

**EFFICACY OF  
DIALECTICAL BEHAVIOUR THERAPY  
BASED ON EMOTION REGULATION IN  
NON-SUICIDAL SELF- INJURIOUS BEHAVIOUR**

Thesis  
submitted in partial fulfilment of the  
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**DOCTOR OF PHILOSOPHY  
IN  
PSYCHOLOGY**

**JULEEMOL GEORGE**

under the guidance of  
**DR JAYA A. T.**



**POST GRADUATE AND RESEARCH DEPARTMENT  
OF PSYCHOLOGY**

**PRAJYOTI NIKETAN COLLEGE, PUDUKAD**

**(Affiliated to the University of Calicut)**

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## DECLARATION

I, Juleemol George, do hereby declare that this thesis entitled “**EFFICACY OF DIALECTICAL BEHAVIOUR THERAPY BASED ON EMOTION REGULATION IN NON-SUICIDAL SELF-INJURIOUS BEHAVIOUR**” is a bonafide record of the research work done by me under the guidance of Dr JAYA A. T., Assistant Professor, Department of Psychology, Prajyoti Niketan College for the award of the degree of Doctor of Philosophy in Psychology at the University of Calicut that has not been placed by anybody in any University for the award of any Degree or Diploma, Associateship, Fellowship, or other similar titles of recognition.

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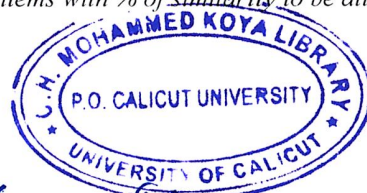
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## ABBREVIATIONS

BPD	:	Borderline Personality Disorder
CBT:	:	Cognitive Behaviour Therapy
CER	:	Cognitive Emotion Regulation
CERQ	:	Cognitive Emotion Regulation Questionnaire
CTBE	:	Community Treatment by Experts
DBT	:	Dialectical Behavioural Therapy
DBT-I	:	DBT Individual Therapy
DBT-S	:	DBT Skill Training
DSHI	:	Deliberate Self-Harm Inventory
DSM	:	Diagnostic and Statistical Manual of Mental Disorders
ER	:	Emotion Regulation
FASM	:	Functional Assessment of Self-Mutilation
MBT	:	Mentalization-Based Treatment
NSSI	:	Non-Suicidal Self-Injury
NSSIB	:	Non-Suicidal Self-Injurious Behaviour
NSSID	:	Non-Suicidal Self-Injurious Disorder
PRO	:	Positive Relationship with Others
PWB	:	Psychological Well-Being
SIB	:	Self-Injurious Behaviours
SITB	:	Self-Injurious Thoughts and Behaviour
SPWB	:	Scale of Psychological Well-Being

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## LIST OF PUBLICATIONS

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## **ABSTRACT**

Research on non-suicidal self-injury (NSSI) among young adults in India is limited, despite the high prevalence rates and the potential gateway effect to more severe outcomes. Up to 77% of adolescents and young self-injurious attempters either do not attend treatment or drop out before any effective intervention is instituted. Dialectical Behaviour Therapy (DBT) is considered the gold standard psychotherapeutic intervention for such behaviour, and adapting such intervention within the Indian cultural context offers effective strategies to prevent suicidal behaviours and NSSI. This study aimed to explore the nature and psychological correlates of NSSI in a sample of young adults in Kerala, India, and to evaluate the efficacy of DBT in enhancing psychological well-being (PWB) in individuals with non-suicidal self-injurious behaviour (NSSIB).

The research comprised two phases: Phase I focused on the nature of self-injurious behaviour in 691 young adults aged 19 to 30 years, selected through purposive sampling and identified the psychological variables associated with both adaptive and non-adaptive strategies of cognitive emotion regulation (CER), along with their predictive influence on PWB. Phase II, the main intervention study utilised a one-group pre-post-test with an extended group quasi-experimental research design that included 21 young adults with NSSIB recruited from three outpatient clinics in south Kerala. The study employed the Functional Assessment of Self-Mutilation (Lloyd et al., 1997), Deliberate Self-Harm Inventory (Gratz, 2001), Cognitive Emotion Regulation Questionnaire (Garnefski & Kraaij, & Sphinhoven, 2001), and Scale for Psychological Well-being (Ryff, 1989) to measure the variables under investigation. In intervention Phase, four months of 14-week Neacsiu Adult DBT based on emotion

regulation skill training, followed by a post intervention and follow-up assessment after six months.

The results revealed that approximately 11.4% of the sample reported engaging in self-injurious behaviour (SIB) within the past year, with cutting being the most prevalent method. Many of the demographic variables did not significantly influence SIB, while occupation shows statistically significant difference. CER strategies and dimensions of PWB show significant differences in all sub-variables between groups with any SIB and no SIB on Mann Whitney U test. Significant correlations were identified between variables and sub-variables of CER and PWB. Logistic regression analysis revealed that Self-blame and Other Blame emerged as significant contributors to SIB and Refocus on Planning and Self-Acceptance are protective factors against SIB. In Phase II, significant differences were found in NSSIB and variables of CER and PWB in three stages of assessment on Friedman test statistics revealing the efficacy of DBT in reducing NSSIB and enhancing PWB.

The study illuminates the widespread presence and nature of SIB in young adults, as well as CER and PWB correlates among young adults in Kerala. DBT based on emotion regulation offers an efficacious intervention strategy for reducing SIB and enhancing PWB based on adaptive and non-adaptive strategies of CER. Skill training programmes drawn from DBT integrating with emotion regulation, mindfulness, distress tolerance and interpersonal effectiveness will be beneficial for enhancing psychological well-being in young adults.

**Keywords:** *Non-suicidal-self injurious behaviour, emotion regulation, cognitive emotion regulation, psychological well-being, dialectical behaviour therapy, young adults.*

**CHAPTER-I**  
**INTRODUCTION**

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This chapter provides brief descriptions of key themes of current research. The first section provides a background of non-suicidal self-injurious behaviour, clinical features, epidemiology, aetiology, variables such as cognitive emotion regulation, psychological well-being and its theoretical background. The second section includes interventions for non-suicidal self-injurious behaviour, dialectical behaviour therapy, background, and modes of therapy. The literature review section encompasses the existing literature on the current study, the prevalence, aetiology, and epidemiology associated with non-suicidal self-injurious behaviour and psychological variables in the study, and dialectical behaviour therapy.

### **Non-Suicidal Self- Injurious Behaviour**

Non-suicidal self-injurious behaviour (NSSIB) is a burning clinical concern among health professionals and a challenging concern for the public in the current social scenario. The alarming rise in non-suicidal self-injury(NSSI) cases has sparked increased attention from healthcare professionals, researchers, and policymakers worldwide. NSSIB refers to deliberate, repetitive, and direct damage to one's body tissue without suicidal intent but for any other reasons that are not socially acceptable (American Psychiatric Association (APA), 2013). The interconnectedness of NSSIB with suicide in all age categories underscores the urgency of comprehensive mental health strategies that address these issues on both a global and local scale. It may serve as a "gateway" for concurrent or later suicidal thoughts and attempts (Whitlock, Muehlenkamp, Eckenrode et al., 2013; Guan, et al., 2012; Barrocas et al., 2012 & Wilkinson et al., 2018). Suicide is the third leading cause of death among young people and represents a significant public health problem worldwide. The impact of NSSI behaviour and suicide extends to multiple aspects of an individual's life, affecting occupation, interpersonal relationships, family life and socio-emotional

development. Self-injurious behaviours are associated with long-term negative consequences for social, emotional and physical well-being (De Haast, 2014). It has also been shown to have long-term adverse effects on performance level, vocational success, and socio-emotional development. It not only affects the victim's family but also extends personal distress to all close to him.

However, despite the significance of NSSIB, individuals often go untreated or experience a considerable delay in seeking professional help (Hooley, Fox et al., 2020). This behaviour is often intensified by the misconception of NSSIB as mere 'attention-seeking behaviour' by both family members and clinicians. In addition, Indian research suggests that suicide behaviours often stem from social and economic adversity rather than psychiatric illness. Factors like economic hardship and familial issues are commonly cited triggers (Banerjee et al., 2013; Chowdhury et al., 2010; Kattimani et al., 2015). Unlike Western studies, Indian research finds a weaker connection between psychiatric disorders and suicide behaviours (Vijayakumar, John et al., 2005). Instead, social adversity and interpersonal factors play significant roles in Indian contexts, potentially leading to psychological distress when individuals encounter challenges. Late adolescence and early adulthood are highlighted as stages of transition marked by psychological and physical changes. The hormonal changes during this phase may contribute to further changes in mood, emotions, impulses, cognition, etc. During this stage, the youth need to develop a sense of personal identity that will define their behaviours and help to further paint their future lives for good. Theoretical frameworks, such as Erikson's model of psychosocial development, have been referenced to explain the identity crisis experienced during this stage, resolving the challenges between intimacy and isolation (Erikson, 1968). A better understanding

of the reasons or motivations behind self-injurious behaviour is imperative for tailoring effective, individualised interventions.

### ***Non-suicidal self-injury and attempted suicide***

Non-suicidal self-injury (NSSI) and attempted suicide are distinct yet often co-occurring behaviours. Although NSSI involves self-harm without the intent to end one's life and typically occurs in the absence of suicidal ideation, it is associated with emotional distress and interpersonal difficulties (Klonsky, Victor et al., 2014). NSSI tends to occur chronically with high frequency and multiple methods, whereas suicide attempts occur less frequently with a single method and higher lethality injuries. However, establishing standardised nomenclature and clear operational definitions remains challenging in the field of self-injury research (Silverman & Berman et al., 2007). While suicide attempts involve thoughts of death and dying and tend to elicit care and concern from the environment, NSSI is typically motivated by a desire to alleviate distress and may evoke negative reactions such as disgust and hostility. Despite their phenomenological differences, individuals with histories of both NSSI and suicide attempts experience distinct patterns of self-injury thought.

### ***Historical Background***

The roots of understanding non-suicidal self-injurious behaviour can be traced back to the work of 19<sup>th</sup> century mental health professionals. During this era, clinicians began to identify meaningful clinical differences between self-harm with and without intent to die or classify self-injurers based on psychotic symptoms and the nature of self-inflicted injuries (Channing, 1878). The terminology used to describe self-injurious behaviours (SIB) during this period reflects the evolving conceptualisation of these phenomena. Terms such as self-injurious behaviours, deliberate self-harm,

self-mutilation, parasuicide, suicide gesture or wrist-cutting syndrome have been employed by different researchers to highlight the complex and varied presentation of self-injurious behaviour (Angelotta, 2015). Another important turning point was that psychiatrists in asylums endeavoured to distinguish self-harm between psychotic and non-psychotic individuals, as exemplified by James Adam's (1892) documentation. Adam observed self-harm driven by delusions or auditory hallucinations, suggesting that it could be a direct consequence of sensory distortion (Adam, 1892). He also identified self-mutilators as a subtype of hysterical patients residing in the "borderland" between sanity and insanity (Chaney, 2013). In their significant contribution to medical curiosities, the American ophthalmologists George Gould and Walter Pyle systematically classified self-mutilation cases into three categories: those arising from temporary insanity, clear suicidal intent, and heightened emotional states (Gould & Pyle, 1897).

In the 20th century, Karl Menninger introduced the concept of a conflict between life and death instincts, coining terms like focal suicide or partial suicide to describe self-destruction as either localized or generalized, akin to neurotic symptoms (Menninger, 1933). However, the independent recognition of self-harm was diminished when the Diagnostic and Statistical Manual of Mental Disorders, 3<sup>rd</sup> edition (DSM-III) included it only as a possible symptom of borderline personality disorder (BPD) (APA, 1980). Later, psychiatrist Pattison suggested the term deliberate self-harm syndrome and advocated for its separate diagnostic classification (Pattison & Kahan, 1983). Marsha Linehan, the pioneer of dialectical behaviour therapy, proposed that serious suicide attempts and non-suicidal self-injury represent distinct yet overlapping populations (Linehan, 1987). Cultural psychiatrists defined self-harm as repetitive self-injury in response to stressors and advocated its inclusion

under Axis 1 disorders (Favazza & Rosenthal, 1990). Despite initial categorisation as a symptom of borderline personality disorder (BPD) in the DSM-IV (APA, 1994), the term non-suicidal self-injury (NSSI) gained prominence, leading to its advocacy for inclusion in the DSM-5 (APA, 2013). Psychiatrist Shaffer from Columbia University formally advocated the inclusion of non-suicidal self-injurious disorder (NSSID) as a distinct disorder in DSM-5. Ultimately, based on published review studies, NSSID was included in Section 3 of DSM-5 under a condition that requires further study (APA, 2013). Diagnostic criteria for NSSID according to DSM-5 are as follows:

Table 1. 1

*Diagnostic criteria for NSSID- DSM-5*

<p><b>(A)</b> In the last year, the individual has, on five or more days, engaged in intentional self-inflicted damage to the surface of his or her body of a sort likely to induce bleeding, bruising, or pain (e. g., cutting, burning, stabbing, hitting, and excessive rubbing), with the expectation that the injury will lead to only minor or moderate physical harm (i. e., there is no suicidal intent). Note: The absence of suicidal intent has either been stated by the individual or can be inferred by the individual's repeated engagement in a behaviour that the individual knows or has learned is not likely to result in death.</p> <p><b>(B)</b> The individual engages in self-injurious behaviour with one or more of the following expectations:</p> <ul style="list-style-type: none"><li>(1) to obtain relief from a negative feeling or cognitive state,</li><li>(2) to resolve interpersonal difficulties,</li><li>(3) induce a positive feeling state.</li></ul> <p>Note: The desired relief or response is experienced during or shortly after self-injury.</p> <p>The individual may display patterns of behaviour suggesting a dependence on repeatedly engaging in it.</p> <p><b>(C)</b> Intentional self-injury is associated with at least one of the following:</p>
--

- (1) interpersonal difficulties or negative feelings or thoughts, such as depression, anxiety, tension, anger, generalised distress, or self-criticism, occurring in the period immediately before the self-injurious act;
  - (2) before engaging in the act, a period of preoccupation with the intended behaviour that is  
Difficult to control,
  - (3) thinking about self-injury that occurs frequently, even when it is not acted upon.
- (D)** The behaviour is not socially sanctioned (e. g., body piercing, tattooing, part of a religious or cultural ritual) and is not restricted to picking a scab or nail biting.
- (E)** The behaviour or its consequences cause clinically significant distress or interference in interpersonal, academic, or other important areas of functioning.
- (F)** The behaviour does not exclusively occur during psychotic episodes, delirium, substance intoxication, or substance withdrawal. In individuals with a neurodevelopmental disorder, the behaviour is not part of a pattern of repetitive stereotypies

*Adapted from DSM-5(APA, 2013)*

### ***Terminology and Definitions***

Terms such as ‘suicide’, ‘suicide attempt’, ‘suicidal ideation’, ‘suicidal intent’, ‘parasuicide’, ‘deliberate self-harm’, ‘self-destructive behaviour’ and ‘self-mutilation’ have been used to describe suicidal or non-self-injurious behaviours in previous literature.

*Parasuicide*: “An act with the nonfatal outcome, in which an individual deliberately initiates a non-habitual behaviour that, without intervention from others, will cause self-harm, or deliberately ingests a substance over the prescribed or generally recognised therapeutic dosage, and which is aimed at realising changes which the subject desired via the actual or expected physical consequences”(World Health Organization,1993).

*Deliberate self-harm*: deliberate, direct destruction or alteration of body tissue without conscious suicidal intent, but resulting in injury severe enough to cause tissue damage (Gratz, 2001)

*Self-mutilation*: “deliberate harm to the body without suicidal intent,” (Andover, Primack et al., 2010).

*Self-destructive behaviour*: “an array of behaviours used for inflicting harm upon oneself, for purposes that are neither socially sanctioned nor with suicidal intent (Nock & Favazza, 2009).

*Non-suicidal self-injury (NSSI)*: is the deliberate, self-inflicted destruction of body tissue resulting in immediate damage, without suicidal intent and for purposes not culturally sanctioned (Swannel et al., 2014). Non-suicidal acts were more often reported as intended to express anger, punish oneself, generate normal feelings, and distract oneself.

Epidemiological studies on NSSIB revealed a global prevalence rate ranging from 13.8% to >40% across different countries (Duggan et al., 2011; Surace, et al., 2021). Worryingly high rates were reported in adolescents (40-60%) and among adults (19-25%) emphasizing the severity within specific populations (Nock, 2010). Large community samples have been reported to have approximately 4% prevalence (Klonsky, Oltmans et al., 2003). The Indian context lacks high-quality epidemiological studies on non-suicidal self-injurious behaviour, with few studies focussing on adolescents’ non-fatal suicidal behaviour or suicidal risk. Clinic and community-based studies use different definitions of self-harm behaviour, with a significant prevalence rate of 40.7% reported among youth (Bhola et al., 2017)

NSSIB is observed in both clinical and non-clinical populations and often co-occurs with various psychiatric disorders (Kiekens, 2023; Gollust et al., 2008).

Borderline personality disorder (BPD) is a major psychiatric condition linked to NSSIB, with a high prevalence of 65-80% within this population (Soloff et al., 2014). The three-factor model of BPD, which focuses on emotion dysregulation, disturbed relatedness, and behaviour dysregulation highlights the complex interplay of factors contributing to NSSIB (Brickman et al., 2014). Emotion dysregulation, in particular, is strongly associated with NSSIB, emphasising the role of affective instability in driving SIB (Asarnow, 2021). While previously a diagnostic criterion for BPD, self-injurious behaviour is associated with conditions such as post-traumatic stress disorder, depressive disorder, obsessive-compulsive disorder, anxiety disorder and somatoform disorder (Yazici, 2021)). Stable and repetitive NSSIB during adolescence serves as a predictive marker for heightened mental health risks in adulthood (Daukantaite et al., 2021). NSSIB is recognized as a precursor to suicidal behaviour, particularly in depressed youth, and its assessment is crucial for understanding the risk of subsequent suicide attempts (Wilkinson & Goodyer, 2011). Substance use disorders are also common among individuals with NSSIB, with alcohol or drugs potentially serving as forms of self-medication or impulsivity (Klonsky, Victor et al., 2014; Guan et al., 2012). The association between NSSIB and eating disorders is significant, particularly when self-injury is employed as a means of emotional regulation or in response to body image concerns (Cucchi, 2010; Favazza & Rosenthal, 1990).

### **Aetiology**

This multifaceted phenomenon of NSSIB poses a complex challenge for understanding its aetiology, neurological, genetic, environmental, and primarily psychological factors, including emotional dysregulation, maladaptive coping, and interpersonal issues, shaping its aetiology.

### ***Neurobiological factors***

The intricate systems of the brain function differently in individuals with self-injurious behaviours. Engaging in self-harm behaviour reflects the somatic nervous system by precipitating an autonomic crisis and triggering the parasympathetic nervous system (Mertin, 2022). Defective serotonergic neurotransmission, increased activity in the hippocampus, anterior cingulate cortex, and middle and inferior orbital frontal cortex, hyperarousal of the limbic structure, abnormalities in the dopaminergic and opioid systems, changes in the levels of endogenous opioids, involvement of lipids, and serotonin deficiency, as well as abnormalities in the hypothalamic-pituitary-adrenal axis, have been reported by different researchers in the context of NSSIB (McCloskey et al., 2009; Hankin et al., 2011; Pies & Popli, 1995; Plener, Bubalo et al., 2012; Niedtfeld et al., 2010; Garland et al., 2007; Groschwitz & Plener, 2012; Garland, et al., 2009 & Kaess et al., 2012). Because of the complexity of these systems, it is difficult to pinpoint a single cause or pathway to NSSIB. A complex interplay of genetic predisposition and environmental factors influences brain pathways. Individuals with emotional dysregulation may utilise self-injury to cope with distress because it is associated with alterations in psychological processes like reward and self-processing (Pambianchi & Whitlock, 2019). It has been noted that diminished connectivity between the amygdala and regions of the limbic system implicated in interceptive awareness, reward processing, and decision-making is associated with a higher frequency of episodes of self-injurious behaviour (Schreiner et al., 2018).

### ***Genetic Factors***

There are substantial evidence indicating familial and genetic transmission of suicidal behaviour independent of psychiatric disorders. The offspring of parents who

attempted suicide exhibit a higher relative risk of suicide attempts themselves compared with the offspring of parents with mood disorders who did not attempt suicide. The intergenerational transmission of suicidal behaviour and its association with parental mood disorders, impulsive aggression, and a history of sexual abuse in parents serve as independent predictors of suicide attempts among offspring (Brent & Melhem, 2008). Genetic factors contributing to NSSI risk, irrespective of major psychiatric disorders, reveal insights into the interplay between genetics and environmental influences in self-injurious behaviours (DiBlasi et al., 2021).

### ***Childhood adversities***

Childhood adversities such as sexual abuse, emotional and physical maltreatment, parental separation or divorce, and financial difficulties have been extensively studied and consistently linked to emotion regulation issues, NSSI, and suicide attempts (Fergusson et al., 2008; Spitzen, 2020). These adverse experiences contribute to a range of emotional and psychological difficulties that often persist into adulthood. For instance, poor family functioning and lack of support have been identified as significant factors in the development of emotion dysregulation and engagement in NSSI behaviours (Hasking et al., 2020). Additionally, trauma, abuse, and adverse childhood experiences are prevalent among individuals with NSSI, significantly impacting their ability to regulate emotions effectively. Research suggests that these experiences can lead to hyperactivity in the amygdala, a brain region associated with emotional processing, which in turn contributes to heightened distress and difficulties in regulating emotions (Hooley, Dahlgren et al., 2020). Overall, these findings underscore the profound influence of childhood experiences on emotional regulation and self-injurious behaviours, highlighting the importance of

early intervention and support in mitigating long-term psychological consequences. (Meng et al., 2022; Afifi, 2008)

### ***Environmental and social factors***

Social support serves as a protective factor, buffering the pathway from negative life events to NSSIB and suicide (Christoffersen et al., 2015). When considering social factors, family-level variables those with poor familial support systems perceive their parents as untrustworthy and may blame themselves, feeling unworthy of being cared for or loved. According to attachment theory, the development of emotional regulation skills in children is nurtured by a high-quality family support system. In such a family system, children learn to regulate their emotions through adaptive strategies taught by their parents, such as expressing rather than repressing negative feelings through crying or seeking help. In addition to family dysfunction, peer conflict, such as bullying, is associated with various mental health problems and can lead to self-injurious behaviour as a means of regulating emotions (Gini & Pozzoli, 2009). Other stress factors stemming from life events, daily hassles, or situational triggers have been identified as risk factors for self-harm behaviour (Fliege et al., 2009).

With the rise of electronic communication, cyberbullying has become prevalent, with an estimated 15%–35% of young people having experienced it (John et al., 2018). Involvement in cyberbullying may have similar or even more severe negative effects than traditional bullying (Lanzillo et al., 2023).

### ***Influence of social media***

The Internet provides an unrivalled opportunity to access information, but sometimes the ideas obtained can be damaging for vulnerable young people

(Sedgwick et al., 2019). Online social networking leads to increased exposure and engagement in self-harm behaviour as negative messages and shared videos may influence vulnerable users (Memon et al., 2018). Social media activities related to NSSIB act as reinforcement for vulnerable young people (Lewis & Seko, 2016; Sedgwick et al., 2019). The NSSI-related online post mainly connection function (Ennis, 2015). The utilization of social media correlates with heightened psychological distress, unmet mental health needs, negative self-assessment of mental well-being, and an increase in thoughts of self-harm. Various forms of social media engagement exhibit distinct associations with non-suicidal self-injury behaviour and suicidal tendencies. Active social private use (e.g., messaging friends) was associated with decreased odds of all outcomes, whereas active social public use (e.g., status updates) was associated with increased odds of suicidal ideation, NSSIB, and suicide attempts (Kingsbury et al., 2021).

### ***Psychological factors***

Non-suicidal self-injurious behaviour is intrinsically linked to various psychological factors and theoretical frameworks, shedding light on the underlying motivations and functions of this behaviour. NSSIB most commonly functions to regulate adverse emotions, indicating a significant role in emotional regulation (Klonsky.,2009). Family rigidity, cognitive reappraisal, social inhibition, nonassertiveness, emotion suppression, self-criticism, and anger have been identified as mediators of NSSIB behaviour in adolescents and young adults (Khan & Kausar, 2020).

Over the past 2 decades, multiple theoretical models of NSSIB have been proposed by different researchers. The *Affect Regulation model* (Favazza, 1992)

suggests that individuals indulge in self-injurious behaviour as a means of downregulating ongoing unpleasant emotional experiences. *The Drive model* (Tangney & Dearing, 2002) proposes NSSIB as a compromise between life and death drives, serving as a placement. The *Experiential Avoidance Model* (Chapman et al., 2006) suggests that NSSIB is primarily performed to avoid aversive emotional experiences. The *Emotional Cascade Model* (Selby, Franklin et al., 2017) extends the avoidance concept, proposing that individuals engaging in NSSIB serve to distract themselves from positive feedback loops of negative effects and rumination. The present research focuses on the Four Function Model of Self-injury (Nock & Prinstein, 2010) and the Cognitive Emotion Model (Hasking et al., 2017) emphasises the role of behavioural and cognitive processes in emotion regulation.

**Four-Function Model of Self-injury:** The Four-function Model (Nock, 2010) proposes that NSSI serves four functions that can be either *intrapersonal* or *interpersonal* and that are either *negatively* or *positively reinforcing*. This model classifies NSSIB based on specific antecedents and consequences, providing a comprehensive account of why individuals engage in NSSIB. It integrates automatic and social reinforcement, offering novel perspectives for future research and a deeper understanding of NSSIB. Each process has two dichotomous dimensions: negative versus positive and automatic or social contingencies (Nock, 2010; Nock & Prinstein, 2004).

Table 1. 2

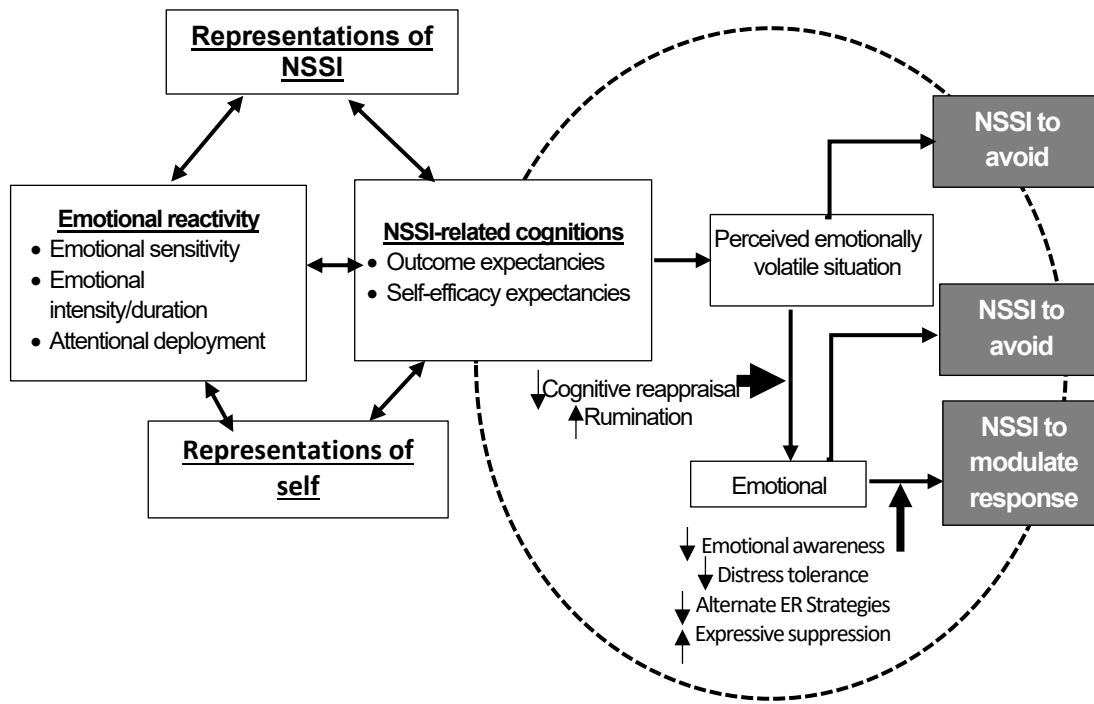
*Key tenets of the four-function models of self-injurious behaviour*

<i>Reinforcement type</i>	<i>Negative</i>	<i>Positive</i>
<i>Automatic(Intrapersonal)</i>	Decrease or eliminate aversive affective or cognitive states	Increase or generate desired affective or cognitive states
<i>Social(Interpersonal)</i>	Decrease or eliminate aversive social event or events	Increase or generate desired social event or events

*Adpated from (Nock & Prinstein, 2004)*

The Four-Function Model contributes to a nuanced understanding of self-injurious behaviour, highlighting the complexity of motivations and paving the way for more targeted and effective interventions in both clinical and research settings.

**Cognitive-Emotion Model of the NSSIB:** This model articulates the role of cognitive processes in emotion regulation (Hasking, Whitelock, Voon et al., 2017). Based on the hypothesis about why people engage in NSSIB rather than opt for healthy emotion regulation strategies, the Cognitive Emotion Model of NSSIB was proposed.

**Figure 1. 1***Cognitive Emotional Model of the NSSIB*

*Cognitive emotion model, Adapted (Hasking et al., 2008)*

In this model, individuals possess a stable propensity towards emotional reactivity, which influences their views and interactions with the world. The model emphasizes the role of positive and negative emotions formed in early life experiences in shaping sensitivity to emotional stimuli, leading to the development of self-schemas related to psychopathology, especially anxiety and depression. Cognitive representations of NSSIB are influenced by attentional deployment and emotional response. Likewise, the cognitive representation of NSSIB can evolve from attention placed towards internal or external stimuli related to NSSIB. The characteristics of the NSSIB, their underlying meanings, and potential purposes may all be included in this form. The cognitions and ideas people have about NSSIB, as well as their beliefs

about their capacity to engage in the conduct, are then influenced by these representations of the self and NSSIB. Cognitive representations of NSSIB are influenced by attentional deployment and emotional responses, and beliefs about one's capacity to engage in NSSIB play a crucial role in relapse prevention strategies (Hasking & Whitlock et al., 2017).

Emotion regulation emerges as a central aspect of NSSIB and is intricately linked with various comorbid mental health conditions such as depression and anxiety. According to the affect regulation model, NSSIB functions as a mechanism to regulate intense and distressing emotional experiences, underlining the pivotal role of emotion dysregulation in the initiation and perpetuation of self-injurious behaviours. Additionally, psychosocial theories like the experiential avoidance model and emotion cascade model underscore the significance of emotion regulation in NSSIB, proposing that individuals may turn to self-harm as a strategy to either avoid aversive emotional experiences or disrupt negative feedback loops of affect and rumination. Recognising the intricate interplay among emotion regulation, comorbidities, and psychological theories provides essential insights for the development of targeted interventions aimed at enhancing emotional regulation strategies and mitigating NSSIB.

### **Emotion Regulation**

Emotion regulation is posited as a significant determinant influencing both well-being and successful functional outcomes. The general concept of emotion regulation is “all the extrinsic and intrinsic processes responsible for monitoring, evaluating and modifying emotional reactions, especially their intensive and temporal features, to accomplish one's goals” (Thompson, 1994). The ability to adaptively

regulate emotion is essential for healthy functioning, and disruptions in emotion regulation are associated with various psychological disorders. Studies by Kharsati and Bholá (2013) explored self-injurious behaviours among college students, highlighting associations with attachment styles and emotion regulation. Men and women use different strategies to manage their emotions, and NSSI is conceptualised as an emotional regulation strategy aimed at reducing negative emotions (Bresin & Schoenleber, 2015).

### ***Theories of Emotional Regulation***

**James- Lange theory of emotions:** The James-Lange hypothesis, proposed by William James and Carl Lange, offers an early perspective on emotions. According to this theory, physiological responses precede emotional experiences, suggesting that individuals do not feel an emotion until they sense a physiological response. While foundational, it is critiqued for minimising the role of actively modulating or managing emotions (Cannon, 1987).

**Lazarus' cognitive-mediation theory:** Lazarus' cognitive-mediation theory (1991) builds upon the James-Lange hypothesis by emphasizing the regulatory role of cognitive processes in determining the strength and quality of emotions. This theory underscores the significance of cognitive assessment in understanding how cognition and emotion interact. It acknowledges the importance of cognitive processes in mediating coping mechanisms between individuals and their surroundings (Lazarus, 1991). The emphasis on cognitive appraisal aligns with later research on emotion regulation and coping strategies (Gross, 1998).

**Psychodynamic theory:** The psychodynamic theory of emotion regulation integrates various theoretical models such as classical psychoanalysis, ego psychology, object

relations theory, attachment theory, and relational psychoanalysis. It focuses on transforming problematic thoughts, feelings, and behaviours by uncovering unconscious past content in patients and connecting it to present conscious experiences. Central to this theory is the concept of intrapersonal emotion regulation mechanisms, rooted in Freud's structural model, which delineates the Ego's role as the regulator of competing psychic processes. Dysfunction in this regulation process can lead to anxiety, with adaptive and maladaptive defence mechanisms playing crucial roles. Implicit emotion regulation processes, akin to defence mechanisms, operate unconsciously and develop predictably during maturation. Therapeutic interventions within psychodynamic therapy aim to facilitate a shift towards more mature defence mechanisms and emotion regulation strategies, ultimately enhancing emotional regulation and overall psychological well-being (Freud, 1923; Christoffersen et al., 2015)

**Neurobiological theory:** The neurobiological theory of emotion dysregulation explores how brain abnormalities may contribute to inadequacies in emotion regulation, disorder like borderline personality disorder is linked to structural anomalies or irregular activity in brain regions involved in emotion regulation, such as the prefrontal cortex, hippocampus, anterior cingulate cortex, and amygdala (Laddis, 2015; Adleman et al., 2012). Understanding the neural basis of emotion dysregulation provides valuable insights into the biological underpinnings of mental health disorders.

**Process Model of Emotion Regulation:** Gross's model of emotion regulation is the current prevailing generic model for describing the emotion generation process. It follows a sequence of events: a psychologically relevant situation captures attention, leading to appraisal and then a response. The Process Model of Emotion, proposed by

Gross (1998), outlines five key processes that regulate emotion: context selection, situation alteration, attentional deployment, cognitive change, and response modulation. These mechanisms allow a person to control emotions. Each mechanism allows a person to choose or avoid emotional encounters, modify situations, direct attention, change cognitive appraisals, and modulate emotional responses. While providing a comprehensive understanding of emotion regulation, this model considers environmental aspects more thoroughly than previous theories. However, it may not fully address the needs of individuals with long-term mental illness or invalidated emotions, highlighting the evolving nature of emotion regulation research.

### **Cognitive Behaviour Theory and Emotion Regulation**

CBT is an action-oriented approach that assumes that maladaptive thinking and behaviour lead to maladaptive emotions. CBT interventions aim to alter these patterns, emphasising coping strategies as intentional cognitive or behavioural attempts to manage stressors. Coping strategies and emotion regulation techniques, including reappraisal, are integral components of cognitive behaviour therapy (CBT), allowing for the differentiation between adaptive and maladaptive forms. This technique plays a crucial role in enhancing individuals' abilities to manage and navigate challenging situations, contributing to the overall effectiveness of CBT interventions. The selection of effective coping strategies is crucial because maladaptive choices are associated with more severe symptomatology (Tenore et al., 2008). These theories emphasize the impact of maladaptive cognitive appraisals on NSSIB, stressing the need for interventions that promote cognitive restructuring. Approaches such as cognitive behaviour therapy and dialectical behaviour therapy integrate cognitive restructuring and mindfulness techniques to enhance emotion

regulation and mitigate the risk of NSSIB, both in prevention and treatment (Hasking et al., 2020)

### **Cognitive Emotion Regulation**

Cognitive emotion regulation (CER) is the concept of a cognitive way of managing the intake of emotionally arousing information (Thompson, 1991 & 1994). It is defined as “strategies that individuals think to handle and manage their emotions to adapt to difficult events” (Balzarotti et al., 2016). Garnefski et al. (2002) used the terms ‘cognitive coping’ and ‘cognitive emotion regulation’ interchangeably. Garnefski and Kraaij (2007) referred to cognitive emotion regulation as the cognitive approach of consciously monitoring and regulating the information that leads to emotional arousal. There are five adaptive and four non-adaptive cognitive emotion regulation strategies. Non-adaptive or negative cognitive emotion regulation strategies include self-blame, blaming others, rumination, and catastrophizing. Adaptive coping or positive cognitive emotion regulation strategies include acceptance, refocus on planning, positive refocusing, positive reappraisal, and putting into perspective (Garnefski et al., 2002).

**Self-Blame:** Self blame refers to blaming self to all the painful experiences in life and situation. Self-blame was divided into two categories, behavioural and characterological attribution. Behavioural self-blame involves attributions to a modifiable source of one’s behaviour and is associated with a belief in the future avoidance of a negative outcome. Characterological self-blame is esteem-related involves attributions to a relatively non-modifiable source of one’s character and is associated with a belief in personal deservingness for past or negative outcomes

(Janoff-Bulman, 1979). Both attributional style of self blame is related to Depression (Anderson et al., 1994).

**Acceptance:** Acceptance refers to thoughts of accepting what has been experienced and resigning oneself to what has happened. Carver et al. (1989) demonstrated that adopting acceptance as a coping mechanism exhibits a moderately positive correlation with indicators of optimism and self-esteem while displaying a negative correlation with measures of anxiety. Acceptance serves as a functional coping strategy, suggesting that individuals who acknowledge and embrace the reality of a stressful circumstance are actively endeavouring to address it.

**Rumination:** Rumination refers to persistent preoccupation with the emotions and thoughts linked to an adverse event. Joormann and Gotlib (2010) considered rumination a maladaptive technique for cognitive emotion regulation. Rumination is regarded as harmful, unmanageable, and distressing which contributes to the development and management of depression (Papageorgiou & Wells, 2003). It has been shown that a ruminative coping style tends to be associated with higher levels of depression (Nolen-Hoeksema et al., 1994). Rumination may amplify negative effects increasing the likelihood of NSSIB (Nicolai et al., 2016).

**Positive Refocusing:** Positive refocusing refers to the tendency of people to perceive or consider a situation worse than the actual situation. People see only the negative aspects of a situation when they get stuck somewhere, and they develop negative beliefs and stories about the situation (Ellis, 1962). Positive refocusing refers to thinking about joyful and pleasant issues instead of thinking about the actual negative event. It can be argued that refocusing thoughts on more positive issues could be

considered a helpful response in the short term, however, it might impede adaptive coping in the long term.

**Refocus on Planning:** Refocusing on planning involves contemplating the necessary steps and strategies for addressing a negative event. This cognitive aspect is integral to action-focused coping, although it does not necessarily indicate immediate behavioural enactment. Action-focused coping methods are integrated into various coping assessment tools, distinguishing between confrontational coping aimed at changing the situation and strategic problem-solving. Planful problem-solving encompasses both cognitive strategies and active efforts to address the situation, as outlined by Carver et al. (1989). They have shown that using 'planning' as a coping strategy is related positively to measures of optimism and self-esteem and negatively to anxiety.

**Positive Reappraisal:** Positive reappraisal refers to thoughts of attaching a positive meaning to the event in terms of personal growth. It involves interpreting events in a way that fosters personal growth by finding positive meanings within them Carver et al. (1989) demonstrated that employing "positive reappraisal" as a coping mechanism correlates positively with measures of optimism and self-esteem while showing a negative correlation with anxiety levels. The 'positive reinterpretation and growth', is exclusively focused on reappraisal of stressful events in positive terms.

**Putting into Perspective:** Putting into perspective involves minimizing the significance of an event or highlighting its relative nature in comparison to other occurrences. Moreover, the concept of putting it into perspective is an important dimension of well-being and quality of life (Allan & Gilbert, 1995; Janoff-Bulman.,1979). It involves minimizing the severity of a situation or highlighting its

relative importance compared to other events. While the significance of social comparison in various forms of psychopathology has been highlighted (Allan & Gilbert, 1995).

**Catastrophization:** The CER strategy of Catastrophization is when someone exaggerates the fear or severity of a situation in their mind, making it seem worse than it is. This tendency is linked with coping in unhealthy ways, experiencing more emotional distress, and having a higher likelihood of developing depression (Sullivan et al., 1995). individuals may inadvertently amplify their stress levels and hinder their ability to effectively manage challenging situations by catastrophization.

**Other Blame:** The other-blame strategy of CER refers to the style of blaming others for what one experiences. Regarding the cognitive style of blaming others, the literature suggests that it is mainly associated with behavioural problems and borderline personality disorder (McGee et al., 2001). Individuals using different strategies of other blame to navigate their emotional world may subsequently affect their psychological development (Robinson et al., 2018 & Mozafari et al., 2021).

Examining the interplay between CER and PWB in non-suicidal self-injury, the research delves into the cognitive processes employed by individuals engaging in NSSI, assessing how maladaptive patterns contribute to emotional dysregulation and subsequently impact psychological well-being.

### **Psychological Well-Being**

The concept of well-being lacks a single definition due to various factors, including the diverse range of factors considered part of the construct, the multidisciplinary nature of research on well-being, and the multitude of labels ascribed to its components (Diener, 2008; Henn, 2016). The World Health

Organisation defines health as encompassing complete physical, mental, and social well-being, not just the absence of disease (WHO, 2008). Well-being literature emphasises the presence of positive factors alongside the absence of negative ones (Henn, 2016). To optimise the use of the well-being concept, researchers must be explicit about their definitions, contexts, and measurement approaches. Huta and Waterman (2014) suggested addressing conceptual challenges by clarifying classification and terminology considerations related to centrality, category of analysis, and level of trait or state measurements. Ryan and Deci (1985) suggest that research on well-being can be categorised into two approaches: hedonic and eudaimonic. Hedonic approach focuses on happiness and pleasure as the primary indicators of well-being. It emphasizes the pursuit of positive emotions and the avoidance of negative ones. In other words, it's all about feeling good and maximizing pleasure while minimizing pain. Hedonic well-being is often associated with experiences of joy, satisfaction, and contentment in the present moment. The eudaimonic approach views well-being as more than just feeling good; it's about living a meaningful and fulfilling life. Eudaimonic well-being emphasizes personal growth, self-actualization, and the realization of one's full potential. It focuses on activities and pursuits that contribute to a sense of purpose, meaning, and authenticity in life, even if they may not always result in immediate pleasure or happiness. Huta and Waterman (2014) highlight Ryff's operationalisation of psychological well-being, which emphasizes hedonic as subjective experiences of well-being, including contentment, happiness, life satisfaction, and positive affect. In contrast, eudaimonia, a key aspect of Ryff's empirical research, is conceptualized as a state in which individuals are healthy, functioning optimally, and capable of succeeding despite life's challenges (Ryff & Singer, 2008).

The principles underlying well-being as per Ryff and Singer (1998) emphasize positive health and are more philosophical than medical focusing on the wellness of both mind and body and highlighting the connection between well-being and engagement in life. Ryff expanded upon these principles by developing a comprehensive model of well-being, drawing inspiration from scholars like Aristotle, Russell, and Rogers (Ryff & Singer, 2008). He argues that well-being aligns closely with personal growth and fulfilment, significantly impacting one's overall health. Ryff's exploration of psychological well-being resulted in a model featuring six essential dimensions, offering a comprehensive approach to comprehend and enhance well-being (Ryff,1989). Ryff's six dimensions of psychological well-being, are explained in simplified form below:

**Autonomy:** Reflects the ability to make independent decisions and evaluate oneself based on personal standards, rather than conforming to external pressures. It holds a positive self-view and finds contentment in past experiences.

**Self-acceptance:** It entails acknowledging and embracing all aspects of oneself, including both positive and negative qualities while maintaining a positive attitude towards the self. People with good self-acceptance dimension of well-being exhibit self-positivity, embrace both positive and negative aspects of themselves and hold a favourable view of past experiences.

**Positive relations with others:** Involve forming warm, trusting relationships characterized by empathy, affection, and intimacy. People with positive relationships with others maintain warm, fulfilling, and trusting bonds with others; demonstrate genuine concern for others' well-being, adept at showing empathy, affection, and fostering intimacy; comprehend the dynamics of reciprocity in human connections.

**Environmental mastery:** Entails effectively managing the environment and creating contexts that align with personal needs and values. It demonstrates a sense of mastery and competence in navigating the environment; adeptly manages various external activities and effectively capitalizes on available opportunities; capable of selecting or crafting environments conducive to personal fulfillment and alignment with values.

**Purpose in life:** It encompasses having meaningful goals a sense of direction and finding purpose in past and present experiences. Someone who has a clear sense of purpose and direction in their life not only have goals they strive to achieve but also feel that there is significance and meaning in both their present and past experiences. Their beliefs provide them with a sense of purpose, guiding their actions and decisions, and they have specific aims and objectives that they are motivated to pursue.

**Personal growth:** Involves continuous self-development, openness to new experiences, and a sense of expanding one's potential over time. They embrace new experiences with openness and see themselves gradually realizing their full potential. Exhibits a sense of ongoing growth and development, viewing themselves as continuously expanding and evolving. They embrace new experiences with openness and perceive progress in realizing their potential, observing improvements in self-awareness and effectiveness over time.

Healthy cognitive processes like positive reappraisal or problem-solving, enhance emotion regulation and psychological well-being, whereas maladaptive strategies, such as rumination or catastrophizing, worsen emotional dysregulation, highlighting the importance of fostering adaptive cognition for better mental health, particularly in individuals with a history of NSSIB. The next part of this chapter

explains intervention for non-suicidal self-injurious behaviour which is mainly caused by emotion dysregulation. There are different modalities in interventions, including pharmacological and psychological approaches.

### **Interventions for Non-Suicidal Self-Injurious Behaviour**

Given the elevated risk of future suicidal behaviour in persons with NSSIB, it is of utmost importance that prime efforts be made to reduce self-injurious behaviour. Psychopharmacological treatment of non-suicidal self-injury (NSSI) is available across various drug classes, including SSRIs (selective serotonin reuptake inhibitors), atypical antipsychotics, SNRIs (serotonin-norepinephrine reuptake inhibitors), opioids, and opioid antagonists. Additionally, non-randomised controlled trials have shown the potential benefits of ziprasidone and naltrexone in lowering NSSI rates and frequency (Wijana, et al. 2021). Uncontrolled trials have suggested that positive outcomes with venlafaxine, buprenorphine, fluoxetine, naltrexone, opiate antagonists, antipsychotics, and anticonvulsants may be effective in reducing the frequency of NSSIB behaviours in patients with a variety of comorbid disorders (Libal et al., 2005; Norelli et al., 2013; Akram, 2015; Food and Drug Administration (FDA), 2018; Eggart et al., 2022). However, there are challenges in addressing the treatment of NSSIB in the absence of firmly established pharmacological treatments, difficulties in sustaining improvements after treatment cessation, and inconsistent superiority of specific interventions over treatment as usual (Kameg et al., 2013, Turner, Austin et al., 2014).

Several psychological treatment modalities, including standard cognitive behaviour therapy, dialectical behaviour therapy, mentalization-based therapy, and transference-focused psychotherapy have demonstrated efficacy in reducing self-

injurious behaviour. Psychodynamic therapies and cognitive analytic therapy have also shown potential for decreasing these behaviours (Klonsky & Muehlenkamp, 2007).

*Cognitive-behavioural therapy (CBT)* focuses on identifying and modifying maladaptive thought patterns and behaviours. Cognitive restructuring in CBT assists patients in learning new coping mechanisms, impulse control, and emotion regulation. It operates under the premise that thoughts influence the type and intensity of emotions experienced and resulting behaviour patterns (Glenn & DeNisco, 2006). Despite the lack of conclusive evidence supporting the effectiveness of CBT for NSSI, its widespread clinical use persists, prompting a critical examination of its efficacy (Labelle et al., 2015).

*Mentalization-based treatment (MBT)* is an integrative form of psychotherapy that skilfully blends elements from psychodynamic, cognitive-behavioural, systemic and ecological approaches (Bateman & Fonagy, 2015). Developed and manualized by Peter Fonagy and Anthony Bateman, MBT is specifically designed for individuals struggling with borderline personality disorder and, notably, is also applicable in addressing non-suicidal self-injurious behaviours. MBT emphasises enhancing mentalization to understand thoughts and emotions, empowering individuals with BPD and NSSIB to regulate emotions effectively, making it a versatile therapeutic option in mental health (Rossouw & Fonagy, 2012).

*Mindfulness-based interventions* emphasise present-moment awareness and acceptance (Kabat-Zinn, 2003; Segal et al., 2023). Mindfulness, which can be cultivated and enhanced through interventions, offers benefits such as increased self-awareness and improved coping strategies. Mindfulness-based techniques have

become widely used to help individuals abstain from deliberate self-harm and suicidal thoughts (Thew, 2018). Mindfulness is often considered an essential component of treatment for self-injury, and mindfulness-based therapies have demonstrated effectiveness in reducing self-injurious behaviour.

*Psychodynamic therapy* explores the unconscious processes influencing behaviour and emotions. From a psychodynamic perspective, self-harm and suicidal behaviour are understood through the lens of affective experience, unconscious meaning, and relational dynamics (Freud, 1923). Early psychoanalytic theories, including Freud's concept of the ego developing from bodily sensations and Winnicott's (1965) and Bion's (1970) emphasis on the mother's emotional relationship with the infant's body, underscore the importance of early interactions in shaping the sense of self. Anzieu's "skin ego" and Bick's notion of the skin's "holding" function further elaborate on how bodily experiences are integral to the formation of self-identity (Anzieu, 1974). Attachment theory extends these ideas positing that the self develops through internalised representations of early attachment relationships.

Of these treatment strategies, Dialectical Behaviour Therapy, a form of CBT is a focal treatment approach in current research for enhancing psychological well-being and is particularly effective in reducing self-injurious behaviours compared to treatment as usual in various studies.

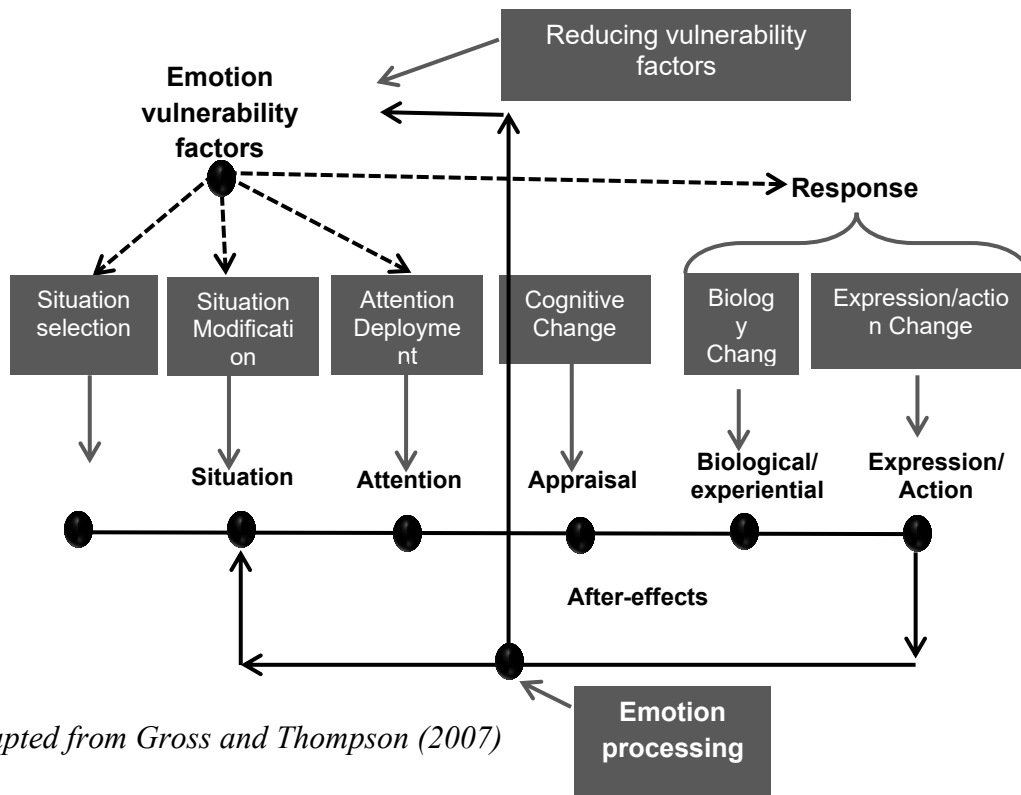
### **Dialectical Behavioural Therapy**

Dialectical Behavioral Therapy (DBT), an evolution of Cognitive Behavioral Therapy (CBT) crafted by Dr. Marsha Linehan in the 1970s, combines mindfulness, humanism, and dialectics (Linehan, 2015b). This psychotherapy method focuses on addressing impulsivity, self-harm, suicidal tendencies, and uncontrolled anger. DBT

enhances emotion regulation through three principles: (a) increasing awareness and acceptance of emotions, (b) developing emotion regulation skills and distress tolerance, and (c) fostering new learning experiences to change negative emotions (McMain et al., 2001). Mindfulness skills are integrated throughout the DBT tasks to promote awareness and acceptance of internal experiences, facilitating effective emotion regulation. By incorporating mindfulness into various tasks, DBT encourages adaptive responses to emotional cues, enhances coping strategies, and promotes emotional well-being (Gross & Thompson, 2007). It is depicted in figure 1. 2.

Figure 1. 2

*DBT extended the model of emotion regulation.*



*Adapted from Gross and Thompson (2007)*

### ***The philosophical concept of DBT***

DBT is based on three philosophical pillars: Dialectics, Zen, and Behavioural Science. Zen principles, which foreground letting go of attachments and accepting reality as it is, were amalgamated into DBT through mindfulness practises. Mindfulness, a core element of DBT, is a practise rather than a philosophy, aiding both clients and counsellors in gaining better control over attention for effective behaviour in times of need. The synthesis of acceptance and change is facilitated by a dialectical philosophy, which is pivotal in treating individuals with severe behavioural issues. Dialectics provides the context for integrating behavioural change with acceptance, recognising that the push for change is most effective within the framework of acceptance and validation (Dimeff, 2008). In the dialectical worldview of DBT, three key principles include holistic understanding, embracing opposites through synthesis exemplified by a wise mind, and emphasising continuous movement, which is crucial for navigating the interplay between acceptance and change.

### ***Biopsychosocial Approach***

Biosocial theory expands emotional dysregulation within the interaction between biological and environmental factors. The biosocial theory of emotional dysregulation posits that biological susceptibility interacts with invalidating social environments to cause emotional and behavioural dysregulation (Linehan, 1993a; Rathus & Miller, 2015). Individuals vary in their sensitivity to emotional stimuli, with some being predisposed to heightened emotional reactivity. Exposure to invalidating environments further intensifies chronic emotion dysregulation, leading to maladaptive regulation strategies such as impulsivity and self-injury. The theory

implicates four components: emotion sensitivity, negative affect, inadequate emotion regulation strategies, and maladaptive regulation strategies, highlighting the intricate interplay between biological predispositions and environmental factors in shaping emotional experiences and behaviours (Leible & Snell, 2004).

### ***Dialectical Dilemmas***

Therapeutic work in Dialectical Behavior Therapy (DBT) revolves around managing dialectical dilemmas, which arise from tensions between opposing forces. Within DBT, therapists guide patients in reconciling these apparent contradictions, aiding in resolving internal conflicts. The four primary dilemmas include balancing emotional vulnerability and self-invalidation, navigating between active passivity and clear competence, addressing unrelenting crises versus inhibited grieving, and managing others' tendency to overestimate the capabilities of individuals grappling with emotion regulation (Linehan & Schmidt, 1995).

### ***Core Strategies for DBT***

Validation and problem-solving are the most essential strategies in Dialectical Behaviour Therapy, and all other strategies are built around them. Validation communicates to the patient that their behaviour is understandable within the current context, with therapists taking their responses seriously and refraining from discounting or trivialising them. The steps for validation are active listening, reflection, and direct validation. In DBT, all dysfunctional behaviours are viewed as problems to be solved. In problem-solving, the therapist engages the patient in analysing her behaviour, committing to change, and taking active steps to change her behaviour. Validation strategies highlight the wisdom of the patient's viewpoint, and problem-solving strategies highlight the therapist's viewpoint. The patient views

his/her behaviour as problematic and needs change, whereas the therapist focuses on the acceptance of the patient and his/her behaviour just as it is. Validation and problem-solving strategies are used in every interaction with the patient.

### ***Stages of treatment***

DBT unfolds through distinct stages, each tailored to provide targeted interventions and foster a transformative journey towards emotional well-being and a fulfilling life.

**Stage I- Stabilization and behavioural control:** In the initial stage of DBT, the primary objective is to establish stability and gain control over maladaptive behaviour. Therapists focus on addressing life-threatening behaviours and reducing actions that interfere with the therapeutic process. Emphasis is placed on crisis intervention, behavioural assessments, and the acquisition of basic emotion regulation skills.

**Stage II- Reducing traumatic stress and relearning to experience emotions:** Moving into the second stage, DBT shifts its focus towards addressing past trauma and enhancing emotion regulation. The objective is to create a narrative for traumatic experiences, foster self-respect, and increase the individual's capacity to tolerate and regulate intense emotions. Therapeutic activities in this stage include trauma-focused interventions, emotion regulation strategies, and validation of emotional experiences.

**Stage III- Improving the quality of life to promote happiness and achieve individual goals:** The third stage of DBT concentrates on building a life worth living by enhancing interpersonal functioning and meaningful engagement. The objective is to improve self-esteem, cultivate fulfilling relationships, establish a foundation for a balanced and satisfying life, reinforce their abilities, and encourage participation in

activities that bring a sense of purpose. Therapeutic activities include training in interpersonal effectiveness, values clarification, and goal-setting exercises.

**Stage IV- Finding meaning in life:** In the final stage, DBT focuses on achieving a sense of completion and fulfilment, encouraging individuals to find meaning and transcend immediate challenges. The objective is to foster a sense of purpose and connection beyond daily struggles. Therapeutic activities involve existential exploration, finding spiritual connections, and fostering a broader perspective on life. This concluding stage emphasises personal growth, self-discovery, and the development of a resilient mind-set that extends beyond the therapeutic setting, supporting individuals in finding deeper meaning and satisfaction in their lives.

### ***Modes of Dialectical Behaviour Therapy***

To maximize the effectiveness of Dialectical Behavior Therapy (DBT), it's crucial to integrate four key components: individual therapy, skills training groups, telephone coaching, and therapist consultation teams. In individual sessions, the focus lies on enhancing motivation, tackling behavioral challenges, and cultivating emotional regulation skills using acceptance, transformation, and validation techniques. Skills training groups provide a structured environment for participants to learn and practise essential skills such as emotion management, distress tolerance, mindfulness, and interpersonal effectiveness. Telephone mentoring offers support and guidance between sessions, helping individuals apply newly acquired skills in real-life situations. Finally, the therapist consultation team ensures consistent and successful application of DBT concepts by providing therapists with a platform to discuss cases, seek advice, and continuously improve their techniques. This

comprehensive approach enhances therapy efficacy by providing ongoing support, opportunities for skill development, and a unified care framework.

### ***Skill Training in DBT***

Based on biosocial theory, DBT focuses on eliminating self-injurious behaviours and other maladaptive behaviours by teaching more adaptive coping skills. The skills are designed to enforce the ability to tolerate difficult emotions, including mindfulness, interpersonal effectiveness, distress tolerance, and emotion regulation, taught in individual and group modalities (Linehan, 1993).

**a) Mindfulness:** Mindfulness, as defined in Dialectical behaviour Therapy (DBT), involves paying attention to purpose, at the moment, without judgement, and encompasses three states of mind: emotional mind, reasonable mind, and wise mind. Individuals cultivate skills to observe, describe, and participate in activities with awareness, focussing on one thing at a time non-judgementally. The key processes of mindfulness include observing, describing, creating awareness, being non-judgemental, and acting nonreactive (Zelazo & Lyons, 2012). Brown, Miller and Thompson (2019) proposed five underlying processes that make mindfulness beneficial: insight, desensitisation, non-attachment, enhanced mind-body functioning, and integrated functioning. These processes enable individuals to perceive thoughts and feelings objectively, limit emotional reactivity, accept things as they are, improve physical health, and enhance self-regulation, autonomy, and relationships. Ultimately, mindfulness strengthens the ability to navigate life's challenges with less suffering.

**b) Emotion regulation skills:** A key objective of DBT is enhancing emotion regulation capabilities to foster a fulfilling life. Rather than advocating for the elimination of emotions, DBT encourages individuals to understand and manage them

through skill development. By identifying and labeling emotions, their intensity can be reduced. The emotion regulation component provides psychoeducation on emotions and equips individuals with skills to modify unwanted emotions and lessen susceptibility to overwhelming emotional states. (Frank, et al., 2014). Clients gain insights into the significance of emotions and why they persist, even when distressing. They also learn the interconnectedness of thoughts, feelings, and behaviors, realizing that altering one aspect can lead to more effective emotional management.

**c) Effective interpersonal skills:** Effective interpersonal skills are divided into four skills: Attending to relationships, balancing priorities vs demands, balancing the wants to should, and building mastery and self-respect. The basic needs of these skills are to meet one's needs, maintain or enhance relationships, and develop self-respect. All relationships are not merely referred to as intimate, emotionally deep relationships. Here, a relationship is any relationship with one person, an intimate partner, or a quick business interaction.

**d) Distress Tolerance Skills:** These skills are also known as “crisis survival” skills and aim to help clients without resorting to problematic behaviour such as suicide attempts, self-harm, substance abuse, etc. to make something worse, to survive the crisis (Motta, 2023). These skills help clients stay calm and distract themselves from problems.

There are many ways of DBT skill training programmes and different approaches to teaching DBT skills (Linehan, 2015a). The standard DBT skill training programme takes 6 months to a 1-year duration. Other skill training schedules are as follows:

- a) 24 weeks, Linehan standard Adult DBT skill training programme (Researches after 2006)
- b) 24 weeks, Linehan standard Adult DBT skill training programme (Researches before 2006)
- c) 12-week Soler adult DBT skill training
- d) 20 weeks of Mcmain Adult DBT Skill training and schedule
- e) 25 weeks of adolescent multi-family DBT skill training
- f) 14 weeks of Neacsiu adult DBT emotion regulation skill training

The index study adapted 14 weeks of Neacsiu adult DBT based on emotion regulation skill training. The DBT schedule was evaluated by Neacsiu as a treatment for individuals without borderline personality disorder but with high emotion dysregulation (Linehan, 2015b). Details of the schedules are explained in the Method Chapter (Chapter II).

## **Review of Literature**

This part discusses the previous studies that shed lights on the influence of psychological variables such as cognitive emotion regulation, and psychological well-being on non-suicidal self self-injurious behaviour. It also provides empirical evidence for the effectiveness of Dialectical Behaviour Therapy. Empirical studies conducted before and after the integration of Non-Suicidal Self-Injury (NSSI) into DSM-5 stand out prominently in the field of NSSI research. They offer valuable insights into the evolution and understanding of this phenomenon.

The review of the existing literature is organised under the following sections:

- Non-suicidal self-injurious behaviour- epidemiology, gender, comorbidity-related studies
- Studies related to variables of emotion regulation, psychological well-being, and NSSI
- Evidence-based interventions for NSSI and dialectical behaviour therapy
- Overview and the research gap
- Need and significance of the study

### ***Non-suicidal injurious behaviour epidemiology, gender, and comorbidity studies***

It focusses on comprehensive overview of the prevalence, gender, comorbidity, and characteristics of NSSIB across various populations shedding light on the nature of these behaviours and their implications for mental health. The terminology used to describe NSSIB can significantly have an impact on the review of literature of this topic. The lack of standardised terminology can make it challenging and crucial for researchers and clinicians to facilitate clearer communication and enhance cross-cultural understanding of conditions. Many

terminologies have been used extensively in studies, including self-harm, self-injury, parasuicide, suicide gesture, self-mutilation, and self-cutting (Nock & Favazza, 2009; McMahon et al., 2023; Silverman et al., 2018; Morthorst, et al., 2016; Aggarwal et al., 2015). The index study used the terms ‘Self Injurious Behaviour’ (SIB) and ‘Non-Suicidal Self Injurious Behaviour’ (NSSIB).

The prevalence of NSSI varies with the population studied i. e. community or clinical sample, age, type of tools such as diagnostic interviews, rating scales, checklist, diagnostic criteria, nomenclature, number of informants, data collection methods, ethnicity, and social class. Disparities in prevalence are observed globally; Estonia, France, Germany, and Israel reported the highest lifetime rates of self-injurious behaviour, while countries like Hungary, Ireland, and Italy reported the lowest rates (Brunner et al., 2014).

In the child and adolescent community sample, the prevalence of NSSIB ranged from 1.5% to 5.6% (Barrocas, 2012). Among adolescents, 3.1%–6.7% met non-suicidal self-injurious disorder criteria as per DSM-5 (Manca et al., 2014 & Zetterqvist et al., 2013). Earlier research by Lloyd-Richardson et al. (2007) explored the characteristics and functions of NSSIB in a community sample of adolescents. The study reported that 46% of the community sample endorsed engaging in NSSI behaviours in the past year. This indicates that NSSIB is common among adolescents in the community. Approximately 18.8% of the overall sample engaged in minor NSSI, whereas a higher percentage engaged in one act of moderate or severe NSSI. Overall, the prevalence data presented in the summary suggests that NSSI is a notable concern among adolescents in the community, and understanding the severity of functions of these behaviours is crucial for developing effective interventions and support systems. Klonsky (2011)

investigated NSSIB and suicide risk factors in four United States groups, revealing different rates: 59% among adolescent psychiatric patients, 21% among high school students, 20% among university undergraduates, and 6% among adults. In a larger sample, the lifetime prevalence of NSSIB was 4.86%, with wrist cutting being the most common method adopted by 13%. Glenn et al. (2017) provided a comprehensive exploration of NSSIB prevalence, longitudinal trends, and the role of temperamental effortful control among Italian adolescents. The study revealed a high co-occurrence of various self-injurious thoughts and behaviours, with certain behaviours more prevalent among inpatients. The age of onset for self-injurious thoughts and behaviours generally occurs during early to mid-adolescence, with inpatients exhibiting an earlier onset than outpatients. Additionally, the time lag between different thoughts and behaviours remains relatively consistent across the continuum of care, emphasising the need for timely intervention, particularly within the first 6–12 months after the onset of suicidal ideation or engagement in non-suicidal self-injury. The findings suggest that pathways to these behaviours may occur simultaneously rather than sequentially and underscore the importance of early identification and targeted interventions to reduce risk and severity among youth.

Habeeb et al. (2013) conducted a cross-sectional study in 557 adults, which included both out and in patients diagnosed with mood disorders in Riyadh and Saudi Arabia, for exploring suicidal and self-injurious behaviours among individuals with depression. The study, covering an age group of 16-60 years, revealed a 7.7% prevalence of suicidal attempts without the intention to die, highlighting the complex nature of self-harm in this population. The research identified varying levels of self-injurious behaviours, emphasising the nuanced

spectrum of self-harm within the studied sample. Overall, this study contributes significantly to understand the prevalence and specific behaviours associated with self-injury among individuals with depression in the Saudi Arabian context.

Studies by You and Lin (2015) and Wan et al. (2019) in China reported initial NSSIB prevalence rates of 24.9% and 17.0%, respectively, with fluctuations observed over follow-up periods of 6–12 months. Similarly, Franklin et al. (2017) found a high baseline NSSIB rate in U. S. community sample, with some individuals discontinuing NSSI behaviour during the 6-month follow-up. Meanwhile, in clinical samples, such as participants from depression treatment studies and adolescent psychiatric inpatients belonging to USA, UK, and Finland, baseline NSSIB rates were also notable, indicating a significant presence of NSSIB within these populations.

Plener, Schumacher et al. (2015) explored the prevalence, patterns, and predictors of NSSIB in a review study across community and clinical populations. In community samples, which included individuals from China, U.S, Australia, Sweden, and Canada, baseline NSSIB rates varied, reflecting the diverse nature of NSSI behaviour. The review of 32 longitudinal studies on NSSI and Deliberate Self-Harm (DSH) reveals a complex behavior change over time. Between assessment points, both NSSI and DSH displayed significant volatility, with some studies indicating increases while others noted decreases in self-harming behaviors. Additionally, within individual studies, there were notable instances of both discontinuation and new initiation of self-harming behaviors. Typically, young adolescents exhibit an upward trend in NSSI rates, whereas older adolescents or young adults tend to experience a decrease. Predictors of NSSI and

DSH include depressive symptoms and female gender, with past self-harming behavior emerging as one of the strongest predictors of future behavior.

A recent study conducted by Gonclaves et al. (2023) reported a 23.4% prevalence of NSSI behaviour in Portuguese college students. The study contextualised its findings within the COVID-19 pandemic, highlighting potential associations between pandemic-related mental health challenges and increased NSSI likelihood. Other researchers support the notion that the pandemic context could influence mental health and NSSI. Although the study was conducted during a pandemic, the findings underscore the need for targeted interventions and mental health support for college students during challenges. The detailed exploration of associated factors, including emotion regulation, resilience, and self-compassion, not only provides a foundation for future research but also potential preventive strategies.

### *Research in India*

In the Indian context, there is a lack of high-quality epidemiological studies on the prevalence of NSSIB, and the research attention. This area has received little. Few studies on adolescents have focussed on non-fatal suicidal behaviours or suicidal risk (Sidhartha & Jena, 2006; Singh, Manjula and Philip, 2012; Pillai et al., 2009; Aggarwal & Berk, 2015). A cross-sectional survey by Bholra et al., (2017) presented a comprehensive exploration of socio-demographic and mental health predictors of self-injurious behaviour among adolescents and young adults in Urban India. The study encompassed 1571 male and female students from various educational institutions. A total of 33.8% reported non-suicidal self-injury and self-injurious actions, and 6.8% reported associated suicidal intent among teenagers and young

adults in an urban city in India. Among these, 19.4% reported minor forms of self-injury, 14.6% moderate forms of self-injury, and 6.8% indicated suicide intent associated with self-injurious acts. The researchers utilized the Functional Assessment of Self-Mutilation (FASM) to evaluate both the methods and the underlying functions of self-injury. In addition, factors such as gender, the use of numerous techniques, higher pain thresholds, and internalising difficulties in the borderline or clinical range were found to be predictive of suicidal intent and self-injury. These results provide insight into the intricate interactions between psychological and demographic variables that fuel self-harming behaviours in this community.

Kharsati and Bhola (2015) investigated NSSIB among college students in the past year and revealed a prevalence rate of 31.2%, with 19.8% engaging in moderate/severe NSSIB and 11.3% engaging in minor NSSIB only. The most common method reported was self-hitting (15.2%), followed by cutting (13.2%). Most participants reported between two and five methods of NSSI (55.9%), with a mean of 2.6 types performed. Notably, 15.2% reported at least one self-injurious behaviour as a suicide attempt. Gender differences were not significant about NSSI prevalence or the number of methods employed. Reasons for NSSI varied, with the most common being to feel relaxed (41.8%) and to gain control over situations (41.1%). Given the limited data currently available, one probable conclusion is that India's lifetime prevalence of NSSI may be greater than the global average, which is 17.2% for teenagers. Individuals engaging in only minor NSSI were more likely to use it to regulate their social environment, whereas those with moderate/severe NSSI used it primarily to regulate their emotions.

Gandhi et al. (2016) conducted a comprehensive electronic search across Indian psychiatry, psychology, and mental health databases and identified 38

publications on NSSIB research in India. This review is consistent with the literature on suicidality in India and points to a lack of worldwide agreement over the nomenclature and definitions of self-directed violent behaviours. Over time, definitions and terminology for certain behaviours change, making it difficult to create clear guidelines. However, establishing uniform standards for characterising these behaviours is crucial. In this sense, the report provides WHO-relevant guidelines internationally. The field of NSSI research in India is still in its infancy, which emphasises the necessity for studies that are contextually and culturally sensitive. Gaining a contextualised understanding of NSSI is essential for properly addressing any potential public health consequences.

Nath (2017) conducted a study examining the psychosocial factors and prevalence of suicidal behaviour and NSSI among Indian college students, guided by social-ecological viewpoints. Their research, which comprised two distinct studies on NSSI and suicidal behaviours contributed to the broader literature on the subject. The data gathered from 1,817 undergraduate students in Gujarat, revealed significant relationships between NSSI and various characteristics, including living arrangements, income levels, family stressors, and psychological distress. Moreover, their findings underscored the heightened risk of suicidal ideation among individuals with a history of NSSI, particularly among those experiencing psychological distress, economic strain, and female gender. Subsequent phases of the study delved into psychosocial risk variables for suicidal thoughts and behaviours, highlighting predictive factors such as psychological discomfort, social stress and economic hardship. Drawing upon the literature review of this thesis, a comprehensive meta-analytic investigation conducted by Wolff et al. (2019) revealed heightened levels of emotion dysregulation across various dimensions among individuals engaged in

NSSIB. Specifically, non-acceptance of emotional responses and difficulties in impulse control were strongly correlated with NSSIB.

Kerala has achieved high healthcare standards nationally; however, the alarming suicide rates present a significant health challenge. In 2014, Kerala's suicide rate (24.9 per 100000) was much higher than the national average (10.6). Although the rate peaked in 2001-2002 at 20.8, it gradually declined to 24.3 by 2012. The impact of the COVID-19 pandemic which witnessed a surge in suicide attempts among children and adolescents is highlighted, focussing on Kerala's alarming loss of 173 young lives during the first wave (March-October 2020) (Philip, 2021). It is observed a hike (9.3%–33%) in the number of children/adolescents having self-injurious behaviour, however, rare studies found SIB in Kerala.

These studies collectively contribute to our understanding of NSSI across different populations, emphasising the need for interventions, prevention strategies, and an approach to the assessment and treatment of NSSIB. The literature underscores the importance of considering demographic factors, gender differences and the intricate relationship between NSSI, suicidal ideation, and psychiatric diagnoses.

The prevalence of NSSIB and its gender-based variations have been extensively investigated with noteworthy findings that contribute to a comprehensive understanding of this phenomenon. The presentation and conceptualisation of self-injurious behaviour in adolescents may differ by gender, with implications for therapeutic practice (Bowen, 2001). The review study mentioned by DeHaast (2014) reported a higher prevalence in females. The final review comprised 37 studies, categorized based on the exclusion of suicidal intent

and the method of assessing self-injury. Findings indicated a notable disparity, with female adolescents demonstrating a significantly higher propensity for engaging in self-injurious behavior compared to males. Moreover, gender variances were observed in both the method and purpose of self-injury, although a retrospective study noted a decrease in these differences over time (Celona et al., 2015). Gender differences seem more apparent in studies utilising clinical samples while compared to community samples, as observed by Heath et al. (2008). Moreover, these differences appear more pronounced in younger age groups, with adolescent samples demonstrating a higher risk compared to young adults, as indicated by Gratz (2001). Meta-analytical reviews, conducted by Bresin & Schoenleber (2015) and Bakken & Gunter (2012) tell that women are significantly more likely to report a history of NSSIB while compared to men. This higher prevalence among women might be influenced by their increased likelihood of seeking treatment, potentially leading to an over-representation of women in clinical samples. Research by Sornberger et al. (2012) reveals that women tend to report higher rates of cutting, scratching, and causing injuries to hands and legs, whereas men are more prone to engage in burning, hitting, and causing injuries to the chest, face, and genitals. This suggests that the manifestation of NSSIB can vary according to gender-specific patterns. This comprehensive exploration of NSSIB patterns provides valuable insights into gender-specific manifestations of self-harm among adolescents, shedding light on the nature of these behaviours.

Transgender individuals are identified as being more susceptible to engaging in NSSIB compared with cisgender populations, with trans men being at greater risk (Claes et al., 2014; Marshal 2013 & 2018). The high levels of NSSIB and its association with interpersonal difficulties and lack of social support need to

be considered while assessing trans individuals. Understanding the refined relationship between gender and NSSI is crucial for developing effective prevention and treatment strategies that account for the diversity of experiences within various gender groups. The inclusion of diverse gender identities, consideration of age-related variations, and intersectionality with suicide attempts contribute to a more comprehensive understanding of NSSIB across genders.

As per the World Health Organization (WHO, 2019), men in wealthier nations experience three times higher rates of suicide compared to women, while in low- and middle-income countries, this ratio is lower at 1.5 men to each woman. Globally, suicides represent 50% of all violent deaths in men and 71% in women. While suicide rates peak among individuals aged 70 years or older in most regions, some countries witness youth facing the highest risk, rendering suicide the second leading cause of death among 15-29-year-olds worldwide.

Self-injurious behaviour manifests across clinical and non-clinical samples and often co-occurs with various psychiatric disorders. Earlier, it was considered a diagnostic criterion for borderline personality disorder in the DSM-IV and the International Classification of Diseases Tenth Revision (ICD-10) (WHO, 1994 & APA, 1994). Other co-occurring diagnoses include post-traumatic stress disorder, depressive disorder, obsessive-compulsive disorder, anxiety disorder, somatoform disorder, and eating disorder (Yates, 2004; Gollust et al., 2008; Cipriano et al., 2017). The presence of stable and repetitive NSSIB, particularly during adolescence, serves as a predictive marker for the heightened risk of developing mental health problems in adulthood (Daukantaite et al., 2021). Non-suicidal self-injurious behaviour is recognized as a precursor to suicidal behaviour and its assessment is crucial in understanding the risk of subsequent suicide attempts. A history of NSSIB before

treatment becomes a clinical marker warranting careful evaluation because it holds significance in predicting future suicidal intent and behaviour, particularly in depressed youth (Wilkinson & Goodyer, 2011). Suicidal behaviours are closely linked to psychiatric disorders. People who had previously, and repeatedly attempted suicide are more commonly reported as having adjustment disorders.

Substance use disorders are common among individuals with NSSIB. Alcohol or drugs may be utilised as a form of self-medication or impulsivity, heightening the risk of engaging in self-injurious behaviour (Guan et al., 2012). A history of trauma, abuse, or adverse childhood experiences is frequently identified in NSSIB patients. These traumatic experiences play a role in the development of emotional dysregulation and the adoption of maladaptive strategies, such as self-injury (Zetterqvist et al., 2013). A significant association exists between behaviour and eating disorders, particularly when self-injury is employed as a means of emotional regulation or as a response to body image concerns (Favazza & Rosenthal, 1990).

Borderline personality disorder (BPD) stands out as a major psychiatric condition associated with NSSIB. Approximately, 65- 80% of individuals with BPD engage in NSSIB, highlighting its significant prevalence within this population. The three-factor model of BPD, which encompasses emotion dysregulation, disturbed relatedness, and behaviour dysregulation, sheds light on the complex interplay of factors contributing to NSSIB (Brickman et al., 2014). Emotion dysregulation, in particular, emerges as the most strongly associated dimension with NSSIB, emphasising the role of affective instability in driving self-injurious behaviour. Individuals with BPD employ NSSIB as a dysfunctional coping up strategy aimed at obtaining quick relief from negative emotions and inner tension, with reasons ranging

from self-punishment to distraction and control (Favazza, 1989, Goodman et al., 2017).

Research on NSSIB and its association with comorbid psychiatric conditions has provided valuable insights into the characteristics, diagnostic criteria, and longitudinal implications of this phenomenon. Odelius and Ramklint (2014) explored the clinical utility of NSSI diagnosis, emphasising that NSSI diagnosis differs from borderline personality disorder but does not exclude suicidal behaviour. The study involving 39 young psychiatric outpatients found no significant difference in other diagnoses, including borderline personality Disorder, among the NSSI groups. Whitlock et al., (2013) conducted a longitudinal study examining whether NSSIB contributes to later suicide thoughts and behaviour independently of shared risk factors.

Collectively, these studies contribute to a comprehensive understanding of NSSIB, its diagnostic criteria, associated psychiatric conditions, and the longitudinal implications of engaging in self-injurious behaviours across different age groups.

### ***Emotion regulation, well-being, and sub-variables related to NSSI***

The intricate relationship between emotion regulation, psychological well-being, and NSSIB has been extensively explored through a few research studies, shedding light on the complex interplay of these factors.

Emotion regulation is a significant risk factor for NSSIB across different age groups and genders. Investigation by Klonsky et al. (2009) revealed that self-injury is related to emotional response and decreases affective arousal. Emotional changes, such as feeling stressed before self-injury and relieved after, indicated a lifetime tendency towards self-harm. A study by Tatnell et al. (2017) also demonstrated higher

scores on risky decision-making and emotion dysregulation in adolescents with NSSIB. The results highlighted that emotion regulation played a crucial role, with higher attachment anxiety, lower reappraisal, and higher cognitive reappraisal scores being associated with NSSIB. This indicates a potential link between cognitive processes related to decision making and emotion regulation and engagement in NSSIB. Incorporating findings from the review, a thorough meta-analytic examination conducted by Wolff et al. (2019) underscored elevated levels of emotion dysregulation across multiple dimensions among individuals involved in NSSIB. Particularly, non-acceptance of emotional responses and challenges in impulse control linked factors with NSSIB.

Hasking and Coric et al. (2010) investigated the extent and correlates of self-injurious behaviour in a sample of 393 adolescents aged 13-18 years from a school population using a self-report questionnaire. This study investigated the interplay between personality traits and self-injury, exploring potential influences from emotion regulation and coping strategies. Although direct links between personality traits, coping strategies, and self-injury were limited after adjusting for age and psychopathology, the study unveiled that coping skills and emotion regulation moderated the relationship between personality traits and self-injury. These results underscore the need for deeper exploration into these intricate dynamics and the potential efficacy of coping skills and emotion regulation training in adolescent self-injury prevention. The literature on emotion-focused interventions for youth with internalising disorders, such as anxiety and depression, highlights the importance of addressing deficits in emotion regulation. Trooper et al. (2009) explored various approaches to enhance the efficacy of interventions for youth experiencing anxiety and depression, including the incorporation of emotion-regulation skills into existing

treatment modalities and expanding the range of emotions targeted in cognitive-behavioural treatments. Emotion-focused interventions designed to achieve these goals are discussed, considering developmental influences on treatment selection using a model of emotion regulation framework. This review also examines the evidence supporting the effectiveness of a novel intervention, the unified protocol for the treatment of emotional disorders in youth, which offers a transdiagnostic approach to treating emotional disorders by simultaneously addressing anxiety and depression. In addition, future directions for treatment outcome research and the assessment of emotion regulation are considered.

Balzarotti (2016) attempted to examine individual differences in cognitive emotion regulation and psychological well-being in which they identified that positive appraisal and refocus on planning were the strategies that were more strongly associated with psychological well-being. They observed that individuals who regularly employ positive reappraisal in their daily lives reported higher levels of psychological well-being, including a sense of purpose in life, personal growth, self-acceptance, environmental mastery, and positive relationships with others.

The review study by McRae (2016) delved into the physiological and neurological effects of various emotion regulation strategies. It highlighted that while cognitive reappraisal is generally considered adaptive, its effectiveness may vary depending on the context. Cognitive reappraisal is generally considered adaptive, but its effectiveness may vary in different situations. Coats and Blanchard-Fields (2008) explored age differences in emotion regulation strategies, revealing that older adults have lower cognitive-emotional complexity and endorse proactive emotion regulation strategies less than young adults. Different cultures may prefer diverse emotion regulation strategies, and expressive suppression is less desirable in Western cultures

but more acceptable in Eastern cultures. Cognitive emotion regulation strategies in adolescents with a history of NSSIB indicated that adverse life events, psychological distress, and specific cognitive strategies had a direct relationship with NSSIB.

Voon et al. (2014) explored how different strategies of cognitive emotion regulation, such as cognitive reappraisal, expressive suppression, and ruminative thinking, could be related to NSSI in the context of stressful life events and psychological distress. The data were collected from 40 Australian secondary schools, including 2507 adolescents with a mean age of 14 years and 254 participants with a history of NSSI. Participants completed the adolescent life events survey the emotion regulation questionnaire, the general health questionnaire, and the ruminative thought style questionnaire, and the data were screened. Results showed that adverse life events, psychological distress, emotion regulation, and ruminative thinking had direct relationships with NSSI. Among the subsample of adolescents with a history of NSSI, anticipatory rumination moderated the relationship between psychological distress and NSSI, whereas cognitive reappraisal demonstrated a direct, although weak, relationship with NSSI. From the findings, it was concluded that adolescents' behavioural factors may have a strong influence on NSSI, suggesting that the prevention and treatment efforts for NSSI is to be focussed on contextual, social, psychological and behavioural factors.

The identification and use of tools for measuring emotional dysregulation across diagnostic categories provide valuable means to monitor and enhance the care of suicidal young individuals. Trait anger and the outward expression of anger have been identified as pertinent factors influencing suicide risk in adolescents. A longitudinal study by Daniel et al. (2009) tracked 180 adolescents up to 13.3 years

who were discharged from an inpatient psychiatric unit and proved that higher levels of anger and outward expression of anger were associated with an increased likelihood of suicide attempts in males. Additionally, research conducted by Kharsati and Bhola (2015) revealed that difficulties in emotion regulation contribute to NSSIB among college students in India, further emphasising the intricate link between emotion regulation challenges and self-harming behaviours.

Gratz, Weiss et al. (2015) underscore the pivotal role of emotion regulation in mental health. They revealed that deficits in emotion regulation serve as significant risk factors for a spectrum of psychopathologies, with individuals grappling with psychiatric disorders, especially schizophrenia, reporting heightened levels of emotional dysregulation, depression, and distress. The implications of these findings are substantial, suggesting that targeted interventions aimed at enhancing emotion regulation abilities, hold promise not only for improving the challenges associated with psychiatric disorders but also for fostering an overall improvement in psychological well-being. The study by Lincoln et al. (2022) further reinforces the interconnected nature of emotion regulation and psychopathology, delineating how emotion regulation patterns act both as predictors and consequences of mental health challenges. This study highlights the significance of effective interventions targeting emotion regulation, indicating a potential avenue for improving outcomes in the realm of intervention in mental health. Together, these studies contribute to a comprehensive understanding of the intricate relationship between emotion regulation, psychopathology, and the broader landscape of psychological well-being.

Collective insights from studies by Brockman et al. (2017) and Benita et al. (2017) shed light on the critical role of cognitive reappraisal and other emotion regulation strategies in enhancing psychological well-being across different

populations. Brockman et al. (2017) underscored the significance of incorporating mindfulness and cognitive reappraisal into daily life, revealing their associations with emotional well-being. Mindfulness correlates with lower negative effects and higher positive effects, emphasising its potential for fostering improved psychological outcomes. Benita et al. (2017) extended these insights to the realm of childhood development emphasising the vital role of integrative emotion regulation in promoting psychosocial adjustment and prosocial behaviour through empathy. This highlights the importance of early interventions that focus on cultivating integrative regulation to positively influence children's psychological well-being and social behaviour. In the realm of psychological well-being and emotional regulation, Panahi et al. (2016) shed light on the pivotal role of planning, in influencing the psychological well-being of graduate students. The empirical exploration suggests that planning serves as a key contributor to well-being by facilitating goal attainment, aligning with previous findings that associate high well-being levels with substantial planning for personal goals. Notably, positive reappraisal emerges as a significant factor with a positive impact on psychological well-being. The investigation revealed a notably high score in the implementation of positive reappraisal as a cognitive emotion regulation strategy. Within the spectrum of cognitive emotion regulation components, this study identified planning as a robust predictor of psychological well-being among graduate students. Additionally, the research underscores the effective contributions of various strategies, including catastrophizing, reappraisal, other-blame, self-blame, putting into perspective, and acceptance, to the psychological well-being of graduate students. This body of literature provides valuable insights into the intricate interplay between cognitive emotion regulation strategies and psychological well-being, offering a foundation for further research in this domain. There were clear gender variations in

the tactics that people used while under stress; women were more inclined to ruminate, whereas males were more likely to place blame on others (Zlomke & Hahn, 2010). Putting things into perspective, focusing on planning, and using positive reappraisal were all often mentioned by both men and women.

In studies concerning well-being, significant correlations were found with cognitive control techniques. Specifically, positive reappraisal, putting things into perspective, positive refocusing, and planning strategies demonstrated positive associations with both subjective and psychological well-being. Conversely, rumination, self-blame, blaming others, and catastrophizing strategies exhibited negative associations. Acceptance showed a small positive association with autonomy only (Balzoratti, 2016). Troy et al. (2013) offered contradictory results, indicating that in some circumstances, an over-reliance on reappraisal may have negative consequences on psychological health. They maintained that unpleasant feelings may be adaptive, inspiring people to take action to overcome obstacles.

The existing research background supports the idea that psychological well-being is influenced by cognitive-emotional regulation strategies. Research evidence confirms that the regulation of emotion is essential for an individual's adaptive functioning. Emotion regulation and well-being encompass multifaceted perspectives, ranging from the intricate dynamics of neural activity in specific brain regions to broader manifestations evident in social interactions. This encompasses various aspects such as sharing emotional experiences, engaging actively within social networks, and contributing meaningfully to society.

The above-mentioned studies provide a comprehensive understanding of the intricate connections between emotion regulation, psychological well-being and

NSSIB. Emotion regulation emerges as a critical factor influencing mental health outcomes, with both adaptive and maladaptive strategies playing significant roles. The findings underscore the need for targeted interventions focusing on emotion regulation skills to prevent and address NSSIB and promote overall psychological well-being.

### **Studies on Intervention for Non-Suicidal Self-Injurious Behaviour**

A wide variety of treatments have been used for self-injurious behaviour, which includes the pharmacological approach, metallisation-based therapy, wellbeing therapy, Acceptance and commitment therapy and cognitive behaviour therapy.

#### ***Pharmacological approaches***

The increasing popularity of employing psychotropic medications to address and prevent self-injurious thoughts and behaviours are underpinned by the findings indicating dysregulation in endogenous opioids, monoamines, and glutamate neurotransmitter systems across various studies (Stanley et al., 2010). However, despite this growing trend, conclusive evidence substantiating the effectiveness of this pharmacological approach remains elusive. Moreover, there are recommendations to use Selective Serotonin Reuptake Inhibitors (SSRI), mood stabilisers, atypical antipsychotics, Serotonin- Norepinephrine reuptake inhibitors (SNRI), and opioids for NSSIB (Plener & Libal, 2014). They reported that the anxiolytic and mild antidepressant properties of ziprasidone, an SSRI, can lead to additional positive effects on the underlying emotional state of patients and reduce self-injurious behaviour. Noreli et al. (2013) revealed that buprenorphine is an alternative therapeutic option to treat NSSIB. However, it cannot be a first-line treatment because there is a possibility of abusing the drug due to its opioid agonist effect, especially for individuals who have not used opioids earlier.

Contrary to the findings from the above studies, Huang et al. (2022) in their randomised controlled study showed only an 8% reduction in self-injurious thoughts and behaviours. There is only uncertain evidence regarding pharmacological interventions in patients who engage in self-harm behaviour. Currently, there are no somatic treatments approved by the Food and Drug Administration specifically for the treatment of NSSI.

Looking into interventions beyond medication, indicating the need for further research, this study investigated the efficacy of various approaches, such as dialectical behaviour therapy, emotion regulation group therapy, cognitive therapy, dynamic deconstructive psychotherapy, atypical antipsychotics, naltrexone, and selective serotonin reuptake inhibitors, both with and without therapy (McEvoy et al., 2017). Significantly, interventions directly addressing NSSI behaviours through structured psychotherapeutic methods demonstrated efficacy, indicating a potential avenue for more targeted and effective treatment. The current study prioritises psychotherapeutic methods over pharmacotherapy in addressing NSSI, aligning with the predominant focus of existing literature reviews on psychotherapeutic interventions for non-suicidal self-injury.

### ***Psychotherapeutic Interventions***

Non-suicidal self-injury (NSSI) is frequently linked to borderline personality disorder (BPD) and is often associated with challenges in emotion regulation. The literature review focuses on intervention studies conducted within the context of BPD, considering the close relationship between NSSI and emotion dysregulation. The meta-analysis conducted by Fox et al. (2020) on published randomised controlled trials about the treatment efficacy of self-injurious thoughts and behaviours (SITBs)

sheds light on the current state of interventions in this area. The findings reveal several noteworthy conclusions: firstly, despite extensive efforts, the overall effectiveness of interventions targeting SITBs remains modest. Second, there has been no significant improvement in intervention efficacy over the past 5 decades, despite a substantial increase in the number of randomised controlled trials conducted. Additionally, the study indicates that no single intervention stands out as consistently superior to others, with all interventions producing similarly small effects. Furthermore, the small intervention effects persist over follow-up assessments, indicating a lack of long-term efficacy. Age groups did not significantly affect intervention efficacy although slightly weaker effects were observed in child/adolescent populations. Moreover, the analysis suggests that various sample and study characteristics do not consistently moderate treatment efficacy. The meta-analysis underscores the need for fundamental changes in SITB intervention approaches, particularly in identifying and addressing the underlying causes of pathology rather than merely targeting correlates and risk factors. In general, the study highlights the importance of prioritising the research aimed at identifying common necessary causes of SITBs to facilitate more effective intervention strategies in future.

Various studies have emphasised the potential effectiveness of structured psychotherapeutic approaches like dialectical behaviour therapy and cognitive-behavioural therapy in mitigating NSSIB (Turner, McMinn et al., 2008). These approaches target the underlying factors associated with NSSIB, such as depression and hopelessness, while aiming to enhance problem-solving skills. The existing literature does not directly address the efficacy of mentalization-based treatment in reducing non-suicidal self-injurious behaviours. However, MBT has demonstrated promise in improving social functioning in nonaffective psychotic disorders (Weijers,

2020), and its specific effectiveness in reducing NSSIB remains an area requiring further investigation. Mentalization-based treatment has shown promise in improving clinical outcomes for individuals with personality disorders, particularly borderline personality disorder (Volkert, 2019). It has been found to achieve significant reductions in BPD symptom severity and comorbid disorders, as well as an increase in quality of life (Vogt & Noorman, 2019).

### **Dialectical behaviour Therapy**

Dialectical behaviour therapy is a comprehensive therapeutic approach that incorporates both cognitive-behavioural and mindfulness strategies (Linehan, 1993a). Dialectical behaviour therapy enhances emotion regulation by teaching skills such as distress tolerance, emotion regulation, mindfulness, and interpersonal effectiveness. Research indicates the efficacy of DBT in reducing NSSI and improving overall psychological well-being (Linehan et al., 2006). We aimed to explore the effectiveness of interventions, with an emphasis on specific components of dialectical behaviour therapy, in addressing NSSIB and improving emotion regulation skills.

### ***Linehan's Pioneering Work on DBT***

Linehan's groundbreaking research predominantly focused on borderline personality disorder (BPD) and laid the foundation for the development of dialectical behaviour therapy (DBT) as a highly effective intervention for individuals diagnosed with BPD (Linehan, 1993). Linehan's DBT is a structured, time-limited treatment that integrates individual psychotherapy with skills training and team consultation for therapists (Williams, Elliot et al., 2020). It has been shown to effectively reduce attrition rates, para-suicidal episodes, and psychiatric in-patient days in individuals with BPD (Swales, 2000). The therapy's success has led to its adaptation and modification for use in diverse settings and populations (Knott, 2014). Linehan's work

has also expanded to include the treatment of eating disorders, treatment-resistant depression, and victims of domestic abuse (Linehan, 2015).

Linehan's initial randomised clinical trial laid the foundation for the efficacy of DBT in reducing parasuicidal behaviours among women with BPD. The study faced ethical challenges, reflecting the reluctance of practitioners to conduct randomised controlled trials with highly suicidal patients. Despite these challenges, the results provided valuable insight into the effectiveness of DBT. Subsequent research by Linehan (1993b) demonstrated the superiority of DBT over treatment as usual. The study showed significant improvements in global functioning, social adjustment, and reduced psychiatric inpatient days. This reinforced the potential of DBT as a specialised intervention for individuals with BPD and self-harm tendencies. Linehan et al. (2006) conducted a two-year randomised controlled trial that further solidified DBT effectiveness, particularly in reducing suicide attempts. The study design, including a follow-up period, provided insights into the sustainability of DBT outcomes over time.

Linehan & Comtois et al. (2006) conducted a study to assess the significance of the skill training component in DBT by comparing Standard DBT with skill training plus case management (DBT-S), DBT individual therapy plus activity group (DBT-I), and the standard DBT, which includes skill training and individual therapy. The study hypothesised that standard DBT would outperform DBT-S and DBT-I. Ninety-nine women with BPD participated in the study and were assigned to three conditions, receiving therapy from adequately trained therapists. In the end, all variations of DBT-S were found to be effective in reducing suicide attempts, suicide ideation, and the medical severity of intentional self-injury. Participants in these groups also demonstrated an increased ability to use crisis services during periods of

suicidality and improved reasons for living. Standard DBT was more effective in addressing other mental health problems such as depression and promoting psychological well-being than the other two modalities. However, it did not show a significant difference in the management of suicide-related conditions. Dialectical behaviour therapy is not only for alleviating symptoms but also to encourage the development of a 'life worth living' in individuals. DBT group therapy shows improvement in the well-being of participants, especially concerning the life satisfaction component.

### ***Effectiveness of the DBT***

Many reviews summarised the evidence for the efficacy of DBT for treating patients with BPD, which has been shown in several randomised controlled trials, including reduction of suicidality, self-injuring and impulsive behaviours, therapy dropouts, and inpatient admissions. Dialectical behaviour therapy has shown effectiveness in treating BPD with several comorbidities and other psychiatric conditions such as substance misuse (Linehan et al., 1991, 2006; Dimeff & Linehan, 2008), eating disorders (McCabe et al., 2004 & Brown et al., 2020); post-traumatic stress disorder (Bohus et al., 2004), and depression (Lynch et al., 2007). DBT-based emotion regulation skill training interventions can be a promising choice for effective coping strategies in substance abuse treatment and relapse prevention (Babaei, 2012). Bohus et al., (2004) delved into the psychopathological variables among female inpatients with BPD and revealed significant improvements in various domains in the DBT group. This study underscored the holistic impact of DBT on psychological well-being.

Soler et al. (2012) investigated the specific effects of the DBT Mindfulness Module on BPD. Their findings indicated significant enhancements in attention, tolerance for delayed rewards, time perception, and impulsivity. The influence of a modified DBT group skill training in an outpatient hospital weight management clinic was investigated by Beaulac et al. (2019). This research explores the effects of a 12-week Dialectical Behavior Therapy (DBT) skills-building group involving 18 participants. Utilizing a pre-post design with a 3-month follow-up, the study evaluates alterations in emotional eating, psychological distress, emotion regulation, and mindfulness. Findings from four repeated measures ANOVAs demonstrate notable enhancements in mindfulness, emotion regulation, and emotional overeating, sustained during the follow-up assessment. The study affirms the efficacy of group intervention in bolstering emotion regulation and mindfulness skills among individuals managing weight-related issues. However, it suggests the need for further research to determine whether the observed improvements in these psychological constructs would lead to enhanced weight management outcomes and to elucidate the pathways through which such improvements occur. Overall, this study highlights the potential efficacy of group-based interventions in addressing emotional eating and psychological distress among individuals undergoing weight management, while also indicating avenues for future investigation. Gillepe, Murphy & Joyce (2022) conducted a systematic review of the long-term effects of DBT and examined the long-term outcomes of DBT for individuals with BPD, finding that improvements observed post-treatment are sustained for at least 1 to 2 years, although the efficacy of DBT in the longer term remains unclear due to limited long-term follow-up in randomised controlled trials.

Although the existing literature on DBT is extensive, there is a need for more standardised outcome measures and consistent methodologies across studies. The collective body of research on DBT for NSSIB and borderline personality disorder supports its efficacy across diverse populations. From Linehan's pioneering work to recent studies emphasising emotion regulation and interventions, DBT has demonstrated consistent positive outcomes. However, ongoing research is crucial to refine DBT interventions, address potential limitations, and further elucidate the mechanisms through which DBT brings about positive changes.

### ***Emphasis on Emotional Regulation***

Effective emotion regulation requires skills such as being aware of emotions and accepting them. Studies have demonstrated that people use different emotion regulation strategies under stressful conditions to modify or adjust their emotional experience (Troy et al., 2013; Aldao et al., 2010). One of the most common strategies is emotion regulation using cognitive strategies called cognitive emotion regulation. Cognitive emotion regulation includes the use of behavioural and cognitive strategies to change the intensity and duration or persistence of emotional experience (Gross, 2015). Glenn et al. (2019) emphasised the importance of emotion regulation skills in DBT. The following studies highlighted the unique association between emotion regulation skills and improved clinical outcomes, revealing a crucial mechanism of action in DBT.

Several studies collectively contribute to understanding the efficacy of DBT in addressing emotion dysregulation, providing valuable insights into its role in enhancing emotion regulation skills and reducing negative emotional experiences. Harvey et al. (2019) examined the efficacy of DBT in addressing emotion regulation

difficulties, a key mechanism of change in treatment, alongside its well-established benefits in reducing suicidal and self-harming behaviour. Through a qualitative synthesis of studies utilising the Difficulties in Emotion Regulation Scale to measure self-reported ER difficulties, this review identifies 14 relevant studies from different databases. However, despite the effectiveness of DBT in addressing suicidal and self-harming behaviour, the review finds inconsistent evidence regarding its effectiveness in improving emotion regulation difficulties compared with other psychological treatments. Methodological limitations across studies contribute to bias, whereas variability in DBT programmes and a lack of investigation into adherence and participant engagement further complicate interpretation. The review concludes that further research is necessary to conclusively determine whether DBT effectively improves emotion regulation difficulties. To better understand effectiveness of DBT on emotion regulation, consistent active treatment, standardized interventions, and participant engagement analysis are needed.

Kraiss et al. (2020) conducted a meta-analysis on the relationship between emotion regulation and well-being in patients with mental disorders and concluded significant positive correlations between specific emotion regulation strategies, such as acceptance and reappraisal, and well-being. Conversely, avoidance and rumination have weakly negative associations with well-being. Overall deficits in emotion regulation exhibit a moderate negative correlation with well-being. Interestingly, no significant differences were found in the strength of relationships when distinguishing between different types of well-being. These findings underscore the importance of emotion regulation not only in alleviating symptoms but also in enhancing overall well-being, emphasising its crucial role in promoting psychological health and resilience.

To assess the effectiveness of DBT, Cherati et al. (2023) utilised a quasi-experimental design with a 2-month follow-up period, incorporating pre-tests, and post-tests, with a control group. Female adolescents exhibiting depressive symptoms and referred to education counselling centres in Babol City were selected for the study. The experimental group underwent 90-minute DBT sessions over 10 weeks. The results demonstrated the effectiveness of dialectical behaviour therapy in addressing challenges related to emotional control, hostility, and violence. The study concluded that DBT is a beneficial intervention for female adolescents with depressive disorders who struggle with emotional regulation and aggressive behaviour.

Several researchers have been influenced by the pioneering work of Linehan on DBT, especially Neacsiu, one of her students who contributed much research on DBT. Neacsiu and Bohus et al. (2014) presented a trans-diagnostic treatment model for emotion dysregulation derived from dialectical behaviour therapy. This model focuses on teaching skills to help individuals reduce vulnerability to emotions, manage situations, interpret emotional cues, and process emotions. Dialectical behavior therapy adopts a skills deficit model comprising over 60 concrete skills across four modules: mindfulness, emotion regulation, interpersonal effectiveness, and distress tolerance. These skills offer a holistic approach to address the deficiency in adaptive skills and counter the utilization of maladaptive strategies associated with emotion dysregulation.

The study conducted by Neacsiu & Lungu et al. (2014) examined secondary data from a randomised controlled trial to assess the distinct efficacy of DBT in comparison to community treatment by experts in altering the experience, expression, and acceptance of negative emotions among suicidal and/or self-injuring women

diagnosed with BPD. The study involving 101 participants randomized to either DBT or community treatment by experts (CTBE) for one year of treatment and one year of follow-up, various aspects of emotional experience and expression were assessed. Results indicated that DBT led to a significant reduction in experiential avoidance and expressed anger compared to CTBE. However, no noticeable distinctions were observed between DBT and CTBE in improving guilt, shame, anxiety, or anger suppression, trait, and control. These findings imply that while DBT uniquely impacts anger expression and experiential avoidance, changes in the experience of specific negative emotions may be attributed to broader factors associated with expert therapy

Neacsiu and Risvi et al. (2014) advocated DBT as an intervention for pervasive emotion dysregulation, particularly in the context of borderline personality disorder. They argued that BPD itself can be conceptualized as a disorder rooted in pervasive emotion dysregulation and provided examples illustrating the relevance of this model for individuals without BPD who struggle with managing emotions. The authors introduced a detailed framework that aligns specific emotion components with corresponding DBT skills. This structured approach encompasses a range of strategies from managing vulnerability factors and modifying situations to altering cognitive appraisals and dealing with emotional after-effects. The article concluded by highlighting the need for research to evaluate the proposed model, emphasizing the comprehensive nature of the framework and its potential as a valuable resource for both individuals seeking practical tools and mental health professionals integrating DBT principles into therapeutic interventions.

Neacsiu and Eberle et al. (2014) assessed the effectiveness of DBT skill training in reducing emotion dysregulation. The study involved 44 non-BPD adults with higher emotion dysregulation who were experiencing anxiety or depression.

Participants were randomised to either a DBT skill training group or an activities-based support group for 16 weeks. The results indicated that DBT skill training was superior to the activities-based support group in decreasing anger suppression and distress. Both treatments significantly decreased feelings of shame, propensity for disgust, and disgust sensitivity, with no notable superiority between them. This study underscored the effectiveness of DBT skill training interventions in improving emotion dysregulation and enhancing specific emotional outcomes.

Various studies conducted across diverse countries and settings consistently demonstrate the effectiveness of Dialectical Behavior Therapy (DBT) in reducing self-harm and suicidal ideation among adolescents. Rathus and Miller (2002) have tailored DBT for suicidal adolescents exhibiting borderline personality traits, emphasizing its capacity to foster patient commitment to treatment while targeting both suicidal behaviors and quality-of-life impairments. DBT for adolescents (DBT-A) is a structured 16-week behavioral intervention, comprising individual therapy sessions, family therapy as needed, and a multifamily skills training group, typically conducted in an outpatient setting. In an open clinical trial conducted by Rathus and Miller, this adaptation of DBT showcased significant reductions in suicidal ideation, overall psychiatric symptoms, and borderline personality features through pre-post comparisons. Furthermore, when compared with a treatment-as-usual group, the DBT-A group exhibited fewer psychiatric hospitalizations and notably higher rates of treatment completion. Miller's (2020) integration of experiential activities within DBT for adolescents engaging in self-harming behaviors not only demonstrated feasibility but also yielded promising effectiveness. This approach resonates with the developmental needs and preferences of younger populations, further solidifying the

potential of DBT in effectively addressing the complex challenges faced by adolescents struggling with self-harm and suicidal ideation.

Studies conducted in USA (Apsche et al., 2006; Ber et al., 2020; Buerger et al., 2019; Courtney and Flament, 2015; Fischer and Peterson, 2015), Germany (Fleischhaker et al., 2011; Geddes et al., 2013), and Australia (Gillespie et al., 2022) collectively demonstrated a reduction in self-harm and suicidal ideation over varying treatment durations. Research conducted by Mehlum et al. (2014 & 2015) on DBT for adolescents showcased the adaptability of DBT for younger populations. Smith et al. (2018) and Wayne (2018) also explored the impact of DBT on executive functions in adolescents with emotion dysregulation. Smith's study indicated significant improvements in emotional control, shifting, and monitoring scales were observed using a behaviour rating inventory of executive functions. Wayne (2018) demonstrated improvements in school functioning, suggesting enhanced cognitive functioning among high school students participating in DBT.

Katz et al. (2004) focussed on adolescents with suicidal ideation, demonstrating DBT's effectiveness in reducing behavioural incidents during admission. The findings suggested that DBT not only addresses self-harm but also contributes to a safer inpatient environment. Lenz et al. (2016) found that interpersonal effectiveness skills and emotion regulation skills are effective in reducing anxiety in adolescents. Perez et al. (2017) provided evidence supporting the cost-effectiveness of DBT for adolescents, reinforcing its potential as an economically viable intervention.

Dialectical behaviour Therapy emerges as a versatile and effective therapeutic modality for enhancing cognitive functions in individuals with emotional

dysregulation, borderline personality disorder, bipolar affective disorder, attention deficit hyperactivity disorder, and multiple sclerosis. While Abdoighaddri et al. (2019) reported modest improvements, Afshari et al. (2019) observed significant enhancements in planning, problem-solving, and cognitive flexibility following DBT in patients with bipolar affective disorder. Fleming et al. (2015) demonstrated higher treatment response rates and clinical recovery rates for executive functions among patients with attention deficit hyperactivity disorder. Patients with multiple sclerosis exhibited significant improvements in memory and attention. Another study by Sepehri et al. (2016) investigated the impact of DBT on cognitive emotion regulation in women with Multiple Sclerosis, focusing on mindfulness, distress tolerance, emotion regulation, and interpersonal efficiency. Results showed that DBT significantly improved negative cognitive emotion regulation strategies, emphasising its potential as an effective intervention for addressing emotional challenges in individuals with multiple sclerosis. However, the study found no significant effect on improving positive cognitive emotion regulation strategies, suggesting a need for further exploration and refinement of DBT interventions in this context.

The Mindfulness manual of DBT is effective in addressing cognitive aspects of personality disorder. Positive effects on attention, impulsivity, and responsiveness were observed in a study by Solet et al. (2012) in which they used the DBT mindfulness module of Linehan along with general psychiatric management. Participants in the DBT mindfulness module group showed a significant reduction in impulsive errors. Moreover, improved responsiveness and enhanced ability to detect stimuli were also noted. Soler et al. (2022) attempted to investigate the impact of DBT on cognitive functions, specifically focusing on delayed gratification and time

perception using the same manual. The module contributed to positive changes in cognitive functions related to delayed gratification, time perception, and impulsivity.

In a study conducted by Kells et al. (2020), a 24-week DBT Skills Training (DBT-ST) intervention showcased significant reductions in emotion dysregulation and dysfunctional coping strategies. The research involved 100 adults diagnosed with borderline personality disorder (BPD), emerging BPD traits, or experiencing emotion dysregulation without active self-harm. These participants underwent the DBT-ST intervention facilitated by trained DBT therapists. Predominantly female and aged between 25 to 34 years, the majority were single and unemployed. Assessment measures, including the Difficulties in Emotion Regulation Scale, DBT Ways of Coping Checklist, and Five-Facet Mindfulness Questionnaire, were administered at various intervals: pre-intervention, after each skills module, and post-intervention. Results indicated noteworthy decreases in emotion dysregulation and dysfunctional coping scores alongside marked increases in mindfulness and utilization of DBT skills. However, the study noted a substantial dropout rate of 49% by the post-intervention phase. Overall, the study underscores the potential benefits of a standalone 24-week DBT-ST intervention in mitigating emotion dysregulation and fostering adaptive coping strategies among individuals with BPD or emerging BPD traits, who are not actively engaged in self-harming behaviours.

The process of emotion regulation has been particularly elucidated as an inhibitory influence of the frontal regions on the amygdala. The amygdala plays a substantial role in emotional processing (Garravan et al., 2001 & Lane et al., 1999). However, a distinct subset of front cortical structures may be involved in the expression of emotional upregulation and downregulation (Frank et al., 2014). Structural and functional alterations in the amygdala are associated with various

psychiatric conditions in humans, including post-traumatic stress disorder, phobic and panic conditions, and depression. The amygdala has been implicated in emotional states associated with aggressive, maternal, sexual, and instinctive behaviours. In addition to its role in emotion, the amygdala regulates or modulates various cognitive functions, such as attention, perception, and explicit memory.

Consistent evidence supports the role of amygdala activity in experienced emotional intensity, where intentional dampening and exaggeration are clearly expressed. At the neurobiological level, univariate analysis of functional neuroimaging data from patients with borderline personality disorder has consistently implicated aberrant activity levels in the amygdala in altered emotional processing, whereas neuroimaging findings have reported normalisation of such activity in the amygdala following DBT. These neuroimaging findings support theories designating the amygdala as a key brain region in emotion regulation (Levin, 2023). Levine and colleagues sought to explore whether neural emotion spaces show systematic alteration before and after the DBT programme in borderline patients. The findings revealed that individuals with borderline personality disorder maintained a comparable degree of similarity to each other in representations of angry, fearful, surprised, and neutral facial expressions when compared with their functional magnetic resonance imaging before therapy. However, downregulation of neuronal activity is noted in limbic areas, namely the insula and amygdala, together with differential engagement of prefrontal regions (Schmitt, 2016). Involving 32 female patients with personality disorder, this study examined changes in brain activation during a reappraisal task before and after a 12-week DBT program, with participants undergoing two scans. The findings showed that responders exhibited decreased activation in the anterior cingulate cortex, orbitofrontal dorsolateral prefrontal cortex,

and amygdala, along with heightened connectivity within a limbic-prefrontal network during psychotherapy reappraisal.

### ***Dialectical Behaviour Therapy for Non-Suicidal Self-Injurious Behaviour***

Dialectical Behaviour therapy in NSSIB is not studied extensively when compared to borderline personality disorders and other conditions. The review tried to explore the literature available predominantly focused on the application of DBT, exploring its effectiveness in addressing NSSIB and suicidal behaviours. Research by Linehan and colleagues demonstrated the efficacy of DBT in significantly reducing self-harm incidents among individuals with borderline personality disorder. The comprehensive skills-based approach of DBT equips individuals with alternative coping mechanisms to mitigate the frequency and severity of self-injurious acts (Linehan et al., 1991). Verheul et al. (2003) compared DBT with treatment as usual, revealing better retention rates and greater reductions in self-mutilating behaviours. Gothem et al. (2012 & 2015) underscored the effectiveness of DBT in reducing both the severity and frequency of suicidal ideation and self-injurious behaviours among individuals diagnosed with borderline personality disorder, indicating the broader applicability of DBT for diverse manifestations of self-harm. Smith et al. (2018) conducted a systematic review, revealing consistent evidence supporting the efficacy of DBT in reducing self-harm. This meta-analysis underscores the broad applicability of DBT and its potential to serve as a valuable therapeutic tool in managing self-injurious behaviours across various clinical contexts.

Geddies et al. (2012) assessed the impact of the DBT programme on trauma-related symptoms, emotion regulation, suicidality and NSSIB in adolescents and found significant reductions in trauma-based symptoms, suicidality and NSSIB.

Walton et al. (2020) compared the effectiveness of DBT and the conversational model in reducing suicidal and NSSI episodes and depression in adolescents. Kothgassner et al. (2021) and DeCou et al. (2019) investigated the effectiveness of DBT in adolescents for reducing self-injurious behaviour and suicidal ideation. Iyengar et al. (2018) conducted an updated systematic review of randomized controlled trials focused on therapeutic interventions for suicide attempts and self-harm in adolescents. Their findings underscored that cognitive behavioural therapy (CBT) stands out as the sole intervention with consistently replicated positive impacts on reducing self-harm in adolescents. Among the interventions examined, dialectical behaviour therapy for Adolescents (DBT-A), categorized as a type of CBT, was explored within this context. However, the study did not find sufficient evidence to suggest that DBT-A alone was effective compared to other intervention programs.

Buerger et al. (2019) aimed to assess the effectiveness of dialectical behavior therapy for adolescents on various outcomes in adolescents with borderline personality disorder (BPD). Seventy-two adolescents between the ages of 12 and 17 received DBT-A treatment, consisting of 25 individual sessions and 20 sessions of skills training. The main focus of the study was to assess the effects of DBT-A on individual trait levels, with secondary outcomes including the frequency of suicide attempts and nonsuicidal self-injury, self-reported BPD core pathology, and overall psychopathology. Investigating its impact on adolescents diagnosed with BPD, the results revealed a notable reduction in the number of BPD traits post-treatment, accompanied by significant improvements in secondary outcomes such as the frequency of suicide attempts, nonsuicidal self-injury, self-reported BPD core pathology, and general psychopathology.

Similarly, Courtney and Flament (2015) conducted a pre-post outpatient study in Canada with 42 participants aged 15 years and above, demonstrating a significant reduction in self-harm and borderline personality traits over 3 months. Fischer and Peterson (2015) conducted a pre-post outpatient study in USA with seven participants aged 14-17 years, revealing a 30% reduction in self-harm over six months. Fleischhaker et al. (2011) conducted a pre-post outpatient study in Germany with 10 participants aged 13-19 years, demonstrating a 25% reduction in self-harm over 6 months. Geddes et al (2013) conducted a pre-post-outpatient study in Australia and found a 33% reduction in self-harm and suicidal ideation. Gillespie et al. (2019) conducted a pre-post outpatient study in Ireland with 84 participants aged 13-18 years and reported a 16% reduction in self-harm and suicidal ideation symptoms. Goldstein et al. (2007) observed a reduction in self-harm and suicidal ideation, and Goldstein et al. (2015) reported a 2% reduction in self-harm over 12 months.

In a randomised controlled trial, Walton et al. (2020) contrasted the conversational model of BPD treatment with DBT and discovered that while both are useful interventions in standard clinical settings, DBT offers some further advantages in terms of lowering depression. In total, 162 patients who had engaged in suicidal or non-suicidal self-harming behaviour throughout the preceding year were included in the study. For 14 months, study participants were randomised to receive treatment using either the conversational model or DBT. Weekly individual treatment, weekly skill training sessions in groups, and phone coaching after hours were all part of DBT. After the initial evaluation, changes were observed in the frequency of suicidal and non-suicidal self-injurious episodes by a research assistant who was blinded to the treatment condition. Study participants were randomised to receive treatment using either the conversational model or DBT. Weekly individual treatment, weekly skill

training sessions in groups, and phone coaching after hours were all part of DBT. After the initial evaluation, changes were observed in the frequency of suicidal and non-suicidal self-injurious episodes. Although they could not find any significant differences between the scores of the two treatment conditions, DBT showed greater reductions in depression scores compared with the conversational model.

These studies collectively contribute to the understanding of diverse therapeutic interventions and their impact on adolescent self-harm and suicidal ideation, providing valuable insights into potential treatment modalities and their outcomes. However, most of the studies are in adolescents. Research on dialectical behavior therapy for adolescents (DBT-A) and non-suicidal self-injury (NSSI) differs significantly from that of adults due to prevalence during adolescence and the need for interventions to address developmental challenges early. Research often emphasizes prevention strategies and early intervention approaches. However, further studies are required to explore effectiveness across age groups.

Saysr's (2020) findings underscore the moderation effects of specific emotions, such as shame, guilt, fear, and sadness, and the impact of DBT on NSSI and suicidal ideation. Kells (2020) demonstrates that DBT skills training is effective in diminishing emotion dysregulation and dysfunctional coping among individuals with borderline personality disorder who are not actively self-harming. Navarro-Haro's (2015) study emphasises the importance of cognitive reappraisal, an emotion regulation strategy, in reducing NSSI in women with BPD and comorbid eating disorders. The results from a pilot DBT programme indicate positive outcomes, showcasing DBT's potential to alleviate trauma-related symptoms, enhance emotional regulation, and reduce suicidality and NSSI in adolescents. Asarnow et al. (2021) research revealed the superiority of DBT over individual and group supportive

therapy in improving emotion regulation and achieving greater self-harm remission during follow-up. Andreasson (2015) established that DBT is more effective than alternatives in reducing non-suicidal self-injury.

The study conducted by Gillespie and Murphy et al. (2022) aimed to explore the long-term follow-up experiences of individuals who completed DBT and found it beneficial. Through individual semi-structured interviews with twelve participants who completed 12 months of standard DBT and were at least two years post-completion, thematic analysis revealed three main themes. Participants reported that DBT had a positive impact on their lives by enabling further development, giving them control over their lives and the ability to manage setbacks, and contributing to healthier and more meaningful relationships with others. Despite these positive outcomes, participants expressed the need for further support in the years following the intervention. The study's strength lies in achieving data saturation with a sample size of twelve participants, improving the quality and content validity of the research. Recruiting participants from various treatment sites helped reduce bias, and clear methodological descriptions addressed previous limitations in qualitative DBT literature. Overall, the findings suggest that DBT continues to benefit individuals in the long term, emphasizing the importance of further qualitative research to understand the experiences of those who did not benefit from DBT or dropped out, ultimately informing service delivery in mental health settings.

In conclusion, the collective body of research highlights the effectiveness of Dialectical Behaviour Therapy in addressing diverse aspects of self-injurious behaviours and regulating emotions across various populations and enhancing emotional well-being across diverse populations.

The COVID-19 pandemic had numerous negative impacts worldwide, but it has also made it necessary for mental health care systems to include digital mental health therapies in normal treatment. Existing research suggests the feasibility of providing DBT online, with preliminary evidence indicating its comparable efficacy to face-to-face training in skills and individual treatment. However, caution is necessary because of the absence of significant experiments directly comparing high fidelity with online DBT and face-to-face counselling for individuals with BPD. Historically, DBT has been delivered by treatment manuals that focus on specific processes and functions in skills training and individual therapy (Lungu & Linehan 2017). However, the success of DBT in an online environment may not lie in replicating face-to-face processes directly. This adaptation is particularly pertinent as it addresses potential limitations of online delivery, such as the "digital divide" where individuals with poorer health outcomes often face limited access to technology, as discussed by Saeed and Masters (2021).

The findings presented by Walton et al. (2023) constitute a valuable exploration of different delivery modes for dialectical behaviour therapy encompassing face-to-face sessions, telehealth-based approaches, and hybrid models, within the contexts of New Zealand and Australia. The observed lack of significant variations among these delivery modes suggests early evidence supporting the practicality and effectiveness of offering DBT through telehealth. This is particularly noteworthy in regions where face-to-face sessions might be challenging or impractical. This research contributes to the evolving landscape of mental health care by indicating that telehealth-based DBT can be a viable and accessible alternative, potentially expanding the reach of therapeutic interventions to individuals facing geographical or logistical barriers. Further research and continued exploration of

telehealth options in mental health interventions would be essential to solidify these early indications and guide the ongoing development of accessible and effective mental health services.

## **Overview**

This review of literature illuminates the evolution and understanding of Non - Suicidal Self-Injury (NSSI), covering epidemiology, gender differences, comorbidities, emotion regulation, interventions, and implications across diverse populations. The integration of NSSI into the DSM-5 marked a pivotal moment in the study of self-harming behaviours, catalysing empirical research that has since enriched our understanding of this complex phenomenon. Moreover, it underscores the significance of considering cultural and contextual nuances in NSSI research, as evidenced by studies in India. The review culminates in an examination of the relationship between NSSI and psychiatric disorders, highlighting its role as a precursor to suicidal behaviour and emphasizing the importance of targeted interventions and prevention strategies.

The literature extensively examines the interplay between emotion regulation, psychological well-being, and NSSI, shedding light on their complex relationships and implications. Emotion regulation emerges as a significant risk factor for NSSI across various age groups and genders, with studies revealing associations between NSSI and factors such as emotional response, affective arousal, risky decision-making, and emotion dysregulation. Additionally, personality traits, coping strategies, and cognitive processes are found to moderate the relationship between emotion regulation and NSSI, emphasizing the importance of understanding these interactions. Interventions targeting emotion regulation skills, such as cognitive reappraisal and

mindfulness, are highlighted as promising approaches to improving psychological well-being and reducing NSSI risk.

Treatment options for NSSIB include medication and talking therapies. While medications like SSRIs and mood stabilizers are commonly used, their effectiveness is uncertain. On the other hand, dialectical behaviour therapy (DBT) stands out as a promising talking therapy, especially for those with borderline personality disorder and trouble controlling emotions. DBT, created by Linehan, combines cognitive-behavioural techniques and mindfulness to help people regulate their emotions better. Studies show that DBT can reduce NSSIB, and suicidal thoughts, and improve overall well-being. DBT teaches skills for handling emotions, dealing with distress, and improving relationships.

However, challenges remain, including the need for standardised outcome measures, consistent methodologies, and further investigation into the mechanisms underlying DBT's effectiveness. Despite these challenges, DBT continues to be a promising intervention for addressing NSSIB and emotion dysregulation, offering hope for individuals seeking effective treatment options.

### **Research Gap**

Significant scholarly inquiry into self-injurious behaviour has transpired within Western contexts; however, it is noteworthy that this phenomenon has limited research attention within the Indian context, notwithstanding the alarming prevalence rates associated with this disorder. A conspicuous insufficiency in the existing literature is evident, particularly concerning the shortage of investigations between psychological factors and individuals manifesting SIB. Emotion dysregulation has emerged as a pivotal factor in prior research exploring self-injurious behaviour. This

underscores the need for dedicated research. It endeavours to elucidate the intricate interplay between emotion regulation and SIB within the unique sociocultural background of India. Moreover, most of the available studies are focused on adolescents because they have a higher prevalence rate. However, individuals with such behaviours from the adolescent period to young adulthood have a high risk of future attempts of suicide, mental health problems and issues related to emotion dysregulation. It is also noticed that a lack of intervention studies based on outpatient clinical services are observed in literature. Above all, a research gap is noticed in the identification of the fundamental reasons of SIB or non-suicidal self-injury, explicating the foundational reasons, notably centred around emotion regulation. This notable void in literature suggests an imperative need for comprehensive investigations aimed at unravelling the multifaceted psychological dynamics inherent in SIB, particularly within the Indian context.

### **Need and Relevance of the Study**

Emotional and behavioural dysregulation emerges as a significant factor associated with non-suicidal behaviours, both acutely and chronically. Furthermore, previous research in this domain has often concentrated on a limited set of variables, potentially overlooking the intricate sociocultural factors influencing young adults in India. The proposed research addresses psychological intervention studies in the Indian context, specifically for young adult survivors of NSSI behaviour. Also, the researcher, being a clinical psychologist, found difficulties in dealing with such cases in clinical practice due to challenges and facts related to ethical considerations, lack of experts in proper therapy training, long duration of therapy, lack of motivation in clients, lack of family support, and financial constraints. Effective treatment strategies for young individuals at risk of self-injury should prioritise evidence-based

psychotherapies, underlying mental health issues, and dysregulation resolution. In the preliminary phase, the investigation delves into the nature and individual characteristics of self-injurious behaviour, aiming to lay the groundwork for an effective model of dialectical behaviour therapy. Based on the Phase-I study, phase II seeks to plan an appropriate therapeutic approach to address psychological reasons for self-injurious behaviour and thereby promote psychological well-being. This is an approach that aligns with the growing call for appropriate interventions in such populations.

### **Statement of the Problem**

This study aims to understand the nature of self-injurious behaviour among young adults and evaluate the efficacy of dialectical behaviour therapy on cognitive emotion regulation for enhancing psychological well-being in young adults with non-suicidal self-injurious behaviour.

### **Definitions of the Key Terms used in the Study**

***Efficacy:*** “Efficacy can be defined as the performance of an intervention under ideal and controlled circumstances” (Gartlehner et al. 2010).

In the context of index research, intervention is conducted under controlled conditions within an ideal setting. This involves working with samples that meet specific exclusion criteria and implementing the intervention by a properly trained and supervised researcher (Striener & Norman, 2009).

***Self-Injurious Behaviour (SIB):*** All behaviours involve the deliberate infliction of direct physical harm to one’s own body without any intention to die due to the behaviour (Favazza & Rosenthal,2008).

***Non-Suicidal Self-Injurious Behaviour (NSSIB):*** Non-Suicidal Self-Injurious Behaviour (NSSIB) refers to the direct, intentional injury of one's body tissue without suicidal intent, based on DSM-5.

***Dialectical Behaviour Therapy (DBT):*** DBT is a therapeutic approach originally developed for addressing suicidal behaviours and subsequently extended to treat borderline personality disorder characterised by significant emotion dysregulation (Linehan, 1993). The DBT used in this study is a 14-week programme based on emotion regulation skills training, specifically the Neacsiu Adult DBT schedule.

***Cognitive Emotion Regulation (CER):***

Cognitive emotion regulation considers adaptive and non-adaptive emotion regulation strategies (Garnefski, 2001). In this study, adaptive and non-adaptive cognitive emotion regulation refers to strategies employed to manage emotional reactions in response to negative events, distinguishing between approaches that enhance well-being (adaptive) and those that may be less effective or counterproductive (non-adaptive).

***Psychological Well-Being (PWB):***

Ryff's model of psychological well-being comprises six dimensions: self-acceptance, positive relationships with others, autonomy, environmental mastery, purpose in life, and personal growth (Ryff, 1989)

***Young adults:***

In this study, young adults were individuals aged between 19 and 30 years, capturing the age range relevant to the developmental and social transitions associated with young adulthood, as outlined by Bonnie, Stroud, and Brenier (2015).

## **Research Questions**

1. What is the prevalence and characteristics of self-injurious behaviour among young adults in Kerala?
2. What are the motivations and reasons for self-injurious behaviour among young adults in Kerala?
3. How do sociodemographic variables relate to young adults with and without history of self-injurious behaviour?
4. How do cognitive emotion regulation and psychological well-being differ in young adults with and without history of self-injurious behaviour?
5. How do different strategies of adaptive and non-adaptive cognitive emotion regulation predict psychological well-being in young adults?
6. How do different strategies of cognitive emotion regulation and dimensions of psychological well being predict self injurious behaviour?
7. Is dialectical behaviour therapy an efficacious intervention programme for reducing self-injurious behaviour in young adults with non-suicidal self-injurious behaviour?
8. Is dialectical behaviour therapy an efficacious intervention programme for enhancing psychological well-being in young adults with non-suicidal self-injurious behaviour?

## **Objectives**

1. To assess the prevalence and characteristics of self-injurious behaviours among young adults in Kerala.
2. To understand the reasons or motives behind self-injury in young adults.

3. To study the association of sociodemographic variables among young adults with and without a history of self-injurious behaviour.
4. To study the difference in emotion regulation and psychological well-being between groups with and without self-injurious behaviour.
5. To identify adaptive and non-adaptive cognitive emotion regulation strategies that predict psychological well-being among young adults.
6. To identify strategies of cognitive emotion regulation and dimensions of psychological well being predict self-injurious behaviour in young adults.
7. To assess the efficacy of dialectical behaviour therapy based on emotion regulation in reducing self-injurious behaviour among young adults with non-suicidal self-injurious behaviour.
8. To assess the efficacy of dialectical behaviour therapy in enhancing the psychological well-being among young adults with non-suicidal self-injurious behaviour.

## **Hypotheses**

The hypotheses were formulated for the current research are based on the objectives described for the study.

### **Phase I- Preliminary Study**

***1. There is no significant association in sociodemographic variables between young adults with history of any self-injurious behaviour (Any SIB) and no history of self-injurious behaviour (No SIB) in past year.***

1.1 There is no significant association in gender between groups of young adults with Any SIB and No SIB in past year.

1.2 There is no significant association in age group between groups of young adults with Any SIB and No SIB in past year.

1.3 There is no significant association in marital status between groups of young adults with Any SIB and No SIB in past year.

1.4 There is no significant association in family type between groups of young adults with Any SIB and No SIB in past year.

1.5 There is no significant association in educational qualification between groups of young adults with Any SIB and No SIB in past year.

1.6 There is no significant association in occupation between groups of young adults with Any SIB and No SIB in past year.

***2. There is no significant difference in strategies of cognitive emotion regulation between groups of young adults with Any SIB and No SIB in past year.***

2.1 There is no significant difference in the Self-Blame strategy of CER between groups of young adults with Any SIB and No SIB in past year.

2.2 There is no significant difference in the Self-Acceptance strategy of CER between groups of young adults with Any SIB and No SIB in past year.

2.3 There is no significant difference in the Positive Refocusing strategy of CER between groups of young adults with Any SIB and No SIB in past year.

2.4 There is no significant difference in the Refocus on the Planning strategy of CER between groups of young adults with Any SIB and No SIB in past year.

2.5 There is no significant difference in the Positive Reappraisal strategy of CER between groups of young adults with Any SIB and No SIB in past year.

2.6 There is no significant difference in the Putting into Perspectives strategy of CER between groups of young adults with Any SIB and No SIB in past year.

2.7 There is no significant difference in the Other-Blame strategy of CER between groups of young adults with Any SIB and No SIB in past year.

2.8 There is no significant difference in the Rumination strategy of CER between groups of young adults with Any SIB and No SIB in past year.

2.9 There is no significant difference in the Catastrophization strategy of CER between groups of young adults with Any SIB and No SIB in past year.

**3. *There is no significant difference in the Dimensions of Psychological Well-Being between young adults with Any SIB and No SIB in past year.***

3.1 There is no significant difference in Autonomy between groups of young adults with Any SIB and No SIB in past year.

3.2 There is no significant difference in Environmental Mastery groups of between young adults with Any SIB and No SIB in past year.

3.3 There is no significant difference in Personal Growth between groups of young adults with Any SIB and No SIB in past year.

3.4 There is no significant difference in Positive Relationships with Others between groups of young adults with Any SIB and No SIB in past year.

3.5 There is no significant difference in Purpose of Life between groups of young adults with Any SIB and No SIB in past year.

3.6 There is no significant difference in Self-Acceptance between groups of young adults with Any SIB and No SIB in past year.

**4. *There is no significant correlation between adaptive and non-adaptive strategies of cognitive emotion regulation strategies and psychological well-being***

4.1 There is no significant correlation between Self-Blame strategy and psychological well-being in young adults.

4.2 There is no significant correlation between Rumination and psychological well-being in young adults.

4.3 There is no significant correlation between the Other-Blame and Psychological Well-Being.

4.4 There is no significant correlation between Catastrophization and psychological well-being.

4.5 There is no significant correlation between the Self-Acceptance strategy and psychological well-being.

4.6 There is no significant correlation between Positive Refocusing and psychological well-being.

4.7 There is no significant correlation between Refocusing on Planning and psychological well-being.

4.8 There is no significant correlation between Positive Reappraisal and psychological well-being.

4.9 There is no significant correlation between the Putting-into-Perspective strategy and psychological well-being.

***5. Strategies of Cognitive Emotion Regulation will not predict Psychological Well-Being and self-injurious behaviour in young adults with SIB***

5.1 Non-adaptive strategies for cognitive emotion regulation do not significantly predict psychological well-being in young adults with SIB.

5.2 Adaptive strategies for cognitive emotion regulation do not significantly predict psychological well-being in young adults with SIB.

5.3 Sub-variables of cognitive emotion regulation will not significantly predict SIB in young adults.

5.4 Dimensions of Psychological well-being will not significantly contribute to SIB in young adults.

***6. There is no significant difference in non-suicidal self-injurious behaviour in the pre-intervention, post-intervention and follow-up stages.***

***7. There is no significant difference in CER strategies between pre-intervention, post-intervention and follow-up stages among young adults with NSSIB.***

7.1 There is no significant difference in Self-Blame between pre-intervention, post-intervention and follow-up stages.

7.2 There is no significant difference in Acceptance between pre-intervention, post-intervention and follow-up stages.

7.3 There is no significant difference in Rumination between pre-intervention, post-intervention and follow-up stages.

7.4 There is no significant difference in Positive Refocusing between pre-intervention, post-intervention and follow-up stages.

7.5 There is no significant difference in Refocus on Planning between pre-intervention, post-intervention and follow-up stages.

7.6 There is no significant difference in Positive Reappraisal between pre-intervention, post-intervention and follow-up stages.

7.7 There is no significant difference in Putting into Perspectives between pre-intervention, post-intervention and follow-up stages.

7.8 There is no significant difference in Catastrophizing between pre-intervention, post-intervention and follow-up stages.

7.9 There is no significant difference between Other Blame between pre-intervention, post-intervention and follow-up stages.

***8. There is no significant difference in psychological well-being between pre-intervention, post- intervention and follow-up stages in young adults with NSSIB.***

8.1 There is no significant difference in Autonomy between the pre-intervention, post-intervention and follow-up stages.

8.2 There is no significant difference in Environmental Mastery between pre-intervention, post- intervention and follow-up stages.

8.3 There is no significant difference in Personal Growth between pre-intervention, post-intervention and follow-up stages.

8.4 There is no significant difference in Positive Relationships between pre-intervention, post-intervention and follow-up stages.

8.5 There is no significant difference in Purpose in life between pre-intervention, post-intervention and follow-up stages.

8.6 There is no significant difference in Self-Acceptance between pre-intervention, post-intervention and follow-up stages.



**CHAPTER-II**  
**METHOD**

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The methodology serves as the foundational support structure of a research study, often regarded as the research framework. The Research Method Chapter guides the researcher in facilitating the achievement of objectives scientifically and systematically. This chapter outlines the underlying support structure of the study, which includes the research design, participants, instruments used, procedure, ethical considerations, and methods of statistical analyses. The purpose of the study was to empirically evaluate the efficacy of dialectical behaviour therapy (DBT) for enhancing psychological well-being (PWB) in young adults with non-suicidal self-injurious behaviour (NSSIB). In this study, variables such as cognitive emotion regulation (CER), PWB, and NSSIB were quantified to assess the impact of the therapy intervention across different stages. Thus, the research justified employing a quantitative approach. Quantitative research entails testing objective theories by investigating the relationship between measurable variables, which are then analyzed using statistical procedures for generalization and replication (Creswell, 2014). This quantitative methodology allows for the systematic measurement and comparison of these variables, providing empirical evidence to evaluate the intervention's effectiveness and its implications for improving outcomes in emotional regulation and well-being while reducing self-injurious behaviours. This research adopts a quantitative methodological stance and unfolds in two distinct phases. Firstly, a preliminary study precedes the main investigation, serving as groundwork for the subsequent intervention study. This preliminary phase encompasses essential background work, involving the preparation and planning of a suitable intervention program, as well as exploring the relationship between variables and their impact on individual participants.

**Phase I (The preliminary study):** Assessing the prevalence, methods, reasons and characteristics of self-injurious behaviour and the relation between variables and influence of variables in self-injurious behaviour among young adults.

**Phase II (The intervention study):** Individual session to participants and assess the impact of the intervention. Young adults who were identified with non-suicidal self-injurious behaviour based on DSM-5 criteria underwent 14 weeks of dialectical behaviour therapy based on emotion regulation.

### **PHASE I- Preliminary Study**

#### **Research Design**

Phase I of the study was conducted within a quantitative methodological framework and a descriptive and predictive research design was adopted. In the first part of the study, the focus was on conducting a descriptive inquiry into the prevalence of self-injurious behaviour, characteristics, method, frequency and reasons among young adults and exploring differences between various groups. The predictive research design involved collecting data from a specific population, in this case young adults, and identify patterns, relationships, or causal links between variable. It focuses on answering 'how' and 'why' questions. Second part of the study investigates the relationship between self-injurious behaviour, emotion regulation and psychological well-being. Predictive research allows researchers to analyze data to forecast future outcomes or behaviour. It enables the researchers to make informed predictions and recommendations. In this context the study aimed to explore how self-injurious behaviour correlates with both emotion regulation and psychological well-being among young adults. By employing this design, the research aimed to uncover potential associations between these variables shedding light on their interplay within this

population. There is one independent variable and two dependent variables in Phase I. The independent variable was self-injurious behaviour, and the dependent variables were cognitive emotion regulation and psychological well-being.

### **Participants**

The research population was composed of young adults between the age range of 19 to 30 years. The sample for the Phase-1 study was drawn from Thiruvananthapuram, Ernakulam, and Thrissur Districts of Kerala, India. A purposive sampling technique was employed to select the sample in the study. (The details of data collection are depicted in figure 2.1). The sample for phase I of the study comprised 691 young adults with the following criteria:

#### ***Inclusion Criteria***

- Participants must be between 19 and 30 years old.
- Participants must reside in Thiruvananthapuram, Ernakulam, or Thrissur.
- Participants must possess the ability to understand English.

#### ***Exclusion Criteria***

- Individuals who were taking medication for any chronic physical or mental illness.
- Individuals with intellectual disability or any significant medical or neurodevelopmental disorder based on history and clinical examination
- Those under the influence of psychoactive drugs or any substances.

## **Instruments**

Instruments/measures used for data collection are described in this section with their respective psychometric properties. They are,

1. Personal Data Sheet (Appendix II)
2. Functional Assessment of Self-Mutilation (Appendix VI)
3. Cognitive Emotion Regulation Questionnaire (Appendix VII)
4. Ryff's Scale of Psychological Well-Being (Appendix VIII)

### **1. Personal Data Sheet**

The personal data sheet was a self-designed performance to gather various sociodemographic variables. It contained relevant information to describe the sociodemographic profile of the participants, such as age, gender, marital status, education, and occupation.

### **2. Functional Assessment of Self-Mutilation**

Functional Assessment of Self-Mutilation (FASM) (Lloyd et al., 1997) was designed by Lloyd and colleagues in 1997 and is widely used in assessing self-injurious behaviour. The purpose of this self-administered test was to evaluate the frequency, mechanisms, and additional features of self-mutilation activity, such as the level of physical pain, duration of contemplation, and use of alcohol or other psychoactive drugs during self-injury.

#### ***The rationale for using the scale***

The FASM is a commonly used scale that helps understand how a client's behaviour is influenced by their surroundings and how internal events like emotions, thoughts, and physical sensations interact with other behaviours. It was initially developed through an extensive review of past literature on self-injurious behaviour

(SIB) in both normative and psychiatric populations (Nock & Prinstein, 2004). FASM evaluates both function domains and reasons for engaging SIB that directly provide essential measurement to guide self-injury intervention treatment (Taylor et al., 2018; Lloyd-Richardson, Baetens, & Whitlock, 2024).

- ***Tool description and scoring***

FASM consists of two sections. The initial segment of the scale includes an inventory of 11 self-mutilation or self-injury behaviours (SIB), such as cutting the skin or purposefully hitting oneself, pulling hair out, self-tattoo, picking at the wound, skin burn, inserting object under skin or nail, biting self, draw blood on the body, scrape the skin and erase skin. Individuals endorsing at least one self-injury were directed to complete the second section, which entails inquiries regarding the duration of contemplation prior to the behavior, onset age if influenced by psychoactive substances, level of physical pain experienced, and presence of suicidal intent. This segment of the FASM comprises 22 statements assessing motivation for self-injurious behavior, utilizing a four-point Likert scale (never-0, rarely-1, some-2, often-3) to discern the underlying reasons behind self-harming actions (Lloyd et al., 1997). Participants were asked to indicate the extent to which each function or motive contributed to the specific self-injurious behaviour. These are classified into two types: Mild behaviours include pulling hair, inserting objects under nails or skin, biting oneself, hitting oneself, picking at a wound, scratching the skin, and self-punching, while moderate to severe behaviours encompass cutting, burning, erasing the skin, and self-tattooing.

Nock and Prinstein (2004) examined the structural integrity of the Functional Assessment of Self-Mutilation (FASM) and substantiated the proposed four-factor conceptual framework concerning non-suicidal self-injurious behavior (NSSIB). Their

findings underscored two pivotal dimensions within NSSIB functions. Firstly, NSSIB is categorized into either intrapersonal, where it serves as an internal means of gratification such as tension reduction or mood enhancement, or interpersonal, where its purpose is to influence or manage one's external surroundings. Secondly, NSSIB is reinforced through either positive means, where engagement with NSSIB is rewarded by encountering a positive stimulus, or negative means, where involvement with NSSIB leads to escape from or avoidance of negative interpersonal pressures. The frequency distribution of these dimensions constitutes a significant component of our study.

- ***Reliability and Validity***

FASM has demonstrated acceptable psychometric properties across samples, yielding adequate internal consistency for minor, moderate, and severe SIB scales. Concurrent validity was also established with significant associations between suicide attempts, suicide intent, hopelessness, and depressive symptoms (Bhola et al., 2017). The correlation coefficient between the FASM behaviour score and the behaviour questionnaires was 0.833 ( $P < .01$ ). In India, the scale was used by young adults in South India to study the predictors of self-injurious behaviour (Kharsati, 2013; Bhola et al., 2017). Permission was taken from the author before the study.

The Cronbach's alpha coefficient, split-half reliability coefficient, and test-retest reliability coefficient of the behaviour questionnaires were 0.921, 0.851, and 0.843, respectively.

### **3. The Cognitive Emotion Regulation Questionnaire**

The Cognitive Emotion Regulation Questionnaire (CERQ) (Garnefski & Kraaij, & Sphinhoven, 2001) is a questionnaire constructed to explicitly measure cognitive

strategies for emotion regulation that individuals may use in response to stressful life events.

***The rationale for using the scale:***

It is a commonly used questionnaire for assessing the level of cognitive emotion regulation among young adults. The cognitive emotion regulation questionnaire helps to understand the cognitive side of emotion regulation strategies. The CERQ is suitable for use in different populations (Garnefski, Kraaij & Sphinhoven, 2001). It can be used to diagnose individuals and plan psychological intervention based on positive, negative, adaptive, and non-adaptive strategies of emotion regulation.

***Tool description and scoring***

The 36-item responses are structured by a five-point Likert scale ranging from 1 to 5, ‘(almost) never’ (1), ‘sometimes’ (2), ‘regularly’ (3), ‘often’ (4), or ‘(almost) always’ (5). The sum value of adaptive and non-adaptive strategies ranges from 4 to 20 (4- low score- indicating never used and 20-high score indicating often used cognitive coping strategy). CERQ contains nine conceptually distinct subscales: five for adaptive strategies (Acceptance, Positive Refocusing, Refocusing on Planning, Positive Reappraisal, and Putting into Perspective) and four for non-adaptive strategies (Self-Blame, Rumination, Catastrophizing, and Blaming Others). The sum score of nine strategies is made by simple straight count,

- Self-Blame (items 1,10,19, 28)
- Acceptance (items 2,11,20,29)
- Rumination (items 3,12,21,30)
- Positive Refocusing (items 4,13,22,31)
- Refocus on planning (items 5,14,23,32)

- Positive Reappraisal (6,15,24,33)
- Putting into Perspectives (7,16,25,34)
- Catastrophizing (8,17,26,35)
- Blaming Others (9,18,27,36).

The CERQ can be administered both individually and in groups, using a computer or a pen-and-paper version, and takes less than 20 minutes.

### ***Reliability and Validity***

This questionnaire demonstrates excellent reliability and validity and has the potential to assess emotion regulation more precisely. Previous research on cognitive emotion regulation strategies has shown that all subscales have good internal consistencies ranging from 0.68 to 0.86 (Garnefski et al., 2002). CERQ has good factorial validity and high reliabilities, with Cronbach's alpha ranging between 0.75 and 0.87. The alpha coefficients of the various subscales across the diverse populations vary from 0.70 to 0.80. The scale has been used in Indian research in different populations by different researchers including youth (Hussain & Bhushan, 2011; Singh & Shankar, 2013; Lavanya & Manjula, 2017). In the present study, Cronbach's Alpha coefficient was 0.789 for the Cognitive Emotion Regulation Questionnaire.

### **4. Ryff's Scales of Psychological Well-Being**

The 42-item Scale of Psychological Well-Being (SPWB) (Ryff, 1989) was developed by psychologist Carol D. Ryff. This structured, self-report instrument is based on six dimensions that point to different aspects of positive functioning (Ryff, 1989). Even though the original Ryff's PWB included 120 items (20 per dimension), shorter versions comprising 84 items (14 per dimension), 54 items (9 per dimension), 42 items (7 per dimension), and 18 items (3 per dimension) are now widely used. SPWB

has been translated into over 35 languages, resulting in over 750 publications (Ryff, 2019). It measures six aspects of well-being and happiness: Autonomy, Environmental Mastery, Personal Growth, Positive Relationships with Others, Purpose in Life, and Self Acceptance.

### ***The rationale for using the scale***

Assessing psychological well-being is in line with the therapeutic goals of DBT, which not only aims to reduce self-injurious behaviours but also to enhance overall psychological well-being and positive functioning in individuals with NSSIB in a clinical setting. As proposed by Ryff (1989) well-being extends beyond simple measures of positive affect, negative affect, and life satisfaction, encompassing a broader spectrum of life attitudes. The scale for psychological well-being, grounded in humanistic psychology and developmental theories, offers an understanding of well-being by incorporating its six dimensions. In the context of a clinical population undergoing DBT, SPWB is a valuable tool for evaluating the impact of therapeutic intervention on various facets of psychological well-being. By assessing these dimensions, the scale provides insights into positive functioning and potential positive psychological changes that may occur during and after psychological intervention.

### ***Scoring and interpretation***

A 42-item scale was used in this study, and responses were made on a 6-point Likert scale ranging from 1 (very strongly disagree) to 6 (very strongly agree). Among the 42 items in the scale, about half of the responses are reverse scored, which is indicated in the master of the test (e.g. If the shaded score is 6, the adjusted score is 1. If the shaded score is 5, the adjusted score is 2). Responses are totalled for each of the six categories as follows:

- Autonomy (1, 7, 13, 19, 25, 31, 37)
- Environmental Mastery (2, 8, 14, 20, 26, 32, 38)
- Personal Growth: (3, 9, 15, 21, 27, 33, 39)
- Positive Relations (4, 10, 16, 22, 28, 34, 40)
- Purpose in Life (5, 11, 17, 23, 29, 35, 41)
- Self-acceptance (6, 12, 18, 24, 30, 36, 42).

For each category, a high score indicates that the respondent has a mastery of that area in his or her life. Conversely, a low score shows that the respondent struggles to feel comfortable with that particular concept.

### ***Reliability and Validity***

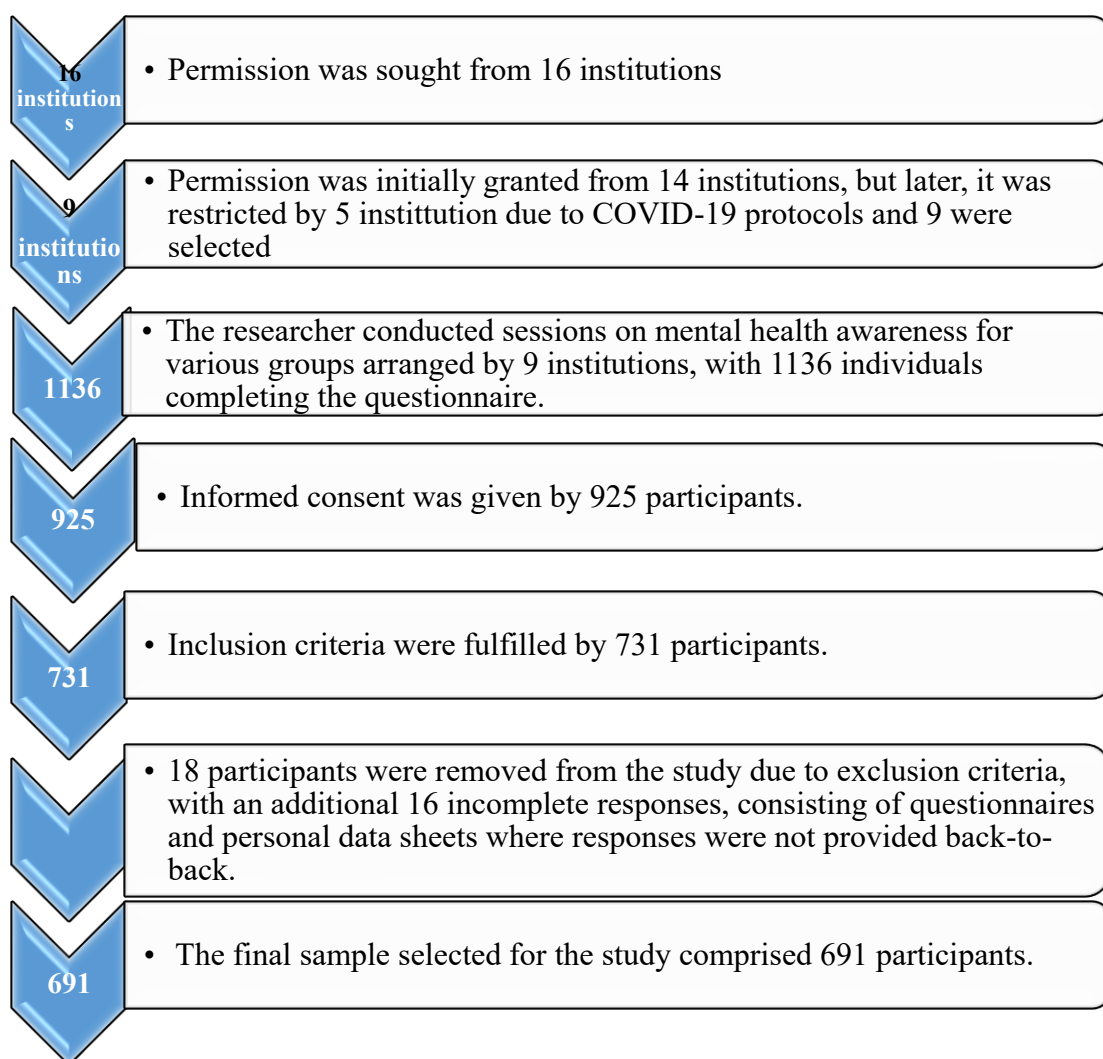
A high internal consistency ranging from 0.86 to 0.93 was reported for different dimensions of the scale (Ryff, 1989). Many studies that have used this scale have reported good validity (Kafka &Kozma, 2002; Van Dierendonck, 2004). They expressed grave concern over the high inter-correlations (0.72- 0.97) between factors, with the highest inter-correlations being between environmental mastery and self-acceptance and between purpose in life and self-acceptance. In Indian Context, Bhagchandani (2017) used this scale to assess graduate students in India, Sharma and Sharma (2018) also used the scale in college students, and Cronbach's alpha coefficient for this scale was 0.817, indicating good internal consistency. Author consent was obtained before using the scale. In this study, Cronbach's alpha coefficient was 0.825.

## Procedure

The flow chart for data collection is depicted below in figure 2.1

Figure 2.1

*Flow chart of data collection*



The research was conducted after obtaining approval from the Research Advisory Committee of the University of Calicut and the institution's ethical committee from research centre at prjyoti niketan College. The Human Ethical Committee Clearance Certificate was obtained from University of Calicut later. The researcher approached 16 institutions to obtain permission for data collection. Fourteen

institutions granted permission primarily and were later restricted by COVID-19 restrictions in 2020 by six institutions. Although the researcher planned to include equal representation from each district of Kerala, the data collection was restricted to Thiruvananthapuram, Ernakulam, and Thrissur districts of South Kerala. Permission was obtained from the head of the institution and the head of selected departments, and the institute made arrangements for the gathering with a demand for an awareness program for participants on mental health by the researcher. At the beginning of data collection, the researcher conducted a mental health awareness program for selected departments or groups from three professional colleges, three arts and science colleges, and gatherings of parents in schools. Written informed consent was obtained from each participant. Upon recruitment, participants were fully informed about the purpose of the study, and research ethical concerns, and assured confidentiality regarding their test results. Detailed instructions were provided to ensure accurate responses, with each question being read aloud to facilitate simultaneous completion by all participants. The questionnaire required approximately 30-40 minutes for completion by each group. Scoring was conducted using a specially prepared format for CERQ and SPWB, with the researcher providing interpretation of scores for participants' understanding to enhance their mental health profiles. A total of 1136 individuals completed all three measurements, among whom 691 young adults met the specified inclusion and exclusion criteria and provided written consent to participate in the study. Details of the data collected are depicted in a flow chart (figure 2.1) and details of the demographic variables are in Table 2.1.

Table 2.1

*Details of Demographic Variables of Participants in Phase-I*

	<b>Category</b>	<b>No. of participants</b>	<b>Percentage (%)</b>
Age group	18-24 years	454	65.71
	25-30 years	237	34.29
Gender	Female	406	58.75
	Male	285	41.25
Marital status	Unmarried	519	75.10
	Married	171	24.75
	Divorced	1	0.001
Educational Qualification	Secondary	39	5.65
	Higher Secondary	91	13.16
	Diploma	46	6.66
	Under Graduation	408	59.05
	Post-Graduation	107	15.48
Occupation	Student	184	26.63
	Not employed	419	60.64
	Private job	81	11.72
	Government job	7	1.01

From table 2.1, the majority of the participants fall within the age group of 18-24 years (65.71%), whereas those in the 25-30 years age group constitute 34.29%. Regarding gender distribution, 58.75% were female, 41.25% were male, and a substantial proportion of participants were unmarried (75.10%), with a smaller percentage being married (24.75%) and one person got divorced. Educational qualifications varied among the participants, with the majority having completed Under Graduation (59.05%), followed by Post-Graduation (15.48%). The occupation distribution reveals that a significant number are students (26.63%), followed by those not employed (60.64%), and individuals engaged in private jobs (11.72%) or

government jobs (1.01%). Family types are predominantly joint (89.58%), followed by nuclear (9.84%) and extended families (0.58%).

History of self-injurious behaviour in the past 12 months, assessed by the Functional Assessment of Self-Mutilation (FASM) (Lloyd et al., 1997) it is depicted in table 2.2.

Table 2.2

*Number of participants engaged in any kind of self-injurious behaviour in the past year*

<b>Self-Injurious Behaviour</b>	<b>Any SIB (past year)</b>	<b>No SIB (past year)</b>
<b>No. of participants</b>	78	613
<b>Percentage</b>	11.48	88.57

From table 2. 2 it can be seen that, there were two groups of participants in phase I: individuals with ‘any SIB’ and ‘no SIB’ in the past year. Among total 78 individuals reported engaging in any kind of SIB and 613 individuals did not report any SIB in the past year. All 78 participants with SIB underwent a structured clinical interview (APA, 2013) to examine the clinical characteristics of individuals to know whether they fulfil the criteria of non-suicidal self-injurious behaviour of DSM-5. Among the 78 participants with SIB, 14 had non-suicidal self-injurious behaviour (NSSIB), but not fulfilling all the criteria for Non suicidal self injurious disorder (NSSID). They were selected for the Phase II intervention study.

## **PHASE II (INTERVENTION STUDY)**

### **Phase II: Research Design**

In the phase II intervention study, a quasi-experimental research design of one-group pre-post-test with an extended group was used. One group, the pre-test - post-test design measures scores before and again following treatment and then compares the difference between pre-test and post-test scores. The index study has an extended group in which a follow-up assessment was performed with the experimental group after 6 months of the treatment program. The pre-test was performed as a baseline assessment; the post-intervention intervention test was performed after 4 months when treatment was completed. Here, dialectical behaviour therapy is the independent variable and non-suicidal self-injury, emotion regulation, and psychological well-being are the dependent variables.

### **Participants**

The participants for the intervention study consisted of young adults with non-suicidal self-injurious behaviour as per the criteria of non-suicidal self-injurious disorder in DSM-5. They were selected from different outpatient clinics in South Kerala (Thiruvananthapuram, Kottayam, and Ernakulam districts) conveniently and participants selected by random sampling. Participants who fulfilled the inclusion and exclusion criteria and who were ready to give written informed consent (Appendix II) were allotted for the study. These cases were referred by psychiatrists, neurologists, general physicians, clinical psychologists, and college teachers. Despite the availability of multiple clinics and community settings for data collection, ethical considerations and the urgent need for attention in this specific population prompted the investigator to focus on three specific clinics.

***Inclusion criteria***

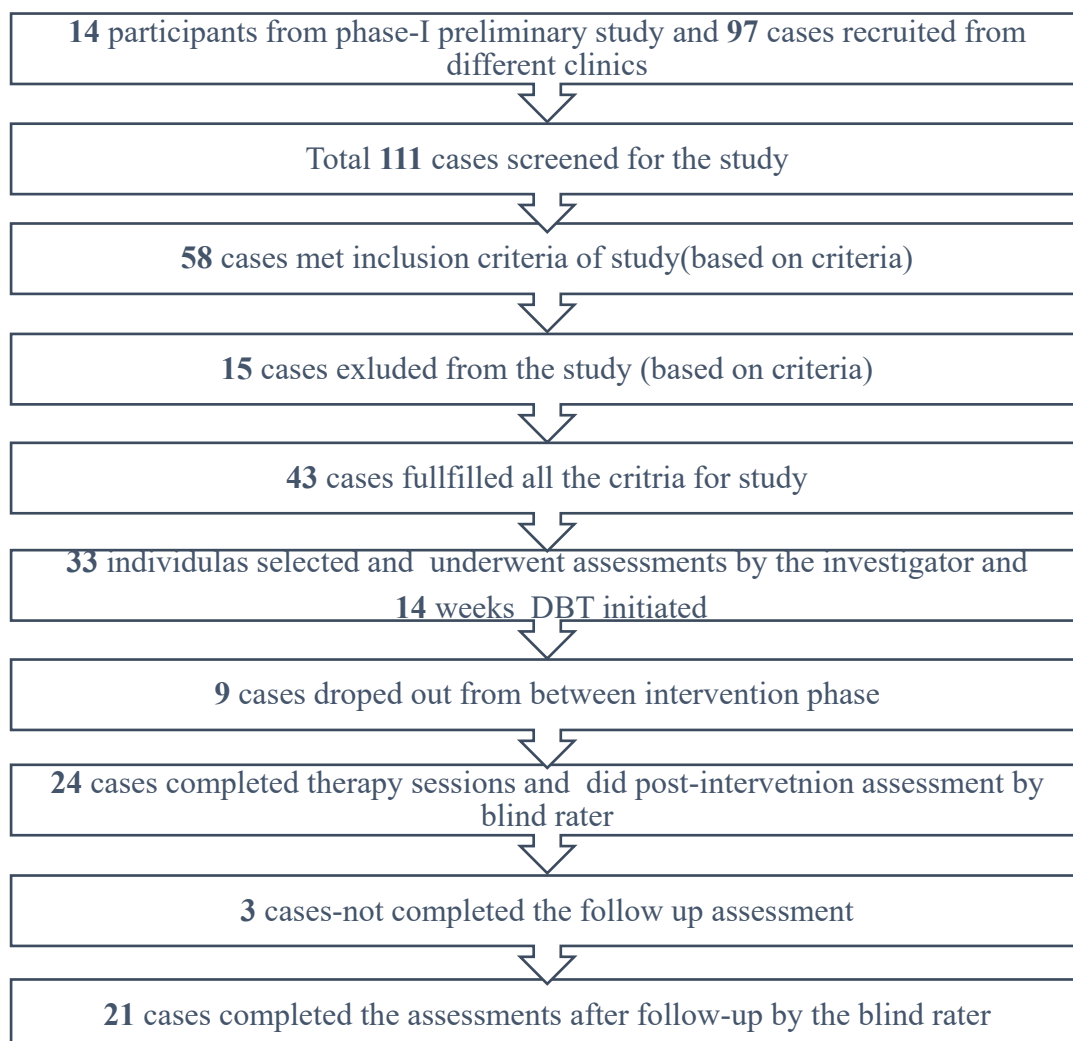
1. Participants identified with non-suicidal self-injurious behaviour according to DSM-5 (APA, 2013) with any NSSIB within the duration of the past four months.
2. Young adults specified an age range between 19 and 30 years.
3. Has not received any psychological intervention in the past.
4. Not taking medication for any chronic physical illness, psychosis or mood disorders or those who are on a stable medication.
5. Participants required an adequate understanding of English

***Exclusion criteria***

1. Comorbid psychosis, moderate or severe depression, bipolar disorder, and alcohol or substance abuse or dependence.
2. Significant medical or neurological disability or disorders.
3. Intellectual disability or any significant medical or neurodevelopmental disorder as per history.

Finally, 21 young adults with NSSIB completed 14 weeks of Dialectical Behaviour Therapy based on Emotion regulation and follow-up assessment after 6 months. Figure 2.2 provides a detailed depiction of the data collection process.

Figure 2.2

*Flow chart of participants in the intervention study*

14 cases with NSSIB were taken from Phase-I of the study. Additional 97 cases were referred by healthcare professionals from different clinics resulting in a total of 111 cases with any self-injury screened for the study. Other cases were referred to mental health professionals or centres where they found comfort and made sure of their follow-ups after informing the primary referral centre. Emergency clinical services and confidentiality was assured as enshrined in the mandate on ethical guidelines in all cases. A detailed interview was conducted with each case by the researcher. Out of these total, 58 cases met the for criteria of non-suicidal self injurious behaviour as per

DSM-5(APA, 2013). Among the 58 cases that met the inclusion criteria, four cases needed high-risk management due to the presence of suicide ideation and five were with comorbid conditions. Among these, 6 cases were not ready to provide written informed consent 43 were left with fulfilling all inclusion and exclusion criteria and ready for giving informed consent. Finally, 33 cases were selected for the study. The present study could not keep a control group due to ethical concerns, the need for emergency intervention, and the effectiveness of DBT well written in the literature. After getting written informed consent, confidentiality, freedom to withdraw from study, referral facilities, follow-up concerns and DBT contract 33 cases proceeded with the 14-week intervention after baseline assessment. However, during the study, there were dropped-out cases as several participants encountered obstacles such as difficulties in attending sessions due to migration to another country and place, job changes, family obligations, and pregnancy. Consequently, the number of participants available for follow-up assessment was reduced to 21 individuals. Finally, 21 young adults with NSSIB completed 14 weeks of dialectical behaviour therapy based on emotional regulation and follow-up assessment after 6 months.

### **Instruments**

In this study, assessments were conducted using the Deliberate Self-Harm Inventory-Clinical Version I & II (Gratz, 2001), the Cognitive Emotion Regulation Questionnaire (Garnefski & Kraaij, 2001), and Ryff's Scale for Psychological Well-Being (Ryff, 2007) to comprehensively evaluate various aspects relevant to the participant's mental health and well-being in the three stages of assessment. Details are given below.

***Pre-intervention assessment***

1. Deliberate Self-Harm Inventory, Clinical Change Version I (Appendix IX)
2. The Cognitive Emotion Regulation Questionnaire
3. Ryff's Scale for Psychological Well-Being

**Deliberate Self-Harm Inventory: Clinical Change Version I**

The Deliberate Self-Harm Inventory (DSHI) developed by Gratz in 2001 is a comprehensive tool comprising 17 items designed to assess intentional self-harm behaviors. It focuses on behaviors where individuals deliberately and directly alter or damage their body tissue without a conscious suicidal intent but resulting in tissue damage. The inventory provides a structured evaluation of various aspects of intentional self-harm, including the frequency, severity, duration, and types of behaviors involved. The first section of the DSHI involves a categorical assessment of specific self-injurious behaviors, using a yes/no format to identify instances of direct tissue destruction. The second section delves deeper into the frequency, severity, and duration of these behaviors, providing a more nuanced understanding of the extent and impact of intentional self-harm.

Two variables were developed using data taken from the DSHI to obtain preliminary psychometric data for the test. A continuous variable was developed to assess the frequency of self-harm behaviour that was reported. A composite variable was formulated to encapsulate the overall frequency of self-harm behaviors, encompassing responses from all 17 items of the Deliberate Self-Harm Inventory (DSHI). This involved summing up participants' responses to frequency-related questions for each item, including item 17, which was recognized as indicative of

deliberate self-harm behavior. The DSHI has been translated into various languages, including Italian, Swedish, German, Dutch, and Iranian.

### ***Reliability and Validity***

Previous findings suggest that the Deliberate Self-Harm Inventory (DSHI) exhibits internal consistency, demonstrating reliability across its items. Additionally, the inventory shows promising construct validity, converging with related measures as expected, and effectively discriminating between distinct constructs. Moreover, the DSHI displays satisfactory test-retest reliability, indicating its stability over time. The English version of the DSHI, originally tested among young adults in the United States, demonstrates good internal consistency and test-retest reliability, as well as adequate construct, convergent, and discriminant validity (Gratz, 2001). The DSHI has good internal consistency (Cronbach's alpha = .795) and 4-week test-retest reliability ( $r = .786, p < .01$ ). DSHI was previously used in young adults in one Indian study (Gupta et al., 2019). In this study, Cronbach's Alpha was 0.78, showing acceptable internal consistency.

### ***Post-intervention and follow-up phases***

1. Deliberate Self-Harm Inventory- Clinical Change Version –II (Gratz, 2001)  
(Appendix X)
2. Cognitive Emotion Regulation Questionnaire
3. Ryff's scale for Psychological Well-being

### **Deliberate Self-Harm Inventory: Clinical Version II**

Deliberate Self-Harm Inventory- Clinical Change Version II (DSHI-II) is a different version of the Self-Harm Inventory used to assess symptoms since the last

assessment. The scale used in post-assessment and follow-up assessment after the intervention programme.

**Cognitive Emotion Regulation Questionnaire** (Garnefski & Kraaij, 2001)

The questionnaire is the same as that used in Phase I

**Ryff's Scales of Psychological Well-Being** (Ryff, 2007)

The questionnaire is the same as that used in Phase I

**The Rationale for the Intervention**

The intervention program for non-suicidal self-injurious behaviour incorporates both psychopharmacological (Libal et al., 2005; Akram, 2015) and psychotherapeutic approaches (Glenn & De Nisco, 2006; Bateman & Fonagy, 2015; Linehan, 2015; Thew, 2018), aiming to reduce self-injury and address underlying psychopathological states. Emphasizing the psychological motivations behind self-injury, the current study particularly highlights emotion regulation based on the existing literature (Glenn et al., 2019; Neacsiu et al., 2014; Voon et al., 2014). Prior research has predominantly focused on group interventions, especially targeting adolescents. Among various intervention programs developed by Linehan and colleagues, Neacsiu's model stands out for its emphasis on emotion regulation, recognizing the intricate link between emotion dysregulation and NSSI. This framework provides a basis to address underlying issues contributing to self-injurious behavior among young adults.

Cognitive emotion regulation emerges as a significant factor, with short-term individual sessions of dialectical behaviour therapy (DBT) proposed as a promising avenue for reducing self-harm and enhancing psychological well-being. Effectiveness of DBT, especially among young adults within the Indian context, remains relatively unexplored. To address this gap, the study aims to evaluate the effectiveness of an

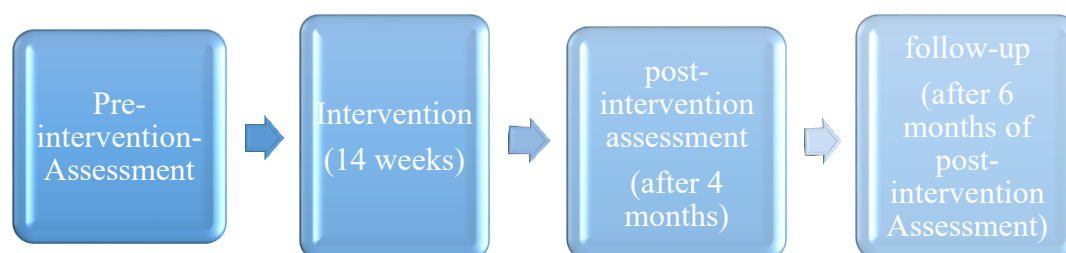
intervention program for young adults in Kerala. Recognizing the convenience of shorter therapy durations, the study implements a 14-week training program based on Neacsiu's Adult Dialectical Behavior Therapy, with a specific focus on emotion regulation skill training according to Linehan's principles (2015), aiming to enhance psychological well-being in this population.

### **Procedure for Phase- II Intervention Study**

The flow chart for the intervention is depicted in Figure 2.3

Figure 2.3

*Flow chart of the Procedure - Phase-II Intervention Study*



After selecting the participants of the study, written consent was obtained from all participants (Appendix II), a contract was made for the intervention and the participants completed the personal data sheet (Appendix IV) and baseline (pre-intervention) assessment using Deliberate Self Harm- Clinical change version I. After that, the assessment was done on the Cognitive Emotion Regulation Questionnaire and Ryff's scale for Psychological Well-being individually.

The researcher, a licenced Clinical Psychologist under the supervision of an experienced DBT practitioner, provided treatment intervention. As part of achieving proper training in DBT, the researcher attended different programs on Dialectical Behaviour Therapy, including Basic and Advanced supervised DBT (certificate attached- Appendix XII) from expert Dr Teslin Joseph, trained at Behaviour Tech,

CA, and five different short-term training programme/workshops online and offline. Regular follow-up for research and theoretical support from Behaviour Tech, CA-Pioneers in DBT training under Marsha Linehan. Peer team review with DBT Practitioners and supervised DBT therapy sessions continued till the end of the investigation.

Participants received weekly individual therapy sessions for three months, followed by fortnightly sessions for one month, a total of four months. The post-intervention assessment took place after a four-month Dialectical Behavior Therapy period. DSHI Clinical Change Version II, CERQ, and SPWB were used for assessment by the blind raters selected for the study. The blind raters were psychologists who completed M.Sc. Clinical Psychology/Counselling Psychology and trained in clinical practices with sufficient experience in handling clinical cases. Blind raters were unaware of the participants' intervention status. After 6 months of post-intervention assessment, at the end of follow-up, DSHI Clinical Change Version II, CERQ, and the scale of PWB were repeated with 21 participants by different blind raters.

Dialectical Behaviour Therapy based on Emotion Regulation includes 14 weeks of intervention, which was supervised, and each patient received 14 sessions of 90-minute duration therapy, each delivered over 4 months. Adapted DBT (Appendix- V) contract made with each participant after explaining all the protocols for intervention before starts therapy. The intervention started with psychoeducation to develop an understanding of self-injurious behaviour and emotion regulation phenomena from cognitive and behavioural perspectives. Each patient was educated about the different aspects of self-injurious behaviour and the function of self-injurious behaviour and was also expected to target the thoughts often associated with this behaviour.

Each session of the intervention programme began with an evaluation of the participant's current level of stress and urges to self injury, any suicidal thoughts or interpersonal conflicts. Before moving on, the researcher and participant discussed strategies they could use to manage distress that might arise during or after the assessment. The 14-week intervention is depicted clearly in Table 2.3

Table 2.3

*A 14-Week Intervention Programme DBT for the Study*

<b>14 Weeks of Neacsiu Adult DBT Emotion Regulation Skill Training</b>			
<b>2 Weeks orientation, Mindfulness Skills</b>			
<i>“Wise Mind Observe</i>	Week 1	M1 M2	<ul style="list-style-type: none"> <li>• Wise Mind</li> <li>• Taking hold of your mind: Mindfulness “What skills”</li> </ul>
<i>Describe, Participate, Non-Judgmentally, One mindfully, and effectively</i>	Week 2	M2 M3	<ul style="list-style-type: none"> <li>• Taking hold of your mind: Mindfulness “What skills”</li> <li>• Taking hold of your mind: Mindfulness “What skills”</li> </ul>
<b>6 weeks of emotional regulation skills</b>			
<i>Understand, identify, and label emotions</i>	Week 3	ER1 ER 2 ER 3 ER 4 ER 5 ER 6	<ul style="list-style-type: none"> <li>• Goals of emotional regulation</li> <li>• Overview: Understanding and naming emotions</li> <li>• What do emotions do for you?</li> <li>• What makes it difficult to regulate your emotions?</li> <li>• describing emotions</li> </ul>
<i>Checking the facts</i>	Week 4	ER 7 ER 8	<ul style="list-style-type: none"> <li>• Overview: Changing emotional responses</li> <li>• Checking the facts</li> </ul>
<i>Opposite action</i>	Week 5	ER 9  ER10	<ul style="list-style-type: none"> <li>• Opposite action: How to change unwanted emotions</li> <li>• Figuring out the opposite action</li> <li>•</li> </ul>
<i>Problem-solving Cope ahead and PLEASE</i>	Week 6	ER11 ER12	<ul style="list-style-type: none"> <li>• Problem-Solving</li> <li>• Reviewing opposite actions and problem-solving</li> </ul>

<b><i>Accumulating positives and Building Mastery</i></b>	Week 7	ER 13	<ul style="list-style-type: none"> <li>• Accumulating Positive emotions in short form and long-term</li> <li>• Building mastery and coping ahead</li> </ul>
<b><i>Cope ahead and PLEASE</i></b>	Week 8	ER 14	<ul style="list-style-type: none"> <li>• Building Master and cope ahead by taking care of your mind and body</li> </ul>
<b><i>1 week review of Mindfulness</i></b>			
<b><i>Wise mind: Observe; Describe; participate; Nonjudgmentally; One-mindedly; effectively</i></b>	Week-9	M 3 M 4	<ul style="list-style-type: none"> <li>• Wise mind</li> <li>• Taking hold of mind: Mindfulness ‘what’ skills</li> <li>• Mindful “How” skills</li> </ul>
<b><i>4-week Distress Tolerance skills</i></b>			
<b><i>TIP skills</i></b>	Week-10	DT 1	<ul style="list-style-type: none"> <li>• TIP Skills; Changing body Chemistry</li> </ul>
<b><i>Distracting, Self – soothing, Improving the moment</i></b>	Week-11	DT 2 DT 3 DT 4	<ul style="list-style-type: none"> <li>• Distracting</li> <li>• Self-Soothing</li> <li>• Improving the moment</li> </ul>
<b><i>Radical Acceptance; Turning the Mind</i></b>	Week-12	DT 5 DT 6 DT 7	<ul style="list-style-type: none"> <li>• Distracting</li> <li>• Self-Soothing</li> <li>• Improving the moment</li> </ul>
<b><i>Willingness; Half-Smiling; Mindfulness of thoughts</i></b>	Week-13	DT 8 DT 9 DT 10	<ul style="list-style-type: none"> <li>• Willingness</li> <li>• Half-Smiling and Willing Hands</li> <li>• Mindfulness of Current Thoughts</li> </ul>
<b><i>One week Interpersonal Effectiveness of Skills</i></b>			
<b><i>DEAR MAN, GIVE FAST; Interpersonal Validation; Behaviour Principles in Relationship</i></b>	Week-14	IE 1 IE 2 IE 3 IE 4 IE 5 IE 6 IE 7 IE 8	<ul style="list-style-type: none"> <li>• Guidelines for Objective Effectiveness (DEAR MAN)</li> <li>• Guidelines for Relationship Effectiveness: Keeping the Relationship(GIVE)</li> <li>• Guideline for Self-respect</li> <li>• Keeping respect for self (FAST)</li> <li>• Validation” (Linehan, 2015)</li> </ul>

*Adapted from (Linehan, 2015b), Skill training Manual*

**14 Weeks of Neacsiu Adult DBT Emotion Regulation Skill Training by Linehan, 2015)**

The 14 weeks of therapy include two weeks of orientation with practicing mindfulness skills, six weeks of emotional regulation skills, one week of review of mindfulness, four weeks of distress tolerance skills and one week of interpersonal effectiveness skills. The initial stage of therapy psychoeducation and session with family members were conducted.

“In the first week, Mindfulness was introduced with breathing exercises and explained the concepts of wise mind, rational mind, and emotional mind. The emotional mind involves impulsive actions without thinking the facts or reason, while the reasonable mind prioritizes knowledge and intellect. The wise mind as the middle path integrates both reason and emotion avoiding judgment. The wise mind uses some inputs from the emotional mind and some inputs from the rational mind. It adds intuitive knowing, focuses on getting things done and experience, and does not judge. Then, the therapist teaches the participants to develop wise mind skills by observing the events even when they are painful and not prolonging them when they are painful. Again describes the events, labels emotions, and identifies thoughts behind participating but entering completely into the activity of the moment. The therapist tries not to be self-conscious, being spontaneous, and giving attention to the activity. After that give an activity that describes one or two situations and note down unpleasant emotions in the emotional mind, thoughts that occurred in the logical mind, and the wise mind’s action to bring both the emotional and logical mind together and add intuitive knowing. Also practice observation skills by writing experiences, labelling them, and stating facts related to events.

In week 2, participants are taught to develop wise mind skills in depth by observing, describing, and participating in events skillfully. The practice involved observing or watching whatever came into awareness without holding onto or pursuing whatever happened to enter. It was a simple act of noticing thoughts, emotions, and sensations, while focusing attention on specific internal or external events. For example, one could focus on deep breathing and pay attention to events, emotions, and thoughts, without terminating them when they were painful or prolonging them when they were pleasant. Allow themselves to experience awareness of thoughts and emotions. Start describing events, labelling emotions, and identifying thoughts, but not taking emotions and thoughts as accurate and exact reflections of events or not labelling or judging. After the training, give an activity chart to write down one or two events in which they could observe, describe, and participate with wise mind skills effectively. Explain what they observed and how it feels to become more aware of life, put words on the experience, label what they observe, unglue from their opinions, and state the facts. Describe the situation in which they decided to participate fully. Next, explain how it feels to become more aware of life.

In the third-week session, the objectives encompassed goals related to emotion regulation, including understanding and naming emotions, recognizing the purpose of emotions, identifying challenges in regulating emotions, and adopting a model for describing emotions. Following two weeks of orientation and mindfulness practices, subsequent sessions focused on applying the emotion regulation perspective to cognitive intrusions across different scenarios. During these weeks, clients received support in enhancing their capacity to recognize, label, and distinguish between various emotional states. There was a specific emphasis on appreciating the functional aspect of primary emotional responses, with clients encouraged to discern the valuable insights

conveyed by their primary emotions and to adopt adaptive strategies based on these insights. This emphasis on the functional aspect of emotions aimed to foster increased emotional acceptance.

Weeks 4 to 7 involved skill training in emotion regulation, changing emotional response, checking the facts, changing unwanted emotions, figuring out opposite actions, problem-solving, accumulating positive emotions in the short and long term, building mastery, and coping ahead while taking care of the mind through caring for the body. These sessions particularly focus on enhancing emotional awareness and clarity. Special emphasis is placed on discerning "what works" and "what does not work" when dealing with self-injurious thoughts. These sessions also highlight the experiential benefits and emotion-regulating consequences of emotional acceptance, along with the potentially paradoxical long-term outcomes of emotional avoidance. Clients are educated about the impact of emotional non-acceptance and avoidance, emphasizing that such practices may intensify emotions and contribute to perceiving emotions as undesirable and negative. A clear distinction is drawn between emotional pain, deemed a necessary part of life, and emotional suffering, which involves secondary emotional responses and unsuccessful attempts at emotional control or avoidance. Clients are instructed that embracing emotional acceptance results in less suffering than emotional avoidance, as it prevents the escalation of emotional arousal, despite not necessarily reducing the primary emotional response.

Week 8 again learning to build Mastery and cope ahead by taking care of mind and body by using **ABC PLEASE** (Accumulating positive emotions, Building mastery of skills; Coping with challenging situations, treating Physical Illness, proper Eating, Avoiding mood-altering substances, Sleep, Exercise) Skills training. It underscores the importance of self-care and reducing vulnerability through several key components.

Accumulating positive emotions involves engaging in activities that bring joy and satisfaction, while **Building mastery** focuses on honing skills and fostering a sense of competence. **Coping ahead** encourages proactive planning to effectively manage challenging situations. **Treat Physical Illness** and take medications as prescribed and **Balance Eating** to avoid mood swings; **Avoid mood-altering substances** and have mood control **Maintain good Sleep** to enjoy life; **Get Exercise** to maintain high spirits.

Week 9 dedicated to repeating the wise mind skills through ‘What’ skills training. The therapist explains how to foster effective living using a non-judgmental, mindful, and outcome-focused approach. Being non-judgmental involves refraining from labelling things as good or bad, right or wrong, and instead concentrating on the consequences of behaviour without passing judgment on oneself or others. Mindfulness encourages the ability to concentrate the mind on the present moment, avoiding distractions from past thoughts and worries about the future, and engaging fully in the current task with open eyes. The principle of effectiveness in DBT underscores the importance of doing what works and not fixating on being "right," but rather directing attention towards achieving the desired outcome in each situation.

From week 10 onwards, skills for distress tolerance were introduced to the participants. The session begins by introducing the TIP (Tip the Temperature, Intense exercise and Paced breathing) skill which serves as a rapid intervention to modify body chemistry and alleviate the impact of overwhelming emotions on thoughts and behaviours. Comprising three techniques, Tip the Temperature involves immersing the face in ice water or applying an ice pack to quickly induce a calming effect. Intense Exercise encourages engaging in vigorous physical activities like running or playing sports to discharge excess energy and restore emotional balance. Paced Breathing guides individuals to slow down their breath, taking deep inhalations into the belly and

exhaling at a reduced pace, promoting a calming effect on the body. These TIP skills provide immediate and effective strategies for individuals to regain control when faced with intense emotional states, allowing them to navigate challenging situations more adaptively.

In weeks 11 and 12, using distraction and self-soothing skills encouraged individuals to engage in activities that brought comfort and pleasure, providing relief from stress without worsening the situation. By focusing on each of the five senses, individuals can find solace. Vision involves appreciating nature's beauty, from sunsets to picturesque landscapes. Auditory soothing includes enjoying music or the calming sounds of the environment. The smell can be indulged through pleasant fragrances, while taste involves relishing favourite foods. The sense of touch is addressed by activities like applying moisturizer or feeling the warmth of the sun. These simple yet effective self-soothing techniques offer a practical way to manage stress and enhance overall well-being. By the end of week 12, the therapist teaches the IMPROVE (Imagery, Meaning, Prayer, One thing at a time, Vacation, Relaxation, and Encouragement) skills, which aim to enhance the current moment by substituting immediate events that trigger negative emotions with more positive actions, thereby rendering the moment more enjoyable and tolerable. The various strategies include imagery, where individuals visualise serene scenes like a beach or mountains; Meaning, which involves finding purpose or significance in daily activities; Prayer, seeking strength from a higher power; Relaxation, achieved through deep breathing, hot baths, or neck massages; Onething at a time; Vacation, taking a break from adult responsibilities with a walk in nature; and Encouragement, utilising positive affirmations to uplift oneself. By incorporating these techniques, individuals can

actively improve their emotional state and navigate challenging moments more effectively.

In week 13, learning willingness is deemed essential, requiring a commitment to engage in the programme, complete assignments, and apply acquired skills for it to be effective. Willingness, as outlined by Marsha Linehan, involves accepting one's connection to a broader world, approaching challenges with an open mindset, and focusing on effectiveness guided by the Wise Mind. After that, participants train for half-smiling skills, in which they find a quiet place where they can focus on the challenging event undergoing currently, loosening the muscles in their face, spanning from their forehead to their jaw and chin, and forming a slight upward curve with your lips, creating a subtle half-smile. "Willing Hands" refers to the practice of adopting an open body posture. Merely uncrossing our arms or releasing our clasped hands can signal to our brain that we are in a secure environment, as an open posture contrasts with a defensive stance. To enhance this effect, we can extend the gesture by turning our palms upward. By the end of week 13 again practice mindfulness. It is an ongoing process that requires practice and commitment to foster a mindset that embraces challenges with grace and openness.

In Week 14, sessions focused on interpersonal effectiveness skills, covering guidelines for objective effectiveness, relationship effectiveness, and maintaining self-respect and validation. The emphasis was on asserting needs, expressing opinions, and negotiating respectfully while balancing assertiveness and flexibility to navigate interpersonal interactions successfully.

DEARMAN (Describing the situation, Expressing feelings, Asserting needs, Reinforcing positive outcomes, being Mindful of goals, Appearing confident, and

Negotiating solutions) is a crucial interpersonal communication tool aimed at effectively expressing needs and maintaining healthy relationships.

The FAST (be Fair, no Apologies, stick to Values, be Truthful) skill, a crucial component of communication, empowers individuals to uphold their self-respect while engaging in interactions. Fostering fairness, avoiding unnecessary apologies, staying true to values, and being truthful are the cornerstones of navigating fast-paced environments. Fairness ensures impartial treatment, while the avoidance of unnecessary apologies keeps progress uninterrupted. Sticking to values maintains integrity amidst pressure, and truthfulness fosters credibility and effective communication. These principles, abbreviated as FAST, provide a robust framework for success in dynamic contexts.

The GIVE (be Gentle, act Interested, Validate, use an Easy manner) skill, crucial for nurturing healthy relationships through effective communication, encompasses four key components: being Gentle, acting Interested, Validating, and using an Easy manner. To be Gentle, one must maintain a respectful and non-confrontational approach, avoiding aggression or manipulation while expressing emotions calmly and directly. Acting Interested involves active listening, displaying genuine curiosity in the other person's perspective, and being patient and attentive without interrupting. Validating entails acknowledging and understanding the other person's feelings and thoughts, and demonstrating empathy and respect for their viewpoint, even if it differs from one's own. Lastly, using an Easy manner involves employing humor, light-heartedness, and a soft approach to ease tensions, build rapport, and avoid confrontations, leaving judgment and attitudes aside to foster constructive dialogue and understanding” (Linehan, 2015).

In therapy sessions, the therapist focuses on identifying and addressing individuals' adaptive and non-adaptive strategies using the Cognitive Emotion Regulation Questionnaire. Emphasis is placed on skill generalization, with regular homework assignments considered essential. Clients complete daily monitoring forms focusing on emotional triggers for self-harm urges and the consequences of their behaviour. Daily monitoring forms are customized for each module, covering tasks like identifying emotions, distinguishing between primary and secondary emotions, and recognizing the consequences of emotional responses. Worksheets and handouts specific to each module are provided to participants for further support and understanding.

### **Ethical Considerations**

Exploring suicidal behavior and various forms of self-harm presents numerous ethical challenges that warrant careful consideration. All participants in the intervention were required to provide written informed consent before inclusion. Participation was voluntary, and participants were free to quit the study at any time. They were also assured of their right to withdraw from the study at any point, with the understanding that treatment would still be available to them regardless of their study involvement. Confidentiality of the information was maintained.

A Human Ethical Committee Clearance Certificate was obtained for the study from the University of Calicut (Appendix XI). As the Human Ethical Committee was not constituted at the university in 2019, approval from the Research Ethical Committee of the Research Centre was obtained. The synopsis of the study was approved by the Research Advisory Committee of the University of Calicut. The investigator was responsible for obtaining informed consent and ensuring that the participants fully

understood their involvement. There was a provision for appropriate referrals for individuals who needed and sought help. A therapeutic agreement was established before starting the intervention. In addition, the involvement of any trusted family members or primary caretakers (such as parents or spouses) was discussed regarding the participant's participation in the intervention programme. This discussion emphasized psychoeducation about the importance of supervision in managing any urges for self-injury. If a participant was deemed at imminent risk of suicide, appropriate safety measures and referrals were initiated. All safety protocols and outcomes were meticulously documented in the patient's clinical records. Participants were informed about the Dialectical Behaviour Therapy programme and were given voluntary invitations to participate. Dropouts were reminded of appointments and the importance of continuing treatment via phone or letter. Treatment was resumed upon their return, even if they were no longer part of the study.

The programme adhered to national suicide prevention guidelines (World Health Organization, 2014). All assessment staff were trained in conducting face-to-face assessments, with clear guidelines on confidentiality in case of high scores on such assessments. The investigator maintained strict confidentiality regarding results, using them solely for academic purposes if needed.

### **Statistical Analysis**

Collected data were entered into an Excel spreadsheet in anonymous coded form. Then, the data were analysed with SPSS V22 (Statistical Package for Social Science Researchers- Version 22) software. There were 691 samples of data for the final analysis of the Phase-I study: Descriptive statistics, namely frequency, percentage,

mean, and standard deviation, were calculated for the characteristics, methods, and frequency of self-injurious behaviour among young adults in Kerala.

- The data were checked for normality by using Kolmogorov- Smirnov test.
- The chi-square test was used to examine the association between sociodemographic variables in young adults with and without a history of self-injurious behaviour in the past year.
- The Mann–Whitney U test was used to determine the difference in Cognitive Emotion Regulation strategies and psychological well-being dimensions between two groups of young adults with and without self-injurious behaviour.
- Spearman correlation coefficient was used to assess the relationship between the variables of cognitive emotion regulation and psychological well-being.
- Linear regression analysis was used to determine the factors contributing to Cognitive Emotion Regulation strategies in dimensions of Psychological Well-being.
- Binary logistic regression analysis was performed to predict self-injurious behaviour (last Year) for cognitive emotion regulation strategies and psychological well-being sub-variables.

There were 21 samples for the final data analysis in the Phase II intervention study.

- Descriptive analysis and normality testing were performed using the Shapiro-Wilk test.
- The Friedman test was used to determine the significant difference between pre, post and follow-up measures for non-suicidal Self-injurious behaviour, all strategies of cognitive emotion regulation, and dimensions of psychological well-being in the three stages of assessment.

- Pairwise comparison on Post-hoc analysis with Wilcoxon signed-rank tests was conducted with Bonferroni correction.

The results of the analysis are discussed in the next chapter.

**CHAPTER-III**  
**RESULTS AND DISCUSSION**

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The results of the data analysis are presented and discussed in this chapter. Results are discussed in different sections based on objectives and proposed hypotheses. To assess the proposed hypothesis data analysis by different statistical methods such as the Chi-square test, Man Whitney U test, Correlation analysis, Regression analysis and Friedman test were carried out by using SPSS V22 (Statistical Package for Social Science).

The primary goal of the current study was to assess the efficacy of an intervention programme, Dialectical Behaviour (DBT) Therapy in young adults with Non-Suicidal Self-Injurious Behaviour (NSSIB). A preliminary study was undertaken to explore the characteristics of NSSIB in the young adult population and establish relationships between different variables by formulating hypotheses. Descriptive analysis was employed to enhance the statistical interpretation of the data, revealing measures of central tendency, dispersion, skewness, and kurtosis. A test for normality was conducted to understand the distribution of variables. Inferential statistics was used to test hypotheses using various statistical techniques to draw conclusions and provide answers to research issues. A sectional presentation of the results follows the sequence in which the proposed hypothesis is based on research questions and objectives in two phases of the study.

### **Phase I -Preliminary Study**

**Section I: *Part A*** - Assess the prevalence, characteristics and reasons for SIB

***Part B*** - Association between sociodemographic variables and SIB.

**Section 2:** Descriptive analysis and normality testing of variables and sub-variables.

**Section 3:** Comparison of psychological variables between the two groups.

**Section 4:** Relationship between different variables and sub-variables

**Section 5:** Determine the predicting factors of self-injurious behaviour and psychological well being

**Phase II –Intervention Study**

**Section 6:** Impact of Dialectical Behaviour Therapy on Non-Suicidal Self-Injurious Behaviour.

**Section 7:** Impact of Dialectical Behaviour Therapy on Cognitive Emotion Regulation.

**Section 8:** Impact of Dialectical Behaviour Therapy on Psychological Well Being

**PHASE I- Preliminary study**

In Phase I, Section 1 was divided into two parts, Part A and Part B. In Part A, Descriptive Statistics, frequencies and percentages were used to assess the prevalence, characteristics and reasons for self-injurious behaviour. In Part B, The Chi-Square test was carried out to assess the association between sociodemographic variables. In Section 2, descriptive analysis and normality testing of all variables and sub-variables by using Kolmogorov-Smirnov test. In section 3, the Mann-Whitney U test was employed to compare psychological variables between the two groups. In Section 4, Correlation analysis was performed to determine the relationship between different variables and sub-variables in research. In Section 5, Linear Regression analysis and Binominal Regression analyses were conducted to determine the predicting factors of self-injurious behaviour and PWB among young adults.

**Section 1(Part A): Frequency, characteristics, and functions of self-injurious  
behaviour**

Based on Self-Injurious Behaviour (SIB) present in the past year, participants divided into two groups those who engaged in such behaviours and those who did not engage in such behaviours in the past year, denoted as ‘Any SIB’ and ‘No SIB’. From

table 2.2 (Method Chapter) it can be observed that 78 participants were in the ‘Any SIB’ and 613 participants in ‘No SIB’ group, the corresponding percentages depicted clearly in figure 3.1.

Figure 3.1

*Number of participants engaged in any kind of Self-Injurious Behaviour in the past year*

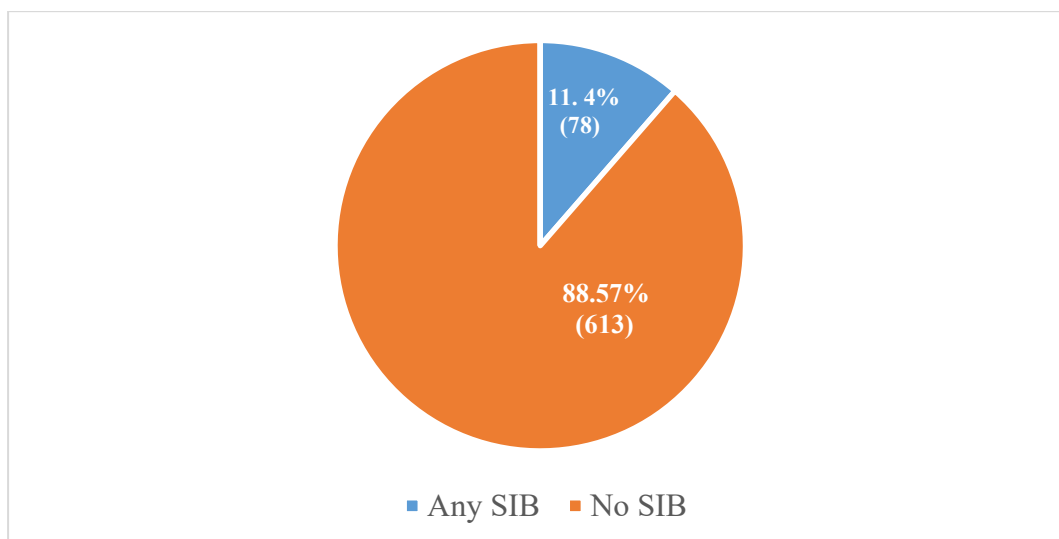


Figure 3.1 offers a clear snapshot of the prevalence of self-injurious behaviour based on the Functional Assessment of Self-Mutilation (FASM), providing insights into its distribution within the studied population. The figure reveals that 11.43% (n=78) reported engaging in any self-injurious behaviour while the majority 88.57% (n=613) did not report any self-injurious behaviour in the past year. This presentation highlights the proportions of individuals who reported and did not report SIB offering valuable information on the prevalence within the study population in last year.

Following this specific analysis was conducted on a subgroup comprising 78 participants who disclosed engaging in any form of SIB within the previous year. Descriptive statistics, including frequencies and percentages, were applied to gather objective information regarding the severity, number of methods employed, presence of thought about killing self, duration of thought about self-injury, and the level of pain

experienced during instances within the past year. These findings are presented in the subsequent table 3.1, providing a detailed characteristic associated with SIB within this subset of participants.

Table 3.1

*Characteristics, Method and Percentage of the Group with Any Self-Injurious*

*Behaviour in Past Year (n=78)*

<b>Characteristics</b>	<b>Methods</b>	<b>No. of participants</b>	<b>Percentage (%)</b>
<b>Severity of SIB</b>	Severe/moderate SIB	48	61.55
	Minor SIB	30	38.45
<b>Methods of Moderate or severe SIB</b>	Erased skin	24	30.7
	Burned skin	2	2.5
<b>Method of Minor SIB</b>	Self-hitting	20	25.6
	Self tattoo	2	2.5
	Scraped skin	1	1.2
<b>Number of Methods</b>	Wrist cut	28	35.8
	Pulled Hair out	8	10.2
	Picked at the wound	1	2.5
	Objects under nail	2	2.5
	Bite self	15	19.2
	Picked body areas to draw blood	2	2.5
	Single method	44	56.46
<b>Thought about killing self</b>	Multiple methods	34	43.54
	No	68	87.1
<b>Duration of thought before the act</b>	Yes	10	12.8
	None	3	3.78
	Few Minutes	55	70.5
	>1 hour	15	19.2
	1 day to one week	5	64.1
<b>Experience of pain during SIB</b>	<one week	1	1.7
		8	8.7
	No pain	56	71.7
	Little pain	15	19.2
	Moderate pain		

From Table 3.1 we can see that 61.55% of the sample reported engaging in moderate/severe forms of SIB, and 38.45% of the individuals reported using only minor methods of self-injury. SIB is categorized into moderate/severe SIB and minor SIB, along with their respective frequencies. In cases of moderate or severe SIB, individuals most commonly engaged in wrist cutting, accounting for 35.8% of reported instances. Erasing the skin also emerged as a notable method, with a frequency of 24 (30.7%) instances. Following this, self-hitting was prevalent, representing 25.6% of cases. Other methods such as burning the skin, self-tattooing, and scraping the skin, had lower frequencies, ranging from 1.2% to 2.5%. For minor SIB, pulling hair out and biting oneself were the predominant methods, comprising 10.2% and 19.2% of cases, respectively. Less common methods included picking at the wound, inserting objects under the nail, and picking body areas to draw blood, each accounting for 2.5% of cases. Participants in both severity groups endorsed either a single method (56.46%) or multiple methods (43.54%). 12.8% acknowledged having thoughts about killing self but the majority of participants (87.1%) reported not having such thoughts. The majority of those endorsing SIB (71.7%) reported feeling little pain, whereas 19.2% reported experiencing moderate pain by self-injury while only a small percentage (8.7%) reported no pain.

From figure 3.1, overall, 11.4% ( $n = 78$ ) of the young adults in this sample reported engaging at least one incident of self-injury in the previous 12 months considered as the prevalence of SIB. The findings from the study shed light on the prevalence of SIB among young adults in Kerala. Previous results involving adolescents and young adults range from 5.5% to 46.5%, approximately (Csorba, et al., 2005; Lloyd- Richarson, Perrine et al., 2007), which is incredibly broad range. A significant challenge in comparing prevalence across various studies is the

methodological frameworks, which include sampling, tools, and time frames such as lifetime prevalence, 12-month prevalence, or 6-month prevalence. Behavioural checklists, like FASM (Functional Assessment of self-mutilation) by Lloyd-Richarson, Kelly and Hope et al. (1997), tend to elicit higher prevalence rates (Muehlenkamp, Claes et al., 2015). A selection of studies using the scale FASM (used in the current study) reported 12-month prevalence rates of 36% and 31.2% by Hilt et al. (2008) and Yates et al. (2008) respectively, 46.5% among adolescents in grades 9-12 (Richarson et al., 2007), 31.2% among Indian college youth aged 17-22 years (Kharsati, 2013); and 33.6% among Chinese adolescents aged 10-18 years (Tang et al., 2013). The disparities in reported rates of self-injurious behaviour (SIB) stem from variations in terminology and definitions (Muehlenkamp et al., 2012). Cutting or carving words skin and self-hitting emerged as the most popular moderate/severe method, consistent with prior research us studies (Hasking, Momeni et al., 2008; Kharsati, 2013; Klonsky & Muehlenkamp, 2007; Lloyd-Richarson et al., 2007). Cutting or carving is done with a blade or safety pins are common. Self-biting and self-hitting (usually hitting head or hitting leg on walls) were the most common mild self-harm behaviours also seen in previous literature (Kharsati, 2013). While present study adopts a broad definition encompassing both mild and severe forms, some research focuses solely on severe behaviours. Additionally, self-report measures may be subject to misinterpretation, and certain behaviours like hair pulling may not be significant forms of self-injury.

The majority of participants reported not having thoughts about killing themselves, while few acknowledged having such thoughts. However, a few cases reported thoughts about killing oneself during self-injury, the presence of thoughts about killing oneself among individuals with SIB is a complex issue. While indicative of potential suicidal ideation, reflects the multifaceted nature of self-harm as a coping

mechanism. Studies by Hawton et al. (2016) and Klonsky (2007) highlight the prevalence of suicidal ideation among those engaging in self-injury, suggesting a significant risk factor for potential escalation. However, research by Andover, Pepper, and Gibb (2007) indicates that for some individuals, thoughts about killing oneself may primarily serve as a maladaptive coping strategy rather than a direct expression of suicidal intent. Recognizing the importance of this distinction of thought about killing self, as the immediate intervention and management of such behaviour, they were advised to receive mental health professional help where they have easy approachability. Even though it may arise from some psychological reasons, due to such reasons and ethical considerations, the inclusion of a control group in a phase 2 study was not feasible. Understanding this distinction is crucial, as emphasized by Klonsky, Victor and Shaffer (2014) to plan interventions effectively and address the underlying psychological distress while providing alternative coping strategies.

The majority had thoughts of SIB for a few minutes (70.5%) while others reported thoughts lasting from one day to one week indicating a relatively impulsive pattern of engaging in SIB. The brief durations of thought about SIB among young adults with SIB lasting only a few minutes, suggest inherent impulsivity, consistent with existing research indicating impulsive tendencies among those who engage in SIB (Nock & Favazza, 2009). This reflects a spontaneous response to distressing emotions or situations, with individuals resorting to self-injury as a coping mechanism in the heat of the moment. The finding highlight the importance of interventions targeting emotion regulation and coping skills in reducing impulsivity and self-injurious acts in the future. Research by Palmer et al. (2019) has shown that individuals engaging in SIB often struggle with emotion regulation difficulties, contributing to the impulsive nature of their actions, as demonstrated by Nock (2009). Interventions such as Dialectical

Behavior Therapy (DBT), developed by Linehan et al. (2006), and Skills Training in Affective and Interpersonal Regulation outlined by Cloutier et al. (2010), target emotion regulation skills and adaptive coping strategies, showing promise in reducing impulsivity and self-injury. Moreover, meta-analysis by Hawton et al. (2016) revealed that interventions incorporating elements of cognitive-behaviour therapy (CBT) and DBT were effective in significantly reducing self-injurious behavior. These findings emphasize the critical role of interventions focusing on emotion regulation and coping skills in addressing impulsivity and preventing future self-injurious acts. Among the young adults reported SIB, majority of them not experience pain during the self-injury even if it is severe or minor. Theories on reduced pain sensitivity in self-injury include elevated endorphin levels, habituation from abuse, or the release of endogenous opioids (Nock, 2009). Hooley et al. (2020) related pain endurance to self-critical cognitive styles and Groschwitz and Plener (2012) suggested insufficient stress response.

Understanding the motives behind self-injury is essential for developing effective interventions and support strategies. The present study aimed to explore the reasons based on the Four-Function Model proposed by Nock (2010). Functional Assessment of Self-Mutilation (FASM) scale adapted this model to categorize reasons for self-injurious behaviour which categorizes reasons for self-injurious behaviour into four main functions: automatic negative reinforcement, automatic positive reinforcement, social negative reinforcement, and social positive reinforcement. Table 3.2 categorizes these reasons based on the identified functions and provides a quantitative overview following table.

Table 3.2

*Frequency and percentage of self-reported reasons for SIB as per FASM (N=78)*

<b>Functions</b>	<b>N</b>	<b>%</b>
<b><i>Social Negative Reinforcement</i></b>		
To avoid something unpleasant you don't want to do	22	27.85
To avoid punishment or pay the consequences	1	1.27
To avoid being with people	14	17.72
<b><i>Social Positive Reinforcement</i></b>		
To control a situation	3	3.79
To try to get a reaction from someone, even if it is a pain	1	1.27
To receive more attention from parents or friends	7	8.86
To get parents to understand or notice you	3	3.79
To make others angry	8	10.13
To obtain attention	14	17.72
To get help	6	7.59
<b><i>Automatic Negative Reinforcement</i></b>		
To relieve feeling "numb" or empty	37	46.84
To stop the bad feeling	6	7.59
<b><i>Automatic Positive Reinforcement</i></b>		
Feel something, even if it is pain	58	73.42
To punish oneself	4	5.06
To feel relaxed	8	10.13

From table 3.2 it can be observed that automatic positive reinforcement, is the most prevalent category, includes individuals engaging in SIB to feel something, even if it involves pain (73.42%). Automatic negative reinforcement is prominent, with a significant portion (46.84%) engaging in SIB to relieve feelings of numbness or emptiness. Social negative reinforcement is highlighted by the prevalence of avoiding

unpleasant tasks (27.85%) and evading social situations (17.72%). Social positive reinforcement involves seeking attention from parents or friends (8.86%), making others angry (10.13%), and general attention-seeking behaviours (17.72%). while 7.59% use it to stop bad feelings, 10.13% feel relaxed 10.13%, and 5.06% self-punishment. These findings provide insights into the self-reported reasons for individuals engaging in SIB.

The four-function model (Nock & Prinstein, 2004) classifies the different possible functions of self-injurious behaviour across two opposing aspects: the contingencies being either automatic or social and the reinforcement being either positive or negative. 'Automatic-negative reinforcement' refers use of self-injury to achieve a reduction in tension or other negative affectives. 'Automatic positive reinforcement' captures instances where individuals engage in self-injury to achieve positive internal states. The most prevalent reasons for self-injury by young adults for Automatic positive reinforcement (to feel something, even if it is pain, 73.42%) and for automatic negative reinforcements (to relieve feeling "numb" or empty, 46.84%) indicate internal states of individuals show psychological reasons other than social/environmental reasons. 'social negative reinforcement' captures instances where individuals employ self-injury to avoid or escape undesirable social situations. In contrast, the 'Social positive reinforcement' category encompasses reasons for self-injury associated with seeking positive social outcomes. Perhaps the greatest contribution of this study is the articulation and empirical support for a functional model of self-injurious behaviour. The findings indicate that young adults engage in self-injurious behaviour for a variety of reasons consistent with learning theory. Social reinforcement also plays a significant role although it is less frequently endorsed. Young adults engaging in SIB may initially be more socially isolated, emphasizing

automatic functions over social functions. Clinicians should consider various therapeutic modalities based on the identified function of SIB (Linehan, 1993 & Miller, 1999).

The current phase of research is a preliminary study for planning interventions. The prominence of ‘Feel something, even if it is pain’, indicating self-injury under automatic positive reinforcement likely arises from individuals seeking to alleviate emotional numbness through physical pain, which triggers the release of endorphins for pleasure or relief, while also temporarily diverting attention from overwhelming emotions or intrusive thoughts, revealing the complex interplay between emotional regulation, sensory experience, and coping mechanisms in self-injury. Whitlock et al. (2011) highlighted that females were more likely to self-injure when they get upset with stressful events life. Research conducted by Klonsky (2007) and Nock (2009) has revealed that individuals often describe feeling emotionally numb prior to engaging in self-injury. This behavior may be motivated by a desire to alleviate this numbness by experiencing physical pain. Additionally, studies by Gratz and Gunderson (2007) and Chapman, Gratz, and Brown (2002) suggest that self-injury can lead to the release of endorphins, a neurotransmitter resulting in feelings of pleasure or relief. Furthermore, research by Favazza and Rosenthal (1993) and Nock and Prinstein (2004) indicates that self-injury may serve as a means of distraction from overwhelming emotions or intrusive thoughts.

While recognizing the significance of socio-cultural and life event factors in self-injury, it is pertinent to note that the present study primarily focuses on evaluating psychological factors. However, the inclusion of traditional sociodemographic details is crucial as these variables also play a pertinent role. Nonetheless, the analysis in this study encompasses only a select few of these sociodemographic details.

### **Section 1 (Part B): Comparison of Demographic Variables in groups with Any Self-Injury or No Self Injury**

Demographic variables included for analysis are gender, age group, family type, marital status, educational qualification, and occupation in the total sample selected for the study. The group was divided into two categories depending on the history of SIB in the past year, and formulated the following hypotheses to correspond with the study objectives.

The chi-square test was used to analyse the association between the two variables in two groups. The chi-square test tells us the probability of independence of a distribution of data or in simple terms it will only test whether two variables are associated with each other or not. The chi-square test is a nonparametric statistical test used to examine whether there is an association between two or more groups, populations, or criteria. Since both variables are categorical, the chi-square test was employed and the result is as follows:

Table 3.3 provides a comparison between two groups within different categories regarding the presence of self-injurious behaviour (SIB) within the past year. In each category, the table presents the number (N) and percentage (%) of individuals reporting any SIB (Any SIB) and those reporting no SIB (No SIB). In gender category (52.6%) reported any SIB, while 365 out of 613 females (59.5%) reported no SIB. Similarly, among males, 37 out of 78 (47.4%) reported any SIB, and 248 out of 613 (40.5%) reported no SIB resulting in a chi-square value of 1.39 with a *p*-value of .23, indicating no statistically significant association between gender and SIB. Similarly, for age groups, 62.8% of participants aged 19-24 years reported any SIB, while 66.1% of those aged 25-30 years reported no SIB, yielding a chi-square value of 0.32 with a *p*-value of

.56, suggesting no significant association between age and SIB presence. Regarding marital status, 70.5% of married individuals reported any SIB compared to 75.7% of unmarried participants, resulting in a chi-square value of 2.20 with a *p*-value of .33, indicating no significant association.

Table 3.3

*Association between demographic variables in Any SIB and No SIB group.*

Variable	Category	Presence of Self-Injurious Behaviour (past year)				$\chi^2$	<i>p</i> value
		Any SIB (n=78)		No SIB (n=613)			
		N	%	N	%		
Gender	Female	41	52.6	365	59.5	1.39	0.23
	Male	37	47.4	248	40.5		
Age	19-24 years	49	62.8	405	66.1	0.32	0.56
	25-30 years	29	37.2	208	33.9		
Marital Status	Married	55	70.5	147	75.7	2.20	0.33
	Unmarried	22	28.2	464	24		
	Divorced	1	1.3	2	.3		
Family Type	Nuclear	6	7.6	62	8.9	0.99	0.60
	Joint	72	92	547	79.1		
	Extended	0	0	4	.05		
Educational Qualification	Secondary	5	6.4	34	55.5	0.31	0.95
	Higher Secondary	11	14.1	79	12.9		
	Under Graduation	49	62.8	386	63		
	Post-Graduation	13	16.7	114	0.6		
Occupation	Student	18	23.1	166	27.1	7.90	0.04
	Self employed	49	62.8	370	60.4		
	Private job	8	10.3	73	11.9		
	Govt. job	3	3.8	4	0.7		

The family type showed 7.6% of nuclear family participants reporting any SIB, compared to 8.9% of joint family participants, with a chi-square value of 0.99 and *p*-value of .60, suggesting no significant association. In terms of educational qualification, percentages ranged from 6.4% to 16.7% for different categories, resulting in a chi-square value of 0.31 with a *p*-value of .95, indicating no significant association. Regarding occupation, percentages ranged from 23.1% to 62.8%, yielding a chi-square value of 7.90 with a *p*-value of .04, suggesting a statistically significant association between occupation and SIB presence.

Therefore, **Hypotheses 1.1 - 1.5** “**There is no significant association in gender, age group, marital status, and education qualification between young adults with SIB and No SIB**” have been accepted and, **Hypothesis 1.6** “**There is no significant association in occupation between young adults with SIB and No SIB**” has not been accepted.

The research attempted to explore the association between demographic variables and the presence of SIB in the past year by examining factors including gender, age, marital status, family type, educational qualification, and occupation. The difference in the presence of SIB in the past year between genders was not statistically significant as indicated by a  $\chi^2$  test ( $\chi^2 = 1.391$ ). Although females exhibited a slightly higher percentage of SIB (59.5%) compared to males (40.5%), this disparity did not reach statistical significance. In the realm of SIB and its gender-related dynamics a discussion emerges from contrasting studies. Epidemiological research on the prevalence of NSSI has found inconsistent results in terms of gender differences, with some studies showing a higher prevalence for women compared to men and other studies showing no difference. Despite the inconsistent findings in previous studies, investigations from Cheng and Mallinckrodt (2010) and Bresin and Schoenleber's

(2015) provides a notable gender discrepancy, with women being significantly more likely to report a history of NSSI compared to men. Moreover, through moderator analyses, Bresin and Schoenleber's (2015) identified that this gender difference was more pronounced in clinical samples than in college/community samples, indicating the influence of sample characteristics on observed disparities. Additionally, they highlighted variations in the methods of NSSI used by different genders that women were more likely to engage in certain forms of NSSI, such as cutting, compared to men, there was no significant difference observed in other methods like punching. Research by Whitlock et al. (2011) among college students found a lifetime NSSI prevalence rate averaging 15.3%, with females are more likely to engage in NSSI compared to males. Female participants within the NSSI group exhibited higher levels of impulse control difficulties and reported limited access to emotion regulation strategies compared to male participants (Thomas & Bonnaire, 2023), and females have significantly higher odds of co-occurrence with suicidal behaviour compared to males, ranging from 3.3 to 8.8-fold (Voss et al., 2020). Conversely, but consistent with current research findings. Andover, Primack et al. (2010) challenge this perspective, that there were no significant differences in age and sex in a non-clinical sample of undergraduates. This assortment of perspectives underscores the complexity of SIB and its relationship to gender, reflecting both shared concerns and the potential for distinctive manifestations across males and females.

The study observed no significant age group differences in SIB among young adults selected for the study, contrary to previous research highlighting higher prevalence among adolescents and young adults, decreasing with age. In our study, we stratified young adults into two age groups, 19-24 and 25-30, representing distinct life stages. The earlier age group may predominantly engage in studies, often supported by

parents, while the later group might be in the transition phase of searching for jobs or navigating the early stages of marriage and child-rearing responsibilities, which are common cultural milestones in Kerala. However, longitudinal studies indicate that self-harming behaviours initiated during earlier stages of life tend to persist into later years (Glenn & Klonsky, 2011; Whitlock et al., 2013). We observed no significant difference in the prevalence of self-injurious behaviour between married and unmarried individuals, but the number of cases is high compared to unmarried ones. This finding suggests that marital status may not be a significant factor influencing self-harming behaviours among young adults. The absence of a significant difference in self-injurious behaviour between married and unmarried individuals in our study highlights the need to consider additional factors such as relationship quality and mental health issues within marriage, which can influence this association. Conversely, unmarried individuals may encounter unique stressors and lack supportive networks, potentially heightening the risk of engaging in self-injury, marriage is protective factor for many (Karimi et al., 2019; Soulsby & Bennett, 2015).

The study did not uncover any significant disparity between education status and self-injurious behaviour, even though the majority of participants are undergraduates. But the education status always emphasizes the complexity of the relationship between educational status and self-injurious behaviour indicated by findings from various studies. McManus et al. (2016) suggested that higher education levels are generally associated with protective factors against self-harm, such as better access to resources and a broader social network. While the discussion of academic stress and its potential impact on psychological distress among students, leading to self-injury or suicide attempts, is relevant to understanding the broader context in which self-injurious behaviours occur. Regarding the situation in Kerala, it's essential to

consider the socio-economic factors influencing the job market and educational attainment in the region. Kerala has a highly educated workforce, with a strong emphasis on education and literacy. However, this educational attainment may not always translate into appropriate job opportunities, leading to issues such as over qualification for certain positions or difficulties in finding suitable employment. Furthermore, the pressure to secure employment and meet societal expectations of success can contribute to heightened stress and psychological distress among young people. This stress may manifest in various ways, including self-injurious behaviours, as individuals struggle to cope with the challenges of transitioning from education to the workforce. Many young participants might be preparing for competitive exams for jobs, which is not included in the present research. Additionally, the pressures and stressors associated with academic demands may play a role in the manifestation of such behaviours among undergraduates.

The significant difference in occupation between the groups suggests that occupation plays a role in influencing SIB among young adults. Among the groups reporting any SIB, the majority were self-employed (62.8%), followed by students (23.1%), those in a private job (10.3%), and those with a government job (3.8%). However, it is important to note that the self-employed category encompasses individuals who may not have stable employment, such as homemakers or individuals temporarily doing odd jobs or seeking employment. In the context of this study, many young adults in Kerala may face challenges in securing stable employment after post-graduation or post-graduation, leading to a transient status of being self-employed or engaged in temporary work. This social issue highlights the complexities of occupational status among young adults in the region, which may contribute to the observed association with self-injurious behaviour. Occupation can impact SIB due to

factors such as job-related stress, workplace culture, and socioeconomic status. One potential factor contributing to this situation is the mismatch between the skills and qualifications of job seekers and the demands of available positions. In some cases, young individuals may find themselves overqualified for entry-level or low-skilled jobs, leading to frustration and disillusionment. Additionally, increased competition in the job market, coupled with limited job opportunities, can exacerbate these challenges. Certain occupations may entail higher levels of stress or exposure to traumatic events, which could increase the risk of engaging in self-harm behaviours (Taylor et al., 2018; Zetterqvist, 2015). Conversely, other research indicates that occupational factors may not always be directly associated with SIB. Individual characteristics, coping mechanisms, and access to mental health support may play a more significant role in determining SIB prevalence (Hawton et al., 2015). While the present study conducted among young adults in Kerala indicates a significant association between occupation and SIB among young adults, the broader literature on this topic may remain varied. This finding is relevant in planning and executing intervention programmes in phase II, by understanding individual challenges in this variable.

Overall, the study found minimal disparity in demographic features, leading to a focused investigation into psychological reasons for SIB. This emphasis stems from the observation that many individuals have undergone similar environmental crises, life events, and challenges, yet only some resort to self-injury. The reasons for SIB based on Assessment in functional assessment of self-mutilation based on four function model Nock and Prinstein (2004) from section 1 findings and recent literature (Voss et al, 2020; Thomas & Bonnaire, 2023) on this topic delving into the psychological factors such as emotion regulation underlying SIB is pivotal in effectively managing distressing emotions. Ultimately, the aim is to enhance psychological well-being by

equipping individuals with strategies necessary to navigate emotional challenges in more adaptive ways. The goal of the study is to plan an intervention programme and evaluate the efficacy of that intervention. So the variables Cognitive Emotion Regulation with sub-variables and Psychological Well-Being with its dimensions were selected for the study in current research. Before the main analysis, the descriptive analysis and normality testing of variables were included in the study which was explained in the following session.

## **Section 2- Descriptive analysis of variables in research**

Before going into detailed analysis, in the initial stage, a comprehensive descriptive analysis of data was done to illuminate the fundamental characteristics of the data set. This analysis serves as a crucial foundation for understanding the central tendencies, variability and distributional properties of the key constructs under investigation. This exploration involved statistical measures of Mean, Median, Mode, Standard Deviation, Kurtosis and Skewness. Normality testing was also done. The primary focus was to provide a clear and detailed overview of data, setting the stage for subsequent inferential analysis and exploration of the relationship between variables both cognitive emotion regulation strategies and dimensions of psychological well-being. There are nine sub-variables in cognitive emotion regulation strategies which are Self-Blame, Catastrophizing, Rumination, Other Blame, positive refocusing, refocusing on planning, Positive Reappraisal, Putting into Perspective, and Acceptance. There are six sub-variables in psychological well-being which are Personal growth, Positive relations with others, Purpose in life, and Self-Acceptance. Thus, a large volume of data is summarized in the study are presented in this section as measures of dispersion.

Table 3.4

*Basic Descriptive Statistics of Sub-Variables of Adaptive and Non-Adaptive Strategies of Cognitive Emotion Regulation in Young Adults (N=691)*

<b>Variables</b>	<b>Mean</b>	<b>Median</b>	<b>Mode</b>	<b>S. D</b>	<b>Skewness</b>	<b>Kurtosis</b>
Self- Blame	9.92	10.00	10	4.414	-0.026	-0.553
Catastrophization	8.53	8.00	10	5.179	0.271	-0.623
Other Blame	7.76	6.00	4	5.145	0.506	-0.712
Rumination	11.68	12.00	16	6.419	5.377	85.16
Positive Refocusing	15.63	16.00	20	4.253	-0.968	0.303
Refocus on Planning	16.26	18.00	20	3.874	-0.965	0.238
Positive Reappraisal	13.76	14.00	15	5.315	9.839	190.40
Putting into Perspectives	17.35	19.00	20	4.350	-1.054	2.390
Acceptance	16	18.00	20	4.045	-1.059	0.283

Table 3.4 provides descriptive statistics for variables of cognitive emotion regulation strategies. Self-blame shows negative skewness and platykurtism. Catastrophization exhibits positive skewness and platykurtism. Other Blame, rumination, positive refocusing, refocusing on planning, positive reappraisal, putting into perspective, and Acceptance also demonstrate leptokurtic distributions with specific skewness and kurtosis values. The arithmetic average of the data set called the arithmetic mean, is calculated as it is the commonly used and useful descriptive value of any distribution. The standard deviation of the dataset gives an idea of how much the values in the dataset differ from the mean value for the entire data set. A low standard deviation indicates that values in data are close to the mean, and a high standard deviation indicates that values are spread out. Some of the features of the normal

distribution are a symmetric bell-shaped curve, mean = mode median with Skewness (shape of curve i.e. lack of symmetry) of zero.

Negatively skewed distributions have a long tail towards the left, with the mean and median less than the mode. Conversely, positively skewed distributions exhibit a tail extended to the right, with the mode less than the median. Kurtosis measures outliers in the distribution, with positive values indicating more outliers and a thicker tail, while negative values suggest fewer outliers and a thinner tail. In reality, distribution does not exactly follow all assumptions for normality; therefore, certain rules of thumb have been proposed: a) If the Skewness value does not lie between +2 and -2, then the distribution is markedly different from the normal distribution in symmetry; b) If the kurtosis value is greater than three, then the distribution is markedly different from the normal distribution in its tendency to create outliers (Bachman, 2004; Westfall & Henning, 2013).

Table 3.5

*Basic Descriptive Statistics of Sub-Variables of Psychological Well Being in young adults (N=691)*

<b>Variable</b>	<b>Mean</b>	<b>Median</b>	<b>Mode</b>	<b>S. D</b>	<b>Skewness</b>	<b>Kurtosis</b>
Autonomy	29.76	31	30	9.190	-0.625	-0.569
Environmental Mastery	31.34	32	30	7.844	-0.862	0.203
Personal Growth	32.47	35	30	7.381	-1.016	0.574
Positive Relationship with Others	34.35	38	40	7.901	-1.351	1.057
Purpose in Life	33.51	35	40	7.842	-1.061	0.405
Self-Acceptance	34.40	38	40	8.257	-1.425	1.479
Total psychological well-being	195.82	203	218	35.185	-1.047	0.791

Table 3.5 summarizes key descriptive statistics for various aspects of psychological well-being, including autonomy, environmental mastery, personal growth, positive relationships with others, purpose in life, self-acceptance, and total psychological well-being. Median, mode, standard deviation, skewness, and kurtosis provide insights into distribution and central tendencies. Higher median and mode values suggest greater positive well-being, whereas lower values indicate areas of lower well-being. Skewness indicates distribution symmetry, with positive skewness skewed towards lower values and negative skewness towards higher values. Kurtosis measures distribution tail thickness, with positive kurtosis indicating heavier tails and negative kurtosis indicating lighter tails. Overall, this table offers valuable insights into the psychological well-being measures of the sample.

Further analysis of variables employed with two groups Participants with SIB and No SIB in the past year, which are depicted in tables 3.6 & 3.7.

Table 3.6 shows descriptive statistics scores of Mean, Median, Mode, Standard Deviation, Kurtosis, Skewness Kolmogorov statistics and *p-value* of cognitive emotion regulation among young adults with any self-injurious behaviour and no self-injurious behaviour in the last year. In the given data, the group with no history of self-injurious behaviour (SIB) exhibits positive skewness in variables such as Catastrophization, Other Blame, Positive Refocusing, Refocus on Planning, Positive Reappraisal, Putting into Perspectives, and Acceptance. The group with no history of SIB exhibits positive skewness in variables such as Catastrophization, Other Blame, Positive Refocusing, Refocus on Planning, Positive Reappraisal, Putting into Perspectives, and Acceptance.

Table 3.6

*Basic Descriptive Statistics of Sub-Variables of Cognitive Emotion Regulation in young adults with any Self-Injurious Behaviour(ASIB) (n=78) and No Self-Injurious Behaviour(NSIB) (n=613) in the past year.*

Variables	SIB	Mean	Median	Mode	S. D	Skewness	Kurtosis	Statistic	<i>P</i> value
<b>Self- Blame</b>	NSIB	9.35	10	10	4.165	-0.028	-0506	0.114	.000
	ASIB	14.8	15	18	3.736	0.314	-0.515	0.142	.001
<b>Catastrophization</b>	NSIB	7.70	8.00	10	4.850	0.314	-0.575	0.105	.000
	ASIB	14.40	14	12	4.320	-0.373	0.597	0.130	.002
<b>Other Blame</b>	NSIB	6.97	6.00	4	4.785	0.708	-0.271	0.166	.000
	ASIB	13.97	14.00	12	3.338	-0.366	1.259	0.151	.000
<b>Rumination</b>	NSIB	11.28	12.00	16	6.566	5.789	89.169	0.109	.000
	ASIB	14.83	14.00	12	3.893	-0.675	1.999	0.105	.033
<b>Positive Refocusing</b>	NSIB	16.43	18.00	20	3.541	-1.057	0.910	0.189	.000
	ASIB	9.35	9.00	8	4.168	0.596	0.281	0.115	.012
<b>Refocus on Planning</b>	NSIB	16.98	18.00	20	3.231	-1.07	0.906	0.203	.000
	ASIB	10.55	10.00	20	3.789	0.671	0.276	0.159	.000
<b>Positive Reappraisal</b>	NSIB	14.24	14.00	15	5.325	10.918	209.24	0.173	.000
	ASIB	9.99	11.00	15	3.379	-0.223	-0.644	0.131	.002
<b>Putting into Perspectives</b>	NSIB	18.13	20.00	20	3.705	-1.296	5.860	0.222	.000
	ASIB	11.24	11.00	9	4.222	0.634	0.222	0.185	.000
<b>Acceptance</b>	NSIB	17.65	19.00	20	3.361	-1.375	1.807	0.188	.000
	ASIB	10.58	10.00	11	3.455	1.065	1.899	0.208	.000

The group without a history of SIB displays negative skewness in variables such as Self-Blame, Catastrophization, Other Blame, Rumination, Positive Refocusing, Refocus on Planning, Positive Reappraisal, Putting into Perspectives, and Acceptance. The group with a history of SIB exhibits negative skewness in the variables Self-Blame,

Other Blame, and Rumination. The group with a history of SIB exhibits negative skewness in the variables Self-Blame, Other Blame, and Rumination and exhibits negative skewness in the variables Self-Blame, Other Blame, and Rumination. The group with a history of SIB exhibits negative skewness in the variables Self-Blame, Other Blame, and Rumination.

Table 3.7

*Basic Descriptive Statistics of Variables of PWB in young adults with any self-injurious behavior(ASIB)(n=78) and no self-injurious behaviour(NSIB)(n=613) in past year*

Variables	SIB	Mean	Median	Mode	S. D	Skewness	Kurtosis	Statistic	P value
Autonomy	NSIB	30.62	32.00	30	9.026	-0.803	-0.216	0.135	0.000
	ASIB	22.94	21.50	21	7.496	0.310	-0.536	0.102	0.044
Environmental Mastery	NSIB	32.40	35.00	30	7.253	-1.062	0.982	0.156	0.000
	ASIB	23.03	22.50	20	7.364	0.237	-0.338	0.099	0.054
Personal Growth	NSIB	33.54	35.00	30	6.616	-1.157	1.221	0.173	0.000
	ASIB	24.01	24.00	30	7.657	-0.064	-0.474	0.083	0.200
Positive Relation with Others	NSIB	35.60	38.00	40	6.997	-1.762	2.885	0.208	0.000
	ASIB	24.49	24.50	30	7.697	0.167	-0.443	0.080	0.200
Purpose in Life	NSIB	34.77	37.00	40	6.916	6.916	1.599	0.164	0.000
	ASIB	23.63	22.50	15	7.704	0.466	-0.220	0.095	0.078
Self Acceptance	NSIB	35.58	39.00	40	7.513	-1.885	3.625	0.217	0.000
	ASIB	25.10	24.50	20	7.977	0.304	-0.400	0.126	0.004
Total Psychological Well Being	NSIB	202.52	207.00	218	29.688	-1.286	2.434	0.085	0.000
	ASIB	143.19	138.50	130	30.421	0.360	0.219	0.081	0.200

Table 3.7 shows descriptive statistics scores of Mean, Median, Mode, Standard Deviation, Kurtosis, Skewness, Kolmogorov statistic and  $p$  value for psychological well-being in both groups (with and without a history of self-injurious behaviour in past year). Here, certain variables exhibit positive or negative skewness and platykurtic or leptokurtic distributions, indicating different characteristics of their distributions. In the group with no SIB, variables such as Purpose in Life and Self-Acceptance demonstrate positive skewness. This suggests that the majority of scores are concentrated towards the lower end of the scale, with a tail extending towards higher values. In the group with SIB, the variables Positive Relation with Others and Purpose in Life also exhibit positive skewness. The group without SIB variables such as Autonomy, Environmental Mastery, Personal Growth, and Self-Acceptance display negative skewness. This indicates that the majority of scores are concentrated towards the higher end of the scale, with a tail extending towards lower values. In the group with SIB, variables such as Autonomy, Environmental Mastery, Personal Growth, and Self-Acceptance also show negative skewness, suggesting a similar concentration of scores towards the higher end of the scale. Variables with positive kurtosis values, such as Positive Relation with Others and Purpose in Life in both groups, demonstrate leptokurtic distributions.

Above distributions have relatively sharper peaks and heavier tails compared to a normal distribution. Understanding these characteristics of the distributions provides insights into the variability and shape of the data, which is important for interpreting the results and drawing meaningful conclusions from the analysis. Higher median and mode values suggest greater positive well-being, whereas lower values indicate areas of lower well-being. Skewness indicates distribution symmetry, with positive skewness skewed towards lower values and negative skewness towards higher values. Kurtosis

measures distribution tail thickness, with positive kurtosis indicating heavier tails and negative kurtosis indicating lighter tails. Overall, this table offers valuable insights into the psychological well-being measures of the sample of two groups.

### **Test of Normality**

Kolmogorov-Smirnov test was used to assess the normality assumption of the sample data, which is crucial for subsequent statistical analyses. It is a powerful test for detecting Normality for large sample sizes. As the present study has a sample size of more than 50 for any SIB and more than 600 for No SIB groups. Above tables 3.6 and 3.7 indicate the distribution values of variables. Kolmogorov-Smirnov test statistic and *p-value* were compared to a significance level of 0.05. Findings show that the distribution of scores significantly deviates from a normal distribution in both group. This suggests the importance of considering the non-normality of sub-variables of CER and PWB data when conducting statistical analyses. Therefore, a non-parametric test was used for the investigation. Non-parametric tests or transformations may be more suitable for subsequent analyses acknowledging the departure from normality.

### **Section 3: Comparison of Sub-Variables of Cognitive Emotion Regulation in Groups with Any SIB and No SIB.**

This section presents the potential difference in Cognitive Emotion Regulation (CER) strategies between individuals who engaged in any SIB and no SIB in the past year. The analysis was conducted by Mann–Whitney U test, a nonparametric statistical test suitable for comparing two independent groups when the assumptions for parametric tests are not met. This analytical approach enhances findings and provides valuable insights into the difference between CER and SIB in two groups.

Table 3.8

*Difference between groups with Any SIB (past year) and No SIB (past year) on Cognitive Emotion Regulation strategies(CER).*

Variables of CER	Mean rank		U	P
	Any SIB N=78	No SIB N=613		
Self- Blame	541.06	321.28	8692.5	<0.001
Catastrophization	548.14	320.28	8140.0	<0.001
Other Blame	573.54	317.05	6159.0	<0.001
Rumination	472.79	329.87	14017.5	<0.001
Positive Refocusing	106.72	376.45	5438.0	<0.001
Refocus on Planning	109.22	376.13	5438.0	<0.001
Positive Reappraisal	154.72	370.34	8987.5	<0.001
Putting into Perspectives	115.72	375.30	5945.5	<0.001
Acceptance	97.68	377.60	4538.0	<0.001

As evident from table 3. 8 there is a significant difference in strategies of CER between the groups. For Self-Blame ( $U = 8692.5$ ), Catastrophization ( $U = 8140.0$ ), Other Blame ( $U = 6159.0$ ), and Rumination ( $U = 14017.5$ ) the mean ranks of the Any SIB group were significantly higher than those of the No SIB group. In contrast Positive Refocusing ( $U = 5438.0$ ), Refocus on Planning ( $U = 5438.0$ ), Positive Reappraisal ( $U = 8987.5$ ), Putting into Perspectives ( $U = 5945.5$ ), and Acceptance ( $U = 4538.0$ ) the mean ranks of the Any SIB group were significantly lower than those of the No SIB group. So Hypotheses 2.1- 2.9 '*There is no significant difference in the sub-variables of CER between young adults with Any SIB and No SIB in the past year*' have been rejected.

The rejection of the null hypothesis indicates a significant difference in CER strategies based on SIB in young adults. Self-Blame, Catastrophization, Other Blame, and Rumination are Non-adaptive strategies of CER and Positive Refocusing, Refocus on Planning, Positive Reappraisal, Putting into Perspectives, and Acceptance are adaptive strategies of CER (Garnefski et al,2001). According to him, Self Blame attributing responsibility and fault to oneself for negative events or outcomes, often leading to feelings of guilt, shame, or inadequacy. Catastrophization is exaggerating the negative consequences of events or situations, imagining the worst possible outcomes, and dwelling on them excessively, which can intensify distress and anxiety. Other Blame entails attributing responsibility and fault to others for negative events or outcomes, often accompanied by feelings of resentment, anger, or hostility towards others. Rumination is repetitively focusing on one's negative thoughts, feelings, and experiences without actively problem-solving or seeking solutions, which can prolong emotional distress and exacerbate depressive symptoms. These non-adaptive strategies represent different approaches to emotional regulation in response to challenging situations. Positive Refocusing involves shifting attention away from negativity towards more positive aspects, fostering a constructive mindset. Refocus on Planning focuses on problem-solving and creating actionable plans to address difficulties, instilling a sense of control. Positive Reappraisal entails finding silver linings or growth opportunities in adversity, promoting resilience. Putting into Perspective involves adopting a broader, objective view of situations, mitigating the intensity of negative emotions. Acceptance emphasizes acknowledging and embracing thoughts and feelings without judgment, fostering psychological flexibility and well-being. Together, these strategies offer diverse tools for effectively managing emotions and coping with life's

challenges. The adaptive and non-adaptive strategies are also called positive and negative strategies (Garnefki et al., 2001).

The finding from the study reveals the SIB group demonstrated higher engagement in non-adaptive strategies and lower utilization of adaptive strategies compared with the SIB group. These findings suggest distinct patterns of CER associated with the presence of SIB in the past year. The study findings also underscore that the no SIB group demonstrated higher engagement in adaptive strategies and higher utilization of adaptive strategies compared with the SIB group. This aligns with the existing literature highlighting the link between maladaptive coping mechanisms and self-harming tendencies (Klonsky, 2007; Selby, Anestis et al., 2008). However, another study reveals lower utilization of adaptive cognitive strategies such as Positive Refocusing and Acceptance among individuals with self-injurious behaviour indicating a struggle to employ positive coping mechanisms which is consistent with previous findings (Nock, 2009; Klonsky, 2009). While these findings contribute to our understanding of the complex relationship between cognitive strategies and SIB, it is essential to acknowledge the potential complexities and individual differences in the effectiveness of these strategies (Plener et al., 2016; Tanaka et al., 2019).

The study further investigated the association of six dimensions of PWB between the groups with Any SIB and No SIB. Mann-Whitney U test was performed to evaluate whether the sub-variable of psychological well being (PWB) differed for self-injurious behaviour in the two groups.

Table 3.9

*Difference between groups with Any SIB (past year) and No SIB (past year) on psychological well-being.*

Dimensions of the PWB	Mean Rank		U	P
	Any SIB	No SIB		
Autonomy	141.06	372.08	7921.5	<0.001
Environmental Mastery	149.83	370.96	8605.5	<0.001
Personal Growth	142.89	371.84	8064.5	<0.001
Positive Relations with others	126.68	373.91	6800.0	<0.001
Purpose in life	130.20	373.46	7074.5	<0.001
Self-Acceptance	141.06	372.08	7921.5	<0.001

The results showed that there was a significant difference in sub-variables of PWB between the two groups in various dimensions: Autonomy ( $U=7921.50$ ), Environmental Mastery ( $U=8605.5$ ), Personal Growth ( $U=8064.5$ ), Positive Relationship with others ( $U=6800.0$ ), Purpose in life ( $U=7074.5$ ) and Self-Acceptance ( $U=7921.5$ ). Therefore, there was a significant difference observed between the two groups on PWB. The mean rank of PWB in a group with self-injurious behaviour (past year) in different dimensions such as Autonomy (372.08), Environmental Mastery (370.96), Personal Growth (371.84), Positive Relation with others (373.91), Purpose in life (373.46) and Self-Acceptance (372.08) was significantly higher when compared to the group with No self-injurious behaviour (past year) with mean rank of 141.06, 149.83, 142.89, 126.68, 130.20 and 141.06 respectively. So **Hypotheses (3.1) – (3.7) “There is no significant difference in dimensions of psychological well-being between Any SIB and No SIB group (past year)”** have been rejected.

From the above results, significant differences were observed between individuals with a history of self-injurious behaviour (SIB) in the past year and those without across various dimensions of psychological well-being (PWB). The different dimensions of PWB are autonomy, environmental mastery, personal growth, positive relations with others, purpose in life, and self-acceptance. Psychological well-being encompasses multiple dimensions crucial for overall mental health and life satisfaction (Ryff & Singer, 1998). Autonomy, reflecting one's sense of independence and self-determination, intertwines with Environmental Mastery, which pertains to adeptly navigating life's challenges and feeling competent in one's surroundings. Personal Growth underscores ongoing development and the realization of one's potential, while Positive Relations with Others emphasizes the significance of meaningful connections and social support. Purpose in Life guides individuals towards meaningful goals and aspirations, providing direction and motivation, while Self-Acceptance fosters inner peace and self-compassion, embracing one's strengths and weaknesses alike. From the above current finding, those engaging in SIB reported lower scores and the group which not engage in any SIB showed high scores all dimensions and differences are significant. Together, these dimensions form a holistic framework for understanding and cultivating psychological well-being. This finding is consistent with previous research, which has highlighted the social, existential, and personal challenges associated with self-injury (Franklin et al., 2017). Individuals who engage in SIB often experience significant psychological distress, such as depression, anxiety, or trauma-related symptoms. These underlying mental health issues can negatively impact their sense of autonomy, personal growth, and positive relations with other. Self-injury is often used as a maladaptive coping mechanism to deal with overwhelming emotions or distressing situations. Instead of developing healthy coping strategies, individuals may

resort to self-harm as a way to regulate their emotions, leading to feelings of powerlessness and decreased self-acceptance. Individuals who engage in self-injury may struggle with problem-solving skills and may feel unable to effectively address challenges or conflicts in their lives. This can contribute to feelings of helplessness and a sense of environmental mastery. Self-injury may be accompanied by negative self-perceptions, such as feelings of worthlessness. These negative beliefs about oneself can undermine self-acceptance and personal growth. Addressing these factors through therapeutic interventions focused on improving coping skills, building resilience, and fostering positive relationships can help support individuals in their recovery.

However, the cross-sectional design of the study may hinder the ability to establish causal relationships between SIB and dimensions of PWB. Cross-sectional studies capture data at a single point in time, making it difficult to determine the temporal sequence of events or to discern whether SIB leads to lower levels of psychological well-being or vice versa. Longitudinal studies would be better suited to examine the dynamic relationship between SIB and PWB over time. The relationship between these variables is explored and explained in the next section.

#### **Section 4: Relationship between Variables and Sub-Variables of the Research**

Correlation analysis was performed to examine the relationship between variables of cognitive emotion regulation (CER) and psychological well-being (PWB). The degree of relationship between two variables is described by correlational analysis. The value of the correlation coefficient might be any number between +1 and -1. The direction of the relationship is shown by the positive and negative signs. Positive signs show that variables move in the same direction, that is, when one increases, the other increases as well, and when one decreases, the other decreases as well. The variable

goes in the opposite direction when there is a negative sign and the variable goes in the same direction when there is a positive sign. The Spearman product-moment correlation coefficient was carried out to explore the relationship between variables. Cognitive emotion regulation is classified into adaptive and non-adaptive strategies. The non-adaptive strategies are Self Blame, Catastrophization, Other Blame, and Rumination. Table 3.10 depicts the correlation between the variables.

Table 3.10

*Correlation between the non-adaptive strategies of CER and total PWB*

Variables	Self Blame	Catastrophization	Other Blame	Rumination
Psychological Well-Being	-0.873**	-0.866**	-0.857**	-0.868**

\*\*Significant relationship at the 0.01 level

Results from table 3.10 reveal a statistically significant negative relationship between non-adaptive Cognitive Emotion Regulation strategies (Self-Blame, Catastrophization, Other Blame, and Rumination) and Psychological Well-Being among young adults. The negative correlation coefficients for Self-Blame ( $r_s = -0.873$ ,  $p < .01$ ), Catastrophization ( $r_s = -0.866$ ,  $p < .01$ ), Other Blame ( $r_s = -0.857$ ,  $p < .01$ ), and rumination ( $r_s = -0.868$ ,  $p < .01$ ) indicate that higher engagement in these non-adaptive strategies is associated with lower levels of psychological well-being. Therefore, the following proposed **Hypotheses 4.1– 4.4: “There is no significant correlation between the non-adaptive cognitive emotion regulation (Self-Blame, Rumination, Other-Blame and Catastrophizing) strategies and total psychological well-being”** has been rejected.

The following table (3.11) explains the correlation between adaptive strategies and PWB. The adaptive strategies of CER are Positive Refocusing, Refocus on Planning, Positive Reappraisal, Putting into Perspective, and Acceptance. Total psychological well-being was obtained from the values of all dimensions of PWB.

Table 3.11

*Correlation between the adaptive strategies of CER and total PWB*

	Positive Refocusing	Refocus on planning	Positive Reappraisal	Putting into Perspectives	Acceptance
<b>Psychological Well Being</b>	0.644**	0.629**	0.290**	0.641**	0.699**

\*\*Significant relationship at the 0.01 level

From table 3.11 it could be observed that there is a statistically significant positive correlation between psychological well-being and adaptive strategies of CER among young adult participants in the study. Specifically, Positive Refocusing demonstrated a strong positive correlation with PWB ( $r_s = 0.644$ ), as did Refocus on Planning ( $r_s = 0.629$ ). In addition, Putting into Perspectives shows a positive correlation with PWB ( $r_s = 0.641$ ), and Acceptance exhibits the highest positive correlation ( $r_s = 0.699$ ). However, Positive Reappraisal, while still significant, demonstrated a comparatively weaker positive correlation with PWB ( $r_s = 0.290$ ) compared to other strategies. Therefore, **Hypotheses 4.5 - 4.9: “There is no significant correlation between Self-Acceptance, Positive Refocusing, Refocus on the Planning, Positive Reappraisal and Putting-into-Perspective strategies of adaptive cognitive emotion regulation and total psychological well-being in young adults”** have been rejected. Hence, there is a positive relationship between adaptive strategies of CER and total psychological well-being.

**Correlation between Sub-Variables of CER and PWB**

Further, the Spearman product-moment correlation coefficient was employed to explore the relationship between adaptive strategies for the dimensions of cognitive emotion regulation and total psychological well-being. There are six dimensions of Psychological Well Being, which are depicted following (Tables 3.12 & 3.13).

Table 3.12

*Correlation between the non-adaptive strategies of CER and the dimensions of PWB*

Variables	Autonomy	Environmental Mastery	Personal Growth	Positive Relationship	Purpose in Life	Self Acceptance
<b>Self-Blame</b>	-.521**	-.653**	-.648**	-.646**	-.702**	-.662**
<b>Catastrophization</b>	-.517**	-.663**	-.654**	-.638**	-.684**	-.647**
<b>Other Blame</b>	-.521**	-.643**	-.638**	-.635**	-.677**	-.647**
<b>Rumination</b>	-.509**	-.663**	-.649**	-.644**	-.691**	-.654**

\*\*Significant relationship at the 0.01 level

Table 3.12 demonstrates a high negative correlation on a statistically significant level between dimensions of PWB and non-adaptive strategies of CER. For instance, Autonomy shows a negative correlation with Self-Blame, as does Environmental mastery, Personal Growth, Positive Relationship with Others, Purpose in Life, and Self-Acceptance. Similarly, Autonomy correlates negatively with catastrophization, as do other dimensions. Additionally, Autonomy negatively correlates with Other Blame, as do Environmental Mastery, Personal Growth, Positive Relationship, Purpose in life, and Self-Acceptance. Similarly, Rumination negatively correlates with Autonomy, Environmental Mastery, Personal Growth, Positive Relationships, Purpose in Life, and Self-Acceptance.

Therefore, **Hypothesis 4.10** ‘*There is no significant correlation between non-adaptive strategies of CER and dimensions of PWB in young adults*’ is rejected. Hence, there is a significant relationship between the six dimensions of PWB and the non-adaptive strategies of CER.

Table 3.13

*Correlation between the adaptive strategies of CER and the dimensions of PWB*

Variables	Autonomy	Environmental mastery	Personal Growth	Positive relationship	Purpose in life	Self Acceptance
Positive refocusing	0.305**	0.776**	0.437**	0.414**	0.445**	0.464**
Refocus on planning	0.281**	0.434**	0.812**	0.405**	0.504**	0.366**
Positive reappraisal	0.183**	0.225**	0.230**	0.196**	0.230**	0.209**
Putting into Perspectives	0.313**	0.457**	0.384**	0.387**	0.462**	0.804**
Acceptance	0.272**	0.439**	0.532**	0.507**	0.873**	0.477**

\*\*Significant relationship at the 0.01 level

Table 3.13 illustrates significant positive correlations between PWB dimensions and adaptive strategies of CER. Autonomy, Environmental mastery, Personal Growth, Positive Relationships, Purpose in life, and Self Acceptance exhibit statistically significant positive correlations with various adaptive strategies such as Positive Refocusing, Refocusing on Planning, Positive Reappraisal, Putting into Perspective, and Acceptance. These correlations highlight the importance of these dimensions in fostering adaptive coping mechanisms for individuals. Therefore, **Hypothesis 4.11** ‘*There is no significant relationship between adaptive strategies of CER and dimensions of PWB*’ is rejected. Hence, there is a significant relationship between the six dimensions of PWB and the adaptive strategies of CER.

**Discussion: Relationship between Study Variables in the study based on Correlation Analysis**

The rejection of proposed hypotheses 4.1 - 4.9 indicates a significant correlation between variables selected for the study. The negative correlations between Self-Blame, Catastrophization, Other Blame, Rumination and total Psychological Well-Being underscore the potential harm caused by these cognitive processes. Previous research has consistently highlighted the role of maladaptive strategies, such as Self Blame and Rumination in intensifying psychological distress and hindering personal growth (Aldao et al., 2010; Nolen-Hoeksema, 1991). The negative correlation between these non-adaptive strategies echoes studies linking excessive self-focus and interpersonal difficulties (Aldao & Nolen-Hoeksema, 2010). The strong negative correlation between Purpose in Life and Self-Blame suggests that individuals who engage in self-blame may struggle to find a sense of purpose, potentially hindering overall well-being.

The positive correlations between adaptive strategies of CER and PWB indicate that employing these cognitive strategies is associated with higher levels of psychological well-being. However, it is crucial to acknowledge the complexity of the relationship between CER and PWB. The index phase of the study supports the view that non-adaptive strategies are harmful to psychological well-being. Some level of self-blame or rumination may serve adaptive functions, such as promoting problem-solving or self-improvement (Garnefski & Kraaj, 2006; Watkins, 2008). It challenges the straightforward negative associations observed in our study. The debate on the adaptive and maladaptive nature of certain cognitive processes remains an active area of research (Aldao & Nolen-Hoeksema, 2012). Moreover, individual differences and cultural factors may influence the impact of CER on PWB, adding complexity to the

relationship (Matsumoto et al., 2008). The findings resonate with studies that emphasise the importance of adaptive coping mechanisms for promoting psychological well-being (Garnefski et al., 2001; Thompson, 1991). The use of adaptive cognitive strategies is linked to a more positive psychological state, highlighting the potential importance of targeting and enhancing these strategies in interventions aimed at promoting well-being in young adults.

The concept of environmental mastery suggests that perceiving control over one's surroundings enhances emotional well-being, as it contributes to effective emotion regulation and overall psychological health (Ryff & Singer, 1998; Waterman, 1993). However, Keyes (2005) introduced the idea of complete mental health, emphasising that while environmental mastery is important, it alone may not ensure overall well-being. Research indicates that the relationship between environmental mastery and emotion regulation can vary over time (Diehl & Hay, 2010), and studies challenge the assumption of a consistently positive correlation, especially in specific populations like those with eating disorders (Brockmeyer et al., 2012; Diel et al., 1996). These findings highlight the complexity of this relationship and advocate for a holistic approach that considers various dimensions of PWB.

Ryff and Singer (1998) emphasized personal growth as crucial to PWB contributing to effective emotion regulation and mental health. Tugade and Fredrickson (2004), drawing upon the broaden-and-build theory, propose that positive emotions associated with personal growth broaden an individual's thought-action repertoire, facilitating adaptive emotion regulation and resilience. Shiota and Levenson (2012) explored the intricate relationship between positive emotions, personal growth, and emotion regulation, acknowledging variability based on individual and contextual factors. Huta and Waterman (2014) propose the 'Eudaimonic Identity Theory',

suggesting that personal growth fosters a sense of purpose and meaning, which enhances emotion regulation. However, Roberts et al. (2006) challenge the assumption of a universal association between personal growth and better emotion regulation indicating a more complex, context-dependent relationship.

The importance of interpersonal connections in fostering adaptive emotion regulation has been highlighted in various studies (Gable et al., 2004; Kawakami et al., 2007). Positive relationships provide emotional support and create an environment conducive to the development of effective emotion regulation skills (Larson et al., 1996). Feeney and Collins (2015) suggest that the quality of social support influences its impact with trust, responsiveness and mutual support playing key roles. However, contrasting perspectives, such as those presented by Overall and Girme (2012) introduce challenges within relationships such as possessiveness which may hinder emotion regulation. These strategies foster a more positive outlook and contribute to sense of purpose and meaning. The correlation coefficients underscore the importance of these adaptive strategies in shaping individuals' sense of purpose, indicating that engaging in positive refocusing, for instance may lead to finding greater meaning and direction in life by focussing on positive aspects (Tugade & Fredrickson, 2004).

Adaptive strategies such as positive refocusing and positive reappraisal are associated with a more positive self-perception and greater self-acceptance (Garnefski et al., 2001; Thompson, 1991; Shiota & Levenson, 2012; Huta & Waterman, 2014). Conversely, non-adaptive strategies like self-blame and rumination are linked to decreased self-esteem and diminished self-acceptance (Nolen-Hoeksema, 1991; Aldao et al., 2010). While negative correlations support the notion that certain non-adaptive strategies may hinder self-acceptance, it's crucial to acknowledge the nuanced nature of these relationships. Some studies suggest that moderate levels of self-blame or

reflection can facilitate personal growth and self-improvement (Garnefski et al., 2001; Watkins, 2008). Interventions aimed at promoting adaptive strategies and mitigating non-adaptive ones may enhance self-acceptance and overall positive self-perception.

The observed negative correlations between non-adaptive cognitive strategies and dimensions of PWB underscore the impact of maladaptive cognitive processes on various aspects of well-being, including Autonomy, Environmental Mastery, Personal Growth, Positive Relationships, Purpose in Life, and Self Acceptance. This aligns with prior research emphasising the adverse effects of rumination and self-blame on psychological well-being, as highlighted by Nolen-Hoeksema (1991) and Garnefski et al. (2001). Additionally, Ryff's model of PWB serves as a foundational framework for understanding these dimensions (Ryff, 1999). While research by Kashdan and Rottenberg (2010) and Lyubomirsky, King, and Diener (2005) explores the role of positive emotion regulation and intentional activities in enhancing well-being, Fredrickson's broaden-and-build theory of positive emotions emphasises the cumulative effect of positive emotions on overall psychological well-being (Fredrickson, 2001). Collectively, these findings underscore the importance of addressing maladaptive cognitive processes and promoting positive emotion regulation strategies to foster a comprehensive sense of well-being across various dimensions.

The contrasting findings presented by Tugade and Fredrickson (2007) introduce a relationship between positive emotions and psychological well-being, challenging the conventional notion that exclusively promoting positive emotions enhances all dimensions of well-being. While research Tugade and Fredrickson (2007) emphasised the role of resilience in coping with adversity, highlighting that certain emotional responses, even negative ones, can contribute to adaptive outcomes in terms of autonomy and personal growth. Moreover, self-determination theory posits autonomy

as crucial for well-being, with autonomy-supportive environments generally associated with positive emotion regulation (Bartholomew et al., 2011; Deci & Ryan, 1985; Ryan & Recio, 2000). However, research by Vansteenkiste and Ryan (2013) and Chirkov et al. (2003) suggests that the impact of autonomy on emotion regulation may vary across cultures and individuals, indicating the importance of considering contextual and individual differences. Additionally, studies such as those by Kashdan and Rottenberg (2010) and Hays & Feldman (2004) highlight the influence of Autonomy on emotion regulation, emphasising the need for a balanced understanding of its potential benefits and downsides. This discussion underscores the complexity of the relationship among autonomy, emotion regulation, and PWB, calling for further research to elucidate these dynamics.

In conclusion, these findings underscore the significant role of cognitive emotion regulation strategies in shaping psychological well being. Adaptive strategies align with greater psychological well being, whereas non-adaptive strategies may act as barriers. Striking a balance and fostering adaptive coping mechanisms may contribute to a more positive self-concept and well being in an individual.

### **Section 5.1- Regression Analysis for Predicting Psychological Well Being**

As there was a significant correlation found between variables and sub-variables in the correlation analysis in Section 5, Regression analysis was employed to predict the variables of PWB and later SIB by binary logistic regression. analysis. Linear regression analysis was carried out to predict the value of a variable based on the value of another variable. Here, adaptive and non-adaptive CER strategies are considered as predictive factors of psychological well being in young adults with SIB.

The model included several non-adaptive strategies of CER as predictor variables: Self-Blame, Catastrophization, Other Blame, and Rumination. The results of regression analysis are discussed in terms of the unique contributions of each non-adaptive strategy and their combined influence on predicting levels of psychological well-being in the studied population (Table 3.14).

Table 3.14

*Predictive Value of Non Adaptive Cognitive Emotion Regulation on Psychological Well-Being*

Model 1	Unstandardized Coefficients		Standardised Coefficients	T
	B	S.E	B	
Constant	-239.35	1.048		228.35***
Self-Blame	-2.039	0.352	-0.321	-5.785***
Catastrophization	-1.272	0.355	-0.206	-3.580***
Other Blame	-0.893	0.331	-0.145	-2.698**
Rumination	-1.508	0.345	-0.244	-4.368***

Note:  $R = 0.892$ ,  $R^2 = 0.795$ ,  $Adj R^2 = 0.794$ ,  $F = 664.96$  \*\*\* $p < .001$ , \*\* $p < .01$

The above results show that the negative coefficients for Self-Blame (-2.039), Catastrophization (-1.272), Other Blame (-0.893), and Rumination (-1.508) indicated that increased levels of these non-adaptive strategies are significantly associated with a decrease in PWB. The overall model, assessed by the F-statistic ( $F = 664.96$ ,  $p < .001$ ), is statistically significant, explaining approximately 79.5% of the variance in PWB due to non-adaptive CER strategies. The model is further supported by the high  $R^2$  (0.795) and *Adjusted R2* (0.794) values. The finding revealed that the  $\beta$  value of the strategies of CER contributed negatively to PWB. Therefore, **Hypothesis 5.1: “Non-adaptive strategies for cognitive emotion regulation do not significantly predict psychological well-being in young adults with SIB”** has been rejected.

Table 3.15

*Predictive value of adaptive strategies of cognitive emotion regulation on psychological well-being*

Model 1	Unstandardized Coefficients		Standardised Coefficients	T
	B	S.E	B	
Constant	55.631	4.057		13.713***
Positive refocusing	1.854	0.242	0.227	7.658***
Refocus on planning	1.855	0.265	0.208	7.000***
Positive reappraisal	0.418	0.156	0.063	2.685**
Putting into Perspectives	1.898	0.235	0.237	8.085***
Acceptance	2.561	0.270	0.301	9.496***

Note:  $R = 0.811$ ,  $R^2 = 0.657$ ,  $Adj R^2 = 0.655$ ,  $F = 262.61$ ,  $***p < 0.001$ ,  $**p < 0.01$

The model, as indicated by the  $R$ -squared value of 0.657, accounts for a substantial proportion of the variance in PWB. Adaptive strategies of emotional regulation contribute 65% of total psychological well-being ( $R^2 = 0.657$ ) statistically significant level. Each predictor variable exhibits a statistically significant positive beta coefficient, highlighting their unique contributions to predicting higher levels of PWB. Specifically, Positive Refocusing ( $\beta = 0.227$ ,  $p < .001$ ), Refocus on Planning ( $\beta = 0.208$ ,  $p < .01$ ), Positive Reappraisal ( $\beta = 0.063$ ,  $p < .01$ ), Putting into Perspectives ( $\beta = 0.237$ ,  $p < .001$ ), and Acceptance ( $\beta = 0.301$ ,  $p < .001$ ) all significantly contribute to the prediction of enhanced psychological well-being. Therefore, **Hypothesis 5.2:** “*Adaptive strategies for cognitive emotion regulation do not significantly predict psychological well-being in young adults with SIB*” has been rejected.

The regression analysis emphasizes the influence of non-adaptive cognitive emotion regulation strategies, including Self-Blame, Catastrophization, Other Blame,

and Rumination, on PWB. These results are consistent with previous research highlighting the detrimental effects of maladaptive coping mechanisms on mental health outcomes (Aldao et al., 2010; Nolen-Hoeksema, 1991). While some studies suggest that certain levels of self-blame or rumination may serve adaptive functions in problem-solving (Garnefski et al., 2001; Watkins, 2008), the consistently negative beta coefficient for self-blame (-0.321) underscores its pervasive role in predicting lower levels of PWB. This critical evaluation highlights the predictive value of maladaptive strategies in understanding and addressing psychological well-being, despite potential variations based on individual differences and contextual factors.

The significant positive predictive value of adaptive strategies of CER on PWB among young adults is consistent with prior research emphasizing the beneficial effects of these strategies on mental health outcomes (Garnefski et al., 2001; Kabat-Zinn, 2003). Specifically, positive refocusing, refocusing on planning, putting into perspective, and acceptance emerge as predictors of enhanced PWB, aligning with the literature on the efficacy of these adaptive coping mechanisms (Troy et al., 2013). However, it is essential to acknowledge the potential limitations of the research. Although this study provides valuable insights into the predictive value of cognitive emotion regulation strategies, it may not account for other factors influencing psychological well-being such as environmental stressors or individual differences. In addition, the cross-sectional nature of the data limits the ability to establish causal relationships between cognitive emotion regulation strategies and psychological well-being, highlighting the need for longitudinal research designs (Moberly & Watkins, 2006).

The findings from the Phase I study on different variables that predict PWB support the effectiveness of adaptive emotion regulation strategies in promoting

positive mental health outcomes, emphasizing their significance for interventions and therapeutic initiatives in any special population. The current research selected the population of young adults with non-suicidal self-injurious behaviour. Knowing the variables studied in the above sections would be beneficial to plan, develop or adopt an intervention. In the following section, attempted to find out the predictive relationship between the study variable in self-injurious behaviour in young adults with one one-year history.

### **Section 5.2- Binary logistic regression analysis: Self-injurious Behaviour as dependent variable**

Logistic regression analysis is a class of regression in which the independent variable is used to predict the dependent variable. When the dependent variable has two categories (Categorical variables), binary logistic regression is used. Binary logistic regression is a suitable model when the outcome variable, consists of two categories, typically labelled as "1" and "0". Unlike regular linear regression, which is not appropriate for such categorical outcomes, binary logistic regression estimates the probability of an event occurrence based on specific explanatory variables. This modelling approach is most suitable when the phenomenon being studied presents itself in a dichotomous manner, and the researcher aims to predict the likelihood of an event happening among two possibilities. In the present study, SIB in young adults is dichotomous manner any SIB and No SIB in two categories. Binary logistic regression analysis was conducted to examine the predictive value of cognitive emotion regulation and psychological well-being sub-variables for SIB (past year) among study participants. The hypothesis posited that the sub-variables of cognitive emotion regulation would not significantly predict self-injurious behaviour. The results of the analysis are depicted in table 3.16.

Table 3.16

*Binary Logistic Regression Analysis predicting self-injurious behaviour (last year) for cognitive emotion regulation sub variables.*

Variables of CER	B	SE	Wald	Sig	Exp (B)	95% CI
Self- blame	0.226	0.056	16.196	0.000	1.253	1.123-1.339
Catastrophization	0.018	0.053	0.122	0.727	1.019	0.919-1.129
Other Blame	0.170	0.050	11.581	0.001	1.186	1.075-1.308
Rumination	-0.022	0.052	0.186	0.666	0.978	0.884-1.082
Positive Refocusing	-0.109	0.053	4.295	0.038	0.897	0.809-0.994
Refocus on Planning	-0.184	0.059	9.629	0.002	0.832	0.740-0.934
Positive Reappraisal	-0.049	0.058	0.720	0.396	0.952	0.851-1.066
Putting into Perspectives	-0.036	0.052	0.490	0.484	0.964	0.871-1.067
Acceptance	-0.164	0.057	8.184	0.004	0.849	0.759-0.950

*Nagelkerke*  $R^2 = 0.706$ ,  $\chi^2(8) = 44.632$ ,  $p < .001$

The results presented in Table 3.16 indicate that several sub variables are significant predictors. Notably, Self-blame ( $B = 0.226$ ,  $Wald = 16.196$ ,  $p < .001$ ), Other Blame ( $B = 0.170$ ,  $Wald = 11.581$ ,  $p = .001$ ), Refocus on Planning ( $B = -0.184$ ,  $Wald = 9.629$ ,  $p = .002$ ), and Acceptance ( $B = -0.164$ ,  $Wald = 8.184$ ,  $p = .004$ ) emerged as significant contributors. These findings suggest that certain cognitive emotion regulation strategies play a crucial role in predicting self-injurious behaviour, contrary to the hypothesised non-significant relationship. The *Nagelkerke* R-square of 0.706 indicates a substantial proportion of variance explained by the model, and the chi-square test ( $\chi^2(8) = 44.632$ ) supports the overall significance of the regression model.

Thus, the null **Hypothesis 5.3 ‘Subvariables of cognitive emotion regulation will not significantly predict self-injurious behaviour in young adults’** has been rejected.

The results of the binary logistic regression analysis reveal crucial insights into the predictive value of cognitive emotion regulation strategies regarding NSSIB. Self-blame and other-blame emerged as significant contributors to NSSIB, echoing previous research highlighting the role of negative attributions and self-perceptions in self-harming behaviours (Joiner, 2005; Klonsky, 2007; Hawton et al., 2016). These findings underscore the need for targeted interventions addressing maladaptive cognitive processes to mitigate the risk of NSSIB. Conversely, the protective effects observed for adaptive strategies such as positive refocusing, planning refocus, and acceptance are noteworthy, suggesting their potential utility in resilience-building interventions (Nock, 2009; Selby et al., 2015). Particularly significant protective effect of Acceptance, which aligns with the principles of mindfulness-based interventions and highlights their relevance in NSSIB prevention (Linehan, 1993). However, the lack of significant associations for Catastrophization, Rumination, Positive Reappraisal, and Putting into Perspective suggests the need for further exploration into their role in NSSIB (Klonsky, 2009). These findings collectively underscore the importance of understanding and targeting cognitive emotion regulation strategies in interventions aimed at preventing NSSIB, offering valuable insights into both risk and protective factors.

We further performed Binary logistic regression to determine the effect size of each variable of psychological well-being on the likelihood of self-injurious behaviour

Table 3.17

*Binary logistic regression analysis of sub-variables of psychological well-being and self-injurious behaviour as dependent variables.*

<b>Variables of PWB</b>	<b>B</b>	<b>S.E</b>	<b>Wald</b>	<b>Df</b>	<b>Sig</b>	<b>Exp(B)</b>	<b>95% C.I.</b>
<b>Autonomy</b>	-0.024	0.018	1.817	1	0.178	00.977	0.944 -1.011
<b>Environmental Mastery</b>	-0.044	0.021	4.346	1	0.037	0.957	0.918 - 0.977
<b>Personal growth</b>	-0.040	0.024	2.868	1	0.090	0.961	0.918–1.006
<b>Positive relationships with others</b>	-0.062	0.019	10.796	1	0.001	0.940	0.905 - 0.975
<b>Purpose in Life</b>	-0.063	0.022	8.285	1	0.004	0.939	0.900 -0.980
<b>Acceptance</b>	-0.041	0.018	4.968	1	0.026	0.960	0.926 - 0.995

*Nagelkerke  $R^2 = 0.447$ ,  $\chi^2(8) = 11.549$ ,  $P = 0.72$*

The overall logistic regression model was statistically not significant,  $\chi^2(8) = 11.549$ ,  $p$  value = 0.72. It explained 44.7% (*Nagelkerke  $R^2$* ) of the variance in self-injurious behaviour and correctly classified 95.5 % of cases. A value of 0.2–0.4 indicates a moderate relationship. A value of 0.4 or higher indicates a strong relationship. When looking into sub-variables, it was found that  $p$  values for Autonomy, environmental mastery, positive relationship with others, personal growth, purpose in life and acceptance significantly contributed to self-injurious behaviour. As the overall model was not significant, the null **Hypothesis 5.4 ‘Sub-variables of Psychological well-being will not significantly predict self-injurious behaviour in young adults’** has been accepted.

Even though Psychological well-being will not contribute to self-injurious behaviour at a significant level 44.7% prediction shows overall in all dimensions. Strong predictors of SIB are dimensions of Autonomy, Environmental Mastery, personal growth, purpose in life and acceptance. Brown and Comtois (2004) suggested that a heightened sense of Environmental Mastery may act as a protective factor against self-harm, emphasizing the importance of emotion regulation skills. Similarly, Joiner et al. (2009) underscored the protective role of purpose in life, positing that a meaningful existence could mitigate the risk of self-injury. Hasking, Momeni et al. (2008) explored how Environmental Mastery influences coping strategies, Victor et al. (2014) highlighted its association with the functions of non-suicidal self-injury. The study underscores the importance of positive relationships and self-acceptance in SIB among young adults, aligning with prior research (Hawton et al., 2016; Joiner, Riberio et al., 2012; Muehlenkamp, Swenson et al., 2015; Whitlock et al., 2013). These psychological well-being dimensions serve as crucial predictors for reducing self-harm risk. However, limitations such as cross-sectional data and self-reported measures warrant further longitudinal research for objective assessments (Klonsky, 2011; Swannell et al., 2014). Integrating these findings into preventive interventions can enhance efforts to effectively address self-injurious behaviours.

**Phase II (Intervention study)**

In Phase II, 21 young adults with NSSIB completed 14 weeks of Dialectical Behaviour Therapy (DBT) based on emotional regulation (Individual therapy sessions) and underwent assessments in the pre-intervention, post-intervention, and follow-up stages. The demographic details of the participants are described below.

Table-3.18

*Demographic details of the participants in the main intervention study*

<b>Demographic variable</b>	<b>Category</b>	<b>No. of participants</b>	<b>Percentage (%)</b>
<b>Gender</b>	Male	2	9.5
	Female	19	90.5
<b>District</b>	Thiruvananthapuram	7	33.3
	Kottayam	11	52.4
	Ernakulam	3	14.3
<b>Marital status</b>	Married	14	66.7
	Unmarried	7	33.33
<b>Age Group(years)</b>	19- 21	6	28.58
	22-25	7	33.3
	26-29	8	38.09
<b>Occupation</b>	Self-employed	12	57.1
	Private job	7	33.38
	Govt Job	2	9.52
<b>Educational Qualification</b>	Higher Secondary	1	4.7
	Under Graduation	13	61.5
	Post Graduation	7	33.38

It can be observed in table 3.18 included 21 participants, with a notable gender distribution where females constituted a significant majority at 90.5%, with only 9.5% being male participants. The participants were recruited from three distinct districts in Kerala: Thiruvananthapuram, Kottayam, and Ernakulam. Among these districts, participants in Kottayam exhibited the highest participation rate at 52.4%, followed by

Thiruvananthapuram at 33.3% and Ernakulum at 14.3%. The majority were married (66.7%), whereas a smaller proportion were unmarried (33.33%). The majority fall into the 26-29 age group (38.09% of the total sample). The 22-25 age group followed closely at 33.3%, while the 18-21 age group made up 28.58%. Participants who underwent DBT were self-employed (57.1%), followed by those in private jobs (33.38%), and a smaller proportion in government jobs (9.52%). The majority were undergraduates (61.5%), followed by those with postgraduate qualifications (33.38%), and a smaller proportion had a higher secondary education (4.7%). Previous analysis in Phase 1 of the study observed that sociodemographics other than occupation did not show significant influence on SIB. As a result, we made the strategic decision not to focus on sociodemographic variables but on psychological variables in the current study.

In the intervention phase, assessments were conducted in three stages, i.e., pre-intervention, post-intervention, and follow-up, which is after 6 months of intervention. Before the main analysis, descriptive analysis and normality testing were done with all variables. It provides a comprehensive overview of the frequency and percentage distribution of the data. Mean, median, mode, standard deviation, skewness and kurtosis, for sub-variables of non-suicidal self-injurious behaviour, cognitive emotion regulation, psychological well-being on pre-assessment, post-assessment and Follow-up assessment were discussed in the following separate tables.

***Descriptive Analysis for Self-Harm Behaviour***

Mean, median, mode, standard deviation, skewness and kurtosis, for Self Harm Behaviour in Pre-assessment, post-assessment and Follow-up assessment are discussed in separate tables.

Table 3.19

*Basic Descriptive Statistics of Self Harm Behaviour for Pre-intervention assessment*

<b>Variables</b>	<b>Mean</b>	<b>Mode</b>	<b>S. D</b>	<b>Skewness</b>	<b>Kurtosis</b>
Self –Harm Pre Assessment	3.52	3	1.692	1.188	1.647
Self –Harm Post Assessment	0.38	0	0.805	2.337	5.3
Self –Harm Follow-up Assessment	0.19	0	0.873	4.853	21

Table 3.19 shows descriptive statistics for pre-assessment scores of Self-harm behaviour. The table summarizes statistical measures for assessing self-harm behavior at three different time points: pre-assessment, post-assessment, and follow-up assessment. For the pre-assessment, measures such as mean, median, mode, standard deviation, skewness, and kurtosis are provided. Similarly, the post-assessment and follow-up assessment periods also include these measures. Skewness values indicate positive skewness in all assessments, suggesting a tail extending towards higher values. Kurtosis values indicate leptokurtic distributions, meaning they have heavier tails and are more peaked compared to a normal distribution. These statistics offer insights into the distribution and characteristics of self-harm behavior assessments across different assessment periods.

Table 3.20  
*Basic Descriptive Statistics of Sub-Variables of Cognitive Emotion Regulation for Pre-intervention assessment.*

Variables	Mean	Median	Mode	S. D	Skewness	Kurtosis
Self- Blame	14.5	14	11	3.8	0.024	-1.18
Acceptance	13	13	16	3.536	-0.030	-0.766
Rumination	14.14	14	16	3.454	-0.230	-0.731
Positive Refocusing	10.57	10	6	4.6	0.468	-0.810
Refocus on planning	11.29	11	6	4.617	0.027	-1.558
Positive reappraisal	11.29	11	9	4.209	0.322	-0.337
Putting into perspective	11.57	11	10	3.709	0.011	-0.925
Catastrophization	12.62	13	7	4.330	0.034	0.231
Other blame	10.76	10	4	4.918	0.231	0.972

The descriptive statistics provides offer valuable insights into the distributional characteristics of cognitive emotion regulation variables. Positive skewness is observed in the majority of the variables, including self-blame, positive refocusing, refocus on planning, positive appraisal, putting into perspective, catastrophization, and other blame. This indicates that the distribution of scores for these variables is skewed towards higher values, suggesting a concentration of lower scores with a tail extending towards higher scores. Conversely, acceptance and rumination exhibit negative skewness, suggesting a concentration of higher scores with a tail extending towards lower scores.

The examination of kurtosis values reveals the nature of the distribution's tails and peaks. Self-blame, acceptance, rumination, positive refocusing, refocus on

planning, positive appraisal, and putting into perspective all exhibit platykurtic distributions. Conversely, catastrophizing and other blame exhibit leptokurtic distributions, characterized by positive kurtosis values. Leptokurtic distributions feature longer and fatter tails compared to a normal distribution, along with sharper peaks.

These findings highlight the variability in the distributional shapes of cognitive emotion regulation variables. The majority of the variables display platykurtic distributions, characterized by negative kurtosis values. This indicates relatively shorter and thinner tails compared to a normal distribution, along with flatter peaks.

Table 3.21

*Basic Descriptive Statistics of Sub-Variables of Cognitive Emotion Regulation for Post-intervention assessment*

<b>Variables</b>	<b>Mean</b>	<b>Median</b>	<b>Mode</b>	<b>S. D</b>	<b>Skewness</b>	<b>Kurtosis</b>
Self- Blame	11.14	10	10	2.869	0.151	-1.174
Acceptance	12.81	13	13	3.219	-0.327	-0.225
Rumination	11.43	10	10	3.234	0.465	-0.641
Positive Refocusing	13.29	13	13	2.390	-0.690	1.958
Refocus on planning	13	14	14	2.470	-1.783	4.533
Positive reappraisal	13.95	14	14	2.109	-1.274	2.223
Putting into perspective	13.38	14	14	2.376	-0.750	1.944
Catastrophizing	10	10	10	3.661	0.034	-1.020
Other Blame	9.52	8	8	3.558	1.376	1.409

Table 3.21 provides descriptive statistics for the post-test scores of cognitive emotion regulation variables offering a comprehensive understanding of their distributional characteristics. Examining the skewness values reveals a mix of positive and negative skewness across the variables. Positive skewness is observed in the variables self-blame, rumination, putting into perspective, and catastrophization. Conversely, negative skewness is evident in the variables acceptance, positive refocusing, refocus on planning, and positive appraisal. This diversity in skewness highlights the variability in the distributional shapes of cognitive emotion regulation variables following the intervention or post-test assessment.

The majority of the variables exhibit platykurtic distributions, characterized by negative kurtosis values. These include self-blame, acceptance, rumination, and catastrophizing. Conversely, positive refocusing, refocus on planning, positive appraisal, and putting into perspective display leptokurtic distributions, featuring positive kurtosis values. This distinction in kurtosis values further underscores the variability in the distributional shapes of cognitive emotion regulation variables post-intervention. Positive skewness may indicate a concentration of scores towards higher values, while negative skewness may suggest a concentration towards lower values.

The table 3.22 provides for the follow-up scores of cognitive emotion regulation variables present a detailed overview of their distributional characteristics. Positive skewness is observed in the variables self-blame, rumination, positive refocusing, and catastrophization, indicating a concentration of scores towards higher values. Conversely, negative skewness is evident in acceptance, refocus on planning, positive appraisal, and putting into perspective, suggesting a concentration of scores towards lower values. This diversity in skewness underscores the variability in the distributional shapes of cognitive emotion regulation variables at the follow-up assessment.

Table 3.22

*Basic Descriptive Statistics of Sub-Variables of Cognitive Emotion Regulation for Follow-up stage*

<b>Variables</b>	<b>Mean</b>	<b>Median</b>	<b>Mode</b>	<b>S. D</b>	<b>Skewness</b>	<b>Kurtosis</b>
Self- Blame	7.14	6	4	3.928	2.060	5.089
Acceptance	16.52	17	19	3.311	-1.070	0.567
Rumination	6.95	6	4	3.612	1.703	3.264
Positive Refocusing	15.95	17	17	2.991	-1.956	5.40
Refocus on planning	17.10	18	20	3.548	-1.838	3.890
Positive reappraisal	16.62	17	18	2.801	-1.572	3.486
Putting into perspective	16.14	16	19	3.005	-0.714	-0.725
Catastrophizing	7.19	4	4	4.676	1.482	1.546
Other Blame	6	4	4	2.757	0.981	-0.693

The examination of kurtosis values offers insights into the tails and peaks of the distribution. Most of the variables exhibit leptokurtic distributions, characterized by positive kurtosis values, including positive refocusing, refocus on planning, positive appraisal, putting into perspective, and catastrophization. Leptokurtic distributions feature longer and fatter tails compared to a normal distribution, with sharper peaks. However, other blame displays a platykurtic distribution, indicated by a negative kurtosis value, suggesting relatively shorter and thinner tails with a flatter peak.

### Testing for Normality

Shapiro Wilk test is a powerful test for detecting Normality for small sample sizes. As the present study has a sample size of 21, Shapiro Wilk test statistic and *p-value* were compared to a significance level of 0.05.

Table 3.23

*Shapiro Wilk test statistics, degrees of freedom and p-value of total Self Harm Behaviour in pre, post, and follow-up assessment*

<b>Testing Time</b>	<b>Statistic</b>	<b>Df</b>	<b><i>p-value</i></b>
Pre-intervention Self Harm	0.887	21	0.020
Post-intervention Self Harm	0.553	21	0.000
Follow-up Self Harm	0.228	21	0.000

From table 3. 24 those variables whose p-value was less than 0.05, reject the null hypothesis and conclude data was non-normal. It was concluded that in the pre-assessment of Cognitive Emotion Regulation, Self-Blame, Acceptance, Rumination, Positive Refocusing, Positive Reappraisal, Putting into Perspective, Catastrophization, Other Blame have p-value greater than 0.05, so fail to reject the null hypothesis and conclude data was normal. Variables such as Self-Blame, Acceptance, Rumination, Positive Refocusing, Putting into Perspective, and Catastrophization of post-test of cognitive emotion regulation also had a p-value greater than 0.05, so variables are considered as normal.

Table 3.24

Table shows Shapiro Wilk test statistics, degrees of freedom and *p value* on CER in three stages of assessment

Testing Time	Sub Variables	Statistic	Df	<i>p value</i>
Pre-intervention	Self- Blame	0.944	21	0.258
	Acceptance	0.961	21	0.545
	Rumination	0.966	21	0.645
	Positive Refocusing	0.939	21	0.209
	Refocus on Planning	0.905	21	0.044
	Positive Reappraisal	0.967	21	0.673
	Putting into Perspective	0.972	21	0.769
	Catastrophization	0.941	21	0.224
	Other Blame	0.932	21	0.151
	Post- intervention	Self- Blame	0.930	21
Acceptance		0.962	21	0.559
Rumination		0.945	21	0.270
Positive Refocusing		0.922	21	0.095
Refocus on Planning		0.820	21	0.001
Positive Reappraisal		0.893	21	0.026
Putting into Perspective		0.917	21	0.074
Catastrophization		0.920	21	0.088
Other blame		0.849	21	0.004
Follow-up		Self- Blame	0.767	21
	Acceptance	0.853	21	0.005
	Rumination	0.799	21	0.001
	Positive Refocusing	0.828	21	0.002
	Refocus on Planning	0.791	21	0.000
	Positive Reappraisal	0.862	21	0.007
	Putting into Perspective	0.853	21	0.005
	Catastrophization	0.739	21	0.000
	Other Blame	0.719	21	0.000

Considering the small sample size and non-normal distribution of data, we opted for appropriate non-parametric statistical analysis. Assessments were performed by

Friedman test statistics and post hoc analysis by Wilcoxon signed-rank tests. Friedman's test is a non-parametric test equivalent to repeated measures ANOVA (Analysis of Variance) to determine if a particular factor has an effect or changes over time, developed by Milton Friedman, an Economist (Friedman,1940). One-way repeated measure analysis of variance (ANOVA) is a parametric test that compares three or more groups in the experiment consisting of the same subjects or objects (Jasrai, 2020). The Friedman test was used to determine the difference between the pre-intervention, post-intervention, and follow-up phases for all variables, including self-injurious behaviour. This test is the best statistic for a repeated measures type of experiment to determine if a particular factor also has an effect. The Friedman test was conducted in sample from the population, and the data consisted of measurements taken on the same group across three or more different occasions, and the samples were of at least ordinal or continuous scale. It should be noted that the samples do not necessarily need to be normally distributed. When a significant difference is detected between treatments (when null hypothesis is rejected), several post hoc tests can be applied to determine which interventions differ and which differences are significant (Pereira et al., 2014). A series of pairwise comparisons was performed by adjusting the significance level using Bonferroni correction. In the current analysis, Wilcoxon signed-rank tests were conducted with a Bonferroni correction at a significance level of  $p < 0.017$  based on three groups (Benavoli, 2015). The three sets of data were subjected to statistical analysis of the changes that occurred based on the intervention they received. The details of the statistical analyses are discussed in Sections 6, 7, and 8.

## Section 6: Impact of Dialectical Behaviour Therapy on Non-Suicidal Self-Injurious Behaviour.

In the intervention phase, baseline (pre-intervention) assessment on non-suicidal self-injury (NSSIB) was done with The Deliberate Self-Harm Inventory (Gratz, 2005). Based on these details, the sample is depicted in the following table.

Table 3.25

*Frequency and percentage of participants who endorsed the NSSIB*

Mode of the attempt	Frequency (n=21)			Percentage( %)		
	Pre	Post	Follow up	Pre	Post	Follow up
Cut wrist	17	4	1	81	19	4.8
Burn with a cigarette	2	0	0	9.5	0	0
Burn with lighter	5	1	0	23.8	4.8	0
Carved words on the skin	9	1	1	42.9	4.8	4.8
Carved pictures on the skin	6	2	0	28.6	9.5	0
Scratch on the skin	6	0	0	28.6	0	0
Bite on the skin	4	0	1	19	0	4.8
Rub with sand paper	1	0	0	4.8	0	0
Drip acid	2	0	0	9.5	0	0
Beach skin	4	0	0	19	0	0
Tattooing	4	0	0	19	0	0
Rub with broken glass	1	0	0	4.8	0	0
Break bone	1	0	0	4.8	0	0
Punch purposely	5	0	1	23.8	0	4.8
Prevent healing of wounds	5	0	0	23.8	0	0

Table 3.25 displays the frequency and percentage of participants endorsing various self-harm methods across different phases of assessment (pre-intervention, post-intervention, and follow-up). Cutting the wrist emerged as the most prevalent method, with 81% of participants reporting it during the pre-intervention phase, which

decreased to 19% post-intervention and 4.8% at follow-up. Burn-related methods, such as burning a cigarette or lighter, were less common. Carving words or pictures on the skin also showed significant prevalence during the pre-intervention phase, with a decrease observed post-intervention. Notable behaviours include scratching, biting and purposely punching, with a decrease observed after the intervention for punching. Less common methods like rubbing with sandpaper or dripping acid were reported by a small percentage of participants, highlighting the diversity of self-harming behaviours within the study population. Overall, the data suggest a reduction in the frequency of self-harm behaviour post-intervention, indicating the potential positive impact of the intervention. The total value of self-injurious behaviour was calculated by summing each value in 16 items of the scale (Gratz, 2001). Friedman test was carried out to compare the three groups based on the proposed Hypothesis 6.

Table 3.26

*Friedman's test statistics for self-harm in the pre, post, and follow-up stages of intervention*

Stage	Mean Rank	Median	$\chi^2$	<i>P</i>
Pre-intervention	2.93	3.00		
Post-intervention	1.62	.00	33.91	0.000
Follow-up	1.45	.00		

It can be observed from table 3.26 that there was statistically highly significant difference in NSSIB between three stages of assessment ( $\chi^2 (2) = 33.91, p < 0.001$ ). The mean ranks for the pre-intervention, post-intervention, and follow-up stages were 2.93, 1.62, and 1.45, respectively. The mean rank was highest in the pre-test phase of the intervention and lowest in the follow-up. Therefore, **Hypothesis-6** “**There is no**

significant difference in NSSIB between pre-intervention, post-intervention and follow-up stages” has not been accepted. Furthermore, post hoc tests were conducted for pair-wise analysis to determine which groups differed using the Wilcoxon-signed rank test (Table 3.27).

Table 3.27

*Pairwise comparison of NSSIB in the pre-intervention, post-intervention, and follow-up stages.*

	Difference between Scores	Rank	N	Z	P
Post NSSIB–pre NSSIB	Negative Ranks		20 <sup>a</sup>	-3.939 <sup>b</sup>	0.000
	Positive Ranks		0 <sup>b</sup>		
	Ties		1 <sup>c</sup>		
	Total		21		
Follow up NSSIB-post NSSIB	Negative Ranks		5 <sup>d</sup>	-0.954 <sup>b</sup>	0.340
	Positive Ranks		1 <sup>e</sup>		
	Ties		15 <sup>f</sup>		
	Total		21		
Pre-NSSIB follow-up NSSIB	Negative Ranks		1 <sup>g</sup>	-3.981 <sup>c</sup>	0.000
	Positive Ranks		20 <sup>h</sup>		
	Ties		0 <sup>i</sup>		
	Total		21		

a. Post total NSSIB < pre total NSSIB

b. post total NSSIB > pre total NSSIB

c. post total NSSIB = pre total NSSIB

d. Follow up total NSSIB < post total NSSIB

e. follow up total NSSIB > post total NSSIB

f. Follow up total NSSIB = post total NSSIB

g. Pre total NSSIB < follow up total NSSIB

h. pre total NSSIB > follow up total NSSIB

i. pre total NSSIB = follow up total NSSIB

In Table 3.27, significant differences in NSSIB are evident between the pre-intervention and post-intervention groups ( $Z = -3.939$ ) and the pre-intervention and follow-up groups ( $Z = -3.981$ ). However, no significant difference was found between the follow-up and post-intervention stages of the intervention ( $Z = -0.954$ ). This lack of significance is attributed to one case exhibited NSSIB during the follow-up stage (1<sup>e</sup>) among 21 cases. However, NSSIB decreased from the post-intervention stage to follow-up in 5 cases (5<sup>d</sup>), whereas 15 cases showed no NSSIB recurrence from post-intervention to follow-up (15<sup>f</sup>). Notably, one patient exhibited NSSIB during the follow-up stage (1<sup>e</sup>).

In Friedman's analysis, there was significant difference among pre-intervention, post-intervention, and follow-up stages of intervention on NSSIB in young adults who received DBT. NSSIB is gradually decreasing from the pre-intervention stage to the follow-up. These findings emphasize the consistent positive impact of DBT in reducing self-injury and DBT holds promise as an effective intervention for reducing self-harm and suicidal ideation. One key aspect of DBT that likely contributes to its effectiveness is its emphasis on skill training, particularly in areas such as mindfulness, distress tolerance, emotion regulation, and interpersonal effectiveness. These skills equip individuals with the tools they need to cope with stressors and challenging situations without resorting to self-injurious behaviour. Mindfulness practices encourage individuals to cultivate present-moment awareness and non-judgmental acceptance of their thoughts, feelings, and experiences. By learning to observe their inner experiences without reacting impulsively, individuals can develop greater self-awareness and self-control, which are essential for breaking the cycle of self-injury. Distress tolerance skills focus on helping individuals tolerate intense emotions without resorting to harmful behaviours. Through techniques such as deep breathing, self-soothing

activities and distraction individuals learn to ride out emotional storms without self-injury. Emotion regulation skills enable individuals to identify and label their emotions accurately, understand the functions of different emotions and modulate emotional intensity effectively. By learning healthy ways to manage their emotions, individuals become less vulnerable to the distress level that often precedes self-injurious behaviour. Previous research findings provided a comprehensive overview of the efficacy of DBT in addressing self-harm and suicidal behaviours. Geddes et al. (2012) and Walton et al. (2020) demonstrated significant reductions in trauma-related symptoms, suicidality, and NSSIB in adolescents undergoing DBT. In addition, Apsche et al. (2006), Ber et al. (2020), Buerger et al. (2019), and others consistently demonstrated significant reductions in self-harm and suicidal ideation following DBT. Notably, Walton et al. (2020) conducted a randomized controlled trial highlighting DBT's superiority over the conversational model in reducing depression among individuals with self-harming behaviours. For instance, Buerger et al. (2019) observed notable decreases in self-harm and suicidal ideation over 6.5 months in German adolescents aged 12-17 years. Similarly, Courtney and Flament (2015) found significant decreases in self-harm and borderline personality traits within a 3-month timeframe among participants aged 15 years and above in Canada. Fischer and Peterson (2015) reported a substantial 30% reduction in self-harm over 6 months among participants aged 14-17 years in the United States. It is noticed that most of the aforementioned studies are in the adolescent population; therefore, this study is a unique contribution to the young adult population.

However, in pairwise analysis, no significant difference was observed between the follow-up and post-intervention stages. NSSIB gradually decreased in most cases after the intervention, but it was present in one of the 21 cases. This particular case exhibited multiple methods of self-injury, including cutting the wrists and banging the

head. Although there was a decrease in the variety of methods used over time, a notable incident occurred during a period of heightened stress, in which the individual resorted to biting themselves, as documented in the inventory form. Consequently, this case received special attention during the follow-up phase of the intervention. Such cases may require consistent sessions of intervention. Although the overall frequency may have decreased, the persistence of any form of self-injurious behaviour underscores the necessity for individualized attention in such instances. In addition, other psychological factors must be assessed, and long-term follow-ups are advised. During the early therapy stages, behaviour contracts and DBT skill training effectively prevented high-risk behaviours. As therapy progressed, participants learned emotion regulation, distress tolerance, and interpersonal effectiveness, replacing self-harm with healthier coping strategies, while consistently practicing mindfulness throughout the session. This emphasizes the importance of continued monitoring and personalized care in effectively managing self-injurious behaviours within clinical settings.

### **Section 7: Impact of Dialectical Behaviour Therapy on the Sub-variables of Cognitive Emotion Regulation.**

There were nine sub-variables in cognitive emotion regulation (CER), including five adaptive and four non-adaptive strategies. The adaptive CERs were Acceptance, Positive Refocusing, Refocus on Planning, Positive Reappraisal, and Putting into Perspective. The non-adaptive coping strategies are Other Blame, Rumination, Catastrophizing, and Self-Blame. Garnefski and Kraaij (2007) used the terms cognitive coping strategies and cognitive emotion regulation interchangeably. Friedman's test analysis was conducted to determine the difference in sub variables of coping/emotion regulation between pre-intervention, post-intervention, and follow-up phases based on scores obtained to test the proposed Hypotheses 7.

Tables 3.28 - 3.45 give detailed results of analysis by the Friedman test, and each table is followed by post hoc analysis on Wilcoxon-signed rank test statistics for pairwise analysis to determine the significant difference between the two groups.

Table 3.28

*Friedman's test statistics for Self-Blame between pre-intervention, post-intervention, and follow-up stages among young adults with NSSIB.*

Stage	Mean Rank	Median	$\chi^2$	<i>P</i>
<b>Pre-intervention</b>	2.60	14		
<b>Post-intervention</b>	2.17	10	20.96	0.000
<b>Follow-up</b>	1.24	6		

The result from the above table 3.28 it is observed show a significant difference ( $\chi^2 (2) = 20.96, p < .001$ ) in the self-blame strategy between the three stages. The mean rank for pre-intervention was 2.60, for post-intervention was 2.17, and for follow-up was 1.24. The mean rank was highest for the pre-intervention stage and lowest for the follow-up stage. Therefore, **Hypothesis 7.1 'There is no significant difference in self-blame between pre-intervention, post-intervention, and follow-up stages'** has not been accepted. Post hoc tests were conducted for pairwise comparison using the Wilcoxon signed rank test to determine which groups differed.

Table 3.29

*Pairwise comparison on Wilcoxon Signed-Rank test of Self-Blame between pre-intervention, post-intervention, and follow-up.*

<b>Difference between Scores</b>	<b>Rank</b>	<b>N</b>	<b>Z</b>	<b>P</b>
<b>Post Self Blame- Pre Self Blame</b>	Negative Ranks	14 <sup>a</sup>	-2.414	0.016
	Positive Ranks	6 <sup>b</sup>		
	Ties	1 <sup>c</sup>		
	Total	21		
<b>Follow up Self Blame- Post Self Blame</b>	Negative Ranks	17 <sup>d</sup>	-3.125	0.002
	Positive Ranks	2 <sup>e</sup>		
	Ties	2 <sup>f</sup>		
	Total	21		
<b>Pre Self Blame- Follow up Self Blame</b>	Negative Ranks	2 <sup>g</sup>	-3.654	0.000
	Positive Ranks	19 <sup>h</sup>		
	Ties	0 <sup>i</sup>		
	Total	21		

*Note*

- a. post self blame < pre self blame
- b. post self-blame > pre self-blame
- c. post self blame = pre self blame
- d. follow up self blame < post self blame
- e. follow up self-blame > post self-blame
- f. follow-up self blame = post-self blame
- g. pre self blame < follow-up self-blame
- h. pre-self-blame > follow-up self-blame
- i. pre self-blame = follow- up self-blame

From table 3.29 it could be observed significant differences in the Self-Blame strategy of cognitive emotion regulation between the pre-and post-intervention stages, between the follow-up and post-intervention groups, and between the pre-intervention and follow-up.

Significant difference in the scores of three stages of intervention on Self-Blame strategy, also a significant change in pairwise analysis indicating dialectical behaviour therapy made some impact in this non-adaptive coping strategy. Self Blame refers to the tendency of individuals to attribute negative events or outcomes to themselves, viewing themselves as responsible or at fault. When individuals engage in self-Blame, they may perceive themselves as inadequate, unworthy, or deserving of punishment. This negative self-perception can contribute to feelings of guilt, shame, and distress, which may intensify the urge to self-injure as a way to cope with these overwhelming emotions. Self Blame can also interfere with healthy coping mechanisms and problem solving strategies. Instead of seeking support or addressing underlying issues constructively, individuals may become trapped in a cycle of self-criticism and avoidance, further worsening their distress and increasing the likelihood of engaging in self-injury as a maladaptive coping mechanism. The current study shows that through consistent sessions of therapy, individuals can reduce Self Blame and develop healthier ways of coping other than blaming themselves or injuring themselves. The results of the present study are consistent with earlier studies that NSSI individuals have high scores in self-blame and it reduces during therapy (Williams et al., 2020). Current findings further supported high levels of self-blame were associated with the frequency of NSSI in a United States sample and intervention targeting cognitive tendency towards Self Blame enhanced NSSI treatment response (Chapman & Gratz, 2015). Collectively, a series of studies, including those by Barnicot & Crawford (2019),

McMain et al. (2022), and Neacsiu et al. (2010) provide evidence for the potential of DBT to alleviate Self Blame in individuals diagnosed with borderline personality disorder. These studies, emphasizing the transformative effects of DBT in self-blame, consistently demonstrated significant enhancements in emotion regulation skills alongside a concurrent reduction in self-harm behaviours. Further, analysis was performed with the Acceptance strategy of CER. The following table 3.30 and 3.31 depict the results of the detailed analysis.

Table 3.30

*Friedman's test statistics for Acceptance between pre- and post-intervention and follow-up.*

Stage	Mean Rank	Median	$\chi^2$	<i>P</i>
<b>Pre-intervention</b>	1.71	13		
<b>Post-intervention</b>	1.71	13	10.537	0.005
<b>Follow-up</b>	2.57	17		

It is seen in table 3.30 a significant difference in the Acceptance strategy was noticed between the pre-intervention, post-intervention, and follow-up stages. Therefore, **Hypothesis 7.2 'There is no significant difference in Acceptance between pre-intervention, post-intervention and follow-up'** has not been accepted. A post hoc test was conducted for pairwise comparison of groups using the Wilcoxon signed rank test to determine which groups differed.

Table 3.31

*Wilcoxon-signed ranks test statistics for changes in Acceptance strategy between pre-intervention, post-intervention, and follow-up.*

<b>Difference between test scores Rank</b>		<b>N</b>	<b>Z</b>	<b>P</b>
<b>Post Acceptance and Pre Acceptance</b>	Negative Ranks	10 <sup>a</sup>	-0.052	0.958
	Positive Ranks	11 <sup>b</sup>		
	Ties	0 <sup>c</sup>		
	Total	21		
<b>Follow-up Acceptance and Post Acceptance</b>	Negative Ranks	3 <sup>d</sup>	-3.02	0.000
	Positive Ranks	16 <sup>e</sup>		
	Ties	2 <sup>f</sup>		
	Total	21		
<b>Pre Acceptance and follow up Acceptance</b>	Negative Ranks	16 <sup>g</sup>	-2.586	0.010
	Positive Ranks	5 <sup>h</sup>		
	Ties	0 <sup>i</sup>		
	Total	21		

*Notes*

- a. post acceptance < pre acceptance
- b. post acceptance > pre acceptance
- c. post acceptance = pre acceptance
- d. follow up acceptance < post acceptance
- e. follow up acceptance > post acceptance
- f. follow up acceptance = post acceptance
- g. pre acceptance < follow up acceptance
- h. pre acceptance > follow up acceptance
- i. pre acceptance = follow up acceptance

There were no significant differences found in the Acceptance variable between pre-intervention and post-intervention ( $Z = -0.052$ ,  $p > 0.05$ ), but a significant difference

was found between the follow-up and post-intervention ( $Z = -3.02, p < 0.001$ ) and pre and follow-up stages ( $Z = -2.586, p < 0.05$ ).

The results from the above analysis indicate a significant difference in Acceptance strategy among young adults with NSSIB across three stages of intervention: pre-intervention, post-intervention, and follow-up. However, in the post hoc analysis, self-acceptance scores did not show a significant difference from pre- to post-intervention. Self Acceptance is the process of recognizing and embracing all aspects of oneself, including strengths, weaknesses, emotions, and experiences, without judgement or criticism. It involves acknowledging one's thoughts, feelings, and behaviours with compassion and understanding rather than striving for perfection or seeking validation from external sources. In the early stages of therapy Acceptance may not show significant improvement because it involves deeply ingrained psychological processes that are resistant to change. However, through consistent skill training in mindfulness and other techniques, gradual improvements in Acceptance become evident over the course of follow-up interventions. The cases reported in the clinic were not very evident that the individuals had poor Self Acceptance, but the scoring of this strategy in the CER questionnaire showed a low score. This was also the finding from phase one of the present study. In the preliminary phase of the study, individuals with a history of any self-injury showed low scores, which was one of the strong predictors of SIB. During therapy especially mindfulness based exercises, distress tolerance skills might have developed and they started to accept their real self through the development of rational mind and wise mind skills. On the other hand, cultivating Self Acceptance can reduce the likelihood of self-injury by promoting healthier coping strategies and enhancing emotional resilience. When individuals accept themselves unconditionally they are better able to cope with difficult emotions and navigate challenging situations

without resorting to self-harm. Findings from this study are expected to contribute to a better understanding of the mechanisms underlying DBT's effectiveness and inform the development of interventions for individuals with self-injury (Bemmouna & Weiner, 2023). Gratz and Gunderson (2006) conducted a study on a 14-week acceptance-based emotion regulation group therapy for women with self-harm and borderline personality disorder (BPD). The therapy taught adaptive responses to emotions, resulting in significant improvements in emotion regulation among participants. This study highlights the effectiveness of acceptance and mindfulness based treatments in promoting better emotional regulation in individuals with self-harm and BPD. Gratz and Tull (2010) explored how Self Acceptance influences treatment outcomes within the context of DBT interventions for individuals struggling with self-injury and found correlations between levels of Self Acceptance and changes in self-injurious behaviours over the course of DBT treatment. The present study contributes to the role of DBT in promoting Acceptance among young adults with NSSIB, highlighting the interconnectedness of emotion regulation, mindfulness, and radical acceptance in enhancing PWB.

Table 3.32

*Friedman's test statistics for Rumination between the pre-intervention, post-intervention, and follow-up phases.*

<b>Stage</b>	<b>Mean Rank</b>	<b>Median</b>	<b><math>\chi^2</math></b>	<b><i>P</i></b>
Pre-intervention	2.48	14		
Post-intervention	2.26	10	19.247	0.000
Follow-up	1.26	6		

It can be observed from table 3.32 that there is a significant difference ( $\chi^2 (2) = 19.247$ ) in Rumination between the three stages. The mean rank for the pre-intervention was 2.48, with a slight decrease in the post-intervention and follow-up phases. **Therefore, Hypothesis 7.3 ‘There is no significant difference in Rumination between pre-intervention, post-intervention and follow-up’** has not been accepted. A post hoc test was employed for pairwise comparison.

Table 3.33

*Pairwise comparison of Rumination on Wilcoxon-signed ranks test statistics in the pre-intervention, post-intervention, and follow-up stages.*

Difference between the test ranks		N	Z	P
Scores				
<b>Post Rumination and Pre Rumination</b>	Negative Ranks	11 <sup>a</sup>	-2.028	0.043
	Positive Ranks	7 <sup>b</sup>		
	Ties	3 <sup>c</sup>		
	Total	21		
<b>Follow-up Rumination and Post-Rumination</b>	Negative Ranks	17 <sup>d</sup>	-3.700	0.000
	Positive Ranks	2 <sup>e</sup>		
	Ties	2 <sup>f</sup>		
	Total	21		
<b>Pre-Rumination - Follow-up Rumination</b>	Negative Ranks	2 <sup>g</sup>	-3.183	0.000
	Positive Ranks	18 <sup>h</sup>		
	Ties	1 <sup>i</sup>		
	Total	21		

*Notes*

- a. post rumination < pre rumination
- b. post rumination > pre rumination
- c. post rumination = pre rumination
- d. follow up rumination < post rumination
- e. follow up rumination > post rumination
- f. follow up rumination = post rumination
- g. pre rumination < follow up rumination
- h. pre rumination > follow up rumination
- i. pre rumination = follow up rumination

There were significant differences between the pre-intervention and post-intervention ( $Z = -2.028$ ), follow-up and post-intervention ( $Z = -3.700$ ), and pre-intervention and follow-up stages ( $Z = -3.183$ ).

The findings from this study provide valuable insights into the effectiveness of DBT in addressing Rumination. Rumination is a maladaptive coping strategy and cognitive distortion prevalent in depression and other psychopathologies. It refers to a repetitive and often uncontrollable focus on negative thoughts, feelings, or experiences typically related to past events or personal shortcomings. It involves dwelling on problems or distressing situations without actively seeking solutions or resolution. Rumination can prolong feelings of sadness, anxiety, or anger and interfere with problem-solving and decision-making processes. Individuals who engage in self-injurious behaviour often ruminate on distressing thoughts or emotions, which may contribute to the escalation of their emotional distress and increase the likelihood of self-harm as a maladaptive coping mechanism. Addressing Rumination within therapeutic interventions is crucial for promoting emotional regulation, adaptive coping strategies, and overall well-being in individuals struggling with self-injury and other psychological disorders. This positive trend was evident in the current study that skill training within DBT played a significant role in reducing Rumination over time. In previous research, DBT with its emphasis on mindfulness and emotion regulation skills demonstrated promise in reducing Rumination among individuals with Borderline Personality Disorder (Radkovsky et al., 2021), mood disorders (Valentine et al., 2020) and eating disorders (Soler et al., 2022). However, findings indicating limited effectiveness in certain populations, such as those with major depressive disorder (Chen et al., 2018) suggest complexities in addressing Rumination through standard DBT interventions. These discrepancies underscore the need for an understanding of

Rumination and its treatment within the DBT framework. Studies examining the effectiveness of DBT in reducing Rumination across various psychological conditions offer valuable insights and raise critical considerations.

Table 3.34

*Friedman's test statistics for Positive Refocusing in the pre-intervention, post-intervention, and follow-up stages.*

Stage	Mean Rank	Median	$\chi^2$	<i>P</i>
<b>Pre-intervention</b>	1.50	10		
<b>Post-intervention</b>	1.93	13	13.154	0.000
<b>Follow-up</b>	2.57	17		

It can be observed from the table 3.34 that significant difference ( $\chi^2 (2) = 13.154$ ) in the Positive Refocusing strategy of CER between the three stages. The mean rank increased from 1.50 pre-intervention to 1.93 post-assessment and to 2.57 at follow-up. Therefore, **Hypothesis 7.4 'There is no significant difference in Positive Refocusing between pre-intervention, post-intervention and follow-up'** has not been accepted. Post hoc analysis using the Wilcoxon signed-rank test was performed for pairwise comparison.

Table 3.35

*Pairwise comparison of Positive Refocusing between pre-intervention, post-intervention, and follow-up.*

<b>Difference between test scores</b>	<b>Rank</b>	<b>N</b>	<b>Z</b>	<b>P</b>
<b>Post Positive Refocusing-Pre Refocusing - Pre Positive Refocusing</b>	Negative Ranks	6 <sup>a</sup>	-1.986	0.047
	Positive Ranks	15 <sup>b</sup>		
	Ties	0 <sup>c</sup>		
<b>Follow up Positive Refocusing – Post Positive Refocusing</b>	Total	21	-2.854	0.004
	Negative Ranks	2 <sup>d</sup>		
	Positive Ranks	14 <sup>e</sup>		
<b>Pre Positive Refocusing: Follow up Positive Refocusing</b>	Ties	5 <sup>f</sup>	-3.257	0.001
	Total	21		
	Negative Ranks	16 <sup>g</sup>		
	Positive Ranks	4 <sup>h</sup>		
	Ties	1 <sup>i</sup>		
	Total	21		

*Notes*

- a. post positive refocusing < pre positive refocusing
- b. post positive refocusing > pre positive refocusing
- c. post positive refocusing = pre positive refocusing
- d. follow up positive refocusing < post positive refocusing
- e. follow up positive refocusing > post positive refocusing
- f. follow up positive refocusing = post positive refocusing
- g. pre positive refocusing < follow up positive refocusing
- h. pre positive refocusing > follow up positive refocusing
- i. pre positive refocusing = follow up positive refocusing

Table 3.35 shows that there were significant differences in the Positive Refocusing strategy of CER between the pre and post ( $Z = -1.986$ ), follow-up and post ( $Z = -2.854$ ), and pre and follow-up ( $Z = -3.257$ ) stages of intervention.

Positive Refocusing is a cognitive process involving the redirection of attention towards positive aspects during stress or adversity. It is considered a higher cognitive function that involves redirecting attention away from negative or distressing stimuli towards positive or neutral aspects of one's environment or inner experience. In the context of emotion regulation, Positive Refocusing is often regarded as a constructive strategy for managing emotions. According to Gross (2015) Positive Refocusing is recognized as an adaptive coping mechanism that can promote psychological well-being and resilience.

In the current study, young adults with NSSIB showed a gradual increase in the Positive Refocusing strategy of CER. In Phase I of the current study, it was demonstrated that Positive Refocusing serves as a protective factor in individuals with self-injurious behavior. Telch et al. (2001) and Lynch et al. (2006) supported the positive influence of DBT on Positive Refocusing. Telch et al. (2001) revealed that individuals with binge-eating disorder reported significant improvements in Positive Refocusing abilities following DBT, suggesting that the emphasis on mindfulness may contribute to the individuals shifting attention towards positive aspects even in challenging situations and improving their coping mechanisms. However, Barnicot et al. (2012) and Harned et al. (2014) reported contrasting findings, indicating positive outcomes for emotion regulation following DBT but not consistent improvements in Positive Refocusing. This underscores the importance of understanding the impact of DBT on specific cognitive processes. Harned et al. (2014) found that DBT effectively reduces suicidal ideation but does not consistently impact Positive Refocusing. These mixed findings suggest that the effects of DBT on Positive Refocusing may vary highlighting the importance of considering the specific cognitive domains targeted by DBT modules and individual differences in cognitive processing. Further exploration

is warranted to identify the specific mechanisms through which DBT influences Positive Refocusing and to discern potential moderators that may enhance or diminish its impact in different clinical contexts.

Table 3.36

*Pairwise comparison of Refocus on Planning between pre-intervention, post-intervention, and follow-up.*

Stage	Mean Rank	Median	$\chi^2$	<i>P</i>
Pre-intervention	1.60	11		
Post-intervention	1.69	14	16.765	0.000
Follow-up	2.71	18		

Table 3.36 shows Friedman's test statistics, which indicate whether the scores on Refocus on Planning dimension of CER differ in different phases of intervention. The results revealed a statistically significant difference ( $\chi^2 (2) = 16.765$ ) in the three stages of assessment. The mean ranks progressively increased from 1.60 pre-intervention to 1.69 post-intervention and peaked at 2.71 during follow-up, while the medians were 11, 14, and 18. Therefore, **Hypothesis 7.5 'There is no significant difference in Refocus on Planning between pre, post and follow-up stages'** has not been accepted. Post hoc analysis on Wilcoxon Signed Rank test was performed for pairwise comparison of the different groups.

Table 3.37

*Pairwise comparison of the Refocus on Planning scores on Wilcoxon signed rank test in the pre-intervention, post-intervention, and follow-up stages.*

<b>Difference between test scores</b>	<b>Rank</b>	<b>N</b>	<b>Z</b>	<b>P</b>
<b>Post Refocus on Planning- Pre Refocus on Planning</b>	Negative Ranks	8 <sup>a</sup>	-1.364	0.173
	Positive Ranks	12 <sup>b</sup>		
	Ties	1 <sup>c</sup>		
	Total	21		
<b>Followup Refocus on Planning- Post Refocus on Planning</b>	Negative Ranks	1 <sup>d</sup>	-3.752	0.000
	Positive Ranks	18 <sup>e</sup>		
	Ties	2 <sup>f</sup>		
	Total	21		
<b>Pre Refocus on Planning- Follow up Refocus on Planning</b>	Negative Ranks	17 <sup>g</sup>	-3.027	0.002
	Positive Ranks	4 <sup>h</sup>		
	Ties	0 <sup>i</sup>		
	Total	21		

*Notes*

- a. post refocus on planning < pre refocus on planning
- b. post refocus on planning > pre refocus on planning
- c. post refocus on planning = pre refocus on planning
- d. follow up refocus on planning < post refocus on planning
- e. follow up refocus on planning > post refocus on planning
- f. follow up refocus on planning = pre refocus on planning
- g. pre refocus on planning < follow up refocus on planning
- h. pre refocus on planning > follow up refocus on planning
- i. pre refocus on planning = follow up refocus on planning

From table 3.37, it can be found that no significant differences in Refocus on Planning between the pre-intervention and post-intervention ( $Z = -1.364$ ). However, there were significant differences between the follow up and post -intervention stages ( $Z = -3.752$ ) and pre -and follow up stages ( $Z = -3.027$ ).

Research exploring the impact of DBT on the cognitive process of Refocusing on Planning provides valuable insights. No significant difference was observed in the pre- and post-intervention phases of this strategy. During the initial stabilization phase of DBT which prioritises crisis management and reducing self-destructive behaviours, immediate changes in higher cognitive functions like Refocus on Planning may not be evident. However, as therapy progresses into later stages, particularly when individuals gain better control over their behaviours the effects on cognitive functions become more pronounced reflecting the phased approach of DBT. Individual differences and the complexity of psychological processes may contribute to variations in the timing of observable changes. Individual differences were observed in each case. While the initial lack of significant change may raise concerns, recognising the gradual nature of behavioural change and considering the longer-term impacts when assessing DBT effectiveness is crucial. There are supporting studies for the current observation on the enhancement of Refocus on Planning after psychological intervention. Telch et al. (2001) and Lynch et al. (2006) indicated that DBT enhances abilities in planning and problem-solving during challenging situations. Telch et al. (2001) demonstrated a significant improvement in Refocus on Planning among individuals with binge eating disorder. This positive outcome was the incorporation of mindfulness and problem-solving skills within the DBT framework. Similarly, Lynch et al. (2006) observed enhancements in the cognitive process of 'Refocus on Planning in their examination of DBT for comorbid BPD and eating disorders. The emphasis on emotional regulation and distress tolerance skills in DBT appears to facilitate a constructive shift towards planning, contributing to adaptive coping strategies. However, contrasting studies such as those conducted by Barnicot et al. (2012) and Harned et al. (2014), did not find improvements in Refocus on Planning, highlighting the variability in the impact of

therapy on specific cognitive processes. Cognitive functions, especially executive functions, improve with mindfulness training (Chiesa et al., 2011 & Im et al., 2021). Refocus on Planning is an executive function, and enhancement of this area is noted in many cases. Participants in the study restarted their academics and successfully completed and started new careers. Our study aligns with the evolving landscape of research on Dialectical behaviour Therapy by Menon and Vijayakumar (2022), Neacsiu, Rizvi et al. (2010), and McCay (2015). More recent studies noted improvement in objective planning performance, particularly work by Vijayapriya (2023), highlighting the efficacy of DBT in enhancing cognitive functions, including planning.

Table 3.38

*Friedman's test statistics for Positive Reappraisal for pre, post and follow-up phases of intervention among young adults*

Stage	Mean Rank	Median	$\chi^2$	<i>P</i>
<b>Pre-intervention</b>	1.43	11		
<b>Post-intervention</b>	1.81	14	20.8	0.000
<b>Follow-up</b>	2.76	17		

Results from the table 3.38 revealed a significant difference ( $\chi^2 (2) = 20.8$ ) in Positive Reappraisal dimension of CER. In addition, the mean rank for the pre-intervention group (1.43), post-intervention (1.81), and follow-up (2.76) phases of intervention were observed. The median was 11, 14, and 17, respectively. Therefore, **Hypothesis 7.6 'There is no significant difference in Positive Reappraisal between pre-intervention, post-intervention and follow-up'** has not been accepted. Post hoc tests were conducted to determine pairwise comparisons between the groups.

Table 3.39

*Pairwise comparison of Positive Reappraisal in the pre-intervention, post-intervention, and follow-up stages.*

<b>Difference between test scores</b>	<b>Rank</b>	<b>N</b>	<b>Z</b>	<b>P</b>
<b>Post Positive Reappraisal-Pre Positive Reappraisal</b>	Negative Ranks	6 <sup>a</sup>	-2.194	0.028
	Positive Ranks	15 <sup>b</sup>		
	Ties	0 <sup>c</sup>		
	Total	21		
<b>Follow up Positive Reappraisal-Post-Positive Reappraisal</b>	Negative Ranks	0 <sup>d</sup>	-3.647	0.000
	Positive Ranks	17 <sup>e</sup>		
	Ties	4 <sup>f</sup>		
	Total	21		
<b>Post Positive Reappraisal- Follow up Positive Reappraisal</b>	Negative Ranks	17 <sup>g</sup>		
	Positive Ranks	0 <sup>h</sup>	-3.647	0.000
	Ties	4 <sup>i</sup>		
	Total	21		

*Notes*

- a. post positive reappraisal < pre positive reappraisal
- b. post positive reappraisal > pre positive reappraisal
- c. post positive reappraisal = pre positive reappraisal
- d. follow up positive reappraisal < post positive reappraisal
- e. follow up positive reappraisal > post positive reappraisal
- f. follow up positive reappraisal = post positive reappraisal
- g. post positive reappraisal < follow up positive reappraisal
- h. post positive reappraisal > follow up positive reappraisal
- i. post positive reappraisal = follow up positive reappraisal

From table 3.39 it can be seen that significant differences in Positive Reappraisal between the pre-intervention and post-intervention ( $Z = -2.194$ ) and follow-up and post-intervention ( $Z = -3.647$ ), and between pre- and follow-up ( $Z = -3.647$ ) stages of intervention.

The results of this study indicate that changes in the Positive Reappraisal strategy are comparatively less from the pre-stage to the post-stage ( $p < 0.05$ ) compared with the follow-up stage ( $p < 0.01$ ). Participants who were undergone therapy shown an eagerness and commitment to address their issues and remain dedicated to therapy sessions. The inclusion of permanent occupation was contributing factor observed by therapists, providing structure and stability that may have facilitated the effectiveness of DBT interventions. These observations highlight the intricate interplay between individual motivation, therapeutic engagement, and external support structures in facilitating positive changes in emotion regulation strategies like Positive Reappraisal through DBT. Insights on the effectiveness of DBT on Positive Reappraisal are drawn from various studies, including those by Neacsiu, Bohus, and Linehan (2014), Burckhardt et al. (2018), and Lipsitz et al. (2024). Neacsiu, Bohus, and Linehan (2014) emphasized DBT as an intervention specifically targeting emotion dysregulation with its framework emphasizing skills like Positive Reappraisal to enhance adaptive emotional responses. This aligns with the broader understanding that Positive Reappraisal a cognitive strategy that focuses on reframing situations positively, plays a pivotal role in managing emotional responses. Burckhardt et al. (2018) suggested that teaching DBT skills including Positive Reappraisal holds promise in preventing mental health symptoms in this demographic. Furthermore, developing acceptance may lead to an enhanced capacity to reinterpret reality, enabling individuals to cope more adaptively with negative events (Segal et al., 2023). This study underscores the multifaceted impact of DBT on cognitive emotional regulation and non-suicidal self-injury. These findings emphasize the potential of DBT in cultivating positive appraisal skills and mitigating emotion dysregulation across diverse populations.

Table 3.40

*Friedman's test statistics for Putting into Perspective the pre-intervention, post-intervention, and follow-up.*

Stage	Mean Rank	Median	$\chi^2$	<i>P</i>
Pre-intervention	1.55	11		
Post-intervention	1.79	14	14.951	0.000
Follow-up	2.67	16		

Friedman's test statistic from table 3.40 Show whether scores on Putting into Perspective strategy of CER differ before (pre) and after (post) intervention and in the follow-up group. From table 3.30 it can be observed a significant difference ( $\chi^2 (2) = 14.951$ ). The mean ranks for the pre, stand follow-up phases of the intervention were 1.55, 1.79, and 2.67, respectively. Therefore, **Hypothesis 7.7 'There is no significant difference in Putting into Perspective between pre, post and follow-up phases of intervention among young adults'** has not been accepted. Post hoc tests were conducted for pairwise analysis in the different groups.

Table 3.41

*Wilcoxon-signed ranks test statistics on Putting into Perspective strategy in pre-intervention, post-intervention, and follow-up.*

<b>Difference between test scores</b>	<b>Rank</b>	<b>N</b>	<b>Z</b>	<b>P</b>
<b>Post Put into Perspective- Pre Put Into Perspective</b>	Negative Ranks	8 <sup>a</sup>	-1.358	0.174
	Positive Ranks	13 <sup>b</sup>		
	Ties	0 <sup>c</sup>		
	Total	21		
<b>Follow-up Put into Perspective-Post Put Into Perspective</b>	Negative Ranks	3 <sup>d</sup>	-2.921	0.003
	Positive Ranks	17 <sup>e</sup>		
	Ties	1 <sup>f</sup>		
	Total	21		
<b>Pre Put into Perspective – Follow up Put Into Perspective</b>	Negative Ranks	17 <sup>g</sup>	-3.348	0.001
	Positive Ranks	3 <sup>h</sup>		
	Ties	1 <sup>i</sup>		
	Total	21		

*Notes*

- a. post put into perspective < pre put into perspective
- b. post put into perspective > pre put into perspective
- c. post put into perspective = pre put into perspective
- d. follow up put into perspective < post put into perspective
- e. follow up put into perspective > post put into perspective
- f. follow up put into perspective = post put into perspective
- g. pre put into perspective < follow up put into perspective
- h. pre put into perspective > follow up put into perspective
- i. pre put into perspective = follow up put into perspective

In table 3.41 there were no significant differences observed in Putting into Perspective between the pre and post-intervention ( $Z = -1.358$ ), whereas a significant difference was observed in the follow-up and post-intervention ( $Z = -2.921$ ), and pre

and follow-up stages of intervention ( $Z = -3.348$ ). Post hoc analysis was performed using the Wilcoxon signed rank test for pairwise comparison.

Similar to the Refocus on Planning strategy, the dimension of Putting into Perspective also fails to demonstrate significant differences immediately after DBT sessions, yet noteworthy changes emerge during the follow-up, reflecting DBT's phased approach targeting behaviour over time. Individual differences and the complexity of psychological processes may contribute to these variations. Some individuals may experience rapid improvements in cognitive functions, whereas others may require more time and additional therapeutic interventions. However, the initial lack of significant change in refocusing on planning and Putting into Perspective may seem concerning. Therefore, it is essential to consider the broader context of DBT's therapeutic framework and the gradual nature of behavioural change. Evaluating the effectiveness of DBT requires not only immediate outcomes but also longer-term impacts and consideration of the multifaceted nature of individuals' responses to treatment. Research exploring the impact of DBT on the ability to put into perspective reveals both supportive and contrasting findings. The studies focusing on mindfulness, distress tolerance, and cognitive restructuring within the DBT framework suggest a therapeutic benefit from a balanced perspective, particularly in individuals with mood disorders and BPD, as indicated by Valenstein et al. (2018) and Neacsiu et al. (2010). However, contrasting findings from Barnicot et al. (2012) and Harned et al. (2014) introduce complexities by reporting inconsistent improvements in this cognitive strategy. While Barnicot et al. (2012) emphasized positive outcomes for emotion regulation following DBT they did not consistently find enhancements of this strategy. Similarly, Harned et al. (2014) in their study on DBT for suicidal behaviours, observed that although DBT effectively reduces suicidal ideation, it does not consistently affect

the cognitive strategy of Putting into Perspective. These findings emphasize the complexity of cognitive processes addressed by DBT and the importance of exploring specific domains influenced by therapy taking into account individual differences and the unique characteristics of different clinical populations.

Table 3.42

*Friedman's test statistics for Catastrophization between pre, post, and follow-up stages of intervention.*

Stage	Mean Rank	Median	$\chi^2$	<i>P</i>
Pre-intervention	2.57	13		
Post-intervention	2.10	10	16.780	0.000
Follow-up	1.33	4		

From table 3.42 it can be seen that a significant difference, i.e.  $\chi^2 (2) = 16.780$  in the Catastrophization strategy of CER between the three stages of intervention. Also, the mean rank and median decreased from the pre-intervention phase to the follow-up stage. Therefore, **Hypothesis 7.8 'There is no significant difference in Catastrophization between pre, post and follow-up stages'** has not been accepted. Furthermore, post hoc tests were conducted to determine which groups differed.

Table 3.43

*Pairwise comparison of Catastrophization by Wilcoxon-signed rank test statistics in pre-, post-intervention, and follow-up.*

<b>Difference between test scores</b>	<b>Rank</b>	<b>N</b>	<b>Z</b>	<b>P</b>
<b>Post Catastrophization- Pre Catastrophization</b>	Negative Ranks	14 <sup>a</sup>	-1.897	0.058
	Positive Ranks	7 <sup>b</sup>		
	Ties	0 <sup>c</sup>		
	Total	21		
<b>Follow up Catastrophization – Post Catastrophization</b>	Negative Ranks	15 <sup>d</sup>	-2.260	0.024
	Positive Ranks	4 <sup>e</sup>		
	Ties	2 <sup>f</sup>		
	Total	21		
<b>Follow up Catastrophization - Pre Catastrophization</b>	Negative Ranks	19 <sup>g</sup>	-3.185	0.000
	Positive Ranks	2 <sup>h</sup>		
	Ties	0 <sup>i</sup>		
	Total	21		

*Notes*

- a. post catastrophization < pre catastrophization
- b. post catastrophization > pre catastrophization
- c. post catastrophization = pre catastrophization
- d. follow up catastrophization < post catastrophization
- e. follow up catastrophization > post catastrophization
- f. follow up catastrophization = post catastrophization
- g. follow up catastrophization < pre catastrophization
- h. follow up catastrophization > pre catastrophization
- i. follow up catastrophization = pre catastrophization

From table 3.43 it can be observed, that there is no significant difference in Catastrophization strategy of CER between the post-catastrophizing and pre-catastrophizing stages ( $Z = -1.897$ ). However, statistically high significant differences

were shown between follow-up and post-intervention ( $Z = -2.260$ ) and between pre and follow-up stages of intervention ( $Z = -3.185$ ).

Catastrophization refers to a cognitive distortion where individuals perceive situations or events as far worse than they are often exaggerating the potential negative outcomes. It is a cognitive pattern characterized by the tendency to exaggerate the severity of events and associated with various psychological disorders including depression. Individuals having high scores in this strategy interpret minor difficulties as big obstacles or anticipate negative outcomes contributing to feelings of hopelessness and helplessness. In the context of self-injury, catastrophizing thoughts can play a significant role people may catastrophize their emotional distress viewing it as unbearable or intolerable and may believe that self-injury is the only solution to alleviate their suffering. It can escalate emotional distress and increase the risk of self-injury as individuals perceive their situation as overwhelmingly negative and hopeless. It was observed in the cases selected for the present intervention they struggle to manage their intense negative emotions in difficult situations such as critical comments from others or interpersonal conflicts seeking maladaptive coping strategies like self-injury. DBT must have helped the participants reduce such thoughts by teaching mindfulness, distress tolerance, and cognitive restructuring. But in the first stage of therapy, it was not very easy to apply themselves as, it was seen that no significant difference in post-intervention score, even decreasing the score. After consistent practice of mindfulness and other skills they improve in managing their thoughts with adaptive coping strategies. Results from the pairwise analysis between post-intervention to follow-up intervention and pre-intervention to follow-up intervention revealed this difference. Moreover as it is individual psychotherapy and individual assessment scores might be evident this fact. Case studies and qualitative analysis may

give more insightful finding. Skill training in DBT made it easier for the participants to manage their emotions better and lowered the chances of them hurting themselves in the current context. It has proven the efficacy of DBT in reducing the catastrophization maladaptive strategy among young adults. It is consistent with previous studies by Chapman et al. (2006) and Telch et al. (2001) who supported the effectiveness of DBT in reducing Catastrophization. Chapman et al. (2001) found that DBT was associated with significant reductions in Catastrophic thinking among individuals with Borderline Personality Disorder (BPD) attributed to the cultivation of distress tolerance and emotion regulation skills. Similarly, Telch et al. (2001) reported significant decreases in catastrophic thoughts related to body image and food in individuals with binge-eating disorder undergoing DBT suggesting that the emphasis on mindfulness in DBT may contribute to the alteration of maladaptive cognitive patterns. Lynch et al. (2007) further supported these findings in the context of comorbid BPD and eating disorders observing reductions in catastrophization through the enhancement of emotional regulation skills. In contrast Neacsiu et al. (2010) and Harned et al. (2012) presented another picture, indicating that the impact of DBT on catastrophization may vary. Neacsiu et al. (2015) found that while DBT led to improvements in emotion regulation skills it did not consistently result in significant reductions in catastrophization among individuals with BPD. These contrasting findings suggest that the effects of DBT on catastrophization may be influenced by the specific cognitive patterns targeted, the nature of the disorder under consideration and the individual's variations in cognitive processing. DBT, being a third-wave psychotherapy and based on a cognitive emotion regulation approach in the present intervention programme might have benefitted in alleviating the symptoms by reducing maladaptive strategies of Rumination and catastrophization which are contributing each other.

Table 3.44

*Friedman's test statistics for Other Blame for pre, post, and follow-up stages of intervention.*

Stage	Mean Rank	Median	$\chi^2$	<i>P</i>
<b>Pre-intervention</b>	2.33	10		
<b>Post-intervention</b>	2.26	8	12.077	0.002
<b>Follow-up intervention</b>	1.40	4		

Results from table 3.44 revealed Other Blame strategy of CER differed before and after intervention and in the follow-up. The *p* value had a significant difference ( $\chi^2(2) = 12.077$ ). The mean rank for pre-intervention was 2.33, for post-intervention, it decreased to 2.26, and for follow-up, it became 1.40. The median was 10, 8, and 4 respectively. Therefore, **Hypothesis 7.9 'There is no significant difference in Other Blame between pre, post and follow-up stages'** has not been accepted. Post hoc on Wilcoxon signed rank test were conducted to determine which groups differed.

Table 3.45

*Pairwise comparison of Other Blame between pre, post and follow-up phases of intervention.*

<b>Difference between test scores</b>	<b>Rank</b>	<b>N</b>	<b>Z</b>	<b>P</b>
<b>Post Other Blame- Pre Other Blame</b>	Negative Ranks	10 <sup>a</sup>	-0.917	0.358
	Positive Ranks	8 <sup>b</sup>		
	Ties	3 <sup>c</sup>		
	Total	21		
<b>Post Other Blame- Follow up Other Blame</b>	Negative Ranks	3 <sup>d</sup>	-3.226	0.000
	Positive Ranks	16 <sup>e</sup>		
	Ties	2 <sup>f</sup>		
	Total	21		
<b>Pre Other Blame- Follow up Other Blame</b>	Negative Ranks	4 <sup>g</sup>	-2.748	0.006
	Positive Ranks	16 <sup>h</sup>		
	Ties	1 <sup>i</sup>		
	Total	21		

*Notes*

- a. post other blame < pre other blame
- b. post other blame > pre other blame
- c. post other blame = pre other blame
- d. post other blame < follow up other blame
- e. post other blame > follow up other blame
- f. post other blame = follow up other blame
- g. pre other blame < follow up other blame
- h. pre other blame > follow up other blame
- i. pre other blame = follow up other blame

In pairwise comparison, of groups there were no significant differences in the Other Blame strategy of CER between the pre-intervention and post-intervention stages ( $Z = -0.917$ ), but statistically significant difference between the follow-up and post-

intervention stages were observed ( $Z = -3.226$ ) and between pre- and follow-up ( $Z = -2.748$ ).

Other Blame refers to the belief that another person causes a negatively experienced psychological or interpersonal state (Eisler & Pare, 2001). It is a cognitive distortion commonly associated with symptoms of depression and Borderline personality. Like Catastrophization, in the initial stages, there was no observed change in Other Blame strategy which Individuals entrenched in this pattern often struggle to change. However, with sustained practice of mindfulness and distress tolerance techniques significant long-term changes can occur and it is proved in the study. This highlights the transformative potential of DBT interventions in addressing cognitive distortions and symptoms of any depressive thoughts over time. Patients with Borderline personality tendencies have a more difficulties due to Other Blame (Licea, 2016 & Foynes et al., 2023). Reflecting from unstable self-esteem, interpersonal distrust, and perceived low social esteem (Andover et al., 2017). The finding of the present study is consistent with that of Moore et al. (2018) stated dialectical behaviour therapy is vital and significant in building emotion regulation skills and nurturing emotional well-being among young adults. Addressing depression and borderline personality traits in individual cases can significantly impact the effectiveness of DBT in alleviating Other Blame. Individuals grappling with these conditions may find it challenging to overcome patterns of blaming others. However, through the application of DBT techniques such as emotion regulation distress tolerance sustained progress can be achieved which leads to the gradual reduction in Other Blame strategy.

In the current research, 14 weeks of Neacsiu Dialectical Behaviour Therapy based on Emotion Regulation was conducted in an experimental group of individuals with Non-Suicidal Self Injurious Behaviour (NSSIB). Reflecting results and

observations from the preliminary study that low scores in adaptive strategies and high scores in maladaptive strategies in participants in the intervention study also. A gradual decrease in scores of non-adaptive coping strategies and an increase in adaptive strategies are observed throughout analysis. The diverse body of research on DBT based on emotional regulation for young adults with NSSIB underscores its multifaceted effectiveness in addressing across different populations. There are only few contrasting findings. As we integrate these findings it becomes evident that a holistic approach of DBT incorporating mindfulness, distress tolerance, emotion regulation, and interpersonal effectiveness offers valuable tools for individuals facing various mental health challenges. It is paving the way for future research and the continued refinement of therapeutic strategies to enhance well-being. Highlighting the positive impact of DBT on mental health and resilience provides a comprehensive perspective on its potential. The varying outcomes also emphasize the importance of considering individual differences and the specific focus of each skill training in DBT modules for understanding its effects on planning and problem-solving skills.

### **Section 8: Impact of Dialectical Behaviour Therapy on Variables of Psychological Well-being**

There are six variables in psychological well-being(PWB) known as dimensions of PWB. They are Autonomy, Environmental Mastery, Positive Relationship with Others, Purpose in Life, Personal Growth, and Self-Acceptance, In this section, analysis is carried out in each sub-variables of the research using the Friedman test and post hoc analysis if a significant difference in the primary analysis.

Friedman's test was conducted to determine whether scores on Autonomy differed before (pre) and after (post) intervention and also in follow-up. Tables 46-57

give detailed results of analysis on the sub-variables of PWB. Each table is followed by post hoc analysis on Wilcoxon-signed ranks test statistics for pairwise analysis to determine the significant difference between the different stages.

Table 3.46

*Friedman test statistics for Autonomy for pre-intervention, post-intervention, and follow-up.*

Stage	Mean Rank	Median	$\chi^2$	<i>P</i>
<b>Pre-intervention</b>	1.10	22		
<b>Post-intervention</b>	2.00	29	35.220	0.000
<b>Follow-up</b>	2.90	35		

From table 3.46 it can be observed that there is a significant difference ( $\chi^2 (2) = 35.22$ ) in the dimension of Autonomy between the three stages of assessment. The mean rank for pre, post-intervention, and follow-up was 1.10, 2, and 2.90, the median was 22, 29, and 35, respectively. The mean rank was highest for the follow-up test and lowest for the pre-test. Therefore, **Hypothesis 8.1 ‘There is no significant difference in Autonomy between pre, post-intervention and follow-up stages’** has not been accepted and it was concluded that there is significant differences in the dimension of Autonomy between pre-intervention, post-intervention, and follow-up. Post hoc tests were conducted for pairwise analysis.

Table 3.47

Pairwise comparison of Autonomy on Wilcoxon Signed Rank test in pre-intervention, post-intervention and follow-up stages.

<b>Difference between Scores</b>	<b>Rank</b>	<b>N</b>	<b>Z</b>	<b>P</b>
<b>Post Autonomy - Pre Autonomy</b>	Negative Ranks	1 <sup>a</sup>	-3.687	0.000
	Positive Ranks	18 <sup>b</sup>		
	Ties	2 <sup>c</sup>		
	Total	21		
<b>Follow up Autonomy - Post Autonomy</b>	Negative Ranks	2 <sup>d</sup>	-3.815	0.000
	Positive Ranks	19 <sup>e</sup>		
	Ties	0 <sup>f</sup>		
	Total	21		
<b>Pre Autonomy - Follow up Autonomy</b>	Negative Ranks	0 <sup>g</sup>	-4.016	0.000
	Positive Ranks	21 <sup>h</sup>		
	Ties	0 <sup>i</sup>		
	Total	21		

*Notes*

- a. post autonomy < pre autonomy
- b. post autonomy > pre autonomy
- c. post autonomy = post autonomy
- d. follow up autonomy < post autonomy
- e. follow up autonomy > post autonomy
- f. follow up autonomy = post autonomy
- g. follow up autonomy < pre autonomy
- h. follow up autonomy > pre autonomy
- i. follow up autonomy = pre autonomy

Pairwise comparison analysis revealed a significant difference in the dimension of Autonomy between the post-intervention and pre-intervention stages ( $Z=-3.68$ ) as

well as between the follow-up and post-intervention stages ( $Z = -3.815$ ), and the pre-intervention and follow-up stages ( $Z = -4.016$ ).

Autonomy, the ability to make independent decisions and take control of one's life, is crucial for psychological well-being. It is the sense of independence and self-direction, where individuals feel they have the freedom to make choices that align with their values, interests, and goals and they tend to experience higher levels of satisfaction and fulfilment. This connection between autonomy and well-being has been widely studied in psychology and is a fundamental aspect of various theoretical frameworks. Individuals who feel a lack of autonomy in their lives may resort to self-injury to regain control or cope with overwhelming emotions. Someone experiencing significant pressure or constraints in their environment, such as in controlling relationships or oppressive social contexts, may engage in self-injury to assert autonomy over their bodies when they feel unable to assert control in other areas of their lives.

In the current research, 14 weeks of DBT was applied to all participants. One core concept of DBT is validation, which involves acknowledging and accepting individuals' thoughts, emotions, and experiences without judgment. Through validation, therapists help clients develop a greater understanding and acceptance of themselves, which can contribute to increased self-awareness and autonomy. DBT often uses behaviour chain analysis to help clients understand the antecedents, behaviours, and consequences of their actions. By examining these chains in detail, clients gain insights into their patterns of behaviour and can identify opportunities for change, thereby enhancing their sense of agency and autonomy. The current study, in agreement with past research, suggests that DBT can enhance Autonomy regarding the patient's SIB, which also aligns with improved emotion regulation, interpersonal effectiveness, and overall functioning within DBT settings (Burckhardt et al., 2017).

Moreover, the emphasis on attaining emotion regulation abilities in DBT permits people to exercise Autonomy through decision making. Additionally, DBT evidence reveals its effectiveness in terms of reduced self-destructive behaviour emotional regulation and its link to autonomy (Bedics, 2012). Nevertheless, the challenge to the efficacy of DBT in fostering Autonomy remains. Studies underline the necessity of further empirical investigations, especially on the long-standing effect of DBT on Autonomy and the efficacy of DBT on distinct types of personality disorders, such as avoidant personality disorder. These results confirm the DBT-Autonomy relationship is quite intricate and many factors need to be considered while evaluating treatment outcomes based on these results. Existing studies support current research (Dwyer, 2012) that the positive effect of DBT would be beneficial to refine Autonomy and well-being.

Table 3.48

*Friedman test statistics of Environmental Mastery between pre-intervention, post-intervention and follow up.*

Stages	Mean Rank	Median	$\chi^2$	<i>P</i>
Pre-intervention	1.10	21		
Post-intervention	2.05	29	32.667	0.000
Follow-up	2.86	36		

The results of statistical analysis from table 3.48 observed a significant difference in the dimension of Environmental Mastery between the three stages ( $\chi^2$  (2) = 32.667). The mean rank was highest for the follow-up stage and lowest for the pre-test stage. Therefore, Hypothesis 8.2, which posited “There is **no significant difference in Environmental Mastery between pre-intervention, post-intervention,**

and follow-up stages” has not been accepted. It suggested that there are indeed significant differences in Environmental Mastery between the pre, post, and follow-up stages of intervention. Post-hoc tests were conducted to identify specific group differences.

Table 3.49

*Wilcoxon-signed ranks test statistics for Environmental Mastery between pre-intervention, post-intervention, and follow-up.*

Difference between Scores	Rank	N	Z	P
Post Environmental Mastery - Pre Environmental Mastery	Negative Ranks	1 <sup>a</sup>	-3.826	0.000
	Positive Ranks	20 <sup>b</sup>		
	Ties	0 <sup>c</sup>		
	Total	21		
Follow up Environmental Mastery - Post Environmental Mastery	Negative Ranks	2 <sup>d</sup>	-3.726	0.000
	Positive Ranks	19 <sup>e</sup>		
	Ties	0 <sup>f</sup>		
	Total	21		
Pre Environmental Mastery - Follow up Environmental Mastery	Negative Ranks	20 <sup>g</sup>	-3.985	0.000
	Positive Ranks	1 <sup>h</sup>		
	Ties	0 <sup>i</sup>		
	Total	21		

*Notes*

- a. post environmental mastery < pre environmental mastery
- b. post environmental mastery > pre environmental mastery
- c. post environmental mastery = pre environmental mastery
- d. follow up environmental mastery < post environmental mastery
- e. follow up environmental mastery > post environmental mastery
- f. follow up environmental mastery = post environmental mastery
- g. follow up environmental mastery < pre environmental mastery
- h. follow up environmental mastery > pre environmental mastery

Table 3.49 revealed significant differences in Environmental Mastery between the pre-intervention and post-intervention stages ( $Z = 3.826$ ), as well as between the follow-up and post-intervention groups ( $Z = -3.726$ ), and between the pre and follow-up stages ( $Z = -3.985$ ) among young adults with NSSIB.

Environmental Mastery refers to an individual's ability to effectively manage and control their environment, adapt to changes and achieve desired outcomes in various life domains. It encompasses aspects such as problem-solving skills, coping strategies, goal setting, and the capacity to navigate challenges and opportunities in one's surroundings. A higher score in Environmental Mastery indicates greater competence and confidence in managing one's life circumstances and surroundings. Lower scores at the pre-test stage may indicate existing difficulties in managing life circumstances which DBT addresses. The findings of the study suggest significant differences in Environmental Mastery among young adults with NSSIB across different stages of DBT intervention due to improvement in scores of post-intervention and follow-up compared to pre-intervention. In the context of DBT in the current study which primarily focuses on addressing emotion dysregulation and maladaptive behaviours the relationship between DBT and Environmental Mastery has received limited attention in research. Psychological well-being can be effectively promoted through different interventions like well-being Therapy (Fava & Tomba, 2009). While DBT has shown effectiveness in reducing self-harm behaviours and improving psychological well-being its broader impact on aspects such as Environmental Mastery and daily functioning remains unclear (Egolf & Gold 2023). However, the extent to which these improvements translate into long-term sustainable changes in Environmental Mastery requires further investigation. Additionally, the lack of direct research on the relationship between DBT and Environmental Mastery highlights the

need for more comprehensive studies in this area. Understanding how DBT interventions target and enhance Environmental Mastery could inform the development of more effective interventions for improving overall functioning and well-being among individuals with NSSI.

Table 3.50

*Friedman test statistics of Personal Growth between pre-intervention, post-intervention, and follow-up.*

Stage	Mean Rank	Median	$\chi^2$	<i>P</i>
<b>Pre-intervention</b>	1.43	24		
<b>Post-intervention</b>	1.93	28	15.831	0.000
<b>Follow-up</b>	2.64	36		

Table 3.50 indicates a significant difference in the dimension of Personal Growth ( $\chi^2 (2) = 15.831$ ) between the three stages. Therefore, **Hypothesis 8.3** “**There is no significant difference in Personal Growth between pre-intervention, post-intervention and follow-up stages**” has not been accepted and concluded that there would be significant differences in Personal Growth between dimension of psychological well-being in three stages of intervention. Post hoc tests were conducted using Wilcoxon Signed Rank test statistics for the pairwise analysis.

Table 3.51

*Wilcoxon-Signed Rank test Statistics for pairwise comparison of Personal Growth between pre-intervention, post-intervention, and follow-up.*

<b>Difference between the stage</b>	<b>Rank</b>	<b>N</b>	<b>Z</b>	<b>p</b>
<b>Post Personal Growth– Pre Personal Growth</b>	Negative Ranks	5 <sup>a</sup>	2.383	0.017
	Positive Ranks	16 <sup>b</sup>		
	Ties	0 <sup>c</sup>		
<b>Follow up Personal Growth- Post Personal Growth</b>	Total	21	-3.085	0.002
	Negative Ranks	3 <sup>d</sup>		
	Positive Ranks	17 <sup>e</sup>		
<b>Pre Personal Growth – Follow up Personal Growth</b>	Ties	1 <sup>f</sup>	-3.409	0.000
	Total	21		
	Negative Ranks	4 <sup>g</sup>		
	Positive Ranks	17 <sup>h</sup>		
	Ties	0 <sup>i</sup>		
	Total	21		

*Notes*

- a. post personal growth < pre personal growth
- b. post personal growth > pre personal growth
- c. post personal growth = post personal growth
- d. follow up personal growth < post personal growth
- e. follow up personal growth > post personal growth
- f. follow up personal growth = post personal growth
- g. follow up personal growth < pre personal growth
- h. follow up personal growth > pre personal growth
- i. follow up personal growth = pre personal growth

From the above table 3.51 it is clear that there is significant difference in the dimension of Personal Growth between pre-intervention and post-intervention groups

( $Z = 2.383$ ), follow-up and post-intervention ( $Z = -3.085$ ), and pre and follow-up stages of intervention ( $Z = -3.409$ ).

The results from the above table indicate a significant difference in Personal Growth among young adults with NSSIB across different stages of intervention, namely pre-, post-, and follow-up. This finding rejects the hypothesis that there is no significant difference in Personal Growth between these stages, emphasizing the importance of examining the impact of interventions on personal growth, especially in populations with psychological challenges like NSSIB. Personal Growth encompasses continuous development, self-realization, and the pursuit of one's potential. These findings suggest that DBT has a significant effect on Personal Growth, enhancing overall PWB in individuals with NSSIB.

Previous research, such as studies by Chugani and Ghosh (2020) and Page & Vella-Brodrick, (2012) supports that DBT interventions can positively influence psychological well-being including personal growth in non-clinical and clinical populations. Chugani and Ghosh (2020) emphasize the importance of long-term investigations to understand the enduring effects of interventions on personal growth. This suggests that while immediate changes may be observed post-intervention, it is essential to assess how these changes manifest over time, particularly in sustaining Personal Growth beyond the intervention period. Cultural factors can significantly impact individuals' perceptions of Personal Growth and the effectiveness of interventions like DBT in specific cultural contexts. DBT interventions may facilitate continuous development and self-realization ultimately enhancing overall psychological well-being.

Table 3.52

*Friedman test statistics of Positive Relationships with Others between pre-intervention, post-intervention and follow-up.*

Stage	Mean Rank	Median	$\chi^2$	<i>P</i>
Pre-intervention	1.38	22		
Post-intervention	2.00	29	17.114	0.000
Follow-up	2.62	36		

The results show a significant difference in the dimension of Positive Relationships with Others between the three stages of intervention ( $\chi^2 (2) = 17.114$ ). Therefore, **Hypothesis 8.4 ‘There is no significant difference in Positive Relationships with Others between pre, post-intervention and follow-up stages’** has not been accepted. Post hoc tests were conducted for pairwise comparison at different stages.

From table 3.53 it can be observed that significant difference in the dimension of Positive Relationships with Others between the three stages of intervention. It can be concluded that the intervention was effective for PRO and it was significantly increased from the pre-intervention to post-intervention and follow-up stages. Post hoc analysis was carried out to determine pairwise comparisons between different groups.

Table 3.53

*Pairwise comparison of Positive Relationships with Others(PRO) on Wilcoxon Signed Rank test between pre-intervention, post-intervention, and follow-up.*

<b>Difference between the stages of assessment</b>	<b>Rank</b>	<b>N</b>	<b>Z</b>	<b>P</b>
<b>Post PRO - Pre PRO</b>	Negative Ranks	4 <sup>a</sup>	-2.802	0.005
	Positive Ranks	16 <sup>b</sup>		
	Ties	1 <sup>c</sup>		
	Total	21		
<b>Follow up PRO - Post PRO</b>	Negative Ranks	3 <sup>d</sup>	-2.943	0.003
	Positive Ranks	15 <sup>e</sup>		
	Ties	3 <sup>f</sup>		
	Total	21		
<b>Pre PRO - Follow up PRO</b>	Negative Ranks	17 <sup>g</sup>	-3.420	0.000
	Positive Ranks	3 <sup>h</sup>		
	Ties	1 <sup>i</sup>		
	Total	21		

a. post PRO < pre PRO

b. post PRO > pre PRO

c. post PRO = post PRO

d. follow up PRO < post PRO

e. follow up PRO > post PRO

f. follow up PRO = post PRO

g. follow up PRO < pre PRO

h. follow up PRO > pre PRO

i. follow up PRO = pre PRO

Positive Relations with Others encompass the quality and satisfaction in interpersonal connections crucial for overall psychological well-being. During the sessions of DBT individual participants in the study were trained in interpersonal effectiveness one of the specific skill training modules of DBT. Most of the participants had problems with their spouses and parents also in their workplaces. Individuals could develop strategies to communicate assertively, set boundaries, and resolve conflicts constructively after receiving skill training. As a result, they become better equipped to manage interpersonal challenges and foster healthier more satisfying relationships. This study explores research findings with a focus on the positive influence of DBT on interpersonal relationships. Studies by Egolf and Gold (2013) found that DBT contributes to autonomy and interpersonal effectiveness in clinical populations. Singh (2021) and Lee et al. (2022) contribute valuable insights into the positive effects of DBT on interpersonal relationships. Choudhary and Thapa (2012) examined the potential utility of Dialectical Behavior Therapy (DBT) in enhancing psychological well-being by addressing interpersonal relationship difficulties. The authors from different literature and the investigator of the current study propose that the skills training mode employed in DBT can effectively teach individuals how to navigate and resolve relationship problems. They highlight the importance of validation and acceptance strategies in reducing rejection sensitivity and negative emotions that often disrupt interpersonal interactions. During therapy sessions, these concepts are applied in practical ways to create a supportive and validating environment conducive to change. Existing research paints an optimistic picture of DBT's impact on positive relationships with others, prompting researchers and clinicians to continue their investigations.

Table 3.54

*Freidman's test Statistics of Purpose in Life between pre-intervention, post-intervention and follow-up.*

Stage	Mean Rank	Median	$\chi^2$	P
<b>Pre- intervention</b>	1.19	20		
<b>Post- intervention</b>	1.98	29	29.049	0.000
<b>Follow-up</b>	2.83	35		

The results of the statistical analysis revealed from table 3.54, a significant difference in the dimension of Purpose in Life dimension among the three assessment stages ( $\chi^2 (2) = 29.049, p < 0.001$ ). The mean ranks illustrate a noticeable variation across the pre-intervention, post-intervention, and follow-up groups, with the pre-intervention group having the lowest mean rank of 1.19, followed by the post-intervention group with a mean rank of 1.98, and the highest mean rank observed in the follow-up group at 2.83. Median values further support this trend, with respective values of 20, 29, and 35 for the pre-intervention, post-intervention, and follow-up groups. Therefore, **Hypothesis 8. 5 ‘There is no significant difference in Purpose in life between pre, post-intervention and follow-up stages’** has not been accepted. Further post hoc analysis was performed to assess which differences are significant.

Table 3.55 indicates significant differences in the dimension of Purpose in Life between the pre and post-intervention ( $Z = -3.101$ ) also follow-up and post-intervention ( $Z = -3.585$ ) and pre and follow-up intervention ( $Z = -3.923$ ) stages of intervention. It can be concluded that the intervention was effective for the Purpose in Life strategy and it was significantly increased from pre-test to post-test and follow-up assessments.

Table 3.55

*Pairwise comparison of Purpose in life on Wilcoxon Sign Rank test scores between pre-intervention, post-intervention, and follow-up.*

<b>Difference between Scores</b>	<b>Rank</b>	<b>N</b>	<b>Z</b>	<b>P</b>
<b>Post-Purpose in Life- Pre Purpose in Life</b>	Negative Ranks	3 <sup>a</sup>	-3.101	0.002
	Positive Ranks	17 <sup>b</sup>		
	Ties	1 <sup>c</sup>		
	Total	21		
	Negative Ranks	3 <sup>d</sup>		
<b>Follow up Purpose In Life- Post Purpose in Life</b>	Positive Ranks	18 <sup>e</sup>	-3.585	0.000
	Ties	0 <sup>f</sup>		
	Total	21		
<b>Pre Purpose in Life - Follow up Purpose in Life</b>	Negative Ranks	20 <sup>g</sup>	-3.923	0.000
	Positive Ranks	0 <sup>h</sup>		
	Ties	1 <sup>i</sup>		
	Total	21		

*Notes*

- a. post purpose in life < pre purpose in life
- b. post purpose in life > pre purpose in life
- c. post purpose in life = post purpose in life
- d. follow up purpose in life < post purpose in life
- e. follow up purpose in life > post purpose in life
- f. follow up purpose in life = post purpose in life
- g. follow up purpose in life < pre purpose in life
- h. follow up purpose in life > pre purpose in life
- i. follow up purpose in life = pre purpose in life

Purpose in life is a crucial component of psychological well-being contributing to a sense of meaning, direction, and fulfilment. The significant differences observed between the pre and post-test stages, as well as the follow-up and post-intervention stages, and between the pre-intervention and follow-up stages, indicate the effectiveness of the intervention in enhancing Purpose in Life. Understanding how DBT influences this dimension is essential for expanding our knowledge of the therapy's holistic effects on individuals undergoing treatment. Previous research sessions have consistently demonstrated the effectiveness of DBT in enhancing emotional regulation skills. The ability to manage intense emotions is directly linked to one's overall psychological well-being, influencing the sense of purpose and direction in life. Mindfulness, a core component of DBT, is associated with increased self-awareness and a greater sense of purpose. Studies examining the impact of mindfulness interventions within the context of DBT may shed light on the therapy's influence on purpose.

Purpose in life contributes significantly to psychological well-being, providing meaning, direction, and fulfilment in one's life. The skill training in DBT facilitated positive changes across all groups suggesting notable improvements over time even after the intervention period. A significant difference in Purpose in life between different groups highlights the comprehensive impact of DBT in enhancing Purpose in Life, supported by its efficacy in promoting long-term positive outcomes beyond immediate assessments. The current study builds upon existing research that suggests a significant change in purpose in life following Dialectical Behaviour Therapy (DBT), despite the lack of direct research on the relationship between DBT and purpose in life. While studies such as Pearson (2015) and Crego et al. (2021) have demonstrated improvements in purpose in life through mindfulness skills among

college students, Dahl (2019) offers insights into the contemplative and spiritual aspects of practicing mindfulness, which may contribute to a greater sense of purpose. Additionally, Allan et al. (2015) present theoretical and philosophical concepts of purpose in life, which provide a foundation for understanding how interventions like DBT might impact these constructs. Mindfulness, a core component of DBT, is practiced throughout therapy sessions and has been linked to improvements in purpose in life across different populations. By cultivating present-moment awareness and accepting experiences without judgement, mindfulness enhances individuals' ability to connect with their values, goals, and sense of meaning. Through mindfulness practice, individuals may develop a deeper understanding of themselves and their purpose leading to greater clarity, motivation and direction in life. The theoretical and philosophical concepts presented by Allan et al. (2015) further underscore the importance of purpose in life as a fundamental aspect of well-being and resilience.

By integrating mindfulness skills into DBT individuals may experience a transformative shift in how they perceive and engage with their lives leading to a greater sense of purpose and fulfilment. Considering these findings, the current study highlights the potential of DBT to promote positive changes in purpose in life, even in the absence of direct research on this topic. The significant change observed in purpose in life following DBT suggests that mindfulness skills and other components of the therapy may play a crucial role in fostering a sense of purpose and meaning among individuals undergoing treatment.

Table 3.56

*Freidman's test statistics of Self-Acceptance for pre, post and follow-up stages*

Stage	Mean Rank	Median	$\chi^2$	<i>P</i>
Pre-intervention	1.10	20		
Post-intervention	2.05	29	32.667	0.000
Follow-up	2.86	36		

From table 3.56 it is observed that a significant difference in Self-Acceptance dimension was noticed between three phases of the intervention group of young adults with NSSIB with a chi-square value of 32.66, *which was significant* ( $p < .00$ ). Therefore, **Hypothesis 8.6 'There is no significant difference in Self-Acceptance between pre-intervention, post-intervention and follow-up stages'** has not been accepted and concluded that there will be significant differences in Self-Acceptance for the pre-intervention, post-intervention, and follow-up groups. Post hoc tests were conducted to determine which groups differed in significant level.

From table 3.57 it is seen that significant differences in the Self-Acceptance dimension between the pre-intervention and post-intervention groups ( $Z = -3.741$ ) also between follow-up and post-intervention groups ( $Z = -3.607$ ), and between the pre-intervention group and follow-up group ( $Z = -4.018$ ). It can be concluded that there was a significant increase in the Self-Acceptance score at different stages of assessment.

Table 3.57

*Wilcoxon-signed ranks test statistics for changes in Self-Acceptance in pre-intervention, post-intervention, and follow-up.*

<b>Difference between Scores</b>	<b>Rank</b>	<b>N</b>	<b>Z</b>	<b>P</b>
<b>Post Self Acceptance - Pre Self Acceptance</b>	Negative Ranks	2 <sup>a</sup>	-3.741	0.000
	Positive Ranks	19 <sup>b</sup>		
	Ties	0 <sup>c</sup>		
	Total	21		
<b>Follow up Self Acceptance- Post Self Acceptance</b>	Negative Ranks	18 <sup>d</sup>	-3.607	0.000
	Positive Ranks	3 <sup>e</sup>		
	Ties	0 <sup>f</sup>		
	Total	21		
<b>Pre Self Acceptance - Follow up Self Acceptance</b>	Negative Ranks	21 <sup>g</sup>	-4.018	0.000
	Positive Ranks	0 <sup>h</sup>		
	Ties	0 <sup>i</sup>		
	Total	21		

*Notes*

- a. post self acceptance < pre self acceptance
- b. post self acceptance > pre self acceptance
- c. post self acceptance = post self acceptance
- d. follow up self acceptance < post self acceptance
- e. follow up self acceptance > post self acceptance
- f. follow up self acceptance = post self acceptance
- g. follow up self acceptance < pre self acceptance
- h. follow up self acceptance > pre self acceptance
- i. follow up self acceptance = pre self acceptance

The rejection of the null hypothesis suggests notable variations in self-acceptance levels throughout the intervention process. This finding aligns with research emphasizing the importance of psychological interventions in enhancing self-

acceptance, particularly in populations struggling with the emotional challenges of NSSIB. The results resonate with the broader context of PWB and the efficacy of DBT in fostering both emotion regulation and self-acceptance. The theoretical understanding of DBT based on philosophical and existential background emphasizes the cultivation of acceptance alongside behaviour change, addressing complex emotional issues like NSSIB. However, limited research has directly explored the relationship between DBT and self-acceptance, underscoring the significance of our findings. Baker et al. (2020) emphasized the role of radical acceptance, a core principle of DBT, in fostering self-acceptance over time. Additionally, a meta-analysis by Garcia et al. (2021) revealed the impact of mindfulness-based interventions within DBT on emotion regulation, emphasizing the interconnectedness of these constructs. In the broader literature, a study by Chapman (2006) provides complementary insights into the effectiveness of various psychological interventions in increasing self-acceptance. These studies highlight the importance of interventions like Acceptance and Commitment Therapy, which focus on enhancing psychological flexibility and self-compassion, contributing to positive mental health outcomes. Contribution from the current study lies in extending this body of knowledge by specifically examining the changes in self-acceptance among young adults with NSSIB undergoing DBT intervention.

The promotion of psychological well-being appears to be particularly beneficial for individuals experiencing psychological or somatic complaints. The study was conducted on individuals diagnosed with NSSIB. CER strategies mainly focus on reducing self-injurious behaviour and adapting coping strategies. While in PWB dimensions enhancement in positive psychological concepts of psychological well-being. One possible explanation is that individuals in clinical populations often

start with lower levels of psychological well-being, indicating more room for improvement compared with the general population. Because higher levels of psychological well-being are associated with better physical health and act as a buffer against future disorders, enhancing well-being becomes crucial for these individuals' recovery process. During the sessions of DBT, much emphasis is placed on the physical health of individuals. Moreover, individuals with higher levels of psychological well-being are generally more resilient suggesting that interventions aimed at improving well-being may help strengthen individuals' ability to cope with stressors and challenges. The personal approach with face-to-face contact seems to be more effective than self-help or group interventions, possibly because it allows for tailored interventions and a stronger therapeutic alliance

In conclusion, DBT appears to be quite effective in improving well-being among participants with non-suicidal self-injurious behaviours. The empirical findings of our study outcomes emphasize the potential of DBT to alleviate emotion dysregulation and impulsivity. Overall, DBT appears to be a valuable approach for tackling emotional issues and impulsivity, making a positive impact on the psychological well-being of individuals dealing with non-suicidal self-injurious behaviours.

**CHAPTER-IV**  
**SUMMARY AND CONCLUSION**

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This chapter summarizes and reviews the findings of the present study. It presents conclusions drawn from the analysis of statistical data, offering insights into the findings of the study.

Research on suicidal behaviours and non-suicidal self-injury among young adults is alarming with high prevalence rates and the potential gateway effect to more severe outcomes. Despite the significance, individuals often go untreated or delay seeking professional help, mostly due to misconceptions, considering it as mere 'attention-seeking behaviour'. Up to 77% of young self-injurious attempters either do not attend treatment or drop out before any intervention effectively. Significant scholarly inquiry into self-injurious behaviour has transpired within Western contexts; however, it is noteworthy that this phenomenon has limited research attention within the Indian context. Most of the available studies are focused on adolescence and sociocultural events because they have a higher prevalence rate. It is also noticed that a lack of intervention studies based on psychological factors and outpatient clinical services. Moreover, the identification of the fundamental reasons for non-suicidal self-injurious behaviour (NSSIB), explicating centred around emotion regulation.

Emotional and behavioural dysregulation emerges as a significant factor associated with non-suicidal behaviours, both acutely and chronically, spanning various diagnostic categories. Recognising this gap, the proposed research addresses psychological intervention programme in Indian context, specifically for young adult survivors of NSSI behaviour. Effective treatment strategies for young individuals should prioritise evidence-based psychotherapies, underlying mental health issues, and dysregulation resolution. Current research delves into the characteristics of self-injurious behaviour, aiming to lay the groundwork for an effective model of intervention by understanding the interconnected psychological variables, leading to

SIB and thereby lessen self-harming behaviours and promote psychological well-being. So Dialectical Behaviour Therapy found a more effective way to address this condition from the previous literature. The current research adapted Neacsiu's 14 weeks of Dialectical Behaviour Therapy based on Emotion Regulation for adults adapted for enhancing psychological well-being in young adults with non-suicidal self-injurious behaviour. So the study entitled "**Efficacy of Dialectical Behaviour Therapy Based on Emotion Regulation in Non-Suicidal Self-Injurious Behaviour**".

The present study was conducted in two Phases:

**Phase I (The Preliminary Study):** Assessing the prevalence, methods, reasons and characteristics of self-injurious behaviour and the relation between variables and influence of variables in self-injurious behaviour among young adults.

**Phase II (The Intervention Study):** Individual intervention therapy session to participants and assess the impact of the intervention. Young adults who were identified with non-suicidal self-injurious behaviour based on DSM-5 criteria underwent 14 weeks of dialectical behaviour therapy based on emotion regulation to assess the efficacy of the intervention.

### **Objectives of the Research**

1. To assess the prevalence and characteristics of self-injurious behaviours among young adults in Kerala.
2. To understand the reasons or motives behind self-injury in young adults.
3. To study the association of sociodemographic variables among young adults with and without a history of self-injurious behaviour.
4. To study the difference in emotion regulation and psychological well-being between groups with and without self-injurious behaviour.

5. To identify cognitive emotion regulation strategies that predict psychological well-being among young adults.
6. To identify psychological variables predicting self-injurious behaviour in young adults.
7. To assess the efficacy of dialectical behaviour therapy based on emotion regulation in reducing self-injurious behaviour among young adults with non-suicidal self-injurious behaviour.
8. To assess the efficacy of dialectical behaviour therapy in enhancing the psychological well-being among young adults with non-suicidal self-injurious behaviour.

## **HYPOTHESES**

The hypotheses were formulated for the current research are based on the objectives described for the study.

***1. There is no significant association in sociodemographic variables between young adults with a history of any self-injurious behaviour (Any SIB) and no history of Self Injurious Behaviour (No SIB) in past year.***

1.1 There is no significant association in gender between young adults with Any SIB and No SIB in past year.

1.2 There is no significant association in age group between young adults with Any SIB and No SIB in past year.

1.3 There is no significant association in marital status between young adults with Any SIB and No SIB in past year.

1.4 There is no significant association in family type between young adults with Any SIB and No SIB in past year.

1.5 There is no significant association in educational qualification between young adults with Any SIB and No SIB in past year.

1.6 There is no significant association in occupation between young adults with Any SIB and No SIB in past year.

**2. *There is no significant difference in strategies of cognitive emotion regulation among young adults with Any SIB and No SIB in past year.***

2.1 There is no significant difference in the Self-Blame strategy of CER between young adults with Any SIB and No SIB in past year.

2.2 There is no significant difference in the Self-Acceptance strategy of CER between young adults with Any SIB and No SIB in past year.

2.3 There is no significant difference in the Positive Refocusing strategy of CER between young adults with Any SIB and No SIB in past year.

2.4 There is no significant difference in the Refocus on the Planning strategy of CER between young adults with Any SIB and No SIB in past year.

2.5 There is no significant difference in the Positive Reappraisal strategy of CER between young adults with Any SIB and No SIB in past year.

2.6 There is no significant difference in the Putting into Perspectives strategy of CER between young adults with Any SIB and No SIB in past year.

2.7 There is no significant difference in the Other-Blame strategy of CER between young adults with Any SIB and No SIB in past year.

2.8 There is no significant difference in the Rumination strategy of CER between young adults with Any SIB and No SIB in past year.

2.9 There is no significant difference in the Catastrophization strategy of CER between young adults with Any SIB and No SIB in past year.

**3. *There is no significant difference in the Dimensions of Psychological Well-Being between young adults with Any SIB and No SIB in past year.***

3.1 There is no significant difference in Autonomy between young adults with Any SIB and No SIB in past year.

3.2 There is no significant difference in Environmental Mastery between young adults with Any SIB and No SIB in past year

3.3 There is no significant difference in Personal Growth between young adults with Any SIB and No SIB in past year

3.4 There is no significant difference in Positive Relationships with Others between young adults with Any SIB and No SIB in past year

3.5 There is no significant difference in Purpose of Life between young adults with Any SIB and No SIB in past year

3.6 There is no significant difference in Self-Acceptance between young adults with Any SIB and No SIB in past year

**4. *There is no significant correlation between adaptive and non-adaptive strategies of cognitive emotion regulation strategies and psychological well-being***

4.1 There is no significant correlation between Self-Blame strategy and psychological well-being in young adults

4.2 There is no significant correlation between Rumination and psychological well-being in young adults

4.3 There is no significant correlation between the Other-Blame and Psychological Well-Being

4.4 There is no significant correlation between Catastrophization and psychological well-being

4.5 There is no significant correlation between the Self-Acceptance strategy and psychological well-being in young adults.

4.6 There is no significant correlation between Positive Refocusing and psychological well-being in young adults.

4.7 There is no significant correlation between Refocusing on Planning and psychological well-being in young adults.

4.8 There is no significant correlation between Positive Reappraisal and psychological well-being in young adults.

4.9 There is no significant correlation between the Putting-into-Perspective strategy and psychological well-being in young adults.

***5. Strategies of Cognitive Emotion Regulation will not predict Psychological Well-Being and self-injurious behaviour in young adults with SIB***

5.1 Non-adaptive strategies for cognitive emotion regulation do not significantly predict psychological well-being in young adults with SIB.

5.2 Adaptive strategies for cognitive emotion regulation do not significantly predict psychological well-being in young adults with SIB.

5.3 Non-adaptive strategies of cognitive emotion regulation will not significantly contribute to SIB (past year).

5.4 Dimensions of Psychological well-being will not significantly contribute to SIB (past year)

**Phase II -Intervention Study**

***6. There is no significant difference in non-suicidal self-injurious behaviour in the pre-intervention, post-intervention and follow-up stages.***

**7. There is no significant difference in CER strategies between pre-intervention, post-intervention and follow-up stages among young adults with NSSIB.**

7.1 There is no significant difference in Self-Blame between pre-intervention, post-intervention and follow-up stages.

7.2 There is no significant difference in Acceptance between pre-intervention, post-intervention and follow-up stages.

7.3 There is no significant difference in Rumination between pre-intervention, post-intervention and follow-up stages.

7.4 There is no significant difference in Positive Refocusing between pre-intervention, post-intervention and follow-up stages.

7.5 There is no significant difference in Refocus on Planning between pre-intervention, post-intervention and follow-up stages.

7.6 There is no significant difference in Positive Reappraisal between pre-intervention, post-intervention and follow-up stages.

7.7 There is no significant difference in Putting into Perspectives between pre-intervention, post-intervention and follow-up stages.

7.8 There is no significant difference in Catastrophizing between pre-intervention, post-intervention and follow-up stages.

7.9 There is no significant difference between Other Blame between pre-intervention, post-intervention and follow-up stages.

**8. There is no significant difference in Psychological Well-Being between the pre-intervention, post-intervention and follow-up phases in young adults with NSSIB.**

8.1 There is no significant difference in Autonomy between the pre-intervention, post-intervention and follow-up stages.

8.2 There is no significant difference in Environmental Mastery between pre-intervention, post-intervention and follow-up stages.

8.3 There is no significant difference in Personal Growth between pre-intervention, post-intervention and follow-up stages.

8.4 There is no significant difference in Positive Relationships between pre-intervention, post-intervention and follow-up stages.

8.5 There is no significant difference in Purpose in life between pre-intervention, post-intervention and follow-up stages.

8.6 There is no significant difference in Self-Acceptance between pre-intervention, post-intervention and follow-up stages.

## **PHASE I- PRELIMINARY STUDY**

### **Research Design**

Phase I of the study was conducted within a quantitative methodological framework and a descriptive and predictive research design was adopted. In the first part of the study, the focus was on conducting a descriptive inquiry into the prevalence of self-injurious behaviour, characteristics, method, frequency and reasons among young adults, and exploring differences between various groups. The second part of the Phase I study investigates the relationship between self-injurious behaviour, emotion regulation, and psychological well-being. In this context, the study explores how self-injurious behaviour correlates with both emotion regulation and psychological well-being among young adults. By employing this design, the research aimed to uncover the correlation between these variables, shedding light on their interplay within this population. There is one independent variable and two dependent variables in Phase I.

The independent variable was self-injurious behaviour, and the dependent variables were cognitive emotion regulation and psychological well-being.

### **Participants**

A purposive sampling technique was employed to select the sample in the study. The participants for phase I of the study comprised 691 young adults with the following criteria:

#### ***Inclusion Criteria***

- Participants must be between 19 and 30 years old.
- Participants must reside in Thiruvananthapuram, Ernakulam, or Thrissur.
- Participants must possess the ability to understand English.

#### ***Exclusion Criteria***

- Individuals who were taking medication for any chronic physical or mental illness.
- Individuals with intellectual disability or any significant medical or neurodevelopmental disorder based on history and clinical examination.
- Those under the influence of psychoactive drugs or any substances.

### **Instruments**

Instruments/measures used for data collection are described in this section with respective psychometric properties. They are:

1. Personal Data Sheet
2. Functional Assessment of Self-Mutilation
3. Cognitive Emotion Regulation Questionnaire
4. Ryff's Scale of Psychological Well Being

### **Procedure for Phase I (Preliminary Study)**

The research was conducted after obtaining approval from the Research Advisory Committee of the University of Calicut and the institution's ethical committee. The Human Ethical Committee Clearance Certificate was obtained from University of Calicut later. The data was collected from Thiruvananthapuram, Ernakulam, and Thrissur districts of South Kerala. Data were collected from three professional colleges, three arts and science colleges, and gatherings of parents. At the beginning of data collection, the researcher conducted a mental health awareness program for a selected group of participants in different places as per the request of the permitting institution. Upon recruitment, participants were fully informed about the purpose of the study, and research ethical concerns, and assured confidentiality regarding their test results. The questionnaire required approximately 30–40 min for completion by each group. Scoring was conducted using a specially prepared format for CERQ and SPWB. The researcher provided interpretation of scores for understanding of individual participant to enhance their mental health profiles. A total of 691 young adults provided written consent to participate in the study. Among that 406 females and 285 males, 519 respondents are unmarried, 171 are married, 39 individuals have completed secondary education, 91 have higher secondary qualifications, 46 have diplomas, 408 are undergraduates, and 107 have post-graduate degrees. Occupation status shows that 184 respondents are students, 419 are not employed, 81 are in private jobs, and 7 are in government positions.

History of self-injurious behaviour in the past 12 months, assessed by the Functional Assessment of Self-Mutilation (FASM) (Lloyd et al., 1997). 78 individuals reported engaging in any kind of SIB and 613 individuals did not report any SIB in the past year. All 78 participants with SIB underwent a Structured Clinical Interview (APA,

2013) to examine the clinical characteristics of individuals to know whether they fulfil the criteria of non-suicidal self-injurious behaviour of DSM-5. Among the 78 participants with SIB, 14 had non-suicidal self-injurious behaviour (NSSIB). They were selected for the Phase II intervention study.

## **PHASE II -THE INTERVENTION STUDY**

### **Research Design**

In the phase II intervention study, a quasi-experimental research design of one-group pre-post-test with an extended group was used. One group, the pre-test- post-test design measures scores before and again following treatment and then compares the difference between pre-test and post-test scores. The index study has an extended group in which a follow-up assessment was performed with the experimental group after 6 months of the treatment program. The pre-test was performed as a baseline assessment; the post-test was performed after 4 months when treatment was completed. Here, Dialectical Behaviour therapy is the independent variable and non-suicidal self-injury, emotion regulation, and psychological well-being are the dependent variables.

### **Participants**

The sample for intervention consisted of young adults who fulfilled the inclusion criteria and provided written consent for the study. They were taken from outpatient clinics in Thiruvananthapuram, Kottayam and Ernakulam districts of Kerala. The clinics were selected by convenient method and identified participants for the study by the investigator through clinical interviews. The identified cases were selected for the study based on inclusion and exclusion criteria. Cases were referred by psychiatrists, neurologists, general physician, clinical psychologists and college

teachers. Informed consent was taken from each participant and confidentiality was assured as enshrined in the mandate on ethical guidelines of institute and research.

***Inclusion criteria***

1. Participants identified with Non-Suicidal Self-Injurious Behaviour according to DSM-5 (APA, 2013) with any NSSIB within the duration of the past four months.
2. Young adults specified an age range between 19 and 30 years.
3. Has not received any psychological intervention in the past.
4. Not taking medication for any chronic physical illness, psychosis or mood disorders or those who are on a stable medication.
5. Participants required an adequate understanding of English

***Exclusion criteria***

1. Comorbid psychosis, moderate or severe depression, bipolar disorder, and alcohol or substance abuse or dependence.
2. Significant Medical or Neurological disability or disorders.
3. Intellectual disability or any significant medical or neurodevelopmental disorder as per history.

14 cases were identified from Phase 1 of the study and 97 were direct cases from different clinics. A total of 111 cases of self-injurious behaviour were identified in three clinics. Out of 111 cases screened, 43 cases with non-suicidal self-injurious behaviour (APA, 2013) fulfilled the inclusion and exclusion criteria of the study. The final 33 cases were randomly assigned for research and started intervention after doing the baseline assessment (pre-intervention). There were 12 dropouts or missed assessments during intervention and follow-up. Finally, 21 young adults with NSSIB completed 14

weeks of Dialectical Behaviour Therapy based on Emotion regulation and follow-up assessment after 6 months.

### **Instruments**

In this study, assessments were conducted using the Deliberate Self-Harm Inventory-Clinical Version I & II (Gratz, 2001), the Cognitive Emotion Regulation Questionnaire (Garnefski & Kraaij, 2001), and Ryff's Scale for Psychological Well Being (Ryff, 2007) to comprehensively evaluate various aspects relevant to the participant's mental health and well-being in the three stages of assessment. Details are given below.

1. Deliberate Self-Harm Inventory, Clinical Change Version I & II
2. The Cognitive Emotion Régulation Questionnaire
3. Ryff's Scale of Psychological Well-being

### **Ethical Considerations**

Studying suicidal behaviour and other forms of self-harm raises several ethical considerations. All participants in the intervention were required to provide written informed consent before inclusion. Participation was voluntary, and participants were free to quit the study at any time. They were also assured of their right to withdraw from the study at any point, with the understanding that treatment would still be available to them regardless of their study involvement. Confidentiality of the information was maintained. A Human Ethical Committee Clearance Certificate was obtained for the study from the University of Calicut. As the Human Ethical Committee was not constituted at the university in 2019, approval from the Research Ethical Committee of the Research Centre was obtained. The synopsis of the study was approved by the Research Advisory Committee of the University of Calicut. The

investigator was responsible for obtaining informed consent and ensuring that the participants fully understood their involvement. There was a provision for appropriate referrals for individuals who needed and sought help. A therapeutic agreement was established before starting the intervention. In addition, the involvement of any trusted family members or primary caretakers (such as parents or spouses) was discussed regarding the participant's participation in the intervention programme. This discussion emphasized psychoeducation about the importance of supervision in managing any urges for self-injury. If a participant was deemed at imminent risk of suicide, appropriate safety measures and referrals were initiated. All safety protocols and outcomes were meticulously documented in the patient's clinical records. Participants were informed about the Dialectical Behaviour Therapy programme and were given voluntary invitations to participate. Dropouts were reminded of appointments and the importance of continuing treatment via phone or letter. Treatment was resumed upon their return, even if they were no longer part of the study.

The programme adhered to national suicide prevention guidelines (World Health Organization, 2014). All assessment staff were trained in conducting face-to-face assessments, with clear guidelines on confidentiality in case of high scores on such assessments. The investigator maintained strict confidentiality regarding results, using them solely for academic purposes if needed.

### ***The Procedure of Intervention Therapy***

After obtaining written consent from each participant selected for the intervention therapy, they completed the personal data sheet and baseline (pre-intervention) assessment using the Deliberate Self Harm Inventory(DSHI)- Clinical Change version I, Cognitive Emotion Regulation Questionnaire, and Ryff's Scale of

Psychological Well Being individually. The investigator a licensed Clinical Psychologist under the supervision of an experienced DBT practitioner, provided DBT. The post-intervention assessment occurred after completing four months of DBT with measures DSHI- Clinical Change Version II, CERQ, and SPWB. Six months after this assessment, at the end of the follow-up, all measures were repeated. Both post-intervention and follow-up assessments were performed by different blind raters. Each participant completed the intervention program (DBT) for a duration of 10 months. While initially beginning with 33 cases, 12 participants dropped out of the 14-week Dialectical Behaviour Therapy programme. Ultimately, 21 participants completed all intervention sessions and assessments.

Participants received weekly individual therapy sessions for three months, followed by fortnightly sessions for one month, a total of 4 months. Dialectical Behaviour Therapy based on Emotion regulation includes 14 weeks of individual psychotherapy intervention sessions and skill training based on Mindfulness, Emotion Regulation, Distress Tolerance and Interpersonal Effectiveness. An expert supervised all sessions, and each patient received 14 sessions of 90-minute therapy. At the beginning of treatment, a DBT contract was made with all participants after explaining all the protocols for intervention before starting therapy. Each session of the intervention programme began by assessing the participant's current stress level and urges related to self-injury.

The 14 weeks of therapy included two weeks of orientation with practicing mindfulness skills, six weeks of emotional regulation skills, one week of review of mindfulness, four weeks of distress tolerance skills and one week of interpersonal effectiveness skills, which are depicted in detail in the following table.

**14-Week Intervention Programme DBT for the Study**

<b>*14 Weeks of Neacsiu Adult DBT Emotion Regulation Skill Training</b>			
<b>2 Weeks orientation, Mindfulness Skills</b>			
<i>Wise Mind Observe</i>	Week 1	M1 M2	<ul style="list-style-type: none"> <li>• Wise Mind</li> <li>• Taking hold of your mind: Mindfulness “What skills”</li> </ul>
<i>Describe, Participate, Non-Judgmentally, One mindfully, and effectively</i>	Week 2	M2 M3	<ul style="list-style-type: none"> <li>• Taking hold of your mind: Mindfulness “What skills”</li> <li>• Taking hold of your mind: Mindfulness “What skills”</li> </ul>
<b>6 weeks of emotional regulation skills</b>			
<i>Understand, identify, and label emotions</i>	Week 3	ER 1 ER 2 ER 3 ER 4 ER 5 ER 6	<ul style="list-style-type: none"> <li>• Goals of emotional regulation</li> <li>• Overview: Understanding and naming emotions</li> <li>• What do emotions do for you?</li> <li>• What makes it difficult to regulate your emotions?</li> <li>• describing emotions</li> </ul>
<i>Checking the facts</i>	Week 4	ER 7 ER 8	<ul style="list-style-type: none"> <li>• Overview: Changing emotional responses</li> <li>• Checking the facts</li> </ul>
<i>Opposite action</i>	Week 5	ER 9  ER10	<ul style="list-style-type: none"> <li>• Opposite action: How to change unwanted emotions</li> <li>• Figuring out the opposite action</li> <li>•</li> </ul>
<i>Problem-solving Cope ahead and PLEASE</i>	Week 6	ER11 ER12	<ul style="list-style-type: none"> <li>• Problem-Solving</li> <li>• Reviewing opposite actions and problem-solving</li> </ul>
<i>Accumulating positives and Building Mastery</i>	Week 7	ER 13	<ul style="list-style-type: none"> <li>• Accumulating Positive emotions in short form and long-term</li> <li>• Building mastery and coping ahead</li> </ul>
<i>Cope ahead and PLEASE</i>	Week 8	ER 14	<ul style="list-style-type: none"> <li>• Building Master and cope ahead by taking care of your mind and body</li> </ul>
<b>1 week review of Mindfulness</b>			

<b><i>Wise mind: Observe; Describe; participate; Nonjudgmentally; One-mindedly; effectively</i></b>	Week-9	M 3 M 4	<ul style="list-style-type: none"> <li>• Wise mind</li> <li>• Taking hold of mind: Mindfulness ‘what’ skills</li> <li>• Mindful “How” skills</li> </ul>
<b><i>4-week Distress Tolerance skills</i></b>			
<b><i>TIP skills</i></b>	Week-10	DT 1	<ul style="list-style-type: none"> <li>• TIP Skills; Changing body Chemistry</li> </ul>
<b><i>Distracting, Self-soothing, Improving the moment</i></b>	Week-11	DT 2 DT 3 DT 4	<ul style="list-style-type: none"> <li>• Distracting</li> <li>• Self-Soothing</li> <li>• Improving the moment</li> </ul>
<b><i>Radical Acceptance; Turning the Mind</i></b>	Week-12	DT 5 DT 6 DT 7	<ul style="list-style-type: none"> <li>• Distracting</li> <li>• Self-Soothing</li> <li>• Improving the moment</li> </ul>
<b><i>Willingness; Half-Smiling; Mindfulness of thoughts</i></b>	Week-13	DT 8 DT 9 DT 10	<ul style="list-style-type: none"> <li>• Willingness</li> <li>• Half-Smiling and Willing Hands</li> <li>• Mindfulness of Current Thoughts</li> </ul>
<b><i>One week Interpersonal Effectiveness of Skills</i></b>			
<b><i>DEAR MAN, GIVE FAST; Interpersonal Validation; Behaviour Principles in Relationship</i></b>	Week-14	IE 1 IE 2 IE 3 IE 4 IE 5 IE 6 IE 7 IE 8	<ul style="list-style-type: none"> <li>• Guidelines for Objective Effectiveness (DEAR MAN)</li> <li>• Guidelines for Relationship Effectiveness: Keeping the Relationship(GIVE)</li> <li>• Guideline for Self-respect</li> <li>• Keeping respect for self (FAST)</li> <li>• Validation</li> </ul>

\*Adapted from Linehan (2015)

## **14 Weeks of Neacsiu Adult DBT Emotion Regulation Skill Training by Linehan & Neacsiu (2015)**

In the first week, Mindfulness was introduced with breathing exercises and explained the concepts of wise mind, emotional mind, and reasonable mind. The emotional mind involves impulsive actions, while the reasonable mind prioritizes knowledge and intellect. The wise mind, as the middle path, integrates both reason and emotion avoiding judgment. Participants learn wise-mind skills by observing events without prolonging pain, describing situations, and engaging fully in activities. Giving training in integrating emotional and logical minds along with intuitive knowing. Additionally, enhance observation skills by documenting experiences, labelling them, and stating facts related to events.

In week 2, participants deepened their wise mind skills by observing, describing, and skillfully participating in events. They started practicing observing without attachment, focusing on thoughts, emotions, and sensations. Attention was directed to specific events like deep breathing. They attended to experiences without cutting short the painful or extending the pleasant, fostering mindful awareness. Describing events, labelling emotions, and identifying thoughts were practiced without assuming their accuracy and engaged fully in activities without self-consciousness, spontaneously giving attention. Post-training, participants used an activity chart to record events where they applied wise-mind skills, described observations, and heightened life awareness. They articulated experiences, labelled without opinions, and stated facts, sharing insights into full engagement and increased awareness.

In the third week session, goals of emotion regulation were covered including understanding and naming emotions recognizing the purpose of emotions, challenges

in regulating emotions and a model for describing emotions. The sessions delve into the cognitive intrusions perspective of emotion regulation and its application in different situations. Clients were guided to enhance their ability to identify, label, and distinguish between emotional states, with a focus on understanding the functionality of primary emotional responses. The encouragement to recognize the information conveyed by primary emotions and adopt adaptive responses aimed to foster emotional acceptance.

During weeks 4 to 7, the focus shifted to skill training in emotion regulation, covering techniques like checking the facts, employing opposite actions, problem-solving, accumulating positives, building mastery, and coping ahead while attending to both the mind and body. This phase aimed at enhancing emotional awareness and clarity, particularly emphasizing discerning effective strategies when dealing with self-injurious thoughts. The sessions underscored the experiential benefits and consequences of emotional acceptance, highlighting the potential long-term outcomes of emotional avoidance. Clients were educated about the adverse impact of non-acceptance and avoidance, stressing that these practices may intensify emotions and contribute to perceiving them as undesirable. A clear distinction was made between emotional pain, considered a natural part of life, and emotional suffering involving secondary responses and unsuccessful attempts at control or avoidance. Clients were instructed that embracing emotional acceptance leads to less suffering compared to avoidance, preventing the escalation of emotional arousal while not necessarily reducing the primary emotional response

In week 8, participants revisited learning to build mastery and cope ahead by taking care of their minds and bodies using **ABC PLEASE** (Accumulating positive emotions, Building mastery of skills; Coping with challenging situations; Physical

Illness, Eating, Avoiding mood-altering substances, Sleep, Exercise) Skills training. It underscored the importance of self-care and reducing vulnerability through several key components. Accumulating positive emotions involved engaging in activities that brought joy and satisfaction, while Building mastery focused on honing skills and fostering a sense of competence. Coping ahead encouraged proactive planning to effectively manage challenging situations. They treated Physical Illness and took medications as prescribed, balanced Eating to avoid mood swings, avoided mood-altering substances, and had mood control. They maintained good Sleep to enjoy life and got Exercise to maintain high spirits.

week 9, participants revisited the 'What' skills and 'How' skills of mindfulness. The therapist emphasized fostering effective living through a non-judgmental, mindful, and outcome-focused approach. Being non-judgmental meant avoiding labelling things as good or bad and focusing on behaviour consequences without passing judgment on oneself or others. Mindfulness encourages concentration on the present moment, avoiding distractions from past thoughts and worries about the future, and engaging fully in the current task with open eyes. The principle of effectiveness in DBT emphasizes doing what works, not fixating on being "right" but directing attention toward achieving the desired outcome in each situation.

Week 10 highlights the TIP skill, a rapid intervention to modify body chemistry and alleviate the overwhelming impact of emotions on thoughts and behaviours. The TIP skill includes three techniques: Tip the Temperature involves immersing the face in ice water or applying an ice pack for a quick calming effect. Intense Exercise suggests engaging in vigorous physical activities to discharge excess energy and restore emotional balance. Paced Breathing guides individuals to slow down their breathing, promoting a calming effect on the body. These TIP skills offer immediate and effective

strategies for regaining control in intense emotional states, facilitating more adaptive navigation of challenging situations.

In week 11 using Self-Soothing skill encourages individuals to engage in activities that bring comfort and pleasure, providing relief from stress without worsening the situation. By focusing on each of the five senses, individuals can find solace. Vision involves appreciating nature's beauty, from sunsets to picturesque landscapes. Auditory soothing includes enjoying music or the calming sounds of the environment. Smell can be indulged through pleasant fragrances, while taste involves relishing favourite foods. The sense of touch is addressed by activities like applying moisturizer or feeling the warmth of the sun. These simple yet effective self-soothing techniques offer a practical way to manage stress and enhance overall well-being.

In week 12, the therapist introduces the **IMPROVE** skill, aiming to enhance the current moment by substituting immediate events triggering negative emotions with more positive actions. This skill involves various strategies, including Imagery (visualizing serene scenes), Meaning (finding purpose in daily activities), Prayer (seeking strength from a higher power), Relaxation (deep breathing or hot baths), One (focusing on the present moment), Vacation (taking a break in nature), and Encouragement (using positive affirmations). By incorporating these techniques, individuals actively improve their emotional state, making it more enjoyable and tolerable to navigate challenging moments effectively.

In week 13, learning willingness is crucial, requiring a commitment to engage in the program, complete assignments, and apply acquired skills for effectiveness. Willingness, as per Marsha Linehan, involves accepting one's connection to a broader world, approaching challenges openly, and focusing on effectiveness guided by the Wise Mind. Linehan uses a metaphorical batting cage, illustrating the choice to either

resist and complain or engage with life's challenges. Willfulness, the opposite of willingness, involves refusing action, self-pity, and resisting new coping skills. Cultivating willingness includes recognizing and accepting willfulness, turning the mind towards acceptance, adopting a willing posture, and actively participating in reality. It's an ongoing process that requires practice and commitment to foster a mindset embracing challenges with grace and openness.

Week 14 focused on interpersonal effectiveness skills, covering guidelines for objective, relationship, and self-respect effectiveness. These included strategies for asserting needs, expressing opinions, and negotiating with clarity and respect. The session also explored the balance between assertiveness and flexibility to foster effective collaboration while maintaining individual boundaries and values. These skills play a crucial role in the overall success of individuals navigating the complexities of interpersonal interactions

### **Statistical Analysis**

Collected data were entered into an Excel spreadsheet in anonymous coded form. Then the data was analysed with SPSS (version 22) software. There were 691 samples of data for the final analysis of Phase-I study: Descriptive statistics namely frequency, percentage, mean and standard deviation were calculated for the characteristics, methods, and frequency of self-injurious behaviour among young adults in Kerala.

- The data was checked for normality by using Kolmogorov- Smirnov test.
- The chi-square test was applied to examine the association between socio-demographic variables in young adults with and without a history of self-injurious behaviour in the past year.

- The Mann-Whitney U test was used to find out the difference in Cognitive Emotion Regulation strategies and psychological well-being dimensions between two groups of young adults with and without self-injurious behaviour.
- Spearman correlation coefficient was used to assess the relationship between variables of cognitive emotion regulation and psychological well-being.
- Linear regression analysis was used to find out the factors contributing to Cognitive Emotion Regulation strategies in dimensions of Psychological Well-being.
- Binary Logistic Regression Analysis was done Predicting Self-injurious Behaviour (last Year) for Cognitive Emotion Regulation Strategies and Psychological Well Being Sub Variables.

There were 21 samples for the final data analysis in the Phase-II main intervention study.

- Descriptive analysis and normality testing were done on the Shapiro-Wilk test.
- The Friedman test was used to find out the significant difference between pre, post and follow-up measures for non-suicidal self-injurious behaviour between the three stages of assessment.
- Friedman test was used to find out the significant difference between pre, post and follow-up measures for strategies of cognitive emotion regulation and dimensions of psychological well-being between the three stages of assessment.
- Post hoc analysis for pairwise comparison of different stages carried out with Wilcoxon signed-rank tests with a Bonferroni correction applied.

### **Major Finding of the Research**

1. Research findings bring attention to the significant prevalence of 11.8% self-injurious behaviour in the past year among young adults in Kerala.
2. Among participants with any history of self-injury, Most of them reported moderate/severe forms of SIB, others reported minor methods of self-injury and most of them engaged in any particular method for injuring self.
3. The majority of participants reported not having thoughts about killing themselves, and a few had suicidal thoughts or ideation.
4. Among individuals with SIB wrist cutting and skin erasing followed by self-hitting are the most commonly reported methods of self-injury.
5. Automatic positive and negative reinforcement such as 'to feel something even if it is pain' and 'to relieve feeling numb or empty' indicate individuals' internal states showing psychological reasons other than social/environmental reasons for self-injury.
6. Self-injurious behaviour was independent of demographic variables such as age group, gender, family type, marital status or educational status.
7. Occupation in which an individual engaged has a discernible influence on self-injurious behaviour.
8. The group with SIB exhibited higher engagement in non-adaptive strategies of self-blame, catastrophization, other blame, and rumination compared to the group without SIB.
9. Lower utilisation of adaptive cognitive strategies such as positive refocusing and acceptance among individuals with self-injurious behaviour indicating a struggle to employ positive coping mechanisms.

10. Dimensions of psychological well-being such as autonomy, environmental mastery, personal growth, positive relations with others, purpose in life and acceptance have significant differences in groups with and without a history of self-injury.
11. A significant negative correlation was found between the six dimensions of psychological well-being and the non-adaptive strategies of cognitive emotion regulation such as self-blame, catastrophization, other blame, and rumination.
12. A significant positive correlation was observed between six dimensions of psychological well-being and the adaptive strategies of cognitive emotion regulation such as putting into perspective, cognitive reappraisal, positive refocusing, refocus on planning, and acceptance. So Adaptive strategies of CER heighten an individual's potential in different dimensions of PWB.
13. Among adaptive strategies refocus on planning and self-acceptance found significant protective factors for SIB.
14. Among non-adaptive strategies self-blame and other blame significantly predict SIB in young adults.
15. There is a significant difference in SIB in three stages (before the intervention, after the intervention and follow-up after six months) of intervention in NSSIB in young adults.
16. There is significant reduction in non-adaptive coping strategies such as self-blame, catastrophization, other blame, and rumination in after the intervention.
17. The significant difference in adaptive coping strategies such as putting into perspective, cognitive reappraisal, positive refocusing, refocus on planning, and acceptance between the three stages of intervention shows the efficacy of DBT in propagating adaptive strategies of emotion regulation.

18. A significant enhancement in six dimensions of PWB such as autonomy, environmental mastery, personal growth, positive relationships, purpose in life, and self-acceptance found in the three stages of intervention.

The research reveals a notable one-year prevalence of self-injurious behaviour among young adults in the background of Kerala, independent of traditional demographic factors. Occupation plays a role in influencing such behaviour, suggesting targeted interventions for specific occupational groups. Adaptive cognitive emotion regulation strategies enhance well-being, while non-adaptive strategies increase the likelihood of self-injury. 14-week Dialectical Behaviour Therapy authenticates effective in reducing self-injurious behaviour. Dialectical behaviour therapy was found efficacious in enhancing psychological well-being in young adults with non-suicidal self-injurious behaviour based on the present study. Emphasizing the importance of integrated approaches to address the complex interplay of psychological factors and non-suicidal self-injurious behaviour.

**CHAPTER-V**  
**RECOMMENDATIONS**

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The findings of the current study highlighted a notable prevalence of self-injurious behaviour among young adults, along with insights into the methods they employ and the impulsive reactions, as well as automatic positive and negative reinforcements serving as motives. These psychological factors appeared to be closely linked to self-injury, while socio-demographic details did not exert significant influence across different groups. However, significant differences were observed in adaptive and non-adaptive coping skills and psychological well-being. Our research also sheds light on the relationship between emotion regulation and self-injury, underscoring the role of these factors in psychological well-being. These findings culminated in the application of an intervention program grounded in emotion regulation and skill training to this specific population. By extending the application of DBT to young adults grappling with non-suicidal self-injurious behaviour, the study endeavours to bridge the gap between established therapeutic modalities and the promotion of positive psychological well-being in this demographic. The implications of our research extend beyond the academic realm, offering insights into multifaceted factors influencing society and advocating interventions to address the complex interplay of psychological and behavioural challenges faced by young adults.

**Strength of the study**

- The specific focus of the study on young adults in Kerala provides a targeted examination of self-injurious behaviour within a particular demographic, allowing for in-depth insights and potential applicability to interventions for this population.

- The incorporation of DBT based on emotion regulation, short term intervention compared to traditional DBT programme, provides a practical and evidence-based approach to potentially improving psychological well-being.
- The findings have practical implications for mental health professionals, suggesting actionable steps for interventions and treatments to address non-suicidal self-injurious behaviour. This enhances the relevance and potential impact on real-world clinical practices.
- The study incorporates positive psychology principles to address the challenges faced by the clinical population and promote psychological well-being. By integrating these principles it emphasizes the potential for a more comprehensive approach to mental health care.

The study employs rigorous quantitative data analysis methods in two phases adding strength to the reliability and validity of the research findings, enhancing the scientific rigour.

### **Limitations of the study**

While the study offers valuable insights into the psychological factors associated with self-injury among young adults, it could benefit from further exploration of potential neurological or physiological aspects in literature, as well as potential collaboration with medication-based interventions to provide a comprehensive understanding and treatment approach.

- It is recommended to expand the sample size and include young adults from various regions across India to enable a more understanding of the extent to which the findings can be extrapolated to broader populations encompassing diverse demographic and cultural characteristics.

- Non-suicidal self-injury and suicidal behaviours were assessed retrospectively with single items, which might have underestimated the lifetime prevalence in this young adult population sample.
- The reliance on self-reported data on sensitive topics like self-injurious behaviour may introduce social desirability bias, as participants may underreport or misrepresent their experiences due to stigma or fear of judgment.
- The study failed to implement a randomized control group intervention programme that ensured timely and appropriate interventions for all participants, so the control group was challenging.
- Patients excluded from the study due to missing data and dropouts in the intervention phase could undergo additional analysis (e. g. Intent to Treat Analysis) to provide further insights into their characteristics and experiences, contributing to a more comprehensive understanding of the studied population.
- The study may not adequately explore the influence of cultural factors on self-injurious behaviour, potentially overlooking cultural attitudes, norms, and coping mechanisms that could impact the findings and their generalizability to diverse populations.
- The study limits to incorporation of qualitative analysis and case study discussion, thereby restricting a comprehensive understanding of suicide-related or self-injurious behaviours.

### **Suggestions for Future Research**

- Future research could delve deeper into potential neurological or physiological basis within clinical settings to enhance our comprehensive understanding and

treatment approach, incorporating medication-based interventions alongside psychological therapies.

- The study can investigate neurobiological changes using before and after neurological investigations, including MRI or fMRI for brain structure and function, EEG for brain wave activity, and neuropsychological assessments for cognitive functioning. These methods aid in identifying neurological correlates and pathways in self-injurious behaviour.
- Propose conducting a randomized controlled trial to assess the effectiveness of dialectical behaviour therapy compared to other therapeutic approaches in reducing self-injurious behaviour among young adults.
- Consider exploring hybrid approaches that integrate in-person therapy with technology-based interventions to enhance accessibility and engagement in mental health care, considering the evolving treatment landscape.
- Propose designing a longitudinal study to monitor the long-term effectiveness of Dialectical Behaviour Therapy (DBT) integrated with hybrid approaches in mental health interventions.

### **Implications of the Study**

The implications of the present research highlight the pressing need for mental health initiatives and preventive strategies in light of the high incidence of self-injurious behaviour among this demographic variables. Emphasizing individualized approaches over demographic stereotypes is crucial, with a focus on the role of DBT in promoting positive interpersonal relationships and enhancing psychological well-being.

***Implication for public and other professionals***

- Making awareness, establishing support systems and availing effective mental health resources can enhance interventions appropriately, ultimately promoting a healthier and more resilient population and addressing such issues especially in young population.
- Develop targeted support systems and interventions in colleges and universities to address impulse control and emotional regulation, while parents and teachers can assist individuals in cultivating healthy coping mechanisms and effective emotion regulation skills to mitigate the risk of engaging in self-injurious behaviour.

***Implications for clinicians, and other mental health professionals***

- As DBT found an efficacious intervention programme to reduce self-injury and enhance well being the proper training can be given to clinical practitioners.
- Mental health professionals can integrate intervention skill training, and occupational factors, utilizing evidence-based practices such as dialectical behaviour therapy to effectively address non-suicidal self-injurious behaviour and promote psychological well-being in young adults.
- Intensive training in DBT can empower clinicians to become experts in dialectical behaviour therapy as it shows effectiveness in Indian background.
- Understanding the role of cognitive emotion regulation strategies in self-injurious behaviour allows mental health professionals to develop prevention programmes and awareness programmes.

- Early identification and intervention, especially among at-risk populations, can help to mitigate the risk of engaging in self-injurious behaviour.
- Mental health professionals should stay updated on effective interventions proven to reduce self-injurious behaviour and enhance psychological well-being.
- Empowering clients with knowledge about effective coping mechanisms and the consequences of non-adaptive strategies can contribute to long-term resilience and well-being.

***Implication for the mental health authority at the government level for youth in Kerala***

- Launching public awareness campaigns on mental health issues and self-injurious behaviour. Education initiatives can focus on disseminating information about adaptive coping mechanisms and the potential negative consequences of non-adaptive strategies.
- Mental Health authorities must appoint qualified clinicians to treat underlying emotional issues and psychological reasons of patients suffering from mental and physical illness.
- Allocating adequate funds to support mental health intervention programs within schools and colleges, such as ‘Jeevani’ counselling program, can significantly enhance their effectiveness. These funds can be used to hire qualified and competent clinicians, conduct awareness campaigns, and implement evidence-based interventions aimed at enhancing coping skills and psychological well-being among students.

- Introducing mental health education as a part of the school curriculum can help to raise awareness about self-harm, suicide prevention, and coping strategies among students. Incorporating topics such as stress management, emotional regulation, and seeking help for mental health issues can promote early intervention and destigmatize the discussions surrounding mental health.
- Providing comprehensive training programs for educators, school counsellors, and college advisors to effectively identify and address specific skill training focused on emotion regulation.
- Government collaboration with businesses can implement workplace mental health initiatives, including stress management training for employees and employers, coping strategies, and supportive work environments, recognizing the influence of occupation on self-injurious behaviour.
- Develop mental health programs for young adults in Kerala, incorporating cognitive emotion regulation strategies and evidence-based interventions like dialectical behaviour therapy to reduce self-injurious behaviour and enhance adaptive coping and train college and school counsellors.
- Continued support for research initiatives and regular evaluation of mental health programs based on self-injury and psychological reasons are crucial for understanding and addressing evolving dynamics of self-injurious behaviour and mental health.
- Community-based organizations collaborating with non-governmental organizations can extend mental health support services, using engagement with local communities to enhance the reach and effectiveness of interventions in special needy populations such as self-injurious behaviour.

By putting these measures into action, society can foster supportive environments in clinics, schools, colleges, and workplaces. This empowers youth to seek help for emotional struggles, ensures effective interventions are accessible, and works toward preventing future instances of self-harm and suicide.

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## **APPENDICES**

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## APPENDIX-1

### Informed Consent Form-I

**Title of the study: Efficacy of Dialectical Behavior therapy based on Emotion regulation in  
Non -Suicidal Self- injurious Behavior**

Information to the Participants:

Hi, my name is Juleemol George (Ph D Scholar, Department of Psychology, Prajyoti Niketan College). I am doing research work under the guidance of Dr Jaya AT (Assistant Professor, Department of Psychology, Prajyoti Niketan College). This study aims to understand the efficacy of Dialectical behavior therapy in young adults. It is expected that this therapy will help to improve cognitive Emotion regulation and Psychological Well being in young adults with Non Suicidal Self Injurious Behavior. In the first phase of the study, we are planning to assess self-injurious behaviour among young adults and certain psychological variables related to it.

Your participation in the study will involve assessment questionnaires 30 minutes.

Undertaking by the investigator your consent to the above study is solicited. Your participation is completely voluntary. At any point during the study, you have the right to withdraw without giving any reason. You are free to contact the investigator for clarification or guidance, if so desired. No tangible or monetary benefits would be given for participating. The information obtained during the study would be used for the purpose of research, which may include research presentations and publications, however the individual identities will not be revealed.

#### Consent

I ..... have been informed about the procedure of the study. I have understood that I have the right to withdraw at any time during the study.

I, the undersigned, give my consent to be a participant of this study.

Signature of Participant:

Signature of the Researcher:

Name: Juleemol George (Ph D Scholar)

Date:

Dept of Psychology, Prajyoti Niketan College. Contact- email:julieelizabath@gmail.com. Phone: 9605067527. Research Guide: Dr Jaya A T (Assistant Professor), Dept of Psychology, Prajyoti Niketan College, Pudukad, Thrissur, Kerala - India- 680301, e-mail: prajyotinetan@yahoo.co.in,

## APPENDIX-II

### Informed Consent Form-II

#### **Title of the study: Efficacy of Dialectical Behavior therapy based on Emotion regulation in Non -Suicidal Self- injurious Behavior**

Information to the Participants:

Hi, my name is Juleemol George (PhD Scholar, Department of Psychology, Prajyoti Niketan College). I am doing research work under the guidance of Dr Jaya AT (Assistant Professor, Department of Psychology, Prajyoti Niketan College). This study aims to understand the efficacy of Dialectical behavior therapy in young adults. It is expected that this therapy will help to improve cognitive Emotion regulation and Psychological Well being in young adults with Non Suicidal Self Injurious Behavior.

Your participation in the study will involve pre assessment questionnaires with a detailed interview that will take approximately one hour. If you are selected for the therapy after the assessment further sessions will include 14 sessions of therapy weekly and 2 sessions fortnightly and a post assessment after 4 months and a follow up assessment after 6 months' period.

Undertaking by the investigator your consent to the above study is solicited. Your participation is completely voluntary. At any point during the study, you have the right to withdraw without giving any reason. You are free to contact the investigator for clarification or guidance, if so desired. No tangible or monetary benefits would be given for participating. The information obtained during the study would be used for the purpose of research, which may include research presentations and publications, however the individual identities will not be revealed.

#### **Consent**

I ..... have been informed about the procedure of the study. I have understood that I have the right to withdraw at any time during the study. I am aware that participation in this study requires 9 months of total duration including 14 sessions of therapy and 3 assessments.

I, the undersigned, give my consent to be a participant of this study.

Signature of Participant:

Signature of the Researcher:

Name: Juleemol George (Ph D Scholar)

Date:

Dept of Psychology, Prajyoti Niketan College. Contact- email: julieelizabath@gmail.com. Phone: 9605067527. Research Guide: Dr Jaya A T (Assistant Professor), Dept of Psychology, Prajyoti Niketan College, Pudukad, Thrissur, Kerala - India- 680301, e-mail: prajyotiniketan@yahoo.co.in,

**APPENDIX-III**

**Title of the study: Efficacy of Dialectical Behavior therapy based on Emotion regulation in  
Non -Suicidal Self- injurious Behavior**

**Demographic Details**

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**Date of assessment:**

Age:

Gender:

Married:

Unmarried:

other:

Academic Qualification:

Occupation:

Birth order:

Locality: Rural / Urban / Suburban / Others

Family Structure: Nuclear / Joint / Extended

**APPENDIX IV**

**Title of the study: Efficacy of Dialectical Behavior Therapy Based on Emotion Regulation in  
Non -Suicidal Self- injurious Behavior**

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**Proforma for demographic and clinical variables**

CASE. No.

OPD No.

**Date of first presentation:**

**Date of first assessment:**

**Second Assessment:**

**Follow up assessment:**

Nam:

Age:

Gender:

Married:

Unmarried:

other:

Academic Qualification:

Occupation:

Current Status:

Locality: Rural / Urban / Suburban / Others

Family Structure: Nuclear / Joint / Extended

Number of family members:

Provisional Diagnosis as per DSM:

SOURCE OF DATA:

Past History any Mental illness illness

Past History of Medical illness:

Consent form:

DBT Contract:

## APPENDIX - V

### Dialectical Behavior Therapy Program Contract Client's Agreement Private & Confidential

I, \_\_\_\_\_ conditions of  
Dialectical Behavior Therapy (DBT) as follows:

#### **I. Basic Principles of Therapy Agreement:**

1. **Mutual Trust.** My therapist and I are entering into this contract in a trusting manner. I need to trust that my therapist has made a commitment to work with me and will actually be available as per the terms and conditions of this contract. Similarly, my therapist needs to trust that I will maintain my commitment to the terms of this contract. Each party is responsible for maintaining that trust.

2. **Safety.** Therapy cannot proceed until there is clear agreement about maintaining safety. I agree to commit to the goal of safety towards self and others<sup>1</sup>. If there are concerns that this can't happen, my therapist and I need to have in place a clear safety plan that specifies the steps I or others need to take to ensure safety. At the very least, active pursuit of harmful behaviours to self or others robs me of the chance to remain committed to the current therapy goals and to learn more helpful ways of dealing with problems in life. By agreeing to do my best to keep myself and others safe I can have a better chance of helping myself apply the principles of DBT to my life. All participants in DBT therapy are expected to act in a way that does not endanger their therapist, family, or others (e.g., through threats or acts of violence against people or property). Such behaviour may result in legal consequences or risk termination of therapy.

3. **Family therapy.** Effective therapy involves the inclusion of family and significant others. Although I am assured confidentiality, I agree to maintain an open and honest communication with my family in family sessions. Family members agree to be involved in treatment and to learn what they can about my problems and although they can't solve them, they will do what they can to help.

#### **II. The Aim of Therapy Agreement:**

Therapy is about learning skills that are likely to increase my ability to have a life that is worth living. Therapy is not about "feeling better" in the first instance. In fact, a good part of DBT is about learning to be "better at feeling" some of my uncomfortable emotions in the service of beginning to live a life that is worth living.

#### **III. Target Behaviours Agreement:**

These are of vital importance and prioritised in the following order:

1. **Eliminating behaviours that are harmful to self or others:** Reducing suicidal or self/other-harm behaviours is a primary therapy goal. The basic agreement is that I will work towards solving problems in ways that do not include intentional harm to self, others, attempts to die or suicide<sup>2</sup>

2. **Eliminating therapy-interfering behaviours:** I agree to work on any problems that interfere with the progress of therapy. Therapy is about working together and requires the participation of both me and my therapist. I agree to give feedback to my therapist on how I am finding therapy, especially if I am concerned about anything that occurs in therapy. Similarly, my therapist agrees to provide feedback on how they are finding therapy.

3. **Reducing quality-of-life interfering behaviours:** These are unhelpful problems that may block my chances of living a life of reasonable quality. Guidelines for addressing these problems are as follows: Problems linked to higher priority targets or to my own life goals take

precedence. Beyond this, immediate problems take priority<sup>3</sup> and easy problems should be solved before hard ones.

**4. Increasing behavioural skills:**

- A. Core mindfulness skills
- B. Interpersonal effectiveness
- C. Emotion regulation
- D. Distress Tolerance

**IV. Period of Therapy Agreement:**

Therapy will commence on the following date: \_\_\_\_\_ and will end on: \_\_\_\_\_

Throughout this period, my therapist and I will review progress which may lead to refining targets and goals. At the end of this period, the question of whether a further phase of therapy is needed will be discussed and may be implemented by mutual consent.

**V. Frequency of Contact Agreement:**

Guidelines for frequency of sessions is weekly for one hour but, from time to time, may be at different intervals depending on circumstances of either party and by mutual arrangement. When sessions are further apart than two weeks, it may be beneficial to implement a longer session and, if possible or desirable, include working-hours phone contact.

**VI. Therapy Attendance Agreement:**

I agree to attend scheduled therapy sessions. It is not acceptable to miss sessions because I find them too uncomfortable or aversive, am not in the mood for therapy, wish to avoid certain topics or feel hopeless.

**VII. Agreement to Advise When Unable to Keep a Scheduled Session:**

I agree to do my best to give at least 24 hours notice when unable to attend a scheduled session to minimise any inconvenience to the therapist. Similarly, my therapist will do their best to give me at least 24 hours notice if it has become necessary to re-schedule a session. I agree to pay the missed session fee when assigned.

**VIII. Agreement on Homework Assignments and Related Material:**

I agree to take responsibility for ensuring that I bring my personal therapy folder and the latest homework assignments to each session because these will be a vital part of in-session work.

**IX. Unilateral Termination of Therapy Agreement:**

If I miss 4 weeks of scheduled therapy in a row, therapy will be terminated. I cannot return to therapy until the end of the contracted period and then return is a matter of negotiation.

**X. Skills Training Agreement**

Skills training are a central part of DBT. During the period of therapy, I will be expected to participate in learning DBT skills through either a group, (date to be announced) or in learning skills through family sessions or in individual therapy.

**XI. Role of Therapist or other providers**

This contract neither replaces nor alters the key-working role of others. I understand that DBT makes a distinction between the roles of my other providers and my therapist<sup>4</sup>. I understand my therapist will be seeking consultation through her consultation team.

**XII. The ultimate goal of having a life worth living**

I understand that the goal of this therapy is to not need therapy. Therefore, as I become more competent with my skills, and strive towards a life worth living, this will result in a decrease in the need for and dependency on my therapist. Although we will have developed a strong and positive therapeutic relationship, it is meant to be temporary and that is the goal. If this is not happening, there is something wrong and consultation will be sought.

Signature: .....

Date:

Signature (Family Member):.....

**APPENDIX - VI**  
**Functional Assessment of Self Mutilation**

**A. In the past year, have you engaged in the following behaviors to deliberately harm yourself (check all that apply):**

	No	Yes	How many times?	Have you gotten medical treatment?
1. cut or carved on your skin				
2. hit yourself on purpose				
3. pulled your hair out				
4. gave yourself a tattoo				
5. picked at a wound				
6. burned your skin (i.e., with a cigarette, match or other hot object)				
7. inserted objects under your nails or skin				
8. bit yourself (e.g., your mouth or lip)				
9. picked areas of your body to the point of drawing blood				
10. scraped your skin				
11. "erased" your skin				
12. other: _____				

**B. If not in the past year, have you EVER done any of the above acts?**

\_\_\_\_\_ Yes  
\_\_\_\_\_ No

**If yes to any of the above behaviors in the past year, please complete the questions (C-H) below:**

**C. While doing any of the above acts, were you trying to kill yourself?**

\_\_\_\_\_ Yes  
\_\_\_\_\_ No

**D. How long did you think about doing the above act(s) before actually doing it?**

- none
- "a few minutes"
- < 60 minutes
- > 1 hour but < 24 hours
- more than 1 day but less than a week
- greater than a week

**E. Did you perform any of the above behaviors while you were taking drugs or alcohol?**

- Yes
- No

**F. Did you experience pain during this self-harm?**

- severe pain
- moderate pain
- little pain
- no pain

**G. How old were you when you first harmed yourself in this way? \_\_\_\_\_**

**H. Did you harm yourself for any of the reasons listed below? (check all reasons that apply):**

0 Never	1 Rarely	2 Some	3 Often
<b>Reasons:</b>			<b>Rating</b>
1. to avoid school, work, or other activities			
2. to relieve feeling "numb" or empty			
3. to get attention			
4. to feel something, even if it was pain			
5. to avoid having to do something unpleasant you don't want to do			
6. to get control of a situation			
7. to try to get a reaction from someone, even if its a negativereaction			
8. to receive more attention from your parents or friends			
9. to avoid being with people			
10. to punish yourself			
11. to get other people to act differently or change			
12. to be like someone you respect			
13. to avoid punishment or paying the consequences			
14. to stop bad feelings			

15. to let others know how desperate you were	
16. to feel more a part of a group	
17. to get your parents to understand or notice you	
18. to give yourself something to do when alone	
19. to give yourself something to do when with others	
20. to get help	
21. to make others angry	
22. to feel relaxed	
23. other:	

Thank you for your responses!

**APPENDIX - VII**  
**COGNITIVE EMOTION REGULATION QUESTIONNAIRE**

© Garnefski, Kraaij & Spinhoven, 2001

**How do you cope with events?**

Everyone gets confronted with negative or unpleasant events now and then and everyone responds to them in his or her way. By the following questions, you are asked to indicate what you generally think, when you experience negative or unpleasant events.

- 1. (almost) never**
- 2. Some times**
- 3. Regularly**
- 4. Often**
- 5. Almost**

1. I feel that I am the one to blame for it	1	2	3	4	5
2. I think that I have to accept that this has happened	1	2	3	4	5
3. I often think about how I feel about what I have experienced	1	2	3	4	5
4. I think of nicer things than what I have experienced	1	2	3	4	5
5. I think of what I can do best	1	2	3	4	5
6. I think I can learn something from the situation	1	2	3	4	5
7. I think that it all could have been much worse	1	2	3	4	5
8. I often think that what I have experienced is much worse than what others have experienced	1	2	3	4	5
9. I feel that others are to blame for it	1	2	3	4	5
10. I feel that I am the one who is responsible for what has happened	1	2	3	4	5
11. I think that I have to accept the situation	1	2	3	4	5
12. I am preoccupied with what I think and feel about what I have experienced	1	2	3	4	5
13. I think of pleasant things that have nothing to do with it	1	2	3	4	5
14. I think about how I can best cope with the situation	1	2	3	4	5
15. I think that I can become a stronger person as a result of what has happened	1	2	3	4	5

16. I think that other people go through much worse experiences	1	2	3	4	5
17. I keep thinking about how terrible it is what I have experienced	1	2	3	4	5
18. I feel that others are responsible for what has happened	1	2	3	4	5
19. I think about the mistakes I have made in this matter	1	2	3	4	5
20. I think that I cannot change anything about it	1	2	3	4	5
21. I want to understand why I feel the way I do about what I have experienced	1	2	3	4	5
22. I think of something nice instead of what has happened	1	2	3	4	5
23. I think about how to change the situation	1	2	3	4	5
24. I think that the situation also has its positive sides	1	2	3	4	5
25. I think that it hasn't been too bad compared to other things	1	2	3	4	5
26. I often think that what I have experienced is the worst that can happen to a person	1	2	3	4	5
27. I think about the mistakes others have made in this matter	1	2	3	4	5
28. I think that basically the cause must lie within myself	1	2	3	4	5
29. I think that I must learn to live with it	1	2	3	4	5
30. I dwell upon the feelings the situation has evoked in me	1	2	3	4	5
31. I think about pleasant experiences	1	2	3	4	5
32. I think about a plan of what I can do best	1	2	3	4	5
33. I look for the positive sides to the matter	1	2	3	4	5
34. I tell myself that there are worse things in life	1	2	3	4	5
35. I continually think how horrible the situation has been	1	2	3	4	5
36. I feel that basically the cause lies with others	1	2	3	4	5
<b>Thank you for filling out the questionnaire!</b>					

**APPENDIX- VIII**

**Ryff's Psychological Well-Being Scales (PWB)**

Please indicate your degree of agreement (using a score ranging from 1 - 6 ) to the following sentences:	Strongly Disagree			Strongly Agree		
	1	2	3	4	5	6
1. I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.	1	2	3	4	5	6
2. In general, I feel I am in charge of the situation in which I live.	1	2	3	4	5	6
3. I am not interested in activities that will expand my horizons.	1	2	3	4	5	6
4. Most people see me as loving and affectionate.	1	2	3	4	5	6
5. I live life one day at a time and don't really think about the future.	1	2	3	4	5	6
6. When I look at the story of my life, I am pleased with how things have turned out.	1	2	3	4	5	6
7. My decisions are not usually influenced by what everyone else is doing.	1	2	3	4	5	6
8. The demands of everyday life often get me down.	1	2	3	4	5	6
9. I think it is important to have new experiences that challenge how you think about yourself and the world.	1	2	3	4	5	6
10. Maintaining close relationships has been difficult and frustrating for me.	1	2	3	4	5	6
11. I have a sense of direction and purpose in life.	1	2	3	4	5	6
12. In general, I feel confident and positive about myself.	1	2	3	4	5	6
13. I tend to worry about what other people think of me.	1	2	3	4	5	6
14. I do not fit very well with the people and the community around me.	1	2	3	4	5	6
15. When I think about it, I haven't really improved much as a person over the years.	1	2	3	4	5	6
16. I often feel lonely because I have few close friends with whom to share my concerns.	1	2	3	4	5	6
17. My daily activities often seem trivial and unimportant to me.	1	2	3	4	5	6

**APPENDIX- VIII**

18. I feel like many of the people I know have gotten more out of life than I have.	1	2	3	4	5	6
19. I tend to be influenced by people with strong opinions.	1	2	3	4	5	6
20. I am quite good at managing the many responsibilities of my daily life.	1	2	3	4	5	6
21. I have a sense that I have developed a lot as a person over time.	1	2	3	4	5	6
22. I enjoy personal and mutual conversations with family members or friends.	1	2	3	4	5	6
23. I don't have a good sense of what it is I'm trying to accomplish in life.	1	2	3	4	5	6
24. I like most aspects of my personality.	1	2	3	4	5	6
25. I have confidence in my opinions, even if they are contrary to the general consensus.	1	2	3	4	5	6
26. I often feel overwhelmed by my responsibilities.	1	2	3	4	5	6
27. I do not enjoy being in new situations that require me to change my old familiar ways of doing things.	1	2	3	4	5	6
28. People would describe me as a giving person, willing to share my time with others.	1	2	3	4	5	6
29. I enjoy making plans for the future and working to make them a reality.	1	2	3	4	5	6
30. In many ways, I feel disappointed about my achievements in life.	1	2	3	4	5	6
31. It's difficult for me to voice my own opinions on controversial matters.	1	2	3	4	5	6
32. I have difficulty arranging my life in a way that is satisfying to me.	1	2	3	4	5	6
33. For me, life has been a continuous process of learning, changing, and growth.	1	2	3	4	5	6
34. I have not experienced many warm and trusting relationships with others.	1	2	3	4	5	6
35. Some people wander aimlessly through life, but I am not one of them.	1	2	3	4	5	6
36. My attitude about myself is probably not as positive as most people feel about themselves.	1	2	3	4	5	6
I judge myself by what I think is important, not by the values of what others think is important	1	2	3	4	5	6

**APPENDIX- VIII**

38. I have been able to build a home and a lifestyle for myself that is much to my liking.	1	2	3	4	5	6
39. I gave up trying to make big improvements or changes in my life a long time ago.	1	2	3	4	5	6
40. I know that I can trust my friends, and they know they can trust me.	1	2	3	4	5	6
41. I sometimes feel as if I've done all there is to do in life.	1	2	3	4	5	6
42. When I compare myself to friends and acquaintances, it makes me feel good about who I am.	1	2	3	4	5	6



1. Yes 2. No

10. In the past 4 months (since / / ) have you intentionally (i.e., on purpose) used bleach, comet, or oven cleaner to scrub your skin? (circle one):

1. Yes 2. No

11. Since the last assessment , have you intentionally stuck sharp objects such as needles, pins, staples, etc. into your skin, not including tattoos, ear piercing, needles used for drug use, or body piercing? (circle one):

1. Yes 2. No

12. Since the last assessment , have you intentionally (i.e., on purpose) rubbed glass into your skin? (circle one):

1. Yes 2. No

13. Since the last assessment , have you intentionally (i.e., on purpose) broken your own bones? (circle one):

1. Yes 2. No

14. Since the last assessment , have you intentionally (i.e., on purpose) banged your head against something, to the extent that you caused a bruise to appear? (circle one):

1. Yes 2. No

15. Since the last assessment have you intentionally (i.e., on purpose) punched yourself, to the extent that you caused a bruise to appear? (circle one):

1. Yes 2. No

16. Since the last assessment have you intentionally (i.e., on purpose) prevented wounds from healing, to the extent that bleeding occurred? (circle one):

1. Yes 2. No

If yes, please write the number of times each level of medical treatment was required:

Doctor/nurse visit \_\_\_\_\_ Emergency room visit \_\_\_\_\_

Medical Floor \_\_\_\_\_ ICU \_\_\_\_\_

17. In the past 4 months (since / / ) have you intentionally (i.e., on purpose) done anything else to hurt yourself that was not asked about in this questionnaire? (circle one):

1. Yes 2. No

If yes, in any items: No. of items ....., ....., .....,

a. When did you first do this (after the last assessment)? Please write the date. \_\_\_\_\_

b. How many times have you done this since the last assessment? Please write an actual number (e.g., 1, 5, or 15 NOT some, many, or few). \_\_\_\_\_

c. When was the last time you did this? Please write the date. \_\_\_\_\_

d. In the past 4 months (since / / ) did this behavior result in hospitalization or injury severe enough to require medical treatment? (circle one):

1. Yes

2. No

If yes, please write the number of times each level of medical treatment was required:

Doctor/nurse visit \_\_\_\_\_

Emergency room visit \_\_\_\_\_

Medical Floor \_\_\_\_\_

ICU \_\_\_\_\_

Date of Assessment: ...../...../.....



- 1. Yes
- 2. No

11. **Since the last assessment** , have you intentionally stuck sharp objects such as needles, pins, staples, etc. into your skin, **not including** tattoos, ear piercing, needles used for drug use, or body piercing? (circle one):

- 1. Yes
- 2. No

12. **Since the last assessment** , have you intentionally (i.e., on purpose) rubbed glass into your skin? (circle one):

- 1. Yes
- 2. No

13. **Since the last assessment** , have you intentionally (i.e., on purpose) broken your own bones? (circle one):

- 1. Yes
- 2. No

14. **Since the last assessment** , have you intentionally (i.e., on purpose) banged your head against something, **to the extent that you caused a bruise to appear**? (circle one):

- 1. Yes
- 2. No

15. **Since the last assessment** have you intentionally (i.e., on purpose) punched yourself, **to the extent that you caused a bruise to appear**? (circle one):

- 1. Yes
- 2. No

16. **Since the last assessment** have you intentionally (i.e., on purpose) prevented wounds from healing, **to the extent that bleeding occurred**? (circle one):

- 1. Yes
- 2. No

**If yes, please write the number of times each level of medical treatment was required:**

Doctor/nurse visit \_\_\_\_\_ Emergency room visit \_\_\_\_\_  
 Medical Floor \_\_\_\_\_ ICU \_\_\_\_\_

17. **Since the last assessment**, have you intentionally (i.e., on purpose) done anything else to hurt yourself that was not asked about in this questionnaire? (circle one):

- 1. Yes
- 2. No

**If yes, in any items: No. of items**   ....., ....., .....,

a. When did you first do this (**after the last assessment**)? **Please write the date.** \_\_\_\_\_

b. How many times have you done this **since the last assessment**? **Please write an actual number (e.g., 1, 5, or 15 NOT some, many, or few).** \_\_\_\_\_

c. When was the last time you did this? **Please write the date.** \_\_\_\_\_

d. **Since the last assessment**, did this behavior result in hospitalization or injury severe enough to require medical treatment? (circle one):

- 1. Yes
- 2. No

**If yes**, please write the number of times each level of medical treatment was required:

Doctor/nurse visit \_\_\_\_\_

Emergency room visit \_\_\_\_\_

Medical Floor \_\_\_\_\_

ICU \_\_\_\_\_

Date of Assessment: ...../...../.....



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	<b>Doc. No: 033/CUHEC/CU/2024</b> <span style="float: right;"><b>Date: 30.01.2024</b></span>
	CUEC Application No.: 033/CUHEC/2023 dated 15/11/2023
	<b>Name of Research Scholar: Ms. Juleemol George</b>
	<b>Approved Title of Ph. D. work:</b> Efficacy of dialectical behaviour therapy based on emotion regulation in non-suicidal self injurious behaviour
	<b>Name &amp; Address of Host Institution:</b> Department of Psychology, Prajyoti Niketan College, Pudukkad, Thrissur, Kerala
	<b>Application status:</b> New review
	<b>Date of Review (D/M/Y):</b> 30/01/2024
	<b>Decision of the Committee:</b> Recommended with suggestions
	<b>Suggestions / Remarks (if any):</b> Scholar has to follow legal protocols in case of revealed crimes, if any, during data collection
	<b>Recommended period of study:</b> One year from the date of sanction
	<b>Reporting frequency:</b> Six months
	<b>Approved sample size of human involvement:</b> Phase I: 500 Nos Phase II: 50 Nos
	<b>Directions:</b> - Inform CUHEC in case of any change in the information given - This permission is valid only for the period mentioned thereon - CUHEC have the right to monitor the trial with prior intimation

  
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Date... 31-05-2021.....

## Certificate of Training and Supervision

This is to certify that Juleemol George, Research Scholar, Prajyoti Niketan College, Thrissur, has successfully completed both Basic and Advance Levels Training in Dialectical Behaviour Therapy(DBT).

- Basic Level: 8<sup>th</sup> September to 10<sup>th</sup> October, 2020
- Advanced Level Training: 1<sup>st</sup> to 30<sup>th</sup> May, 2021

Furthermore, Juleemol George has actively engaged in conducting Therapy Sessions and Facilitating skill training under my direct Supervision.

Dr Teslin Joseph

MM &SP, Ph D (Clinical Psychology)

Post-Doctoral MS in Psycho Pharmacology

Consultant Clinical & Neuro Psychologist

Dr. Teslin Joseph Ph.D, Mphil  
in Medical & Social Psychology  
Post doctoral M.S. in psychopharmacology  
& Neuropsychology Consulting clinical  
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## The Pattern of Non-Suicidal Behaviour and Mediating Role of Emotion Regulation Strategies in Adolescents

Julemol George<sup>1\*</sup>, Dr. Jaya A T<sup>2</sup>

### ABSTRACT

Nonsuicidal self-injurious behaviour (NSSI) is a concern for adolescents' mental health issues and acts as a gateway for future suicide attempts or other mental health issues later. The study explored the occurrence and characteristics of Non-Suicidal Self Injurious Behaviour in adolescents and the role of emotion regulation strategies. A total of 702 Adolescents from higher secondary schools in different districts of Kerala were selected as participants by stratified random sampling and completed the Functional Assessment of Self-Mutilation (FASM) and Cognitive Emotion Regulation Questionnaire (CERQ). 9.8% of the participants reported NSSIB with a mean age of 15.6 years. The most common method is banging the head on the wall (23.1%) and the most commonly endorsed reason for NSSI was to get attention from someone (53.6%). All strategies of Non-adaptive emotion regulation dimensions such as Rumination, Catastrophization, Self-Blame & Other Blame and Adaptive coping strategies as Cognitive Reappraisal and Self-Acceptance shows statistically significantly difference in two groups. The study implicates the need for awareness of the increasing rate of NSSIBs and to plan targeted intervention based on adaptive and Non-Adaptive Emotion Regulation Strategies in adolescents.

**Keywords:** *Non-Suicidal Self Injury, Adolescents, Adaptive Emotion Regulation, non-adaptive Emotion Regulation.*

**N**on-Suicidal Self Injurious Behavior(NSSIB) is a growing concern among adolescents and young populations for the last two decades. Adolescence is the period in which individual faces challenges of increased independence, academic stress, new opportunities and social situation. NSSI has become a significant mental health issue and a significant predictor of death among young adults globally. NSSI behaviour is not intended to die most of the time whereas these acts become a coping function to reduce stress, anxiety and other emotion (Gratz, 2007; Klonsky, 2007). But it leads to physical, social and emotional harm in individuals and may become a gateway to future suicide due to associated psychological factors (Klonsky, 2013). The prevalence of NSSI in European countries ranges from 17% to 38.7 %. Among that, 6.7% met the criteria of the DSM-V

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## The Pattern of Non-Suicidal Behaviour and Mediating Role of Emotion Regulation Strategies in Adolescence

diagnostic manual of NSSIB (APA, 2015) under research area. The prevalence of NSSI raises concern about their reliability due to the methodological and nomenclature disparities throughout the old literature, but a pooled prevalence among a non-clinical sample of adolescents was found 17.2% (Swanell et al, 2014). Cross-cultural variations in prevalence and patterns differ in methods, limited research in India makes comparisons difficult (Thippaiah et al., 2021; Aggarwal, 2017; Muehlenkamp et al., 2012; Plener, Libal, Keller, Fegert, & Muehlenkamp, 2009; Bakken, 2021). Most Indian studies have examined this behaviour in association with psychotic, developmental or other disorders, and largely situated in either general or psychiatric hospital settings and family conflicts, failures in academics, unfulfilled romantic ideals, and domestic violence were found as causal factors. (Pillai, Andrews & Pattel, 2009; Gandhi, Luyckx, Maitra, & Claes, 2015; Rangeeth, Moses & Reddy, 2011). In a study in South India, 31.2% of junior college students with a mean age of 15.9 years were reported NSSI with multiple methods in which individuals mostly focused on the emotional regulation of their internal state (Kharsati & Bhola, 2015). Even though self-harm behaviour decreases from 40% adolescents to 18.7% in young adults. But adolescents with repetitive NSSI showed significantly high difficulties of stress, anxiety, and difficulties in emotion regulation 10 years later in their adulthood (Daukantaite, 2021). Previous literature indicates that occasional engagement in self-injury is a strong risk factor for mental health problems later. Emotion dysregulation is associated with a higher risk for Non-Suicidal Self-injurious behaviour regardless of age or sex (Wolff et al., 2019).

### *Purpose of the present study*

The objective of the current study was to know the pattern and prevalence of self-injurious behaviours in adolescents in Kerala and to find out the difference in adaptive and non-adaptive Emotion regulation strategies.

## **METHOD**

### *Sample*

A total of 702 students were recruited for this study from different higher secondary schools in Kerala using a stratified sampling method. Participants age ranging from 15 to 19 years without any history of neurological and cognitive deficits. Different government and private schools were contacted for the study after obtaining ethical clearance from the Research Centre. Both parents/guardians and the participants provided informed consent and the participants were informed that participation was voluntary, responses were anonymous. 39 participants were excluded lack of written consent, incomplete data or not being willing to participate in the study leaving a sample size of 702 participants. Questionnaires were administered in class groups during school time after an awareness programme.

### *Instruments*

The personal data sheet provides important information describing the socio-demographic profile of the information like age, education, parents' job, and economic status.

Suicidal behaviour was measured using the Functional Assessment of Self-Mutilation (FASM). The first part consists of a checklist of 11 different self-injurious behaviours. The second part of the FASM consists of 22 statements assessing reason for self-injurious behaviours (Lloyd, Kelley & Hope, 1997). The FASM has demonstrated acceptable psychometric properties within adolescent samples (Guertin et al. 2001; Esposito et al. 2003; Penn et al. 2003), yielding adequate internal consistency (coefficient  $\alpha=0.65-0.66$ ) for both

## The Pattern of Non-Suicidal Behaviour and Mediating Role of Emotion Regulation Strategies in Adolescence

minor and moderate/severe SIB scales. The FASM has been used previously in an Indian study with youth (Kharsati & Bhola, 2013).

**Cognitive Emotion Regulation Questionnaire (Garnefski, 2007):** The Cognitive Emotion Regulation Questionnaire (CERQ) is the instrument developed to explicitly measure cognitive strategies for emotion regulation that individuals may use in response to threatening or stressful life events. The 36-item CERQ contains nine conceptually distinct subscales: five for adaptive strategies (acceptance, positive refocusing, refocusing on planning, positive reappraisal, and putting into perspective) and four maladaptive strategies (self-blame, rumination, catastrophizing, and blaming others). The items in the questionnaire are structured in the 5-point Likert spectrum and all four questions evaluate one factor. The CERQ has shown good reliability and validity and the subscales had good internal consistency, with alpha coefficients ranging from 0.65 (putting into perspective) to 0.91 (refocusing on planning) (Garnefski, 1999).

### RESULTS

There were 702 Adolescents for the final analysis with an average age of 15.6 years and gender distribution of male was 50.4% and female was 49.6%, taken equally from private and government schools in five districts of Kerala, Thiruvananthapuram, Idukki, Kottayam, Ernakulam and Thrissur.

**Table I Self-injurious methods, plan, previous thoughts and experience of pain after SIB**

Method, previous thought and pain of SIB	Frequency (%) (n=702)	
	Without a history of Self Injury	633 (90.2)
	With history of Self injury	69 (9.8)
<b>Methods</b>	Making Scar on the wrist	9 (13)
	Scratch the wrist with the blade	13 (18.8)
	Banging head on the wall	16 (23.1)
	Making scar with compass	12 (17.3)
	Hitting leg on the wall forcefully	12 (17.3)
	Other methods	7 (10.1)
<b>Number of methods</b>	One method	38 (55.5)
	2-3 methods	19 (27)
	2-5 methods	12 (17.3)
<b>Pre thought about the harm</b>	None	24 (34.7)
	<one hour	19 (27.5)
	>one hour but <24 hours	9 (13.4)
	>one day but <one week	8 (11.5)
	>One week	9 (13.4)
<b>Experience of pain</b>	No pain	17 (24.6)
	Little pain	38 (55.5)
	Moderate pain	8 (11.5)
	Severe pain	6 (8.6)
	Age of onset	15.6 years

Table 1 shows that the prevalence of SIB in the past year was 9.8%. The most common method endorsed by the participants was banging the head on the wall (23.1%), followed by scratching the wrist with a blade (18.8%), scratching with a compass from the instrumental box and hitting the leg on the wall forcefully (17.3%), and 13% of participants make the scar on the wrist with any sharp objects like broken bottle or blade. The majority of participants

## The Pattern of Non-Suicidal Behaviour and Mediating Role of Emotion Regulation Strategies in Adolescence

(55.5%) reported a single method for self-harm, 27% were two or three methods and 17% used more than three methods. A majority of those endorsing SIBs did not think about the acts before engaging in such acts (34.7%) or had thoughts only for few minutes (27.5%). This indicates a relatively impulsive pattern of engaging in NSSI. Most participants indicated experiencing little (55.5 %) or no pain (24.6%), moderate pain (11.5%) and Severe pain only by 6% during the self-injury.

**Table II: Reason for NSSI among Adolescent students.**

Reason for SI	Frequency(%) (n= 69)
To feel something even though it was a pain	6 (8.69)
To get attention	1 (1.59)
To avoid something unpleasant	8 (11.59)
To get control of a situation	6 (8.69)
Try to get a reaction from someone	2 (2.89)
To receive more attention from parents or friend	37(53.6)
To feel numb or empty	1 (1.45)
To punish yourself	2 (2.89)
To be like someone you respect	2 (2.89)
To stop bad feeling	2 (2.89)

The most common reason for self-injury reported by the participants were ‘to get attention from someone in an emotional relationship’ (53.6%), followed by ‘to avoid something unpleasant’ (11.6%), ‘to feel something even though it was a pain’ (8.69%). Other reasons endorsed in a reason for suicidal behaviour were ‘to be like someone they respect’ (2.9%), ‘to stop bad feelings’ (2.9%) and ‘to get a reaction from someone (2.9%), and ‘to get control of a situation.

**Table III: Mann Whitney U test for significant differences between the Mean Rank of Cognitive Emotion Regulation strategies on a group of adolescents with and without SIB**

Cognitive Emotion regulation Strategies	Mean Rank		Mann Whitney U test	Z
	With Self-injurious Behaviour	Without self-injurious Behaviour		
Self-Blame	419.82	344.05	17124.500	2.971**
Acceptance	287.18	358.51	17400.50	2.830**
Rumination	452	340.44	14839.50	4.402**
Positive Refocusing	319.77	354.96	19649.00	1.382
Positive Reappraisal	302.93	356.79	18487.00	2.107*
Refocus on Planning	338.62	352.90	20950.00	0.560
Putting into perspectives	367.09	349.80	13108.50	0.681
Catastrophization	478.02	337.71	13108.50	5.493**
Other blame	457.57	339.94	14519.50	4.614**

\*\*  $P > 0.01$ , \*  $P > 0.05$

The Mann-Whitney U test was done to compare the difference between adaptive and non-adaptive Cognitive Emotion regulation strategies among adolescents with self-injurious and without self-injurious behaviour. From table-III it is clear that all the negative coping strategies such as self-blame ( $Z=2.971$ ,  $P=.003$ ), rumination ( $Z= 4.402$ ,  $P=.00$ ). Catastrophization ( $Z=5.493$ ,  $P=.00$ ) and Other Blame ( $P=4.614$ ,  $P= 0.00$ ) were shown statistically significant difference, Since P value is less than 0.01, the null hypothesis is

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rejected at 1% level in all Negative Coping Strategies between adolescence with self-injurious behaviour and without Self Injurious Behaviour. In adaptive Emotion Regulation Strategies, Acceptance ( $Z=2.830$ ,  $P=.005$ ) and Positive Reappraisal ( $Z=2.107$ ,  $P=0.03$ ) were shown statistically significant. In Acceptance, the P value is less than 0.01 and the null hypothesis is rejected at a 1% level. In Positive Reappraisal P value is less than 0.05 and the null hypothesis is rejected at 5% level. There is no significant difference between adolescents with self-injurious behaviour and adolescents without SIB in Positive refocusing ( $Z=1.383$ ,  $P= 0.167$ ), refocus on planning ( $Z= 0.561$ ,  $P= 0.575$ ) and Putting into Perspectives ( $Z=0.681$ ,  $P= 0.496$ ) since P value is greater than 0.05 level. Hence the null hypothesis is accepted at a 5% level with regard to positive refocusing, refocusing on planning and putting into perspective.

### DISCUSSION

In present study at school community level, 9.8% of adolescents reported Self Injurious Behaviour. Our finding was consistent with prior studies (Drum et al, 2009). A pooled Prevalence among adolescents found earlier was 17.2 % (Swannel, 2014). Prevalence of Nonsuicidal Self Injurious Behaviour among non-clinical samples raises concern about their reliability due to the influence of methodology and terminology. In the current study, most participants harmed themselves by head banging, hitting their leg forcefully on a wall or making scratches on the wrist with any sharp objects like a blade or compass from the instrumental box which is the most easily and available means and the impulsivity leads to action which is consistent with earlier reports. Most of the adolescents reported reason or stress for self-injurious behaviour to get attention from someone in an emotional relationship followed by avoiding something unpleasant and feeling something even though it was a pain. The other reason for people who engaged in self-injurious behaviour is to be like someone they respect, to stop bad feelings or to get a reaction from someone. Relationships play a pivotal role during the period of adolescence and stress due to relationship difficulties leads to emotional disturbances and acts of self-injury. Earlier studies reported stress related to academic achievement and relationship problems in accordance with previous Indian studies carried out on school students (Singhal, Manjula and Sagar, 2014; Bhasin, Sharma & Saini, 2010). Current findings again indicate that they have no long-term plan or thought before acting and not experiencing pain or little pain which is consistent with previous studies that survivors of suicide attempts have less than five minutes between the decision to attempt suicide and the actual attempt (Simon, 2001). People with a history of NSSI display diminished pain perception. Earlier one study specified that emotion dysregulation has an association with NSSI and pain tolerance (Franklin, et al, 2012). It is also in accordance with previous literature that impulsivity associated with ADHD would be a high risk for engagement in Self injurious Behaviour (Bakken, 2019). Inadequate control of aggressive impulses might be a greater indicator of risk for an impulsive suicide attempt than depression. Even though the self-harm behaviour decreases from the adolescent period to adulthood it is observed that stable repetitive NSSI in adolescence is a strong risk factor for mental health problems in young adulthood and that occasional engagement in NSSI in adolescence is an indicator of vulnerability for poorer mental health in their adulthood (Daukantaite, 2021).

The study evaluated the relationship between Emotion Regulation strategies and found that greater difference in all Non-Adaptive Cognitive Emotion Regulation (CER) strategies in the self-injurious group compared to the non-self-injurious group which tells that SIB was related to ruminating thoughts, catastrophizing after a stressful event or blaming self or other

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for an event. Emotion Regulation is one of the most important factors that contribute after an event. Linehan, in his research on Borderline Personality Disorder and other research also conceptualized Emotion regulation as a strategy for Self-injurious Behaviour (Gratz, 2003; Klonsky, 2007). Our findings are supported by the earlier finding that Rumination and catastrophization might be a predictor of NSSI (Klonsky & Muhlenkamp, 2007; Nock, 2007). Observation from current research that high-level adaptive strategies such as self-acceptance and positive appraisal in the non-self-injurious group would enlighten the therapists and interventionists to make plans to reduce negative CER and increase self-acceptance and cognitive reappraisal. The adaptive strategies of acceptance and positive reappraisal may have more cognitive resources to help them remain well-regulated in their daily lives in the midst of academics and emotional struggles. Cognitive reappraisal is a potential factor for regulating their emotions and the absence of self-injurious behaviour. It is consistent with Prior Studies that recent engagement in self-injurious behaviour is associated with poor Cognitive Reappraisal (Hasking et al, 2017; Robinson et al, 2019; Wolff, 2019). Individuals who experience emotional dysregulation, especially those who have heightened emotional reactivity and those who have difficulties in accessing effective emotion regulation strategies are at increased risk for engagement in NSSI (You, et al. 2018). Garnefski and Kraaij (2007) suggested the cognitive approach of consciously monitoring and regulating the information that directs to regulating the information which leads to emotional arousal. The potential mechanism of Emotion Regulation in Individuals with Self injurious behaviour and identifying specific strategies of emotion regulation of individuals may provide future targets of treatment or intervention. Wolf et al, 2019 highlight the importance of a better understanding of emotion dysregulation as a treatment target for preventing NSSI. Our findings suggest that additional effort is needed to understand interpersonal as well as psychological characteristics that influence the risk for impulsive and common self-injurious behaviour in the community, whereas previous research mostly focused on depression or anxiety. The majority sought help from their own circle, family or friends but did not consider professional help which reflects a lack of awareness and attitude towards mental health problems and help-seeking.

### CONCLUSION

Increasing the rate of Non Suicidal Injurious Behaviour in Higher Secondary Schools adolescents shows the need for mental health care assistance and proper assessment in every stage of development. Adolescents with NSSI experience difficulties in emotion regulation and engage in impulsive self-injury. This behaviour may lead to later suicide attempts and mental health issues. The existence of Negative emotion regulation strategies such as Rumination, Catastrophization, Other-blame and Self -Blame have high suicidal risk and Self-acceptance and Cognitive Reappraisal have a protective role. Considering these potential protective factors as well as risk factors would allow clinicians to develop more suitable early intervention and treatment strategies in adolescent population. Awareness about such behaviour among parents, teachers and other health professionals would help to identify the problems earlier and can motivate adolescents for further assessment and intervention if needed. Further research is necessary to address psychosocial stressors, depression and suicidal ideation contributing to adolescents at the community level.

### *Implications*

The study highlights the importance of understanding the increasing rate of self-injurious behaviour patterns in adolescents and plan interventions for reducing Non-adaptive emotion regulation strategies and increasing self-acceptance and cognitive reappraisal.

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