, and personality traits like impulsivity and perfectionism, however there remains a paucity of research that integrates these elements to show their combined influence on DSH behaviours. Moreover, the role of environmental stressors and social influences in contributing to cognitive and personality-related vulnerabilities towards self-harm remains relatively understudied.

Our understanding of why young people engage in deliberate self-harm, is still missing a big piece. While we know a lot about how their thoughts and feelings play a role, we're not looking enough at how everything fits together. Lets imagine a scenario like this: we've got some pieces—like how negative thoughts and strong emotions can lead to self-harm—but we're not seeing the whole picture yet. This gap means we're not fully grasping how factors like how they think, their personality, and what's happening around them all work together to make self-harm more likely. So, it's like we're trying to solve a puzzle without all the pieces.



Theories like the Cognitive-Behavioural Model or Linehan's biosocial model help us see how a person's thoughts, emotions, and environment all interact. Think of it like this: imagine a recipe for baking a cake. The Cognitive-Behavioural Model and Linehan's model are like the recipe instructions—they tell us how to put everything together to understand self-harm. An understanding of these theories, we can start filling in the missing pieces of the puzzle and see the bigger picture. This way, we can develop better ways to help young people who are struggling with self-harm by considering all the different factors that might be affecting them.

Research found that while cognitive distortions, such as all-or-nothing thinking and mind reading, are significant predictors of DSH behaviors among adolescents, their impact is often amplified in the presence of environmental stressors like bullying or family conflict (27). This study highlights the importance of considering both cognitive factors and environmental influences in understanding DSH among youth.

Again, another study found that certain personality traits, such as impulsivity and neuroticism, interacted with changes in environmental circumstances, such as transitions to new schools or peer group dynamics, to predict DSH behaviors (28). This research points to the dynamic nature of DSH risk factors and emphasizes the need for a comprehensive, multi-dimensional approach to understanding youth self-harm.

### **Theoretical frameworks and empirical evidence**

Several theoretical frameworks have been proposed to explain the relationship between cognitive constructs, personality profiles, and deliberate self-harm in youth. These frameworks are explained below.

**Cognitive-Behavioural Model:** The Cognitive-Behavioural Model proposes that self-harm behaviors in youth are influenced by maladaptive cognitive processes and distorted thinking patterns. Negative self-beliefs, cognitive biases, and cognitive distortions play a significant role in contributing to self-harm (29). According to this model, an individual's thoughts and interpretations of events impact their emotional and behavioural responses.

In the context of deliberate self-harm, the Cognitive-Behavioural Model suggests that

cognitive processes like cognitive distortions and negative self-beliefs contribute to the development and maintenance of self-harming behaviors. Negative and distorted thoughts about oneself, others, and the world can lead to feelings of hopelessness, worthlessness, or overwhelming emotions. These negative thoughts can trigger intense emotions that individuals may struggle to manage effectively. As a result, self-harm may be seen as a way to cope with or regulate these overwhelming emotions or as a means to communicate distress. Cognitive-behavioural therapy (CBT) is an effective treatment approach based on the Cognitive-Behavioural Model. It aims to identify and modify maladaptive thoughts and behaviors to improve emotional well-being and reduce self-destructive behaviors.

**The Emotion Dysregulation Model:** The Emotion Dysregulation Model focuses on the difficulties individuals experience in regulating and managing their emotions, leading to self-harm as a maladaptive coping strategy (30). This model emphasizes the association between emotional dysregulation, impulsivity, and self-harm behaviors. According to the Emotion Dysregulation Model, individuals who engage in self-harm may struggle with effectively managing and controlling their emotions. Emotion dysregulation is characterized by heightened emotional sensitivity, intense emotional experiences, and challenges in modulating emotions.

These individuals may have limited healthy coping strategies and may turn to self-harm as a way to regulate or relieve emotional distress. The model suggests that self-harm behaviors provide temporary relief or a sense of control over overwhelming emotions. Through repetitive engagement, self-harm can become a habituated response to emotional distress. To address deliberate self-harm, interventions based on the Emotion Dysregulation Model focus on helping individuals develop effective emotion regulation skills, enhance distress tolerance, and cultivate adaptive coping mechanisms.

**Linehan's biosocial model of borderline personality disorder:** Linehan's biosocial model, proposed by Marsha Linehan, offers a comprehensive framework for comprehending the relationship between cognitive, emotional, and environmental factors in deliberate self-harm

behaviors (31). The model highlights the influence of biological vulnerabilities, invalidating environments, and emotional dysregulation on self-harm. Individuals with borderline personality disorder (BPD) exhibit heightened sensitivity to emotional stimuli, influenced by biological factors. They often struggle with intense emotional reactivity and difficulties in emotion regulation. The model underscores the significance of an invalidating social environment, which disregards or belittles an individual's emotions, impairing emotional regulation skills and interpersonal relationships. The combination of biological vulnerabilities and an invalidating environment contributes to BPD symptom development, including self-harming behaviors. Self-harm may serve as a means of emotional regulation or communication for individuals with BPD when other strategies fail.

Empirical evidence consistently supports the role of cognitive constructs and personality profiles in understanding deliberate self-harm among youth. Studies have demonstrated the predictive and explanatory power of cognitive and personality factors in youth self-harm (32), shedding light on the complex interplay between cognitive processes, personality traits, and self-harm tendencies.

### **Importance of training interventions for youth with dsh behaviours and varied cognitive constructs and personality profiles**

Self-harm behaviours, such as deliberate self-harm (DSH), pose significant challenges to the well-being and development of youth. Effective training interventions play a crucial role in addressing these behaviors, especially considering the diverse cognitive constructs and personality profiles that may underlie them. This discussion will highlight the importance of training interventions, focusing on cognitive constructs encompassing reasoning, emotion regulation, cognitive distortion, and executive functioning, as well as personality traits including neuroticism, sensation seeking, impulsivity, borderline personality disorder, and perfectionism.

The importance of training interventions lies in their ability to address various aspects of self-harm behaviours in youth. Cognitive restructuring and critical thinking interventions have shown promise in challenging maladaptive thoughts and

beliefs associated with DSH behaviors (33). Additionally, mindfulness-based therapies targeting emotion regulation can equip youth with effective strategies to manage distressing emotions, thereby reducing the likelihood of self-harming behaviors (34). Interventions focused on cognitive distortions are recommended to help youth develop more adaptive thinking patterns (35). Furthermore, training interventions that enhance executive functioning skills, such as planning, problem-solving, and impulse control, can be particularly beneficial for youth with DSH behaviors, as deficits in these areas are often linked to impulsive and risky behaviors (36).

When addressing personality traits, interventions that focus on emotional resilience and coping strategies have been found to be beneficial for individuals with high levels of neuroticism (34). Training interventions that prioritize risk assessment, self-control, and impulse management can help redirect sensation-seeking tendencies towards healthier activities, thus reducing the likelihood of self-harm behaviors (37).

Dialectical Behaviour Therapy (DBT) has demonstrated effectiveness in reducing self-harm behaviors among individuals with borderline personality disorder (BPD) by targeting emotional dysregulation, self-esteem issues, and interpersonal difficulties (34). Additionally, cognitive-behavioural approaches, including cognitive restructuring and self-compassion training, can be effective in addressing perfectionistic tendencies and minimizing the risk of self-harm behaviors in perfectionistic youth (38).

## **Discussion**

The relationship between the cognitive constructs and the personality profiles in this context of deliberate self-harm exposes to us the interactions among the psychological, emotional and behaviours of the youth engaged in this this behaviours. These cognitive constructs and personality profiles together contribute significantly to our understanding of the core processes in deliberate self-harm behaviours.

Cognitive distortions refer to twisted or inaccurate ways of thinking. When someone has these distorted thought patterns, it increases their vulnerability to deliberately harming themselves. These thought patterns become a basis for specific treatments, especially within the field of cognitive-

behavioural therapy (39). Cognitive-behavioural therapy aims to address and correct these distorted thoughts to help individuals cope better and reduce the risk of self-harm.

Given the available evidence, it is fair to conclude that emotional regulation is a key factor influencing self-harm behaviours. It plays a central role in both the frequency and differentiation of deliberate self-harm occurrences (15). This means emotional dysregulation is important in intervention to mitigate emotional distress and promote healthier coping mechanisms.

Impairments in executive functioning present challenges in adaptive problem-solving and coping (40). Executive functioning difficulties has an adverse impact on the individual and hence the need for support such as cognitive training programs and behavioural interventions to optimise the cognitive abilities of the individual.

Reasoning is relevant in understanding the link to deliberate self-harm. The identification of dichotomous thinking and cognitive biases helps us to understand how individuals process information and make decisions. Efforts to improve reasoning skills are crucial for preventing self-harm. Certain specific traits play a crucial role in understanding deliberate self-harm behaviours among youth.

Borderline personality traits, such as emotional dysregulation and identity disturbance, have consistently emerged as significant predictors of deliberate self-harm in youth. Additionally, high levels of impulsivity, characterized by acting without thinking and engaging in risky behaviors, have shown a robust association with self-harm among adolescents (41).

Sensation seeking, the desire for novel and intense experiences, has been identified as a relevant personality trait in understanding deliberate self-harm behaviors among youth. Moreover, perfectionism, characterized by striving for flawlessness and setting excessively high standards, has been recognized as a relevant factor in understanding deliberate self-harm behaviors (24).

On a consistent basis, neuroticism correlates with deliberate self-harm behaviors, as individuals high in neuroticism tend to experience emotional instability and psychological distress (42). A clear understanding of these personality traits helps us to understand the tendencies and weaknesses that

make young people more likely to intentionally hurt themselves.

In an attempt to address the gap in this body of knowledge, we will have to understand how cognitive constructs, personality profiles, and environmental factors interaction can guide the development of interventions precisely to meet the needs of at-risk youth. This is where cognitive-behavioural therapy techniques aimed at challenging cognitive distortions with interventions addressing personality traits such as impulsivity or perfectionism which can enhance treatment effectiveness and address the nature of self-harm behaviours comes in handy.

Screening instruments/protocols to include a wider array of factors such as cognitive biases, personality traits, and environmental stressors can be developed. The screening process can be refined by the healthcare professional to raise the level of accuracy and efficiency in identifying at risk individuals. For example, they could develop screening questionnaires that not only inquire about overt self-harm behaviors but also delve into cognitive patterns, such as black-and-white thinking or catastrophising, and personality traits like impulsivity or perfectionism. Additionally, healthcare professionals can incorporate environmental stressors into their assessments by exploring aspects such as family dynamics, peer relationships, academic pressures, and exposure to trauma or adverse life events. Our research findings are significant for suicide prevention efforts. This is because early identification and intervention for adolescents at risk of suicidal behaviors is necessary to curtail the behaviour from happening.

Interdisciplinary collaboration stands as a cornerstone in youth mental health care, calling the need for psychologists, psychiatrists, social workers, and other healthcare practitioners to collaborate. This will make it easier for team work and better intervention strategies to address this self-harm challenge among the youth.

On teenage mental health, our research findings recognises the relationship between cognitive constructs, personality profiles, and environmental factors in self-harm behaviours, therefore, we advocate for holistic approaches to support teenage mental health. This entails not only therapeutic interventions but also fostering supportive social networks, implementing school-

based mental health services, and leveraging community resources to address the diverse needs of adolescents facing mental health challenges.

## Conclusion

This review emphasizes the role of cognitive constructs and personality profiles in deliberate self-harm among youth. The study identifies cognitive distortions, reasoning, emotion regulation difficulties, and executive functioning deficits as relevant cognitive constructs. It also highlights borderline personality traits, impulsivity, sensation seeking, and neuroticism as important personality profiles associated with self-harm. Theoretical frameworks, like Linehan's biosocial model, provide a foundation for understanding self-harm's multifaceted nature.

Empirical evidence supports the need for comprehensive assessments and targeted interventions to address these cognitive and personality factors. Effective interventions should target cognitive constructs such as reasoning, emotion regulation, cognitive distortion, and executive functioning, as well as personality traits like neuroticism, sensation seeking, impulsivity, borderline personality disorder, and perfectionism. Cognitive restructuring, mindfulness-based therapies, and interventions focusing on cognitive distortions help challenge maladaptive thoughts and promote adaptive thinking patterns. Training interventions that enhance executive functioning skills can address impulsive and risky behaviors. For personality traits, interventions focusing on emotional resilience, coping strategies, risk assessment, self-control, and impulse management have shown promise. Dialectical behaviour therapy is effective for individuals with borderline personality disorder, while cognitive-behavioural approaches can address perfectionistic tendencies.

## Future research direction

Further research is required to examine the efficacy of targeted training interventions for addressing self-harm behaviors in youth with diverse cognitive constructs and personality profiles. Long-term studies are needed to evaluate the long-lasting effects and applicability of these interventions. Exploring the underlying mechanisms and processes involved can offer valuable insights into their specific outcomes. Additionally, research should prioritize the

development of personalized interventions that consider individual variations in cognitive constructs and personality traits.

## Implications for practice

When designing and implementing training interventions for youth, practitioners must consider the diverse cognitive constructs and personality profiles linked to self-harm behaviors. These interventions should incorporate strategies addressing cognitive restructuring, emotion regulation, cognitive distortion, executive functioning, and specific personality traits. Enhancing effectiveness requires collaborative and multidisciplinary approaches involving psychologists, therapists, and educators. Practitioners should remain informed about evidence-based interventions like DBT and cognitive-behavioural approaches and assess their applicability to various cognitive constructs and personality profiles. On-going assessment and evaluation of training interventions in real-world settings are crucial for informing and enhancing practice.

## Abbreviation

DSH - Deliberate self-harm  
 CBT - Cognitive-behavioural therapy  
 BPD - Borderline personality disorder  
 NSSI - Non-suicidal self-injury

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## Authors Contributions

AK serving as the Principal author played a pivotal role in conceptualizing and designing the scoping review. Also played the role of a lead in coordinator during the review process, ensuring adherence to timelines. Again led the role in data extraction. PKS with his expertise in research methodology guided the team in defining the scope, search strategy, and inclusion criteria. Also assumed the critical role of ensuring the rigor and validity of the review process. SS and AKS, both content experts in the subject matter under review, brought in-depth knowledge in the review. They did the proof reading of the manuscript. All authors approved the final version of the manuscript.

## Conflict of Interest

The authors declare they have no conflict of interest.

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Nil

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