

**Scratching Beneath the Surface of Non-Suicidal Self-Injury:
The Relationship Between Early Maladaptive Schemas and Non-Suicidal Self-Injury in
Youth**

Annemarie Nicol, Bachelor of Science in Psychology (Honours)

Discipline of Psychology, Faculty of Health, University of Canberra

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Thesis Summary

Non-suicidal self-injury (NSSI) is a major public health concern. There has been little published research examining the early maladaptive schemas (schemas)¹ of young people who self-injure. To date, no research has explored the relationship between the functions of NSSI, particularly to address difficulties in emotion regulation, and early maladaptive schemas. The purpose of this thesis is to address these gaps, with the overarching goal of incorporating early maladaptive schemas into existing emotional regulation conceptualisations of NSSI. There are four broad aims associated with the project. These are to:

1. Examine whether early maladaptive schemas can provide a framework for understanding psychopathology in youth.
2. Explore how adolescents who self-injure differ from those who do not self-injure in terms of their underlying schemas.
3. Determine whether schemas are associated with the functions of NSSI.
4. Test whether emotion regulation skills mediate the relationship between schemas and NSSI.

This thesis makes important contributions to research and clinical practice.

Conceptually, a schema framework presents to self-injury researchers a vulnerability model with which to understand complex behaviour. Therapeutically, this approach offers clinicians a pathway to an integrated treatment approach by addressing not just dysfunctional behaviour, but the maladaptive schemas underlying the behaviour and the function of the behaviour.

This thesis is organised into distinct but integrated chapters intended to address the broad aims of the project described above. Chapter one describes the historical development

¹ Throughout this thesis, the terms early maladaptive schema and schema will be used interchangeably.

of schemas and provides a definition and conceptualisation of early maladaptive schemas, and then summarises the literature that demonstrates the relationship between schemas and psychopathology in adults.

Research examining the relationship between schemas and psychopathology in youth is less extensive than in adults. Chapter two contains a systematic review of the relevant literature pertaining to youth, in which 58 studies that assess a direct relationship between early maladaptive schemas and psychopathology in young people are examined. This literature is identified using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) tool (Moher et al., 2015) and includes a total of 24,005 participants reporting symptoms of depression, anxiety, eating pathology, borderline pathology, and externalising behaviours; including NSSI. The broad aim of the review is to investigate whether early maladaptive schemas can provide a framework for understanding psychopathology in youth. Specifically, the review explores evidence for the presence of schemas in youth, their relationship to psychopathology and their ability to discriminate between different types of psychological distress. The review has been published in *Cognitive Therapy and Research*.

In Chapter three, a general introduction to NSSI is presented. This chapter includes a definition and brief description of research concerning NSSI's epidemiology, aetiology, and associations with other psychological disorders.

The following three chapters contain empirical studies examining the relationship between early maladaptive schemas and NSSI in youth. These studies employ data collected from 404 Australian school and university students, aged between 16 and 25 years. Each have been published in peer-reviewed psychology journals. In chapter four, I examine the relationship between early maladaptive schemas and NSSI. There is emerging evidence that schemas are implicated in NSSI (Castille et al., 2007; Lewis et al., 2015). However, existing

research has been hampered by small and heterogeneous samples, such that findings may not generalise to non-clinical adolescent and young adult groups. This investigation fills this gap by explicitly exploring schemas and NSSI in community groups of young people. An additional aim is to explore whether gender moderates the relationship between schemas and NSSI, particularly given perceptions of the gendered nature of NSSI (Bresin & Schoenleber, 2015).

Chapter five contains a second empirical article which examines the relationship between early maladaptive schemas and the functions of NSSI. NSSI is often explained using a functional framework which seeks to understand the function, purpose, or immediate reinforcing value of the behaviour for the individual (Bentley et al., 2014; Hepp et al., 2020; Taylor et al., 2018). Two specific functions of NSSI, namely intrapersonal (attempting to manipulate one's internal experience) and interpersonal (attempting to influence one's social world) are examined and contrasted, consistent with emerging literature (Taylor et al., 2018). This chapter also compares these findings with the early maladaptive schemes of young people who self-injure with at least some intent to die.

Chapter six presents the third empirical study. This study examines the relationship between difficulties in emotion regulation, early maladaptive schemas, and NSSI, consistent with evidence that emotion regulation is one of the primary functions of NSSI (Brereton & McGlinchey, 2019; Klonsky et al., 2014; Rodríguez-Blanco et al., 2018; Taylor et al., 2018). This study also examines whether difficulties in emotion regulation mediate the relationship between two early maladaptive schemas – Abandonment/Instability and Defectiveness/Shame – and NSSI.

Chapter seven summarises the results from the empirical studies, discussing their findings in relation to four main questions:

1. Can early maladaptive schemas provide a framework for understanding psychopathology in youth?
2. How do adolescents who self-injure differ from those who do not self-injure in terms of their underlying schemas?
3. Can early maladaptive schemas can predict specific functions of NSSI?
4. Is the relationship between early maladaptive schemas and NSSI mediated by difficulties in emotion regulation? If so, are there specific emotion regulation difficulties that mediate this relationship.

Declaration

I declare that this thesis presents work carried out by myself and does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any university; to the best of my knowledge, it does not contain any materials previously published or written by another person except where due reference is made in the text. All substantive contributions by others to the work presented, including jointly authored publications, are clearly acknowledged. I acknowledge that I received financial support to complete this PhD thesis in the form of an Australian Government Research Training Program Scholarship.

Annemarie Nicol

List of Publications

Chapter two: Systematic Review

Nicol, A., Mak, A. S., Murray, K., Walker, I., & Buckmaster, D. (2020). The relationships between early maladaptive schemas and youth mental health: A systematic review. *Cognitive Therapy and Research*, 44(4), 715-751.

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Chapter four: Early maladaptive schemas in young people who self-injure

Nicol, A., Mak, A. S., Murray, K., & Kavanagh, P. S. (2021). Early maladaptive schemas in young people who self-injure. *Journal of Clinical Psychology*,

77(6), 1745-1762. <https://doi.org/10.1002/jclp.23172>

Chapter five: Relationship between early maladaptive schemas and the functions of self-injurious behaviours

Nicol, A., Mak, A. S., Murray, K., & Kavanagh, P. S. (2022). The relationship between early maladaptive schemas and the functions of self-injurious behaviour in youth. *Clinical Psychologist*. <https://doi.org/10.1080/13284207.2022.2046976>

Chapter six: Emotion Regulation as a Mediator Between Early Maladaptive Schemas and Non-Suicidal Self-Injury in Youth

Nicol, A., Murray, K., Mak, A. S., & Kavanagh, P. S. (2022). Emotion regulation as a mediator between early maladaptive schemas and non-suicidal self-injury in youth. *Journal of Behavioral and Cognitive Therapy*.

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Publication Contribution Agreement

This section provides a statement by the candidate (Annemarie Nicol) stating the contribution of each author to the four publications generated by this thesis. Nicol is the first author on all submitted and published manuscripts, recognising her primary contribution to the work. Nicol undertook the conception and design of each project, data analysis and interpretation of the data and drafting of the paper. She was assisted in each paper by Kavanagh, Mak and Murray, who contributed to the design and critically reviewed drafts. Walker and Buckmaster contributed to the systematic review by providing comments on the final draft.

All collaborating authors agreed to their contribution to each publication.

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Chapter 1: Early Maladaptive Schemas

The concept of schema is popular in modern psychological theories. In traditional cognitive theory, a schema is a pattern of thinking, imposed by an individual on their experience of the world, helping them to make sense of reality, interpret events, organise information and guide the retrieval of stored information and the processing of new information (Beck, 1967, 1976). The earliest notion of a schema dates back to early modern philosophy, notably the work of Emmanuel Kant (1724-1804), who first introduced the term to refer to mental representations that guide perception (Matherne, 2015). Its foundation in psychology was first laid by Frederic Bartlett in 1932 who used the schema concept to build a theory of memory, defining it as “an active organisation of past reactions and past experiences” (Bartlett, 1932, pp. 200).

In 1990, Jeffrey Young formulated the concept of early maladaptive schemas as broad and pervasive themes about oneself and others that may be at the core of many chronic psychological disorders (Young, 1990). The development of Young’s early maladaptive schema has been guided by cognitive theories, particularly the works of George Kelly (1955), who formulated that individuals develop personal constructs to make sense of the world and determine behaviour, Albert Ellis (1962), who suggested that individuals’ irrational beliefs were closely linked to their difficult emotions, and Aaron T. Beck (1963) who emphasised cognitive structures, including schemas, in the development and maintenance of psychopathology. Psychoanalytic theory also played an important role in Young’s conceptualisation of early maladaptive schemas. John Bowlby (1958), Mary Ainsworth (1970) and Karen Horney’s (1950) theories of attachment, internal working models and the influence of the child’s early environment on later experiences of self, were also instrumental in laying the foundations of early maladaptive schemas in what Young et al. (2003) describe as the toxic frustration of core needs in an individual’s childhood and adolescence.

1.1 Cognitive Theory

Cognitive theories suggest that various levels of cognitions (automatic thoughts, underlying assumptions and core beliefs/schemas) are critically influential in determining both emotional responses and patterns of behaviour (Beck, 1976). Automatic thoughts are said to be at the most accessible level of cognition and are activated in response to triggering events, while underlying assumptions are implicit rules for living and “if-then” beliefs. In contrast, schemas are unconditional beliefs, distinguished by their persistence across time and situation. The earliest cognitive models suggested that automatic thoughts and assumptions are underpinned by these more stable, global, and generalised structures (Beck, 1967, 1976). Beck defined schemas as structures “for screening, coding, and evaluating the stimuli that impinge on the organism. It is the mode by which the environment is broken down and organised into its many psychologically relevant facets. Because of schemas, the individual is able to categorise and interpret his experiences in a meaningful way.” (Beck, 1967, p. 283).

These schema structures are hypothesised to form the basis of dysfunctional assumptions, activating negative automatic thoughts, including negative interpretations of current events, memories of past experiences, or fear about the future (Jones et al., 2007). Beck (1967) proposed that negative schemas develop in response to aversive early life experiences, hypothesising that these structures lie dormant, becoming activated in response to triggering experiences. These contribute to psychopathology by driving the individual to attend selectively to experiences that validate their schema, and choosing behaviour that reinforces cognitive content, leading to further cognitive distortion and perpetuation of the schema.

1.2 Definition and Conceptualisation of Early Maladaptive Schemas

Young (1990) and other clinical researchers have highlighted the importance of schemas in underlying psychopathology, suggesting that a focus on negative automatic

thoughts and assumptions is insufficient to address chronic disorders (e.g. Beck et al., 1990; Padesky, 1994; Waller et al., 2000; Young et al., 2003). For example, Ball (2007) distinguished between automatic negative thoughts that are manifest only during periods of acute illness and underlying schemas that persist even after acute illness has remitted. Indeed, Ball (2007) highlighted that maladaptive schemas may never be entirely eliminated, rather they are managed by building greater awareness of schema triggering situations, regulating the negative affect associated with schema activation and building more adaptive coping strategies in order to reduce the perpetuation of the schema.

Young et al. (2003) elaborated on earlier conceptualisations of schemas, identifying 18 early maladaptive schemas, which were defined as broad psychological themes or patterns that form early in life in response to the degree to which core emotional needs were met in the individual's early environment. These patterns are then superimposed on later life experiences and repeated throughout life, even though they may no longer be helpful or relevant to the individual's experience. Early maladaptive schemas are said to contain memories, bodily sensations, cognitions, and emotions. They drive behaviour to the extent that individuals experiencing the schemas would seek to find ways to manage, or cope with, the distress that results from their activation. Young's (1990) schemas were originally organised into five domains, based on thematically related core emotional needs; however, there is increasing evidence that the original domain structure may not represent the best fitting model (Bach et al., 2018). Nevertheless, the original structure continues to be used by both researchers (Faustino & Vasco, 2020; Ke & Barlas, 2020; Kunst et al., 2020) and clinicians (Arntz & Van Genderen, 2021; Simpson & Smith, 2020). For simplicity, this thesis retains the original five domain structure in this thesis and uses it for descriptive purposes only. A list of Young et al.'s (2003) 18 schemas, five domains, and related unmet needs are presented in Table 1.1.

Table 1.1 Description of Schema Domains and Early Maladaptive Schemas*Description of Schema Domains and Early Maladaptive Schemas (adapted from Young et al., 2003, pp14-17)*

Domain / Schema	Description	Example of Core Belief	Unmet Need / Origins of Schema
Disconnection / Rejection	People with schemas in this domain believe their needs for safety, acceptance, nurturance, and love will not be predictably met. They have difficulty forming secure and satisfying relationships with others.		The need for secure attachment to others (safety, stability, nurturance, acceptance) was not reliably met in childhood.
Emotional Deprivation	Individuals with an Emotional Deprivation schema believe that there is no-one who can give them love and guidance. They feel chronically alone, misunderstood, empty and invisible. They perceive others as incapable or unwilling to provide the emotional support and guidance they desperately crave.	“No-one will ever care for me or support me”	The individual’s early environment was cold and unaffectionate. They did not have a sense of being loved or valued by their caregivers.
Abandonment / Instability	Individuals with an Abandonment/Instability schema live in constant fear of losing those they are closest to. They are continuously vigilant for any sign that they are about to lose a loved one, experiencing feelings of anxiety, grief, and anger. They perceive others as unreliable or unpredictable.	“Everyone I care about will eventually leave me”	Attachment figures were unreliable or unavailable, and there was no stable caregiver. As a child, they may have experienced the loss of a parent through a death, divorce, or illness.
Mistrust/Abuse	Individuals with a Mistrust/Abuse schema do not trust others and are always on guard and suspicious of others’ intentions, perceiving others as wanting to intentionally hurt, cheat or humiliate them. They are always on edge.	“Others will eventually abuse me or hurt me”	The individual experienced physical, sexual or verbal abuse as a child. They may have been humiliated, bullied, or betrayed.

Domain / Schema	Description	Example of Core Belief	Unmet Need / Origins of Schema
Defectiveness / Shame	Individuals with a Defectiveness/Shame schema believe they are inherently flawed, worthless, or unlovable. They experience chronic feelings of shame, often withdrawing from relationships for fear they will be exposed.	“I’m internally flawed and not worthy of being loved”	As a child, the individual was heavily criticised and told they were bad. They may have been led to believe that they were to blame when bad things happened.
Social Isolation / Alienation	Individuals with a Social Isolation/Alienation schema feel intensely that they are different from others, never experiencing a sense of belonging or being part of a community.	“I’m different from everyone, I don’t belong”	The family of origin may have been very different from the dominant culture. The individual may have been different from peers or may have experienced early bullying or teasing.
Impaired Autonomy and Performance	People with schemas in this domain believe they are unable to perform autonomously or function independently and have difficulty creating their own identity.		The need for autonomy, competence and sense of identity was not reliably met in childhood.
Dependence / Incompetence	Individuals with a Dependence/Incompetence schema feel completely helpless and believe that they are unable to care for themselves. They experience life as overwhelming and are convinced they are unable to make their own decisions or cope with life’s demands. They seek others to take care of them and present as helpless and child-like.	“I’m helpless and can’t cope without others”	The individual’s caregivers were overprotective and made decisions for the child, giving them little or no responsibility. Parents may have been overly critical of the child’s own decisions and did everything for the child.
Vulnerability to Harm / illness	Individuals with a Vulnerability to Harm/Illness schema live in constant fear that an imminent catastrophe is about to strike. They are constantly anxious and feel powerless to avert the disaster.	“Something terrible is going to happen to me”	As a child, the individual may have experienced a serious traumatic event, such as a death in the family. Parents may have continuously warned the child of dangers.

Domain / Schema	Description	Example of Core Belief	Unmet Need / Origins of Schema
Enmeshment / Undeveloped Self	Individuals with an Enmeshment/Undeveloped Self schema are so fused with a significant other that they lack their own identity. They feel extreme guilt about setting boundaries around this person, surrendering their own needs, interests, and identity in order to maintain this connection.	“I don’t have my own identity”	The individual as a child may not have been given developmentally appropriate opportunities to make their own decisions. Caregivers did not respect the child’s autonomy or individual identity.
Failure	Individuals with a Failure schema believe they are unsuccessful in areas of achievement compared to their peers, feeling inadequate, untalented, or stupid. They often do not believe they have what it takes to succeed.	“I’ll never succeed at anything, I’m stupid”	The individual had a caregiver who criticised their performance. They may have been compared unfavourably to their siblings or peers.
Impaired Limits	People with schemas in this domain struggle to set limits and meet realistic goals. They have difficulty cooperating and respecting the rights of others.		The need for realistic limits and self-control was not reliably met in childhood.
Entitlement / Grandiosity	Individuals with an Entitlement/Grandiosity schema feel special and superior. They believe they are better than others and are therefore entitled to special privileges. They may try to control others to meet their own needs and insist that they should be able to do whatever they want, regardless of the rights of others.	“I’m more important than others and entitled to special rights”	The individual may have been spoiled and indulged as a child, given what they want or had things their own way.
Insufficient Self-Control	Individuals with an Insufficient Self-Control schema lack the ability to restrain their emotions and impulses (self-control) or tolerate boredom and frustration to accomplish tasks (self-discipline). They seek to avoid all discomfort, even at the cost of personal fulfillment.	“I can’t tolerate frustration or control my emotional impulses”	As a child, the individual was not encouraged to take responsibility. They may have been allowed to get away with irresponsibility, not have been given household chores or allowed to act on impulses, without imposing consequences.

Domain / Schema	Description	Example of Core Belief	Unmet Need / Origins of Schema
Other Directedness	People with schemas in this domain focus on meeting the needs and desires of others at their own expense to gain approval or avoid retaliation.		The need to freely express valid needs and emotions was not reliably met in childhood.
Subjugation	Individuals with a Subjugation schema live in constant fear of retaliation, punishment, or rejection from others. To avoid this, they surrender control of their own needs and/or emotions, often becoming overly submissive and compliant.	“People will retaliate and get angry if I put my own needs first”	Early life experience was characterised by a domineering or controlling parent. The child was punished if they did not do things their parent’s way.
Self-Sacrifice	Individuals with a Self-Sacrifice schema have an excessive desire to meet the needs of weaker others at the expense of their own. They feel excessive feelings of guilt or selfishness if they focus on their own needs, however, can end up feeling resentful or taken for granted.	“I am selfish when I put my own needs first”	Early life experience was characterised by a needy or helpless parent. The parent may have been ill or depressed. The child may have been a caregiver and parentified.
Approval / Recognition seeking	Individuals with an Approval/Recognition Seeking schema crave the constant approval and validation of others. Their self-esteem is dependent upon the approval of others rather than their own values.	“I’m of no value if others don’t like/respect me”	Parents may be very child-oriented and loving, but also very concerned with outward appearances.
Over-vigilance and Inhibition	People with schemas in this domain focus excessively on meeting rigid expectations about performance and ethical behaviour at the expense of joy, relaxation, or self-expression. They tend to be over-vigilant, perfectionistic, and cautious.		The need for spontaneity and play was not reliably met in childhood.
Negativity / Pessimism	Individuals with a Negativity/Pessimism schema are pervasively biased towards negativity, discounting	“Life’s a bitch and then you die”	Parent may have been overly negative and pessimistic, which the child has

Domain / Schema	Description	Example of Core Belief	Unmet Need / Origins of Schema
Emotional Inhibition	<p>anything positive. They have an exaggerated expectation that bad things will happen.</p> <p>Individuals with an Emotional Inhibition schema find it difficult to express or let go of their emotions for fear they will completely lose control. They present as emotionally constricted and lack spontaneity, valuing self-control over intimacy.</p>	<p>“If I express my true feelings, I’ll offend/hurt others”</p>	<p>internalised or there may have been a childhood history of hardship and loss.</p> <p>The child was shamed when they spontaneously displayed emotion. There may have been a belief in family that it is “bad” to show/talk about feelings or act on them impulsively.</p>
Unrelenting Standards	<p>Individuals with an Unrelenting Standards schema are perfectionistic and driven to continually meet extremely high standards. They feel relentless pressure to perform, alongside intense anxiety about being less than perfect. They are often hypercritical of themselves and others, but rarely take pleasure from success.</p>	<p>“Whatever I do it isn’t good enough”</p>	<p>Parents may have modelled high standards; or the individual was only given affection, attention, or approval when they were successful.</p>
Punitiveness	<p>Individuals with a Punitiveness schema believe that people, including themselves, should be harshly punished for their mistakes, finding it very difficult to forgive errors or allow for human imperfection. They are harsh, intolerant, aggressive, impatient, and merciless.</p>	<p>“I should be harshly punished for making mistakes”</p>	<p>The individual may have had a blaming parent.</p>

Early maladaptive schemas are seen as a priori truths, influencing what is noticed, attended to, and remembered (Padesky, 1994). While individuals are highly motivated to avoid the distress of an activated schema, schemas are very resistant to change. They are said to “fight for survival” (Young et al., 2003), as the human drive to maintain cognitive consistency and self-coherence means that individuals seek schema-confirming experiences, even where this may result in further schema activation and increased suffering (Festinger, 1957; Gawronski, 2012; Swann & Brooks, 2012). Individuals with entrenched early maladaptive schemas, therefore, get stuck in cycles of activation and avoidance, recreating in their adult lives the childhood conditions that lead to the development of the schema initially.

1.3 Measurement of Early Maladaptive Schemas

Core beliefs or schemas are difficult to elicit, particularly in research settings. To aid in their assessment, Young (1990) developed the Young Schema Questionnaire (YSQ), a self-report instrument designed to assess the presence and strength of early maladaptive schemas. Since the publication of the first YSQ (Young & Brown, 1990), multiple versions have been developed to assess schemas in both clinical and non-clinical populations. Initially, based on clinical observation, Young (1990) identified 16 schemas, captured in a long form (YSQ-LF; Young & Brown, 1990) and, later, 15 schemas in a short form (YSQ-SF; Young & Brown, 1994). With increasing research, adjustments have been made to the original items; based on factor analysis the initial Social Undesirability schema was removed and incorporated into the now Defectiveness/Shame schema (Schmidt & Joiner Jr, 1995), while three additional schemas (Approval-Seeking, Punitiveness and Negativity/Pessimism) were identified, resulting in the 18 schemas utilised in the current model. Subsequently, the YSQ has been developed to incorporate these extra schemas into both long (YSQ-L3, Young & Brown, 2003) and short (YSQ-S3; Young, 2006) forms (see Table 1.2), and has been translated into numerous languages for research and clinical purposes. Recently, a further

three schemas have been proposed (Arntz et al., 2021), highlighting the continual development of the schema framework.²

Table 1.2

Description of Schema Measures

Questionnaire	Abbreviation	Description	Changes
Young Schema Questionnaire – Long Form	YSQ-LF	205 items (16 schemas)	
Young Schema Questionnaire – Short Form	YSQ-SF	75 items (15 schemas)	Removed Social Undesirability schema
Young Schema Questionnaire – Long Form (updated)	YSQ-L3	232 items (18 schemas)	Added Approval-Seeking, Punitiveness and Negativity/Pessimism
Young Schema Questionnaire – Short Form (updated)	YSQ-S3	90 items (18 schemas)	

The YSQ is scored on a six-point scale (1 = *completely untrue of me*; 6 = *describes me perfectly*). Two methods are generally used to calculate scores. Clinically significant scoring counts only the number of response values of 5 and 6 (and in some cases 4) endorsed by the participant, whereas mean scoring takes the average across all relevant item scores. The latter tends to be favoured by researchers and the former by clinicians.

There has been much support for the structure of both the 15 schema and 18 schema versions of the YSQ (Calvete et al., 2005; Calvete, Orue, & González-Diez, 2013; Hoffart et al., 2005). The short form of the YSQ has been found to have equivalent psychometric properties to the long form and is far easier and more convenient to administer in both clinical and research settings (Waller et al., 2001).

² The three proposed schemas are: Lack of coherent identity, Lack of meaningful world, and Unfairness. These have not been examined in the current research program.

While early maladaptive schemas are assumed to be independent, they are theorised to cluster thematically together in five higher-order categories, known as domains, hypothesised to be directly associated with the chronic frustration of five core needs in childhood and adolescence, described below (Young et al., 2003). There is debate that the five factor model, originally developed by Young et al. (2003), may not be the best fitting model. Kriston et al. (2012) found that a four factor model was a better fit for the data. Hoffart et al. (2005) and Lee et al. (1999) suggested a three factor model was a better fit. Kriston et al. (2012) found that although the YSQ was designed to measure distinct subscales, a single generic factor accounted for approximately half of the explained variance across items in a nonclinical population, while Van Vlierberghe et al. (2010) suggested that five domains showed a good fit in their youth sample of youth. Most recently, Bach et al. (2018) examined the hierarchical structure of early maladaptive schemas, identifying a four-factor domain model (labelled Disconnection and Rejection; Impaired Autonomy and Performance; Excessive Responsibility and Standards; and Impaired Limits) and suggesting a change of the theoretical model from five to four domains. Researchers are slowly starting to validate and adopt this new domain structure (Aloi, Rania, et al., 2020). Given this thesis focuses on the schema-level rather than the domain level, this is of less relevance for the current project.

1.4 The Origins of Early Maladaptive Schemas

Early maladaptive schemas have their origins in the unmet needs of childhood and adolescence, interacting with the child's own temperament. They begin to form when the nature of a child's earliest relationships with their caregivers begins to tell them who they are and what the world is like. These relationships tell them if they are worthy of love (Defectiveness/Shame), if others are trustworthy (Mistrust/Abuse), and whether they are competent (Dependence/Incompetence) or understood (Emotional Deprivation). Alternatively, they tell the child if they do not belong (Social Isolation/Alienation), if others

are unreliable (Abandonment/Instability), or if they are helpless (Enmeshment/Undeveloped Self) or stupid (Failure). In the absence of any other information to challenge these beliefs, they will internalise these “representations of the self” and accept them as fundamental truths about themselves and others (Young et al., 2003).

Young et al. (2003) identified five emotional needs, hypothesised to be universal and essential to healthy development. These are described as: (i) secure attachment to others, including the needs of safety, stability, and nurturance, (ii) autonomy, competence, and identity, (iii) freedom to express valid needs and emotions, (iv) spontaneity and play, and (v) realistic limits and self-control. A psychologically healthy person, therefore, is one in whom core emotional needs have been effectively met, which is the major goal of schema therapy (Bach et al., 2018). Yet, for many individuals, these core needs are not adequately provided, and children and adolescents may undergo adverse early experiences that foster the acquisition of early maladaptive schemas. For example, an individual may have endured too little nurturance, care, stability, or understanding needed to thrive, which Young et al. (2003) described as a “toxic frustration of needs”. They may have experienced harm, trauma, or victimisation, through physical, sexual, verbal, or emotional abuse. Alternatively, they may have received “too much of a good thing”, being overindulged and/or overprotected, which compromised their ability to develop healthy boundaries. Finally, the child/adolescent may not have been provided with an environment that fostered the development of agency and appropriate independence, such that they selectively internalised or over-identified with their caregivers.

Young et al.’s (2003) early maladaptive schemas draw heavily from Bowlby’s (1958) theory of internal working models. Early maladaptive schemas and internal working models are both cognitive structures that are influenced by the quality of the relationship with the primary caregiver and remain stable throughout life. These early attachment relationships are

essential for understanding the development of early maladaptive schemas. Simard et al. (2011) looked at patterns of attachment in childhood (measured observationally) and compared these longitudinally with retrospective accounts of attachment in adults and early maladaptive schemas. They found that the presence of early maladaptive schemas in adulthood related to ambivalent attachment in childhood 15 years earlier. There is evidence, however, that, while heavily influenced by parental attachment relationships, schemas are not limited in their development to these specific relationships. Roelofs et al. (2013) found that peer relationships may also influence the development of early maladaptive schemas, noting that schemas are continuing to form throughout childhood and adolescence.

Research confirms the detriment that early life experiences have on the development of early maladaptive schemas. Dutra et al. (2008) found significant positive correlations between childhood abuse and chronic interpersonal trauma with almost all early maladaptive schemas. Bach et al. (2018) found bivariate relationships among a number of adverse childhood experiences and early maladaptive schemas in adulthood. For example, emotionally depriving parenting was linked to schemas of Emotional Deprivation, Social Isolation/Alienation and Defectiveness/Shame; overprotective parenting was linked to Enmeshment; perfectionist parenting was linked to Unrelenting Standards; controlling parenting was linked to Subjugation, Enmeshment, Emotional Deprivation, Social Isolation/Alienation and Pessimism/Negativity; and punitive parenting was linked to Emotional Deprivation, Social Isolation/Alienation, Mistrust/Abuse, and Defectiveness/Shame. In their meta-analysis, Pilkington et al. (2020), found that emotional abuse and the lack of emotional warmth in childhood were stronger predictors of early maladaptive schemas in adulthood compared with other types of childhood adversity.

While negative early experiences play a key role in the development of early maladaptive schemas, these do not act alone to determine the future course of the child. The

child's unique temperament is a critical feature in determining how they will react to their environment, and how their environment will react to them. There is evidence that maladaptive schemas are related to temperament, with an individual's personality influencing the way in which they perceive or interpret their experiences. Thimm (2010) found substantial overlap between early maladaptive schemas and the five-factor model of personality, with most schemas associated with high neuroticism, low extraversion, low agreeableness, and low conscientiousness. Indeed, research suggests that certain temperaments may render some children more vulnerable to difficult life experiences, while other temperaments may be protective (Haugh et al., 2017). An emotionally reactive temperament, for example, may make a child more likely to be exposed to negative parental child-rearing styles (Thimm, 2010). Alternatively, some research suggests that children who have a vulnerability to developing maladaptive schemas in the face of negative childhood experiences, often tend to develop strong adaptive schemas in loving and enriched environments (Lockwood & Perris, 2012). Taken together, this may suggest that a vulnerable temperament is not enough for maladaptive schemas to form, rather what is more important are the ways in which the early environment handles the child's temperament, noting that extremely favourable or aversive caregiving can largely override temperament.

Once developed, Young et al. (2003) theorised that schemas elaborate and reinforce themselves. This may happen through cognitive distortions, whereby information from the environment is filtered so that only information that confirms the schema is processed. It can also happen through patterns of self-defeat, whereby individuals unconsciously engage in behaviours that reinforce the schema, thereby recreating the negative feelings associated with childhood. In other words, these individuals continually recreate, in their adult lives, the conditions that most damaged them in childhood (Young et al., 2003). They can also be reinforced by particular coping styles which initially develop to help the child survive in toxic

and non-nurturing environments. However, as these often persist into adulthood, their enactment also serves to perpetuate the schema. Such coping styles are said to be maladaptive, in that they can appear to help manage the schema, but, by avoiding the distress generated by schemas, they can hinder an individual's capacity to meet their needs and prevent them from healing (Young et al., 2003). Schema theory suggests that individuals use three broad maladaptive coping styles in particular to manage distressing emotional experiences activated by schemas. First, individuals may surrender to the schema, engaging in self-defeating behaviours that maintain the validity of the schema by focusing on information that corroborates the schema and dismissing evidence that disconfirms the schema. Second, individuals may overcompensate and fight the schema by acting in ways contrary or opposite to the schema. Finally, individuals who cope through avoidance may actively avoid situations, thoughts or feelings that are associated with, or may trigger, their schema.

1.5 Early Maladaptive Schemas and Psychopathology in Adults

There are strong links between early maladaptive schemas and psychopathology in adults. Originally developed to better conceptualise and treat pervasive and characterological conditions, schema research has predominantly focused on personality pathology (e.g. Bach & Farrell, 2018; Barazandeh et al., 2016; Bilge & Balaban, 2021; Carr & Francis, 2010; Lawrence et al., 2011; Nordahl et al., 2005; Petrocelli et al., 2001; Reeves & Taylor, 2007). Personality disorders are consistently linked to a greater number and severity of early maladaptive schemas (Kunst et al., 2020; Lee et al., 1999). Schemas have also been shown to differentiate between personality disorders on the basis of their cognitive content. Kunst et al. (2020) examined the early maladaptive schemas of 130 inpatients from a psychological health care centre in the Netherlands, finding that schemas were differentially related to personality disorders. Specifically, dependent personality disorder was related to schemas of

Subjugation and Self-Sacrifice; avoidant personality disorder was related to Emotional Deprivation, Defectiveness/Shame and Social Isolation/Alienation; and obsessive-compulsive personality disorder was associated with Unrelenting Standards and Entitlement/Grandiosity.

Despite the origins of Young's (1990) theory to address personality pathology, research is increasingly linking schemas with conditions beyond the characterological domain. There is now burgeoning evidence that schemas are implicated in a range of other psychopathologies, particularly depression (Bishop et al., 2021; Hawke & Provencher, 2011; Tariq et al., 2021), anxiety (Hawke & Provencher, 2011; Koerner et al., 2015), eating disorders (Meneguzzo et al., 2020; Pauwels et al., 2018; Van Vlierberghe et al., 2009) and substance use disorders (Aloi, Verrastro, et al., 2020; Briet, 2017; Chodkiewicz & Gruszczynska, 2018; Grebot & Dardard, 2010; Zamirinejad et al., 2018). In their meta-analysis, Bishop et al. (2021), found that all 18 schemas were associated with depression in 51 studies using adults, with particularly large correlations found for schemas of Social Isolation and Defectiveness/Shame. Schemas have been found to mediate the relationship between childhood adversity and a range of psychopathology, including depression (Lumley & Harkness, 2007), social anxiety (Calvete, Orue, et al., 2013a), generalised psychological distress (O'Dougherty Wright et al., 2009), personality disorders (Carr & Francis, 2010a; Specht et al., 2009), as well as forms of self-destructive behaviour such as suicide (Dale et al., 2010). Schemas have also been found to be related to attention deficit hyperactivity disorder (Kiraz & Sertçelik, 2021; Philipsen et al., 2017), obsessive compulsive disorder (Atalay et al., 2008; Khosravani, Sharifi Bastan, et al., 2019; Kizilagac & Cerit, 2019; Tenore et al., 2018), psychotic disorders (Bortolon et al., 2013; Khosravani, Mohammadzadeh, & Sheidaei Oskouyi, 2019; Stowkowy et al., 2016), bipolar disorders (Hawke & Provencher, 2012b; Hawke et al., 2011; Özdin et al., 2018), post-traumatic stress disorder (Cockram et al.,

2010; Harding et al., 2012; Kachadourian et al., 2013) and somatic disorders (Davoodi et al., 2018; Henker et al., 2019).

Researchers have also turned their attention to examining the relationship between early maladaptive schemas and dysfunctional behaviours. Schemas have been found to impact upon behaviours such as aggression (Calvete & Orue, 2010; Crawford & O'Dougherty Wright, 2007; Sigre-Leirós et al., 2014; Van Wijk-Herbrink et al., 2021), intimate partner violence (Borges & Dell'Aglio, 2020; Gay et al., 2013; Hassija et al., 2018; Kachadourian et al., 2013; Pilkington, Noonan, et al., 2021), and suicide (Ahmadpanah et al., 2017; Azadi et al., 2019; Dale et al., 2010; Dutra et al., 2008; Flink et al., 2017; Khosravani, Mohammadzadeh, Sharifi Bastan, et al., 2019; Khosravani et al., 2017; Langhinrichsen-Rohling et al., 2017; Pilkington, Younan, et al., 2021). Interest in understanding NSSI from a schema-informed perspective is also growing, and research is increasingly exploring the relationship between NSSI, schemas and schema modes in both clinical and non-clinical populations (Pilkington, Younan, et al., 2021).

1.6 Early Maladaptive Schemas in Young People

While early maladaptive schemas have strong links with psychopathology in adults, particularly in chronic disorders, research carried out with adolescents and young people has been limited. This may relate to Young et al's. (2003) suggestion that schemas may be less well developed in young people. Given their personality is still emerging, schemas are continually being formed and consolidated in young people as they navigate new relationship dynamics and their identity in the world. Newly acquired freedom and responsibility, emerging romantic encounters, and an emphasis on peer relationships at the expense of family all increase the possibility of rejection from significant others, fuelling schema formation beyond that of childhood (McCarthy & Lumley, 2012; Simons et al., 2018).

Nevertheless, increasing attention is being paid to this period of the lifespan and there is evidence that early maladaptive schemas have formed by early adolescence (Van Vlierberghe et al., 2010). Many authors adapt existing measures to attempt to better explore schemas in younger populations. For example, Lumley and Harkness (2007), Muris (2006) and Van Vlierberghe and Braet (2007) all used the short form YSQ in their research with adolescents, rephrasing some of the original items to fit in with the life experience of youth. These studies reported adequate scale reliabilities, and consistent relationships between schemas and psychological distress in adolescent samples with depression (Lumley & Harkness, 2007) and obesity (Van Vlierberghe & Braet, 2007). Santos et al. (2018) used a shorter and developmentally appropriate 54-item measure of schemas for adolescents to avoid the fatigue and disengagement associated with the longer YSQ questionnaires. Santos et al. (2018) suggest that schema development occurs alongside the challenges of adolescence, highlighting this period as “an in-between stage of development, in which the pillars for relevant schemas are already set but not entirely solidified, making their change easier, either via therapy and/or intra and interpersonal positive life experiences” (p.2108).

Studies have further demonstrated the relevance of early maladaptive schemas in childhood. Rijkeboer and de Boo (2010) constructed their own schema questionnaire for children, identifying schemas in children as young as eight years old. The researchers were able to validate eight out of Young’s (1990) original 15 schemas in the sample, although these did not always cluster in the same way as has been observed in adults. Rijkeboer and de Boo (2010) found three new schema factors, which they labelled “loneliness” (a combination of Emotional Deprivation and Social Isolation), “vulnerability” (a combination of Abandonment/Instability and Vulnerability to Harm), and “submission” (a combination of Dependence/Incompetence, Subjugation and Emotional Inhibition). While they found that there were strong correlations between schemas and psychopathology, two schemas,

Enmeshment and Self-Sacrifice, presented opposite patterns. Together, these findings suggests that developmental factors need to be considered when investigating schemas in relation to psychopathology or dysfunctional behaviours, and that not all schemas may be maladaptive during this period of the lifespan.

In summary, this suggests that early maladaptive schemas are important in understanding vulnerability to psychopathology and maintenance of psychological distress. Schemas are linked with a range of psychological disorders and dysfunctional behaviours. Despite less attention being paid to young people, increasing evidence suggests that schemas are linked to psychological distress in similar ways to those of adults. The following chapter will systematically examine the literature between early maladaptive schemas and psychopathology in young people.

Chapter 2: The Relationships Between Early Maladaptive Schemas and Youth Mental Health: A Systematic Review

2.1 Overview

This chapter presents a systematic review of the relationship between early maladaptive schemas and mental health in young people. Given that schemas are still developing in youth and may not be as entrenched as in adult populations, it is important to investigate whether they are differentially related to psychological outcomes during this period as has been observed in adults. The aim of the review is to examine how schemas relate to psychopathology, and whether they can discriminate between different types of psychological distress. A total of 58 studies were examined, which included 24,005 participants who report symptoms of depression, anxiety, eating pathology, borderline pathology, and externalising behaviours, including NSSI.

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Following is a version of the published article (Appendix B), which contains changes to ensure consistency of language. Some explanatory content has been removed from the introduction to limit repetition throughout the thesis, although it is not always possible to avoid repetition in its entirety. I acknowledge the contribution of my co-authors, Anita Mak, Kristen Murray, Iain Walker and Dean Buckmaster, who assisted in the review design and editing of the final document. As the primary author, I contributed approximately 90% to the overall design, data collection, data analysis and writing of the article.

2.2 Abstract

BACKGROUND: Although early maladaptive schemas have been strongly associated with psychopathology in adults, this association is less clear in young people since schemas are still emerging. This systematic review examines the relationship between early maladaptive schemas and psychopathology in young people to assess the degree to which schemas discriminate between psychopathologies, consistent with the cognitive content specificity hypothesis.

METHOD: PsycINFO, MEDLINE, PsycARTICLES, Psychology and Behavioral Sciences Collection, CINAHL Plus, Web of Science, and Scopus databases were systematically searched.

RESULTS: Fifty-eight studies were identified for inclusion, with 24,005 participants across all studies. Findings suggested evidence of the relationship between early maladaptive schemas and psychopathology in young people. Early maladaptive schemas were found to discriminate between depression, anxiety, eating pathology, borderline symptomology, and externalising behaviours.

CONCLUSIONS: Findings are discussed in the context of treatment approaches for psychopathology in youth, specifically through an increased understanding of the role of early maladaptive schemas in this developmental period. Future research directions are suggested and methodological limitations of the studies reviewed are discussed, including a bias towards community samples, and a lack of consistency in schema measures. These findings suggest that early maladaptive schemas may be an important area to target when treating youth presenting with psychological distress.

2.3 Introduction

Traditionally a time of growth and change, the transition to adulthood can be a period of instability and vulnerability for many adolescents and emerging adults. The ability to manage one's emotional experiences during this time is crucial for healthy navigation through adolescence and into adulthood. Not all young people manage this transition successfully. Rates of major depressive disorder, for example, have been found to increase dramatically in adolescence (Hankin et al., 1998) and a substantial minority of youth show signs of psychopathology at some point during this period (Rickwood et al., 2007).

A dominant framework for understanding this increased vulnerability focuses on the influence of cognitive content and process on both emotional responses and patterns of behaviours (Beck, 1976). Cognitive theories suggest that cognitions are organised hierarchically. Automatic thoughts are said to be at the most accessible level of cognition and are activated in response to specific triggering events. In contrast, schemas operate at the broadest level of generality, underpinning both automatic thoughts and intermediate beliefs (such as assumptions), and are distinguished by their persistence across time and situations (Beck, 1967). Beck described schemas as structures for screening, encoding, and evaluating stimuli, helping individuals to make sense of reality, interpret events, organise information, and guide thinking and behaviour. He described these globalised structures as integral in understanding an individual's vulnerability to psychopathology, predisposing them to distress in stressful situations.

Young (1990, 1999) re-articulated the role of schemas in chronic psychological distress, identifying a set of specific maladaptive schemas. These are hypothesised to emerge early in life in response to the frustration of early core needs and collude with temperamental factors to contribute to psychological distress. Young defined these early schemas as broad pervasive themes or patterns comprising memories, cognitions, emotions, and bodily

sensations. Once established, early schemas remain stable throughout life, ensuring cognitive consistency. However, they can become maladaptive and lead to self-destructive patterns of thinking and behaving.

Building on Young's (1990, 1999) original identification of 16 early maladaptive schemas, Young et al. (2003) described 18 schemas, organised into five domains (see Table 1.1). While Young's notion of early maladaptive schemas originated primarily from clinical observations, subsequent research has confirmed that schemas are implicated in a range of negative symptom states in adults, particularly personality disorders because of their characterological features (e.g. Cecero et al., 2004; Kellogg & Young, 2006), but also mood and anxiety disorders (Hawke & Provencher, 2011), eating disorders (Damiano et al., 2015), and externalising behaviours (Van Wijk-Herbrink et al., 2018).

While evidence for the role of early maladaptive schemas in adult populations is strong (see Barazandeh et al., 2016; Hawke & Provencher, 2011), the association between schemas and youth psychopathology is less certain. Schemas are still forming and hence may be fluid in this developmental period (Rijkeboer & de Boo, 2010). Indeed, it is possible that some schemas may be adaptive in youth, particularly given the environmental conditions that spawned their development may still be operating. It is, therefore, unclear whether early maladaptive schemas are an appropriate mechanism through which to understand young people's experiences of psychological distress. Nonetheless, adolescence is a critical time of identity formation, with consistent patterns of thinking, feeling, and sensing becoming more embedded. This makes an understanding of the relationship of schemas to psychological distress in youth particularly relevant.

Schemas are hypothesised to be disorder-specific based on their content. Beck's (1976) cognitive content specificity hypothesis suggests that a particular type of emotional distress is characterised by a consistent cognitive profile, such that depressed individuals tend

to have cognitions that are related to negative self-evaluation, hopelessness, and pessimism. In contrast, cognitions focused on perceptions of danger and threat, tend to predispose individuals to anxiety disorders. In younger populations, there is evidence for the cognitive specificity hypothesis in both internalising and externalising behaviour (Schniering & Rapee, 2004), as well as depressive (Calvete & Connor-Smith, 2005) and anxious (Yu et al., 2017) symptoms, with research predominantly focused on automatic thoughts rather than deeper cognitive structures, such as schemas. In adults, while Hawke and Provencher (2011) found evidence that schemas discriminate between mood and anxiety disorders, they noted that early maladaptive schemas are stable underlying character traits and reflect more than just symptom states.

2.3.1 The Current Study

Research is growing on the relationship between early maladaptive schemas and emerging psychopathology in young people, providing a richer understanding of the evolution of these enduring structures and a better understanding of the developmental trajectories leading to psychopathology. This is essential in helping to develop early interventions for young people to address the implications for schemas across their lifespan; however, the research field is still maturing. The aims of the current systematic review are to identify evidence for the relationship between schemas and psychopathology in young people and to determine whether schemas are related to distinct types of psychopathology in youth based on their cognitive content. Given the theoretical basis of early maladaptive schemas as emerging in childhood and adolescence, it is hypothesised that greater endorsement of early maladaptive schemas will consistently be related to higher instances of psychopathology in youth, that youth in clinical environments will report greater endorsement of early maladaptive schemas, and that early maladaptive schemas will predict psychopathology over time. It is also expected that the content of early maladaptive schemas will reliably

discriminate between specific psychopathology in youth, such that schemas with themes of negative self-evaluation (Emotional Deprivation; Defectiveness/Shame; Social Isolation/Alienation; Failure) will relate to depressive symptoms, borderline symptomology, and eating pathology, schemas with themes of threat (Vulnerability to Harm/Illness) will relate to anxious symptoms, and schemas with themes of lack of control (Insufficient Self-Control; Entitlement/Grandiosity) will relate to externalising behaviours, including aggression, conduct disorders, and substance use.

2.4 Method

2.4.1 Search Strategy

The search was conducted using PsycINFO, MEDLINE, PsycARTICLES, Psychology and Behavioral Sciences Collection, CINAHL Plus, Web of Science, and Scopus databases and covered studies published since January 1990 until 30 April 2019. The search terms comprised three major categories: “schema”, “young people”, and “mental health” (see Table 2.1). These terms were combined using “and” statements and searches were performed on article titles, abstracts, and subjects for schema searches and full text for young person and mental health. Additional studies were identified through manually searching the references in relevant studies and reviews. The search methodology and reported findings comply with the relevant sections of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (Moher et al., 2015).

Table 2.1*Systematic Review Search Terms*

Categories	Words and Phrases
Schema	EMS OR Schema* OR core belief*
Young person	Young person OR Young people Youth OR Young adult OR adolescen* OR teen*
Mental health	psychopath* Anx* OR Depress* OR Personality disorder* OR Substance abuse OR Addict* OR Eating disorder* OR Bulimi* OR Anorexi* OR Conduct disorder*

*Is a wildcard character used in place of any number of characters in a search word

2.4.2 Eligibility Criteria

Peer-reviewed articles were included in this review if they assessed a direct relational link between early maladaptive schemas and a negative psychological outcome in young people. Studies that used early maladaptive schemas as mediator variables were included as far as a link between the schema and outcome could be ascertained. Studies were included if participants had a mean age between 12 and 21 and a maximum age of 25 years. To be included articles were required to have used the Young Schema Questionnaire, where at least

two schemas (or domains) were used as independent variables. Studies that assessed a single schema or used the sum of all schemas were therefore excluded, as were studies that used schemas as outcome variables. Additionally, the review excluded dissertations, theses, conference papers, book chapters, case studies, theoretical papers, and conceptual papers. For practical reasons, the review was restricted to English-language articles.

2.4.3 Young Schema Questionnaire

Since the publication of Young et al. (1990), multiple versions of the Young Schema Questionnaire have been developed. Initially, based on clinical observation, Young et al. identified 16 schemas, captured in a long form (YSQ-LF; Young & Brown, 1990) and, later, 15 schemas in a short form (YSQ-SF; Young & Brown, 1994). With increasing research, adjustments have been made to the original items, with current conceptualisations including 18 schemas in both long (YSQ-L3, Young & Brown, 2003) and short (YSQ-S3; Young, 2006) forms. The YSQ is scored on a six-point Likert-type scale (1 = *completely untrue of me*; 6 = *describes me perfectly*). Two methods are used to calculate scores; clinically significant scoring counts only the number of 5s and 6s (and in some cases 4s) endorsed by the participant and mean scoring takes the average across all relevant item scores. The latter tends to be favoured by researchers, the former by clinicians. While schemas are assumed to be independent, they are believed to cluster thematically together in five higher-order categories, known as domains. Several studies support this structure for both the 15-schema and 18-schema versions of the YSQ (Calvete et al., 2005; Calvete, Orue, & González-Diez, 2013; Hoffart et al., 2005).

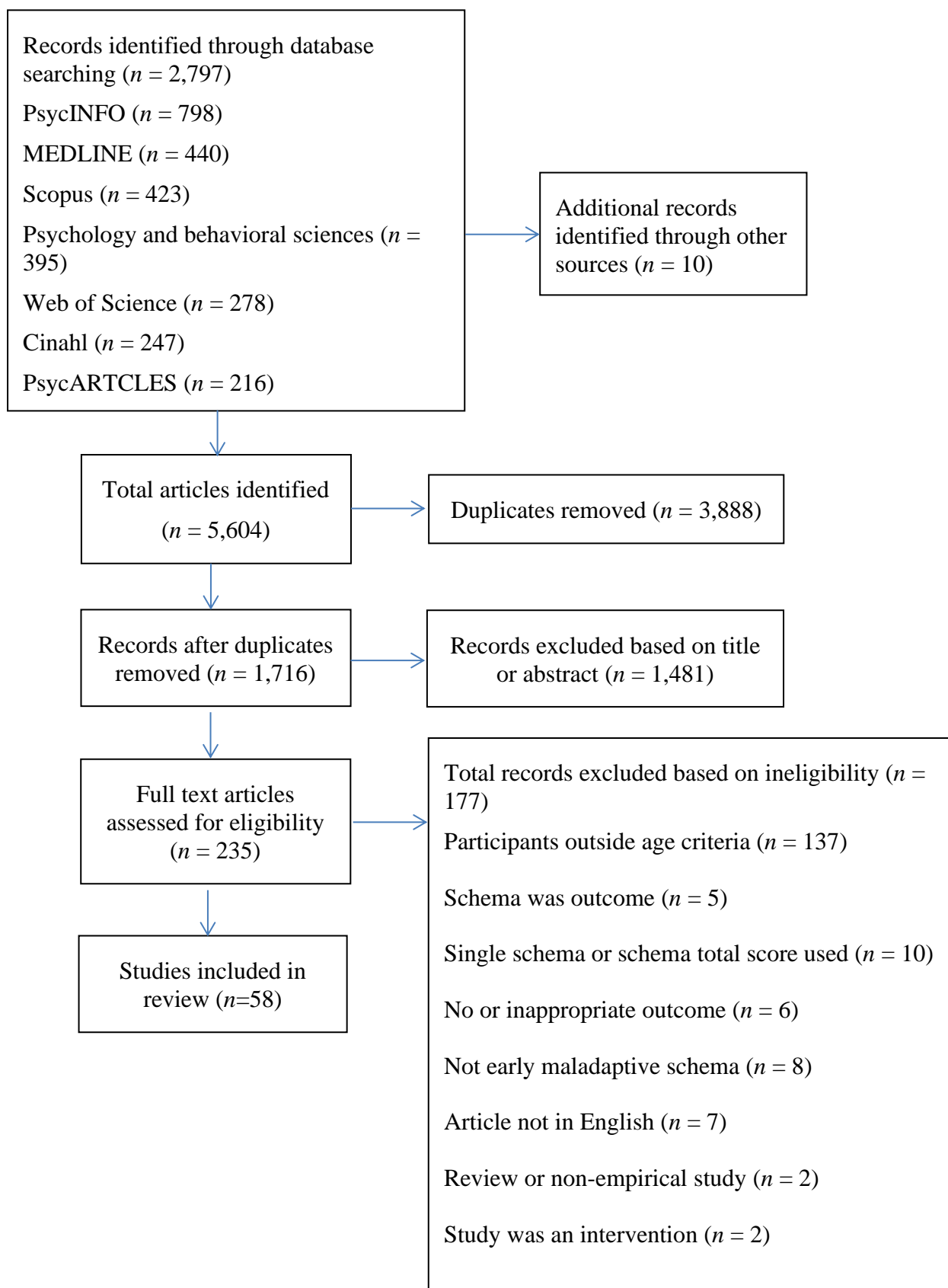
2.4.4 Data Extraction

Following the database search, duplicates were first removed, titles and abstracts were then screened, and irrelevant studies removed. Full text articles of studies identified as relevant for inclusion were then obtained and the authors inspected these against the

eligibility criteria for inclusion. Two reviewers assessed studies for the inclusion/exclusion criteria, with 100% agreement on studies to be included in the review. The reference lists of relevant articles were inspected to ascertain if there were any further articles missed by the database search. This resulted in 58 articles being retained. Figure 2.1 shows the PRISMA flow diagram for study inclusion. Relevant information from each article was then entered into a Microsoft EXCEL spreadsheet, capturing data on the sample, outcome measures, research design, analyses, and findings.

2.4.5 Quality Assessment

Each study was assessed using the Standard Quality Assessment Criteria for Evaluating Primary Research Papers (Kmet et al., 2001). This consists of 14 criteria of methodological quality, scored from 0 to 2, allowing for a common approach to assess the quality of each study. The total quality score was calculated for each paper by summing the total score of all relevant criteria and dividing by the total possible score. Each paper's quality was then rated by me as limited (less than .5), adequate (.5-.7), good (.7-.8) or strong (greater than .8). A sample of studies was assessed by a second reviewer, with broad agreement reached. No study was excluded from the review based on its assessed quality.

Figure 2.1*Prisma Flow Diagram*

2.5 Results

The search yielded 2,807 citations from which 58 eligible studies were identified. Of these 58 studies, five different schema measures were used, including the 75-item YSQ-SF (Young & Brown, 1994, $n=21$); the 90-item YSQ-S3 (Young, 2006, $n=14$); the 205-item YSQ-LF (Young & Brown, 1990, $n=2$); the 232-item YSQ-L3 (Young & Brown, 2003, $n=2$); and the child version of the YSQ (Rijkeboer & de Boo, 2010, $n=1$). Several studies (e.g. Khorramdel et al., 2013; Muris, 2006; Santos et al., 2018) adapted the questionnaires for adolescents. Questionnaires were presented in many languages, including Spanish, Portuguese, Chinese, Dutch, Turkish, and Persian. Studies typically examined early maladaptive schemas at the individual schema level ($n = 40$); however, 17 studies assessed early maladaptive schemas at the higher-order domain level. One study (Saritaş & Gençöz, 2011) created a new factor structure using factor analysis. Table 2.2 provides a summary of the relevant findings of each study.

2.5.1 Quality

The quality varied between studies; however, most studies were rated as strong ($n = 25$) or good ($n = 14$). Nine studies were rated as having limited quality, with many of these failing to control for confounds, provide estimates of variance, or describe key components of their study in sufficient detail.

2.5.2 Sample Characteristics

Participants' ages ranged from 12 to 25 years, with 14 studies using participants with a mean age between 12 and 15 years, 14 studies using participants with a mean age between 15 and 18 years and 25 studies using participants with a mean age between 18 and 21 years. Five studies reported only participants' age range, but not their mean age. These studies were included in the review given the age range met inclusionary criteria. Most studies sampled both males and females, two studies used exclusively males, 11 studies used exclusively

females and one study (Santos et al., 2018) did not specify the gender of its participants. In total, there were 24,005 participants across all studies (approximately 59% were female). The majority of studies ($n = 43$) used a community sample, generally school or university students, with 15 studies sampling from a clinical population, sourcing participants from health centres, mental health clinics, forensic mental health services, and inpatient services, with 1,222 participants (approximately 5%) recruited from a clinical population. Eleven of these studies used a non-clinical comparison group, mostly sampled from a high school or university. The smaller number of clinical participants was to be expected as this is a much more difficult group from which to sample, the sampling frame is much smaller, and there are far fewer participants in clinical as opposed to community populations.

2.5.3 Outcomes

Studies varied across the review in terms of the outcomes that were examined. A total of 21 studies measured depressive symptoms, 19 studies measured anxiety symptoms, 10 studies measured eating pathology, six studies measured personality disorder symptoms, and 11 studies explored externalising behaviours, including aggression, conduct disorders and substance use. Other outcomes of interest included post-traumatic stress disorder (one study), dissociation (one study), and NSSI (one study). It is important to note that the outcome measures used in these studies did not necessarily reflect clinically significant scores, nor represent a diagnosis of respective disorders.

Table 2.2*Overview of 58 Studies included in the Systematic Review*

Study	Sample	N	Age M (SD)	YSQ Unit of analysis	Outcome (Measure)	Design and Analysis	Select Findings	Quality Rating
Abdolahzadeh Rafi et al. (2017)	Community –school students	492	Males: 13.61 (0.7) Females: 13.60 (0.6)	YSQ-child version (Rijkeboer & de Boo, 2010) Schemas (all)	Depression, Anxiety (Achenbach Emotional Disorders Questionnaire)	Cross-sectional Path analysis	Depressive symptoms were associated with <i>Submission</i> and <i>Vulnerability to Harm</i> . Anxiety symptoms were associated with <i>Submission</i> and <i>Loneliness</i> . Schemas mediated the relationship between emotional maltreatment and anxiety and depressive symptoms.	adequate
Alba and Calvete (2019)	Community –school students	584	15.99 (1.1)	YSQ-S3 Domains of <i>Disconnection/Rejection</i> , <i>Impaired Autonomy</i> , <i>Other-Directedness</i>	Depression Stress Rumination (CES-D, Children's Response Style Scale, Adolescent Life Events Questionnaire)	Longitudinal Path analysis	Over time, <i>Disconnection/Rejection</i> predicted depressive symptoms, rumination and stressors; depressive symptoms predicted an increase in <i>Disconnection/Rejection</i> ; and stressors predicted an increase in all schema domains.	good
Alba et al. (2018)	Community –school students	571	15.78 (0.9)	YSQ-S3 Domains of <i>Disconnection/Rejection</i> , <i>Impaired Autonomy</i> , <i>Other-Directedness</i>	Depression (CES-D)	Longitudinal Multiple regression SEM	<i>Disconnection/Rejection</i> and <i>Other-Directedness</i> moderated the relationship between bullying victimisation and depressive symptoms.	strong

Study	Sample	N	Age M (SD)	YSQ Unit of analysis	Outcome (Measure)	Design and Analysis	Select Findings	Quality Rating
Bakhshi Bojed and Nikmanesh (2013)	Community – university students	260	19-24 years, M/SD not reported	YSQ-SF Domains (all)	Addiction (Addiction Potential Scale)	Cross-sectional Multiple regression	Addiction potential were associated with <i>Disconnection/Rejection</i> , <i>Impaired Autonomy</i> , and <i>Other-Directedness</i> .	limited
Baranoff et al. (2006)	Community – university students	260	19.5 (3.7)	YSQ-SF 13 schemas (identified via Principal Components Analysis)	Depression (BDI)	Cross-sectional Multiple regression	Depressive symptoms were associated with <i>Insufficient Self-Control</i> and <i>Failure</i> . Schemas accounted for 44% of the variance in depressive symptoms.	good
Bosmans et al. (2010)	Community – university students	289	21.0 (1.9)	YSQ-SF Domains of <i>Disconnection/Rejection</i> , <i>Impaired Autonomy</i> , <i>Other-Directedness</i>	General psychopathology (SCL-90)	Cross-sectional Mediation	<i>Disconnection/Rejection</i> and <i>Other-Directedness</i> fully mediated the relationship between attachment anxiety and psychopathology. <i>Disconnection/Rejection</i> partially mediated the relationship between attachment avoidance and psychopathology.	strong
Calvete (2013)	Community – school students	1052	13.43 (1.3)	YSQ-S3 Domains of <i>Disconnection/Rejection</i> , <i>Impaired Autonomy</i> , <i>Other-Directedness</i>	Depression Social Anxiety (CES-D, SASC)	Longitudinal SEM	<i>Disconnection/Rejection</i> mediated the relationship between emotional abuse and depressive symptoms. <i>Other-Directedness</i> mediated the relationship between emotional abuse and social anxiety.	strong
Calvete, Fernandez-Gonzalez, et al. (2018)	Community – school students	1,328	15.05 (1.4)	YSQ-S3 Domains of <i>Disconnection/Rejection</i> , <i>Impaired Autonomy</i>	Bully victimization (Peer Relations Questionnaire)	Longitudinal SEM	<i>Disconnection/Rejection</i> predicted continued bully victimization over time. <i>Disconnection/Rejection</i> mediated the predictive relationship between emotional abuse in the family and later bullying victimisation.	strong

Study	Sample	<i>N</i>	Age <i>M (SD)</i>	YSQ Unit of analysis	Outcome (Measure)	Design and Analysis	Select Findings	Quality Rating
Calvete, Fernández-González, et al. (2018)	Community –school students	867	13.77 (1.2)	YSQ-S3 Domains of <i>Disconnection/Rejection, Impaired Limits</i>	Dating Violence perpetration (Conflict in Adolescent Dating Relationships Inventory)	Longitudinal SEM	Over time, <i>Disconnection/Rejection</i> mediated the relationship between exposure to family violence and dating violence; exposure to family violence and <i>Impaired Limits</i> predicted dating violence.	strong
Calvete, Orue and González-Diez (2013)	Community – university and vocational students	971	20.58 (2.8)	YSQ-S3 Schemas (all)	Depression Social Anxiety (SCL-90-R, Social Anxiety Questionnaire for Adults)	Longitudinal Multiple regression	<i>Abandonment, Social Isolation/Alienation, Negativity, Emotional Deprivation, Self-Sacrifice, Defectiveness, Emotional Inhibition, and Enmeshment</i> predicted depressive symptoms. <i>Emotional Inhibition, Approval seeking, Abandonment, Entitlement/Grandiosity (neg), Self-Sacrifice, Punitiveness (neg), Failure</i> predicted social anxiety symptoms. <i>Mistrust/Abuse</i> and <i>Entitlement/Grandiosity</i> predicted hostility. Schemas explained 36% of the variance in depression, 22% of the variance in social anxiety and 21% of the variance in hostility.	strong
Calvete, Orue, et al. (2013a)	Community –school students	1052	13.43 (1.3)	YSQ-S3 Domains of <i>Disconnection/Rejection, Impaired Autonomy, Other-Directedness</i>	Social Anxiety (SASC, Social Cognitions Questionnaire)	Longitudinal SEM	<i>Other-Directedness</i> (via increases in anxious automatic thoughts) predicted social anxiety.	strong

Study	Sample	<i>N</i>	Age <i>M (SD)</i>	YSQ Unit of analysis	Outcome (Measure)	Design and Analysis	Select Findings	Quality Rating
Calvete, Orue, et al. (2013b)	Community –school students	1187	13.42 (1.3)	YSQ-SF Domains of <i>Disconnection/Rejection</i> , <i>Impaired Autonomy</i>	Depression Stress (Adolescent Perceived Events Scale, Adolescent Cognitive Style Questionnaire, CES-D)	Longitudinal SEM	Over time, <i>Disconnection/Rejection</i> predicted depressive symptoms and stress and depressive symptoms predicted increases in schemas.	strong
Calvete et al. (2015)	Community –school students	1281	13.61 (1.4)	YSQ-S3 Domains of <i>Disconnection/Rejection</i> , <i>Impaired Autonomy</i> , <i>Other-Directedness</i>	Depression Social Anxiety (CES-D, SASC)	Longitudinal SEM	<i>Disconnection/Rejection</i> , <i>Other- Directedness</i> and <i>Impaired Autonomy</i> predicted symptoms of depression, the stability of depression over time and social anxiety.	strong
Camara and Calvete (2012)	Community –school students	371	19.01 (1.6)	YSQ-SF Schemas of <i>Abandonment</i> , <i>Emotional Deprivation</i> , <i>Defectiveness/Shame</i> , <i>Failure</i> , <i>Dependence</i> , <i>Vulnerability to Harm</i>	Depression Anxiety (Life Stress Questionnaire, Social Stress Questionnaire, CES-D, SCL-90- R)	Longitudinal Multiple regression	<i>Emotional Deprivation</i> predicted depressive symptoms. <i>Vulnerability to Harm</i> , <i>Dependence</i> and <i>Abandonment</i> predicted anxiety symptoms. Sex moderated the relationship between stressors, schemas and psychopathology.	strong
Cooper et al. (2005)	Females Community– unclear	272	17-18 years <i>M/SD</i> not reported	YSQ-SF All schemas used in initial ANOVAs. <i>Failure</i> , <i>Vulnerability to Harm</i> , <i>Emotional Inhibition</i> and <i>Abandonment/Instability</i>	Depression Eating disorder (BMI, Eating Attitudes Test, BDI, Eating	Cross- sectional ANOVA Discriminant function analysis	<i>Emotional Deprivation</i> , <i>Abandonment</i> , <i>Mistrust/Abuse</i> , <i>Social Isolation/Alienation</i> , <i>Failure</i> , <i>Dependence</i> , <i>Vulnerability to Harm</i> , <i>Emotional Inhibition</i> , <i>Insufficient Self- Control</i> were associated with depressive symptoms. <i>Emotional Deprivation</i> , <i>Abandonment/Instability</i> ,	limited

Study	Sample	<i>N</i>	Age <i>M (SD)</i>	YSQ Unit of analysis	Outcome (Measure)	Design and Analysis	Select Findings	Quality Rating
				used in discriminant function analysis	Disorder Beliefs Questionnaire)		<i>Mistrust/Abuse, Social Isolation/Alienation, Defectiveness/Shame, Failure, Dependence, Vulnerability to Harm, Subjugation, Emotional Inhibition, Insufficient Self-Control</i> were associated with eating disorder symptoms.	
Crawford and O'Dougherty Wright (2007)	Community – university students	301	20.37 <i>SD</i> not reported	YSQ-LF Schemas (all)	Interpersonal aggression (Index of Dating Abuse, Aggression Questionnaire)	Cross- sectional Mediation	<i>Mistrust/Abuse, Self-Sacrifice, Emotional Inhibition</i> fully mediated the relationship between child psychological maltreatment and adult intimate partner victimization. <i>Mistrust/Abuse, Emotional Inhibition, Insufficient Self-Control</i> partially mediated the relationship between child psychological maltreatment and intimate partner aggression.	adequate
Cui et al. (2011)	Community – university students	712	19.6 (1.6)	YSQ-SF PCA identified 14 schemas, used as predictors in subsequent analysis	Depression Anxiety (BDI, STAI)	Cross- sectional Multiple regression	<i>Emotional Deprivation, Dependence, Self-Sacrifice</i> were associated with depressive symptoms. <i>Mistrust/Abuse</i> and <i>Vulnerability to Harm</i> were related to anxiety symptoms.	good
Damiano et al. (2015)	Females Clinical – outpatients with Anorexia diagnosis Control –	Clinical = 36 Non- clinical = 111 Total	Clinical: 16.46 (1.3) Non- clinical: 15.59 (1.5)	YSQ-S3 Schemas (all)	Eating Disorder (Eating Disorder Screen for Primary Care, Behaviour Assessment	Cross- sectional MANOVA	<i>Abandonment, Defectiveness/Shame, Mistrust/Abuse</i> and <i>Social Isolation/Alienation</i> were significantly higher in high pathology anorexia group compared with low-risk community participants.	strong

Study	Sample	<i>N</i>	Age <i>M (SD)</i>	YSQ Unit of analysis	Outcome (Measure)	Design and Analysis	Select Findings	Quality Rating
	school students	= 147			System for Children)			
Dozois et al. (2012)	Clinical – adolescent mental health program Control – media ads	Clinical = 22 Non-clinical = 25 Total = 47	13-17 years <i>M /SD</i> not reported	YSQ-SF Domains (all)	Depression (Diagnostic Interview for Children and Adolescents, BDI)	Cross-sectional MANOVA	<i>Disconnection/Rejection, Impaired Autonomy</i> and <i>Impaired Limits</i> were associated with depressive symptoms.	adequate
Esmæilian et al. (2019)	Community – university students	706	19.48 (1.3)	YSQ-SF Schemas (all)	Borderline personality characteristics (Personality Assessment Inventory - Borderline Subscale)	Cross-sectional Network analysis	<i>Abandonment, Insufficient self-control, Vulnerability to Harm Dependence/Incompetence</i> were associated with identity problems. <i>Abandonment</i> and <i>Mistrust/Abuse</i> were associated with negative relations. <i>Emotional Deprivation</i> and <i>Failure</i> were associated with self-harm.	strong
Gay et al. (2013)	Females Community – university students	511	19.14 (1.4)	YSQ-SF Domains of <i>Disconnection/Rejection</i> <i>Impaired Autonomy</i> <i>Other-Directedness</i>	Intimate partner violence (Conflict Tactics Scale–Revised, Relationship Styles Questionnaire)	Cross-sectional Mediation	<i>Disconnection/Rejection</i> mediated the relationship between childhood emotional abuse and intimate partner violence victimization; and childhood emotional abuse and intimate partner violence perpetration.	good

Study	Sample	<i>N</i>	Age <i>M (SD)</i>	YSQ Unit of analysis	Outcome (Measure)	Design and Analysis	Select Findings	Quality Rating
Gong and Chan (2018)	Community – university students	1102	Males: 20.58 (1.2) Females: 20.41 (1.1)	YSQ-S3 Schemas (Excluded: <i>Subjugation</i> , <i>Punitiveness</i> , <i>Negativity</i> , <i>Approval Seeking</i>)	Depression Anxiety (Zung Depression Scale, Zung Anxiety Scale)	Cross- sectional SEM	Schemas mediated the relationship between all forms of childhood maltreatment and psychological distress.	limited
González-Díez et al. (2015)	Community – university students	471	17.81 (3.2)	YSQ-S3 Domains (all)	Social Anxiety (Social Anxiety Questionnaire for Adults)	Longitudinal SEM	Over time, <i>Impaired Autonomy</i> , <i>Impaired Limits(neg)</i> , <i>Other-Directedness</i> predicted social anxiety symptoms. Social looming cognitive style mediated the relationship between <i>Other-Directedness</i> and social anxiety.	strong
Güner (2017)	Clinical – children with any diagnosis Control – school students	Clinical = 78 Non-clinical = 905 Total = 983	10-16 years <i>M/SD</i> not reported	YSQ-S3 Schemas (all)	General psychopathology (Symptom Assessment Questionnaire)	Cross- sectional Independent samples <i>t</i> -test	Psychopathology was related to all schemas except <i>Enmeshment</i> , <i>Entitlement/Grandiosity</i> , <i>Insufficient Self-Control</i> , <i>Approval Seeking</i> . Clinical sample had significantly higher scores on all schemas compared with community sample.	good
Harding et al. (2012)	Community – university students	177	Child Sexual Abuse: 19.3 (2.5) Control: 19.0 (1.1)	YSQ-SF Schemas (all)	PTSD (Purdue PTSD Scale-Revised, Trauma Symptom Inventory)	Cross- sectional ANOVA Discriminant analysis	<i>Mistrust/Abuse</i> , <i>Vulnerability to Harm</i> , <i>Emotional Deprivation</i> , <i>Subjugation</i> , <i>Social Isolation/Alienation</i> , <i>Defectiveness</i> , <i>Emotional Inhibition</i> , <i>Abandonment</i> were associated with PTSD Symptoms.	strong

Study	Sample	N	Age M (SD)	YSQ Unit of analysis	Outcome (Measure)	Design and Analysis	Select Findings	Quality Rating
Hulbert et al. (2011)	Clinical – Outpatients of mental health service	60	Borderline: 19.34 (2.6) Control: 19.88 (2.8)	YSQ-LF Schemas (all)	Borderline Personality Disorder (SCID CES-D)	Cross-sectional Multiple regression	<i>Mistrust/Abuse</i> and <i>Entitlement/Grandiosity</i> was significantly higher in BPD group (compared with depressed group).	strong
Khorramdel et al. (2013)	Females Clinical – runaways from health centres Control – unspecified	Clinical = 30 Non-clinical = 40 Total = 70	Runaway: 18.83 (3.2) Control: 19.56 (1.5)	YEMSQ - 3rd ed, 2005 Schemas (all)	Running away (Group membership)	Cross-sectional Stepwise discriminate analysis	<i>Emotional Deprivation</i> , <i>Defectiveness/Shame</i> , <i>Dependence/Incompetence</i> , <i>Vulnerability to Harm</i> were significantly higher in runaway group compared to control group.	limited
Klibert et al. (2015)	Community – university students	262	20.2 SD not reported	YSQ-S3 Schemas <i>Vulnerability to Harm, Failure, Subjugation</i> Factor analysis resulted in one factor - " <i>Threat and Control</i> " schemas	Generalized anxiety (State-Trait Personality Inventory)	Cross-sectional Path analysis	<i>Threat and Control</i> schemas were associated with generalized anxiety. <i>Threat and Control</i> schemas partially mediated the relationship between socially prescribed perfectionism and anxiety (for women, but not for men).	adequate
Langhinrichsen-Rohling et al. (2017)	Community – university students	535	19.9 (3.7)	YSQ-SF Schemas <i>Abandonment, Defectiveness/Shame, Self-Sacrifice, Emotional Deprivation, Self-Sacrifice</i>	Suicide proneness Suicide ideation (Suicide Ideation Questionnaire)	Cross-sectional Mediation	<i>Abandonment</i> and <i>Defectiveness/Shame</i> were associated with suicidal ideation and proneness. <i>Self-Sacrifice</i> and <i>Unrelenting Standards</i> were negatively associated with suicide proneness (unrelated to suicidal ideation). Schemas mediated the relationship between parental	limited

Study	Sample	N	Age M (SD)	YSQ Unit of analysis	Outcome (Measure)	Design and Analysis	Select Findings	Quality Rating
							attachment and suicide proneness and ideation	
Lawrence et al. (2011)	Clinical – adolescents with BPD diagnosis Control – AXIS I & II screened out.	Clinical = 30 Non-clinical = 28 Total = 58	Borderline Females: 18.56 (3.4) Males: 19.33 (1.5) Control: 19.22 (2.9)	YSQ-SF Schemas (all)	Borderline Personality Disorder (SCID)	Cross-sectional Independent samples t-test	<i>Abandonment, Mistrust/Abuse, Social Isolation/Alienation, Defectiveness/Shame, Emotional Deprivation, Failure, Dependence/Incompetence, Vulnerability to Harm, Subjugation, Emotional Inhibition, Insufficient Self-Control</i> were significantly higher in BPD group compared to control group.	Strong
Lewis et al. (2015)	Community – university students	392	18.59 (1.2)	YSQ-SF Schemas (all)	Non-suicidal self-injury (NSSI) (Deliberate Self-Harm Inventory)	Cross-sectional MANCOVA	<i>Social Isolation/Alienation, Emotional Inhibition, Entitlement/Grandiosity</i> (negative) were associated with NSSI (history). <i>Dependence/Incompetence</i> were associated with NSSI (frequency).	Strong
Lumley and Harkness (2007)	Clinical – mental health agencies Community – school students	76	15.8 (1.6)	YSQ-SF Separated schemas according to themes of danger and themes of loss or worthlessness	Depression Anxiety (Schedule for Affective Disorders, BDI, Mood and Anxiety Symptom Questionnaire)	Cross-sectional Multiple regression	<i>Vulnerability to Harm</i> was related to anxiety symptoms. <i>Emotional Deprivation, Social Isolation/Alienation, and Self-Sacrifice</i> were associated with depressive symptoms. Schemas with themes of loss mediated the relationship between childhood adversity and depressive symptoms, while schemas with themes of danger mediated the relationship	strong

Study	Sample	<i>N</i>	Age <i>M (SD)</i>	YSQ Unit of analysis	Outcome (Measure)	Design and Analysis	Select Findings	Quality Rating
Mateos-Pérez et al. (2015)	Community –school students	981	13.42 (1.3)	YSQ-S3 Domains of <i>Disconnection/Rejection</i> , <i>Other-Directedness</i> , <i>Impaired Autonomy</i>	Depression (Adolescents Cognitive Style Questionnaire, CES-D)	Longitudinal SEM	between childhood adversity and anxiety symptoms. <i>Disconnection/Rejection</i> and <i>Other-Directedness</i> predicted depressive symptoms (mediated by negative inferences about social stressors).	strong
Meyer and Gillings (2004)	Females unclear	102	19.4 (3.5)	YSQ-SF Schemas (all)	Bulimia (Bulimic Investigatory Test)	Cross-sectional Mediation	<i>Mistrust/Abuse</i> and <i>Unrelenting Standards</i> were associated with bulimia symptoms. <i>Mistrust/Abuse</i> partially mediated the relationship between paternal overprotection and bulimic severity.	limited
Meyer et al. (2001)	Females Community – university students	61	20.0 (.7)	YSQ-SF Schemas (all)	Bulimia Borderline Personality Disorder (Bulimic Investigatory Test, Borderline Syndrome Index)	Cross-sectional Multiple regression	<i>Defectiveness/Shame</i> were associated with bulimia symptoms. BPD symptoms related to all schemas except <i>Self-Sacrifice</i> , <i>Unrelenting Standards</i> , <i>Entitlement/Grandiosity</i> .	adequate
Muris (2006)	Community –school students	173	13.32 (.9)	YSQ-A Schemas (all)	Depression Anxiety Disruptive behaviour Eating problems Substance Use	Cross-sectional Multiple regression	<i>Social Undesirability</i> , <i>Mistrust/Abuse</i> , <i>Unrelenting Standards</i> , and <i>Failure</i> were associated with depressive symptoms. <i>Emotional Inhibition</i> , <i>Abandonment</i> , and <i>Social Isolation/Alienation</i> were associated with anxiety symptoms. <i>Social Isolation/Alienation</i> ,	adequate

Study	Sample	<i>N</i>	Age <i>M (SD)</i>	YSQ Unit of analysis	Outcome (Measure)	Design and Analysis	Select Findings	Quality Rating
					(Psychopathology Questionnaire for Youth)		<i>Dependence/Incompetence, Self-Sacrifice</i> (negative), <i>Entitlement/Grandiosity, Enmeshment</i> (negative), and <i>Failure</i> were associated with disruptive behaviour. <i>Social Isolation/Alienation</i> and <i>Unrelenting Standards</i> were associated with eating problems. <i>Failure</i> was associated with substance use.	
O'Dougherty Wright et al. (2009)	Community – university students	301	20.37 <i>SD</i> not reported	YSQ-L3 Schemas (all)	Anxiety Depression Dissociation (Dissociation Trauma Symptom Checklist-40)	Cross- sectional Multiple regression Mediation	<i>Vulnerability to Harm, Self-Sacrifice,</i> and <i>Defectiveness/Shame</i> were associated with anxiety and depressive symptoms. <i>Vulnerability to Harm</i> and <i>Defectiveness/Shame</i> were associated with dissociation. <i>Vulnerability to Harm, Self-Sacrifice,</i> and <i>Defectiveness/Shame</i> mediated the relationship between child emotional neglect and adult symptoms of anxiety and depression. <i>Vulnerability to Harm</i> and <i>Defectiveness/Shame</i> mediated the relationship between child emotional neglect and adult symptoms of dissociation.	good
Orue et al. (2014)	Community –school students	948	13.44 (1.3)	YSQ-S3 Domains of <i>Disconnection/Rejection,</i> <i>Impaired Autonomy</i> <i>Other-Directedness</i>	Depression Social Anxiety (Children's Response Styles, CES-D, Social Anxiety Scale for Adolescents)	Longitudinal SEM	<i>Disconnection/Rejection</i> predicted depressive symptoms. <i>Other-Directedness</i> predicted depressive symptoms via brooding. <i>Other-Directedness</i> predicted social anxiety symptoms both directly and via brooding.	strong

Study	Sample	<i>N</i>	Age <i>M (SD)</i>	YSQ Unit of analysis	Outcome (Measure)	Design and Analysis	Select Findings	Quality Rating
Reeves and Taylor (2007)	Community – University students	804	19.19 (1.4)	YSQ-SF Schemas (all)	Personality disorder traits (SCID)	Cross-sectional Multiple regression	<p><i>Mistrust/Abuse</i> and <i>Social Isolation/Alienation</i> (negative) were associated with Paranoid traits. <i>Social Isolation/Alienation</i> and <i>Emotional Inhibition</i> were associated with schizoid traits. <i>Social Isolation/Alienation</i> was associated with schizotypal traits. <i>Insufficient Self-Control</i> and <i>Social Isolation/Alienation</i> (negative) were associated with antisocial traits. <i>Abandonment</i>, <i>Social Isolation/Alienation</i>, and <i>Enmeshment</i> (negative) were associated with Borderline traits. <i>Emotional Inhibition</i> and <i>Social Isolation/Alienation</i> were negatively associated with histrionic traits. <i>Entitlement/Grandiosity</i> and <i>Mistrust/Abuse</i> were associated with narcissistic traits. <i>Social Isolation/Alienation</i>, <i>Emotional Inhibition</i>, <i>Entitlement/Grandiosity</i> (negative) were associated with avoidant traits. <i>Abandonment</i> was associated with dependent traits. <i>Unrelenting Standards</i> and <i>Enmeshment</i> were associated with obsessive-compulsive traits.</p>	adequate

Study	Sample	<i>N</i>	Age <i>M (SD)</i>	YSQ Unit of analysis	Outcome (Measure)	Design and Analysis	Select Findings	Quality Rating
Richardson (2005)	Males Clinical – forensic mental health service	54	16.1 (1.6)	YSQ-LF Schemas (all)	Sexual offending (Group membership)	Cross- sectional ANOVA	<i>Emotional Inhibition, Social Isolation/Alienation, Mistrust/Abuse</i> were associated with sexual offending. Compared to those who offended against children,, those who offended against adults scored higher on <i>Insufficient Self-Control, Entitlement/Grandiosity, and Emotional Inhibition.</i>	good
Roelofs et al. (2011)	Community –school student	222	14.7 (1.6)	YSQ-SF Domains (all) and schemas (only in significant domains)	Depression (BDI)	Cross- sectional Mediation	Depressive symptoms were associated with all schema domains. <i>Mistrust/Abuse</i> and <i>Social Isolation/Alienation</i> mediated the relationship between trust in parents and depressive symptoms. <i>Social Isolation/Alienation</i> and <i>Self-Sacrifice</i> mediated the relationship between alienation from peers and symptoms of depression.	good
Roelofs et al. (2013)	Clinical – outpatient treatment centre	82	14.7 (1.6)	YSQ-SF Domains (all) and schemas (only in significant domains)	Emotional problems Conduct problems Peer problems (Strengths and Difficulties Questionnaire)	Cross- sectional Mediation	Emotional and peer problems were associated with all domains. <i>Impaired Limits</i> was associated with conduct problems. <i>Social Isolation/Alienation</i> mediated the relationship between lack of trust in peers and peer problems. <i>Abandonment</i> mediated the relationship between alienation from peers and emotional problems.	strong

Study	Sample	<i>N</i>	Age <i>M (SD)</i>	YSQ Unit of analysis	Outcome (Measure)	Design and Analysis	Select Findings	Quality Rating
Roemmele and Messman- Moore (2011)	Females Community – university students	653	18.77 (1.0)	YSQ-SF Domains and schemas of <i>Abandonment</i> , <i>Mistrust/Abuse</i> , <i>Emotional Deprivation</i> , <i>Defectiveness/Shame</i> , <i>Subjugation</i> , <i>Self- Sacrifice</i>	Risky sexual behaviour (Cognitive Appraisal of Risky Events Questionnaire– Revised)	Cross- sectional Mediation	<i>Disconnection/Rejection</i> was associated with lifetime number of partners. <i>Disconnection/Rejection</i> partially mediated the relation between child sexual abuse and lifetime number of partners. <i>Abandonment</i> partially mediated the relation between child sexual abuse and risky sexual behaviour.	good
Sajadi et al. (2015)	Community –school students	300	15.72 (1.0)	YSQ-SF Schemas of <i>Abandonment</i> , <i>Emotional Deprivation</i> (these were combined to form a “schema” score)	Borderline Personality Disorder (Difficulties in Emotion Regulation Scale, Dissociative Experience Scale, Beck Suicide Ideation)	Cross- sectional Multiple regression	<i>Abandonment</i> and <i>Emotional Deprivation</i> were associated with borderline traits.	limited
Santos et al. (2018)	Community –school students	146	12-18 years <i>M/SD</i> not reported	YSQ-S3 Schemas (all)	Internalising and externalising problems Anger (Youth Self- Report, State Trait Anger Expression Inventory)	Cross- sectional Correlation	Internalising problems were associated with all schemas except <i>Entitlement/Grandiosity</i> , <i>Enmeshment</i> , and <i>Unrelenting Standards</i> . Externalising problems were associated with all schemas except <i>Emotional Deprivation</i> , <i>Enmeshment</i> , <i>Self- Sacrifice</i> , <i>Emotional Inhibition</i> , and <i>Punitiveness</i> . Anger was associated with all schemas except <i>Abandonment</i> , <i>Dependence/Incompetence</i> ,	limited

Study	Sample	<i>N</i>	Age <i>M (SD)</i>	YSQ Unit of analysis	Outcome (Measure)	Design and Analysis	Select Findings	Quality Rating
							<i>Enmeshment, Self-Sacrifice, Emotional Inhibition, Unrelenting Standards.</i>	
Sarıtaş-Atalar and Gencoç (2015)	Community – university students	266	21.89 (.5)	YSQ-3 Domains (created 3 new domains through factor analysis)	Depression Anxiety (BDI, STAI)	Cross-sectional Multiple regression Mediation	<i>Disconnection/Rejection and Impaired Autonomy-Other-Directedness</i> mediated the relationship between perceived maternal rejection and anxiety. <i>Impaired Autonomy-Other-Directedness</i> mediated the relationship between perceived maternal rejection and anxiety.	good
Sarıtaş and Gençöz (2011)	Community – school students	356	16.0 (.5)	YSQ-SF3 Domains (used newly created three factor structure)	Anxiety Anger (STAI, State Trait Anger Inventory)	Cross-sectional Multiple regression	<i>Disconnection/Rejection and Impaired Autonomy-Other-Directedness</i> were associated with anxiety symptoms. <i>Impaired Limits-Exaggerated standards</i> was associated with Anger symptoms.	adequate
Shorey et al. (2013)	Males Clinical – inpatient substance use treatment program Control – university students	Clinical = 101 Non-clinical = 175 Total = 275	Clinical: 21.84 (2.0) Non-clinical: 18.87 (2.0)	YSQ-L3 Schemas (all)	Substance use (Alcohol Use Disorders Identification Test, Drug Use Disorders Identification Test)	Cross-sectional ANCOVA	Substance use group scored higher <i>Abandonment, Mistrust/Abuse, Defectiveness/Shame, Failure, Dependence/Incompetence, Vulnerability to Harm, Enmeshment, Insufficient Self-Control, and Negativity</i> compared with a non-clinical comparison group.	good

Study	Sample	<i>N</i>	Age <i>M (SD)</i>	YSQ Unit of analysis	Outcome (Measure)	Design and Analysis	Select Findings	Quality Rating
Shorey et al. (2014)	Females Clinical – substance abuse group Control – university students	464	Substance Abuse: 20.43 (2.23) Control: 18.38 (.83)	YSQ–L3 Schemas (all)	Substance use (Alcohol Use Disorders Identification Test, Drug Use Disorders Identification Test)	Cross- sectional MANCOVA	Substance use group scored higher on 16 of 18 schemas (exception was <i>Unrelenting Standards</i> and <i>Self- Sacrifice</i>), compared with non-clinical control group.	strong
Simons et al. (2018)	Community – university students	364	19.41 (1.5)	YSQ-S3 Schemas of <i>Abandonment</i> , <i>Defectiveness/Shame</i> , <i>Insufficient Self-Control</i>	Alcohol-related problems (Daily Drinking Questionnaire, Young Adult Alcohol Consequences Questionnaire)	Cross- sectional SEM	Distress tolerance partially mediated the relationship between <i>Abandonment</i> and <i>Insufficient Self-Control</i> and alcohol problems. Distress tolerance moderated the relationship between <i>Defectiveness/Shame</i> moderated and alcohol problems.	strong
Turner et al. (2005a)	Females Community – school students	367	17.74 (.5)	YSQ-SF Schemas (all)	Eating disorder symptoms (Eating Attitudes Test)	Cross- sectional Multiple regression Mediation	<i>Defectiveness/Shame</i> and <i>Dependence/ Incompetence</i> were associated with eating disorder symptoms. <i>Defectiveness/Shame</i> and <i>Dependence/Incompetence</i> mediated the relationship between parental bonding and eating disorder symptoms.	limited

Study	Sample	N	Age M (SD)	YSQ Unit of analysis	Outcome (Measure)	Design and Analysis	Select Findings	Quality Rating
Turner et al. (2005b)	Females Community – school students	46	Overweight: 17.6 SD not reported Healthy weight: 17.7 SD not reported	YSQ-SF Schemas (all)	Overweight (BMI)	Cross-sectional T-test	Compared with normal weight adolescents, overweight females scored higher on <i>Emotional Deprivation</i> , <i>Abandonment</i> , <i>Subjugation</i> and <i>Insufficient Self-Control</i> .	adequate
Van Vlierberghe and Braet (2007)	Clinical – obesity treatment centre Control – non-obese school students	Clinical =91 Non-clinical =91 Total =182	Referred Obese youth: 14.91 (1.5) Non-obese: 15.02 (1.7)	YSQ-SF Schemas (all)	Overweight (BMI, Child Behaviour Checklist, Youth Self-Report)	Cross-sectional MANOVA Multiple regression	Compared with non-obese controls, overweight group scored higher on <i>Emotional Deprivation</i> , <i>Social Isolation/Alienation</i> , <i>Defectiveness/Shame</i> , <i>Failure</i> , <i>Dependence/Incompetence</i> , and <i>Subjugation</i> . <i>Social Isolation/Alienation</i> and <i>Vulnerability to Harm</i> were associated with internalising symptoms. <i>Entitlement/Grandiosity</i> and <i>Dependence/Incompetence</i> were associated with externalising symptoms.	good
Van Vlierberghe et al. (2010)	Clinical – outpatient and inpatient centres Control –	Clinical = 104 Non-clinical	Clinical: 14.60 (1.6) Non-clinical:	YSQ-SF Schemas (all)	Depression Anxiety Oppositional Defiant Disorder	Cross-sectional Multiple regression	Compared with control group, the clinical group scored higher on <i>Emotional Deprivation</i> , <i>Abandonment</i> , <i>Mistrust/Abuse</i> , <i>Social Isolation</i> , <i>Defectiveness/Shame</i> , <i>Failure</i> ,	strong

Study	Sample	N	Age M (SD)	YSQ Unit of analysis	Outcome (Measure)	Design and Analysis	Select Findings	Quality Rating
	convenience sampling	= 112 Total = 216	15.50 (1.7)		Conduct Disorder (Youth self- report, Child Behaviour checklist, SCID – child version)	Logistic regression	<i>Vulnerability to Harm, Enmeshment, Subjugation, Self-Sacrifice.</i> Schemas explained 29.8% of variance in internalising problem behaviour and 21.3% of variance in externalising problem behaviour. Depressive symptoms were associated with <i>Emotional Deprivation, Failure, Defectiveness/Shame</i> and <i>Dependence/Incompetence</i> . Anxiety symptoms were associated with <i>Vulnerability to Harm, Unrelenting Standards, Emotional Deprivation (neg), Insufficient Self-Control (negative), Abandonment, Failure, Unrelenting Standards, Dependence/Incompetence, and Entitlement/Grandiosity</i> . Oppositional defiant symptoms were associated with <i>Defectiveness/Shame, Social Isolation/Alienation</i> and <i>Unrelenting Standards</i> (negative). Conduct disorder was associated with <i>Entitlement/Grandiosity, Failure</i> and <i>Unrelenting Standards</i> .	
Van Vlierberghe et al. (2009)	Clinical – obesity treatment centre Control –	Clinical = 38 Non- clinical = 26 Total	14.97 (1.5)	YSQ-SF Schemas (all)	Eating problems (Eating Disorder Examination – Child version)	Longitudinal ANOVA	Compared with control group, the loss of control overeating group scored higher on <i>Abandonment, Mistrust/Abuse, Social Isolation, Failure, Subjugation, and Unrelenting Standards</i> .	adequate

Study	Sample	<i>N</i>	Age <i>M (SD)</i>	YSQ Unit of analysis	Outcome (Measure)	Design and Analysis	Select Findings	Quality Rating
	non-treatment seekers	= 64						
Yan et al. (2018)	Community – school students	983	15.44 (1.0)	YSQ-SF Schemas (all)	Anxiety (Screen for Child Anxiety Related Emotional Disorders)	Cross-sectional Multiple regression	Anxiety symptoms were associated with <i>Vulnerability to Harm, Abandonment, Emotional Inhibition, Subjugation, and Unrelenting Standards</i> . Panic symptoms were associated with <i>Vulnerability to Harm, Abandonment, and Subjugation</i> . Generalized Anxiety symptoms were associated with <i>Vulnerability to Harm, Abandonment, Emotional Inhibition, and Subjugation</i> . Separation anxiety symptoms were associated with <i>Vulnerability to Harm and Abandonment</i> . Social phobia symptoms were associated with <i>Emotional Inhibition, Abandonment, Subjugation, and Unrelenting Standards</i> .	good
Yigit et al. (2021)	Clinical – adolescent psychiatric unit Control – school students	325	15.29 (1.1)	YSQ-3 Domains of <i>Disconnection/Rejection Impaired Autonomy, Other-Directedness</i>	Depression Anxiety (Children’s Depression Inventory, The Spielberger State-Trait Anxiety Inventory)	Cross-sectional Path analysis	Depressive symptoms were associated with <i>Disconnection/Rejection</i> in the clinical sample but not the community sample. <i>Disconnection/Rejection</i> mediated the relationship between emotional abuse and depression and anxiety. <i>Disconnection/Rejection</i> mediated the relationship between physical abuse and depression and anxiety. <i>Impaired Autonomy</i> mediated the relationship between physical abuse and anxiety.	strong

Study	Sample	<i>N</i>	Age <i>M (SD)</i>	YSQ Unit of analysis	Outcome (Measure)	Design and Analysis	Select Findings	Quality Rating
Zeigler-Hill et al. (2011)	Community – University students	442	20.92 (4.8)	YSQ-SF Schemas (all)	Narcissistic personality traits Narcissistic Personality Inventory	Cross-sectional Multiple regression	Grandiose narcissism was associated with <i>Mistrust/Abuse, Insufficient Self-Control</i> (negative), <i>Entitlement/Grandiosity, Self-Sacrifice, Unrelenting Standards</i> Vulnerable narcissism was associated with <i>Mistrust/Abuse, Subjugation, Dependence/Incompetence</i> (negative), <i>Abandonment, Entitlement/Grandiosity</i>	good

Note. BDI = Beck Depression Inventory; BMI = Body Mass Index; CES-D = Centre for Epidemiologic Studies Depression Scale; SASC = Social Anxiety Scale for Children; SCID = Structured Clinical Interview for DSM; SCL-90 = Symptom Checklist-90; STAI = State-Trait Anxiety Inventory; NSSI= Non-suicidal self-injury

Early maladaptive schemas were found to be a factor in symptoms of psychopathology in each study, with no study observing a null finding. For those studies that reported variance, these ranged from 15% for addiction potential (Bakhshi Bojed & Nikmanesh, 2013) to 47% for narcissism (Zeigler-Hill et al., 2011). Yan et al. (2018) found that around 31% of the variance in anxiety in secondary school students could be accounted for by schemas, while Baranoff et al. (2006) reported that schemas explained 44% of the variance in depressive scores. Van Vlierberghe et al. (2010) found that together schemas explained nearly 31% of the variance in internalising behaviour problems and 21% in externalising behaviour problems. Similarly, Calvete, Orue and González-Diez (2013) found that schemas explained 36% of the variance in depression, 22% of the variance in social anxiety and 21% of the variance in hostility.

Age and Sex. Early maladaptive schemas were related to psychopathology across each age range, even in the youngest participants. In children as young as 12 years, for example, schemas were found to differentiate between depression and anxiety (Muris, 2006) and predict obesity (Van Vlierberghe et al., 2009). Three studies examined sex differences, specifically the moderating effect of sex on psychopathology. Results suggested that, while females generally scored higher than males on schemas and symptomology, the pattern of associations was similar for males and females (Calvete, Orue, et al., 2013a; Orue et al., 2014). Camara and Calvete (2012) found that Emotional Deprivation and Abandonment moderated the impact of stressors on depressive symptoms in older adolescents, but this differed for males and females, suggesting that the influence of schemas varies as a function of sex.

Longitudinal Versus Cross-Sectional Studies. Most studies were cross sectional; however, 14 studies used a longitudinal design, providing greater insight into the relationship between schemas and psychopathology over time. Longitudinal studies tended to use

domains as the level of analysis, with only three of the studies examining individual schemas. One longitudinal study used a clinical sample. Calvete, Orue and González-Diez (2013) were the only authors to specifically examine the stability of schemas over time. They found high test-retest correlations (ranging from .50 to .73) among the schemas of young adults; however, lower absolute compared to relative stability, with several schemas significantly decreasing over the six-month period of the study. In terms of the relationships of schemas to symptoms over time, Calvete et al. (2015) found schema domains were associated with high initial levels of symptoms, but also predicted higher stability of symptoms over time. Camara and Calvete (2012) examined the ability of schemas to predict the development of depressive and anxiety symptoms in school students over a six-month period, finding Emotional Deprivation and Abandonment moderated the impact of stressors on depressive symptoms, and Vulnerability to Harm and Dependence directly predicted anxiety. There was evidence of bidirectional relationships between schemas and symptoms. For example, Calvete, Orue, et al. (2013b) examined different pathways among schemas, depressive symptoms and stress, finding that, while schemas and stress increased the likelihood of depressive symptoms, depressive symptoms in turn increased schema endorsement and the likelihood of new stressors. González-Díez et al. (2015) found differences between longitudinal and cross-sectional analyses. Specifically, although schemas in the domain of Disconnection/Rejection were correlated with social anxiety, these schemas did not predict increases in social anxiety over time.

Clinical Versus Community Samples. None of the studies that used a clinical sample reported the R^2 value of the relationship between schemas and psychopathological outcomes, making it difficult to assess the degree to which early maladaptive schemas can reliably predict clinical severity. Nonetheless, each study that compared a clinical with non-clinical control group found differences between the samples in terms of degree of schema

endorsement. For example, Güner (2017) compared young adolescents with a psychiatric diagnosis with high school students and found that the clinical sample scored significantly higher on 14 of 18 schemas (with the exception of Enmeshment, Entitlement/Grandiosity, Insufficient Self-Control and Approval-Seeking). Shorey et al. (2014) found that substance abusers scored higher on 16 of 18 schemas (with the exception of Unrelenting Standards and Self-Sacrifice) compared with undergraduate psychology students. Van Vlierberghe et al. (2010) found Unrelenting Standards was the only schema that did not differentiate overweight treatment seekers from community controls. Lawrence et al. (2011) compared young adults with a borderline diagnosis with a control group with DSM-IV Axis I and II disorders screened out, finding that the borderline group scored significantly higher on 11 of 15 schemas (with the exception of Enmeshment, Entitlement/Grandiosity, Self-Sacrifice and Unrelenting Standards). Hulbert et al. (2011); Yiğit et al. (2021) found that schemas in the domain of Disconnection/Rejection significantly correlated with depressive symptoms in an adolescent psychiatric inpatient group, but not in a community sample. These patterns of results may also suggest that some schemas, particularly Enmeshment, Entitlement/Grandiosity Unrelenting Standards and Self-Sacrifice may be less related to clinical severity in young people.

Cognitive Content Specificity. It was difficult to compare and assess the cognitive content of psychopathology, as results were confounded by differences in YSQ measures, and the inconsistent use of first and second order factors. Of those studies that analysed data by individual schema, many did not include all schemas in their analyses, using theoretically driven hypotheses to select schemas for analysis. While this strategy likely improves power, it ultimately made it difficult to compare studies and draw conclusions about the specific impact of schemas on psychopathology.

Ten studies examined the relationship between early maladaptive schemas and depressive symptoms (see Table 2.3). A broad range of schemas were related to depressive symptoms; these were located across all domains, clustering predominantly within the domain of Disconnection/Rejection. Six studies found a relationship between Emotional Deprivation and depressive symptoms. Defectiveness/Shame, Social Isolation/Alienation and Failure were significantly related to depression in four studies each. Entitlement/Grandiosity was not related to depressive symptoms in any of the studies in the review.

Table 2.3

Relationship between Early Maladaptive Schemas and Depressive Symptoms in Youth

	Clinical Sample			Non-clinical Sample						
	Van Vierberghe et al. (2010)	Lumley and Harkness (2007)	Baranoff et al. (2006)	Calvete, Orue and González-Diez (2013)	Camara and Calvete (2012)	Cooper et al. (2005)	Cui et al. (2011)	Muris (2006)	O'Dougherty Wright et al. (2009)	Roelofs et al. (2011)
Disconnection/Rejection										
Emotional Deprivation									*	
Abandonment/Instability					*					
Mistrust/Abuse										
Defectiveness/Shame										
Social Isolation/Alienation					*					
Impaired Autonomy										
Dependence/Incompetence			*							
Vulnerability to Harm										
Enmeshment/Undeveloped Self					*					
Failure									*	
Impaired Limits										
Entitlement/Grandiosity										*
Insufficient Self-Control										*
Other-Directedness										
Approval Seeking (YSQ3 only)	**	**	**		*	**	**	**	**	**
Subjugation			*							
Self-Sacrifice					*					
Over-Vigilance and Inhibition										
Emotional Inhibition					*					
Negativity/Pessimism (YSQ3 only)	**	**	**		*	**	**	**	**	**
Unrelenting Standards					*					
Punitiveness (YSQ3 only)	**	**	**		*	**	**	**	**	**
Social Undesirability (YSQLF only)	**	**	**	**	**	**	**			**

Note. *Item was not included in study; **Not included in YSQ measure used by authors

■ Significant – analysis at schema level

Nine studies examined the relationship between early maladaptive schemas and anxiety symptoms (Table 2.4). Vulnerability to Harm emerged as having the strongest association with anxiety with seven studies reporting a significant relationship, and Abandonment/Instability was related in four studies. Some studies found negative relationships between particular schemas and anxiety, with youth reporting Emotional Deprivation (Van Vlierberghe et al., 2010), Entitlement/Grandiosity (Calvete, Orue, et al., 2013a) and Insufficient Self-Control (Van Vlierberghe et al., 2010) significantly less likely to also report anxious symptoms.

Nine studies examined some form of eating pathology (Table 2.5), with three of these using a clinical population. Compared with anxiety and depression, eating pathology appeared to have many more predictors, but only in clinical groups. This was particularly the case for schemas within the domains of Disconnection/Rejection and Impaired Autonomy and Performance. In contrast, the non-clinical samples appeared to have relatively fewer significant schemas. The most frequently endorsed schemas for this population were Defectiveness/Shame, Social Isolation/Alienation and Subjugation, identified in five studies each, as well as Abandonment/Instability, Mistrust/Abuse, Enmeshment and Dependence/Incompetence, identified in four studies each.

Seven studies examined the relationship between borderline characteristics and early maladaptive schemas, including three that used a clinical sample (Table 2.6). Importantly, borderline personality disorder is rarely diagnosed in adolescence, so studies tend to reflect symptomology or borderline features rather than actual diagnosis. Two studies (Lawrence et al., 2011; Meyer et al., 2001) found that multiple schemas are implicated in borderline symptomology, with participants endorsing 11 of the 15 schemas. Lewis et al. (2015) examined NSSI, a feature of borderline personality disorder, finding some commonalities with other borderline studies, namely Defectiveness/Shame, Dependence/Incompetence and

Emotional Inhibition. Abandonment/Instability was the most frequently endorsed schema in this population (five studies), followed by Emotional Deprivation, Social Isolation/Alienation and Dependence/Incompetence (four studies each).

Table 2.4

Relationship between Early Maladaptive Schemas and Anxious Symptoms in Youth

	Clinical Sample			Non-clinical sample					
	Van Vlierberghe et al. (2010)	Lumley and Harkness (2007)	Calvete, Orue and González-Diez (2013)	Camara and Calvete (2012)	Cui et al. (2011)	Klibert et al. (2015)	Muris (2006)	O'Dougherty Wright et al. (2009)	Yan et al. (2018)
Disconnection/Rejection									
Emotional Deprivation	negative					*			
Abandonment/Instability						*		*	
Mistrust/Abuse				*		*			
Defectiveness/Shame						*			
Social Isolation/Alienation				*		*			
Impaired Autonomy									
Dependence/Incompetence						*			
Vulnerability to Harm									
Enmeshment/Undeveloped Self				*		*			
Failure								*	
Impaired Limits									
Entitlement/Grandiosity			negative	*		*			
Insufficient Self-Control	negative			*		*			
Other-Directedness									
Approval Seeking (YSQ3 only)	**	**		*	**	*	**	**	
Subjugation				*					
Self-Sacrifice				*		*			
Over-Vigilance and Inhibition									
Emotional Inhibition				*		*			
Negativity/Pessimism (YSQ3 only)	**	**		*	**	*	**	**	
Unrelenting Standards				*		*			
Punitiveness (YSQ3 only)	**	**	negative	*	**	*	**	**	
Social Undesirability (YSQLF only)	**	**	**	**	**	**	**	**	

Note. *Item was not included in study; **Not included in YSQ measure used by authors

■ Significant – analysis at schema level

Table 2.5

Relationship between Early Maladaptive Schemas and Eating Disorder Symptoms in Youth

	Clinical sample			Non-clinical sample					
	Damiano et al. (2015)	Van Vlierberghe and Braet (2007)	Van Vlierberghe et al. (2009)	Cooper et al. (2005),	Meyer et al. (2001),	Meyer et al. (2004)	Muris (2006)	Turner et al. (2005b)	Turner et al. (2005a)
Disconnection/Rejection									
Emotional Deprivation (ED)		■		■	*			■	
Abandonment/Instability (AB)	■		■	■	*			■	
Mistrust/Abuse (MA)	■				*	■			
Defectiveness/Shame (DS)	■	■		■		■			■
Social Isolation/Alienation (SI)	■		■	■	*		■		
Impaired Autonomy					*				
Dependence/Incompetence (DI)	■	■		■	*				■
Vulnerability to Harm (VH)	■			■	*				
Enmeshment/Undeveloped Self (ENM)	■	■			*				
Failure (FA)	■		■		*		■		
Impaired Limits					*				
Entitlement/Grandiosity (ENT)					*				
Insufficient Self-Control (ISC)				■	*			■	
Other-Directedness					*				
Approval Seeking (AS) - YSQ3		**	**	**	*		**		
Subjugation (SBJ)	■			■	*			■	
Self-Sacrifice (SS)					*				
Over-Vigilance and Inhibition					*				
Emotional Inhibition (EI)	■			■	*				
Negativity/Pessimism (NEG) - YSQ3	■	**	**	**	*		**		
Unrelenting Standards (UR)			■		*	■			
Punitiveness (P) - YSQ3		**	**	**	*		**		
Social Undesirability – YSQLF	**	**	**	**	**	**	**	**	**

Note. *Item was not included in study; **Not included in YSQ measure used by authors

■ Significant – analysis at schema level

Table 2.6

Relationship between Early Maladaptive Schemas and Borderline Personality Symptoms in Youth

	Clinical Sample		Non-clinical sample				
	Hulbert et al. (2011)	Lawrence et al. (2011)	Esmailian et al. (2019)	Lewis et al. (2015)	Meyer et al. (2001)	Reeves and Taylor (2007)	Sajadi et al. (2015)
Disconnection/Rejection							
Emotional Deprivation							
Abandonment/Instability							
Mistrust/Abuse							*
Defectiveness/Shame							*
Social Isolation/Alienation							*
Impaired Autonomy/Performance							
Dependence/Incompetence							*
Vulnerability to Harm/Illness							*
Enmeshment/Undeveloped Self						negative	*
Failure							*
Impaired Limits							
Entitlement/ Grandiosity				negative			*
Insufficient Self-Control							*
Other-Directedness							
Approval Seeking (YSQ3 only)	**	**		**	**		**
Subjugation							*
Self-Sacrifice							*
Over-Vigilance and Inhibition							
Emotional Inhibition							*
Negativity/Pessimism (YSQ3 only)	**	**		**	**		**
Unrelenting Standards							*
Punitiveness (YSQ3 only)	**	**		**	**		**
Social Undesirability (YSQLF only)		**		**	**		**

Note. *Item was not included in study; **Not included in YSQ measure used by authors

■ Significant – analysis at schema level

Eight studies in the review examined the relationship between early maladaptive schemas and externalising behaviours, including aggressive or conduct behaviours. A further four studies examined drug and problematic alcohol use (Table 2.7). Entitlement/Grandiosity was most likely to relate to aggressive behaviours, a significant result in six studies. Mistrust/Abuse, Failure and Insufficient Self-Control were significantly related to aggressive behaviours in four studies each. It is difficult to draw any firm conclusions regarding the relationship between schemas and drug/alcohol use due to the limited number of studies examined, with Abandonment/Instability, Failure and Insufficient Self-Control having a significant relationship in three studies each.

A number of studies explored the mechanisms through which schemas are related to specific psychopathology by examining mediational pathways. Orue et al. (2014) tested whether a brooding ruminative style among adolescents mediated the relationship between schemas and depression and anxiety in young adolescents across a 12-month period. The authors found that schemas are differentially related to depression and social anxiety symptoms. In particular, schemas in the Disconnection/Rejection domain directly predicted depression symptoms, whereas schemas in the Other-Directedness domain predicted social anxiety symptoms, both directly and through the brooding component of rumination. Other-Directedness also predicted depression symptoms through brooding. Mateos-Pérez et al. (2015) found that negative inferences about social stressors mediated the association between interpersonal schemas (those in the Disconnection/Rejection and Other-Directedness domains) and depressive symptoms. In a three wave study, González-Díez et al. (2015) found that social looming, a cognitive processing bias, fully mediated the relationship over time between Other-Directedness and social anxiety. Calvete, Orue, et al. (2013a) examined automatic thoughts as a mediator between schemas and anxiety and found that automatic thoughts about social evaluation mediated the relationship between Other-Directedness and

social anxiety. Two studies examined schemas as mediators between maternal rejection and psychological problems (Saritaş-Atalar & Gencoz, 2015), and specific types of childhood adversity and depression and anxiety (Lumley & Harkness, 2007; Saritaş-Atalar & Gencoz, 2015). Lumley and Harkness (2007) found while, both physical abuse and emotional maltreatment were strongly related to a wide range of schemas and to both anxious and depressive symptoms, different schemas mediated the relations of physical abuse and emotional maltreatment (Emotional Deprivation versus Social Isolation and Self-sacrifice respectively) to symptoms.

Table 2.7

Relationship between Early Maladaptive Schemas and Externalising Behaviours in Youth

	Clinical Sample						Non-clinical sample				
	Guner (2017)	Khorrandel et al. (2013)	Roelofs, et al. (2013)	Shorey, et al. (2013)	Shorey, et al. (2014)	Van Vlierberghe, Braet et al. (2010)	Calvete, Orue and -Diez (2013)	Crawford and O'Dougherty Wright (2008)	Muris (2006)	Santos et al. (2018)	Simons et al. (2018)
	Hostility	Running away	Conduct	Substance use	Substance use	Conduct	Hostility	Aggression	Disruptive behaviour	Externalising problems	Alcohol use
Disconnection/Rejection											
Emotional Deprivation	■	■			■					■	
Abandonment/Instability	■			■	■					■	■
Mistrust/Abuse	■			■	■		■			■	■
Defectiveness/Shame	■	■								■	■
Social Isolation/Alienation	■				■					■	■
Impaired Autonomy/Performance											
Dependence/Incompetence		■			■					■	■
Vulnerability to Harm/Illness	■	■			■					■	■
Enmeshment/Undeveloped Self	■				■				negative	■	■
Failure	■				■					■	■
Impaired Limits											
Entitlement/ Grandiosity	■				■					■	■
Insufficient Self-Control	■		■	■	■		■	■	■	■	■
Other-Directedness											
Approval Seeking (YSQ3 only)					■			**	**	■	
Subjugation					■					■	
Self-Sacrifice	■								negative	■	
Over-Vigilance and Inhibition											
Emotional Inhibition	■	■			■		■			■	
Negativity/Pessimism (YSQ3 only)	■			■	■		**	**	**	■	
Unrelenting Standards	■					■				■	
Punitiveness (YSQ3 only)	■				■		**	**	**	■	
Social Undesirability (YSQLF only)	**	**	**	**	**	**	**	**	**	**	**

Note. *Item was not included in study; **Not included in YSQ measure used by authors

■ Significant – analysis at schema level

2.6 Discussion

The aim of this study was to review literature investigating the relationship between early maladaptive schemas and psychopathology in youth aged between 12 and 25 years. Young et al. (2003) suggested that early maladaptive schemas are at the core of characterological problems that lead to patterns in problematic functioning throughout life. Schemas are hypothesised to emerge in response to a child's relationship with primary caregivers and accounting for their temperament. Despite their importance for healthy functioning, research exploring schemas in youth lags far behind that of adult populations. This study sought to examine evidence for the presence of schemas in youth to assess whether there are signs of their emergence and stabilisation in this period of development. The study also sought to determine whether schemas could reliably be related to psychopathology in youth and to assess whether they are able to discriminate between particular disorders in this developmental period. The review assessed 58 studies, focusing depression, anxiety, eating pathology, symptoms of emerging personality disorder, as well as externalising behaviours, such as aggression and substance use.

There is strong evidence that schemas in adults are related to personality disorders (Frías et al., 2018; Petrocelli et al., 2001), as well as depression and anxiety (Halvorsen et al., 2010; Hawke & Provencher, 2011). This review suggests that, like those of adults, young people are also starting to form maladaptive beliefs about themselves, others, and the world, and that these beliefs are related to psychopathology. Consistent with hypotheses, schemas were found to be related depression (e.g. Alba & Calvete, 2019), social anxiety disorder (e.g. Calvete, Orue, et al., 2013a), eating pathology (e.g. Damiano et al., 2015), borderline symptomology (e.g. Lawrence et al., 2011), and externalising behaviours, such as aggression (e.g. Dozois et al., 2013), as well as substance abuse (e.g. Shorey et al., 2013; Shorey et al., 2014). Depressive symptoms appear particularly related to schematic beliefs. For example,

Baranoff et al. (2006) found that 44% of the variance in symptoms was explained by schemas, slightly higher than those of anxiety (31% - Yan et al., 2018) and externalising behaviours (around 21% - Calvete, Orue, & González-Diez, 2013; Van Vlierberghe et al., 2010). Schemas were related to psychopathology across the age spectrum, even in the youngest samples. Muris (2006), for example, found a broad range of maladaptive schemas in 12 to 15-year-old school students high in depressive and anxious symptoms. While out of scope for this review, Friedmann et al. (2016); Rijkeboer and de Boo (2010) found that maladaptive schemas are related to psychopathology in children as young as eight and nine. Evidence for sex differences in schemas were mixed. Females reported higher schema endorsement (Calvete, Orue, et al., 2013a; Orue et al., 2014); however, it was unclear whether pathways between schemas and psychopathology were similar for males and females, reflecting a dearth of research in this area.

It was not clear the degree to which schemas are stable during this developmental period. Only one study in the review specifically explored schemas over time. Calvete, Orue and González-Diez (2013) found relative stability in schemas over a six month period, with some schemas significantly decreasing over the study period, a finding consistent with Stallard (2007) study using a younger sample of 9 and 10 year-olds. Longitudinal studies supported the hypothesis that schema endorsement reliably predicts higher depressive and anxiety symptoms over time (Calvete et al., 2015; Camara & Calvete, 2012), however, bi-directional relationships, were also evident, with depressive symptoms increasing schema endorsement (Calvete, Orue, et al., 2013b). This reflects the complex interaction between symptom states, externalising factors, and beliefs about the self.

As expected, schemas were higher in clinical samples than non-clinical controls (Güner, 2017; Shorey et al., 2014; Van Vlierberghe et al., 2010; Yiğit et al., 2021), indicating young people in clinical settings hold stronger maladaptive beliefs about themselves than

young people in community settings, even where these may also be symptomatic. However, not all schemas were found to be higher in clinical samples. Enmeshment, Entitlement/Grandiosity, Unrelenting Standards and Self-Sacrifice, did not differentiate between clinical and community samples, suggesting that these may not be maladaptive in youth and may even protect against certain types of psychopathology (e.g. Langhinrichsen-Rohling et al., 2017; Muris, 2006). It is possible that these schemas, which tend to be more prosocial, may strengthen young people's capacity to build social connections, improving peer relationships and increasing school engagement.

Also consistent with the hypothesis, schemas appear differentially related to psychopathology, supporting the content specificity hypothesis (Beck, 1967, 1976). This hypothesis speculates that unique cognitive profiles, characterised by their particular cognitive content, predict specific types of emotional disturbances. Five broad types of symptoms were reviewed, including depression, anxiety, eating pathology and borderline symptomology, and externalising behaviours, to assess whether young sufferers show patterns across the types of schemas. While there was considerable overlap in schemas between symptom groups, likely indicative of comorbid symptoms and generalized distress, clear patterns emerged. As hypothesised, depressive symptoms were strongly associated with Emotional Deprivation, Defectiveness/Shame, Social Isolation/Alienation and Failure; symptoms of anxiety were more highly related to Vulnerability to Harm/Illness; eating pathology related to Defectiveness/Shame; Social Isolation/Alienation and Subjugation; borderline symptomology associated with Abandonment/Instability, Emotional Deprivation, Social Isolation/Alienation and Dependence/Incompetence; and externalising behaviours related to Entitlement/Grandiosity (aggression) and Insufficient Self-Control, Abandonment/Instability and Failure (substance use).

Individuals with Emotional Deprivation struggle to maintain satisfying connections, not expecting to receive nurturance, care, or understanding from others and in turn, reflecting beliefs about one's own value as a person. This is consistent with the cognitive content theory of depression (Beck, 1967, 1976), which theorises that depression is characterised by pervasive themes of personal loss and failure. In contrast, Vulnerability to Harm/Illness, associated with beliefs about the imminence of disaster and the experience of powerlessness in the face of future catastrophe, reflects the fears and concerns of those with anxiety disorders. Research with adults has found similar patterns. Yu et al. (2017), for example, found that automatic thoughts about threat, both social and physical, were related to anxious symptoms, while automatic thoughts about personal failure were related to depressive symptoms.

Across the studies in the review, eating pathology was a major area of investigation, given the relevance of eating disorders to this stage of the developmental lifespan. Most of the studies examined obesity, bingeing, and overeating. These tended to be associated with high numbers of schemas, particularly within the domains of Disconnection/Rejection and Impaired Autonomy and Performance in patterns not dissimilar to those of borderline personality disorder noted above. The schemas with the strongest endorsement was Defectiveness/Shame, possibly reflecting core beliefs in areas of body dissatisfaction and its salience in self-evaluation (Fairburn & Cooper, 2007).

There was also evidence that patterns of schema presentation can indicate emerging borderline symptomology. The two studies that specifically explored borderline personality disorder, found that individuals with personality-like symptoms tended to endorse schemas across multiple domains, particularly in the domains of Disconnection/Rejection and Impaired Autonomy and Performance. This is to be expected given the chronicity, complexity and characterological nature of the disorder. Barazandeh et al. (2016), in their

systematic review of the relationship between schemas and borderline personality disorder, found similar relationships across studies involving older populations, particularly in the domain of Disconnection/Rejection. This is likely to explain the pattern of intense interpersonal relationships often prevalent in individuals with this personality disorder. There is consistent agreement that borderline personality is not necessarily characterised by a specific set of beliefs (Beck (1990), but instead there are multiple schemas implicated in the disorder (Young et al. 2003).

Early maladaptive schemas were also found to be specific to a range of externalising behaviours, including aggression, conduct problems and drug and alcohol misuse. Consistent with hypotheses, Entitlement/Grandiosity, marked by beliefs about one's superiority over others, was found to relate to aggression and other conduct problems. Individuals with this schema believe they are entitled to special treatment and that rules that guide typical social interactions do not apply to them. In contrast, drug and alcohol use was dominated by Insufficient Self-Control/Self-Discipline, a schema which reflects the desire to avoid distress and exercise self-control (Young et al., 2003).

2.6.1 Limitations

Several limitations made comparing findings across studies difficult. The cross-sectional nature of most of the studies in the review made it difficult to predict causal pathways. The schema model hypothesises that schemas lead to increases in psychopathology, but it is also likely that this relationship is bi-directional or reciprocal, and psychopathology may increase the risk of more entrenched patterns of schemas. For example, Alba and Calvete (2019) found that stress predicted increases in schemas over a six month period. Similarly, Calvete, Orue, et al. (2013a) found that depressive symptoms lead to an increase in maladaptive schemas. There were also differences in results depending upon whether cross sectional data or longitudinal data were used. For example, González-Díez et

al. (2015) found that social anxiety correlated with Disconnection/Rejection using cross-sectional data, and was predicted by Impaired Autonomy and Performance, Impaired Limits (negative relationship) and Other-Directedness using longitudinal data. Studies in the review were also dominated by community samples, making it difficult to accurately ascertain the impact of schemas on clinical severity. Outcome measures varied substantially, even within the same symptom profile. Very few studies used instruments that could lead to a valid diagnosis of psychopathology. Schema measures were also not consistent, with five different versions used across the 58 studies, and studies varying between level of analysis, as well as selection of schemas. There may also be some shared variance between the YSQ and outcome measures, with none of the 58 studies reporting the impact of this on cognitive specificity conclusions. Comorbidity of symptoms were also not addressed in any of the studies in the review and this may have masked the specificity of schemas.

Accurately assessing schemas is not an easy task. Schemas lie at the deepest level of processing, making them difficult to access and assess. Individuals possess differing degrees of awareness of their own schemas and the increase of negative affect associated when schemas are activated can impact upon an individual's response to schema questionnaires. For these reasons, Oei and Baranoff (2007) recommended that the YSQ should be used with caution, particularly in clinical settings. Hoffart et al. (2005) noted that schemas are likely to be state-dependent and relatively inaccessible when not activated. There are no perfect measures of latent structures, and ideally evidence from self-report questionnaires would be bolstered by reports from families, teachers, and peers. No study in the review included this type of corroborating evidence. Nevertheless, self-report measures have value and can be a reliable and convenient method of assessing beliefs about self, others, and the world. Self-report measures have been found to be more reliable than parent and teacher reports when assessing adolescent cognitions (DiBartoli et al., 1998).

2.6.2 Future Research Directions

Research exploring schemas with younger samples is increasing. This systematic review has highlighted several opportunities for further research on this population. More longitudinal studies are required to assess the stability of schemas in youth. This is particularly important as schemas are still forming and may be fluid in this period of the lifespan. Longitudinal research will assist in assessing the degree to which schemas remain stable and predictable. While there is evidence for the relationship between schema content and specific symptom profiles, more research is needed to examine schema processes, such as avoidance and overcompensation, through which schemas impact upon symptom states and behaviour. Little research has been conducted on schema modes in this population. These are the moment-to-moment manifestation of schemas, which are a key target of treatment in schema therapy. In addition, uniform methodology and measures are necessary to compare effect sizes across studies. This was not possible in the current review given the heterogeneity of methods, populations, outcome measures and questionnaires used across the studies. Finally, it is useful to apply a schema lens not only to specific symptom profiles, but also to dysfunctional behaviours, such as NSSI, which is becoming an increasingly common presentation in this period of the lifespan (Lim et al., 2019).

2.6.3 Conclusions

Schema therapy is emerging as a promising intervention for individuals suffering a range of psychological disorders (Giesen-Bloo et al., 2006; Masley et al., 2012), not just personality pathology for which it was designed. Clinicians are also beginning to apply the therapy to treat younger clients, including adolescents, as well as treating unhelpful behaviours, such as NSSI (Loose et al., 2020). In order to assess whether schema therapy can be used successfully with young people, the nature and relevance of schemas in youth must firstly be determined. The findings of the review demonstrate that schemas are present in

youth and are related to a range of psychopathology in both clinical and community samples.

This information can be useful to clinicians treating young people with emerging schema level concerns.

Chapter 3. Non-Suicidal Self-Injury

3.1 Introduction

Non-suicidal self-injury (NSSI) is one behaviour that typically emerges during the period of adolescence and young adulthood. There is evidence suggesting that NSSI has increased dramatically in the last two decades, particularly in young people (Hawton & Harriss, 2008). McManus et al. (2019) found lifetime prevalence rate in females aged 16-24 went from 6.5% in 2000 to 19.7% in 2014. A similar increase is also observed in hospital admissions as a result of NSSI (Mercado et al., 2017), while a national children's helpline in Britain noted a 65% increase in disclosures of NSSI (quoted in Whitlock et al., 2006). I note, however, that it is possible that these increases in prevalence may also be related to increased awareness of the behaviour among mental health practitioners and researchers, which may artificially inflate prevalence figures.

It is a mistake, however, to consider self-injury as a new phenomenon. In the fifth century, a Spartan leader is described as mutilating himself by slicing "his flesh into strips" (Herodotus, quoted in Favazza, 1996) while in the Gospel of Mark there is reference to a man who "night and day...would cry out and cut himself with stones" (*New International Bible*, 2009, Mark 5:5). One of the first formal attempts to describe self-injury was in 1938 when Menninger proposed that self-mutilation was used to avert suicide. Following this, many early theorists linked the behaviour to suicide (e.g. Stengel, 1960). Krietman et al. (1969) were among the first researchers to recognise that not all self-injury was suicidal in nature, acknowledging that there are various motivations inherent in the behaviour.

Most researchers now recognise the conceptual distinction between self-injury and suicide (Klonsky & Muehlenkamp, 2007). However, authors acknowledge that there is confusion in the literature about terminology and its distinction from suicide (Borrill et al., 2009). Use of varying terminology to describe the behaviour is often ambiguous around

suicidal intent, one of the reasons why the term non-suicidal self-injury is increasingly adopted (Prinstein, 2008).

For the purposes of this project, NSSI is defined as the destruction of body tissue, which is deliberate, socially undesirable, and distinct from both suicidal actions (Klonsky, 2007b) and other self-destructive behaviours, such as disordered eating or substance abuse (St Germain & Hooley, 2012), where resultant tissue damage is usually unintentional (Klonsky, 2007b). This definition excludes body piercing and tattoos, which are seen as socially sanctioned forms of artistic expression; but, researchers admit the boundaries are not always clear (Klonsky, 2007b). It is regarded as having low lethality (Muehlenkamp, 2005). Around 70% of those who self-injure cut (Nock et al., 2006); however, the methods of NSSI are myriad and include scratching, hitting or punching oneself, burning, needle-sticking, or interfering with wound healing. It is also noted that, while NSSI is defined as having non-suicidal intent, this is not always clear-cut, as NSSI is often associated with ambivalence about suicide and intent can change rapidly (Miller & Smith, 2008).

3.2 Epidemiology of NSSI in Young People

NSSI occurs frequently in non-clinical settings and among individuals who may be regarded as high-functioning (Klonsky, 2007b). Indeed, evidence suggests that the dramatic increase in NSSI in the past two decades has primarily occurred in community samples (Whitlock et al., 2006). Despite extensive research on clinical samples of young people who self-injure (Adrian et al., 2018; Taliaferro et al., 2019; Washburn et al., 2015), it is unclear whether these are representative of NSSI in individuals who do not present at clinics. While NSSI among this population may reflect underlying psychopathology that has not yet been detected, there is also evidence to suggest that this behaviour occurs in individuals with a high level of functioning and absence of pathology. Klonsky and Olino (2008) found that close to 80% of college students who reported NSSI had relatively low levels of clinical

symptoms, making it difficult to generalise findings from clinical research to the broader population. This highlights the importance of examining NSSI in non-clinical samples.

3.2.1 Prevalence

While prevalence rates of NSSI vary widely in community samples of adolescents and young adults, the behaviour appears to feature more commonly during this developmental period than at any other point in the lifespan. Epidemiological studies have found that around 6% of American adults have self-injured during their lifetime (Klonsky, 2011). In contrast, Polk and Liss (2007) found that 20% of American college students had self-injured, while Hasking et al. (2008) noted a lifetime prevalence rate of 43.6% in the community sample of young adults they surveyed, with around 10% of these engaging in moderate to severe NSSI. Using a community sample of adolescents, Howe-Martin et al. (2012) found approximately 16% of their sample had engaged in repetitive NSSI within the past six months, with three different methods used on average. Lloyd-Richardson et al. (2007) surveyed ninth and tenth graders and found that 46% had performed at least one self-injurious behaviour in the past year. Jacobson and Gould (2007) identified among adolescents a lifetime prevalence rate ranging from 13% to 23%, and a 12-month prevalence rate ranging from 2.5% to 12.5%. In a systematic review, Cipriano et al. (2017) noted prevalence rates up to 46% for adolescents and 39% for university students. Similar prevalence rates have been noted around the world, including Australia (Claes et al., 2010), the United Kingdom (Lloyd-Richardson et al., 2007), Europe (Plener et al., 2009; Zetterqvist et al., 2013) and Asia (Tang et al., 2016).

3.2.2 Onset and Frequency

Onset for NSSI appears to most commonly occur during early adolescence, typically around 13 to 14 years of age (Klonsky & Muehlenkamp, 2007), with the period of young adulthood (18-25 years) identified as one of the highest risk periods for engaging in NSSI (Rodham & Hawton, 2009). Once started, self-injurious behaviour is often repeated;

however, a large number of individuals also disengage from the behaviour after a single episode (Bjärehed et al., 2012). Muehlenkamp and Gutierrez (2007) found that 26% of individuals who self-injured only did so once, with a slightly smaller proportion (20%) doing so on more than four occasions. There is also a large variation in the frequency of self-injurious behaviour among this population, with Klonsky (2007b) noting that the average number of episodes of NSSI range from 3.4 to 50, suggesting there is a large degree of heterogeneity in the population of young people who self-injure.

3.2.3 Gender Differences in NSSI

There are inconsistent findings regarding gender differences in self-injurious behaviour. Klonsky and Muehlenkamp (2007), in their review of the literature, suggested that there were similar rates of NSSI among men and women, with the main gender differences being in the method of NSSI chosen, with women more likely to cut themselves and men were likely to burn themselves. Bresin and Schoenleber (2015) noted inconsistent results in terms of gender differences across a number of studies, however, their meta-analysis found that women were significantly more likely to report a history of NSSI than men, particularly in clinical samples. Claes et al. (2007) found gender differences in the number and frequency of episodes, as well as the intensity of pain, care of the wound, and emotional states preceding and proceeding the self-injurious behaviour. Males reported more daily episodes of NSSI, tended to experience more pain during the act, and were less likely to seek help and care for their wounds than female self-injurers. In other studies, males have been found to be more likely to engage in NSSI for interpersonal reasons, such as demonstrating to others their strength, whereas females are more likely to engage in NSSI for intrapersonal reasons, such as managing or avoiding unpleasant and aversive emotions (Bresin & Schoenleber, 2015).

3.3 Correlates of NSSI

NSSI is a behaviour that, even in non-clinical populations, can have serious correlates. These include an increased risk of depression and anxiety, substance use and eating disorders (Bjärehed & Lundh, 2008; Marshall et al., 2013), as well as being associated with a range of negative outcomes, such as social isolation, shame and guilt (e.g. Gratz & Roemer, 2008; Klonsky & Muehlenkamp, 2007). There is evidence to suggest that NSSI may be a risk factor for, and predictor of, later psychological problems (Cole et al., 1999), and there are also strong links between NSSI and later suicidal ideation and attempts (Brown et al., 2007). Some characteristics of NSSI are associated with greater degrees of impairment. For example, using a number of methods to self-injure is associated with greater levels of psychopathology, and is predictive of the number of suicide attempts, even more so than the frequency of NSSI (Jacobson & Gould, 2007).

NSSI has a high level of comorbidity with a range of other disorders, particularly depression, anxiety, and borderline personality disorder. Marshall et al. (2013) examined the relationship between NSSI and depressive symptoms annually across three waves of data and found that depressive symptoms predict increases in NSSI at subsequent time periods. In a review of the literature, Jacobson and Gould (2007) found that those with major depressive disorder were 8.3 times more likely to have self-injured, those with a diagnosed phobia were 8.5 times more likely to have self-injured, and those with obsessive compulsive disorder were 5.3 times more likely to have self-injured. Adolescents who engage in NSSI display higher levels of hostility, alexithymia, emotional reactivity, and dissociation (Miller & Smith, 2008), they have more conduct issues, attentional problems, lack positive feelings towards their parents, and engage in a more ruminative style of emotion regulation (Bjärehed & Lundh, 2008). Young people who self-injure also tend to adopt more avoidant coping and use alcohol to manage distress (Hasking et al., 2008), and are more likely to be emotionally distressed,

have decreased self-esteem, engage in antisocial behaviour, report problems controlling their anger as well as experience increased discomfort with angry feelings (Laye-Gindhu & Schonert-Reichl, 2005).

3.3.1 NSSI and Suicide

NSSI demonstrates a fairly robust relationship with suicidal behaviours. Cooper et al. (2007) found that people who deliberately self-injure are at a thirty-fold increased risk for completing suicide compared to those who do not self-injure. Brown et al. (2007) found that those with a history of NSSI were 2.5 times more likely to have suicidal thoughts than non-injurers, which increased to 3.5 times for those whose self-injurious episode was recent. Laye-Gindhu and Schonert-Reichl (2005) found that among the community adolescents they surveyed, one quarter of those who self-injure also reported a prior suicide attempt and the majority indicated suicidal ideation. It is important to note that while commonly viewed as overlapping suicidal and self-injurious behaviours are conceptually distinct, varying not only in function but also in risk factors and theoretical mechanics (Gratz et al., 2020).

3.3.2 Borderline Personality Disorder and NSSI

Historically, NSSI has been regarded as a manifestation of a significant psychological disorder requiring intensive inpatient treatment (Graff & Mallin, 1967). In the 1980s, NSSI was first included in the DSM-III as a symptom of Borderline Personality Disorder (BPD), and research has confirmed that NSSI is an important symptom of BPD (Andover et al., 2005). Andover et al. (2005) studied the relationship between NSSI and symptoms of depression and anxiety in a non-clinical population, controlling for symptoms of BPD. Their research found that all the associations between NSSI and depressive and anxious symptoms became non-significant once BPD symptoms were statistically controlled. This suggests that the presence of BPD symptoms may be responsible for differences in depressive and anxious symptoms, even in a non-clinical population. Nock et al. (2006), in a study of female

adolescents with a history of NSSI, found that 51.7% met the criteria for a diagnosis of BPD. The frequency of NSSI was also found to be positively correlated with a diagnosis (Andover et al., 2005), as well as with greater disorder severity (Chapman et al., 2005). Using a multi-method, multi-informant approach, Crowell et al. (2012) found consistent patterns of differences between teenage girls with depression and those who self-injured. Girls who self-injured reported higher levels of suicide ideation, greater hopelessness, more tobacco use, higher emotional dysregulation, and greater impulsivity compared to girls who were depressed but did not self-injure. These findings suggest that developmental trajectories for young self-injurers may be more akin to BPD than to depression.

Despite this, the relationship is far from simple and some would argue that these simple relationships promote a diagnostic myth that all adolescents who self-injure have BPD (Howe-Martin et al., 2012). Selby et al. (2012) compared three groups to demonstrate this – one engaged in NSSI, the second was a BPD group, and finally an Axis I group. They found that NSSI could be distinguished from both the Axis I and the BPD group based on a number of features including level of impairment, depressive, and anxiety symptoms. The authors concluded that NSSI symptoms were not adequately described by borderline symptoms, suggesting a separate diagnostic classification for NSSI was needed.

As a result of the recognition that NSSI was not perfectly aligned to any one disorder, a separate diagnostic category was included in the Diagnostic Statistical Manual 5th Edition (DSM-5) to encourage further research into NSSI. The newly created non-suicidal self-injury (NSSI) disorder requires that an individual has, on at least five days, engaged in intentional self-inflicted damage to the surface of his or her body...with the expectation that the injury will lead to only minor or moderate physical harm (i.e. there is no suicidal intent) (American Psychiatric Association, 2013). Zetterqvist et al. (2013) found that although 41.6% of community adolescents reported a history of NSSI, only 6.7% met criteria for diagnosis of

NSSI disorder. In contrast, Glenn and Klonsky (2013) surveyed adolescent psychiatric inpatients and found that 78% of those with history of NSSI met criteria for the DSM-5 disorder. This suggests that there are differences in NSSI between clinical and non-clinical populations.

3.4 Aetiology of NSSI

Both personality and environmental variables play a role in the aetiology of NSSI. In terms of personality, using an undergraduate sample of 211 students, Mullins-Sweatt et al. (2013) found individuals who self-injured were significantly more likely to report higher levels of neuroticism and openness, and lower levels of conscientiousness on the Five Factor Model of Personality, compared with their non-injuring peers. NSSI is associated with a number of other trait-like variables, such as perfectionism (Flett et al., 2012); impulsivity (Taylor et al., 2012), and trait rumination (Selby et al., 2013).

Research has also explored the environmental factors that contribute to self-injurious behaviour. Many studies investigate the relationship between NSSI and childhood adversity, with a range of negative events in childhood found to play a role in the aetiology of the behaviour (Valencia-Agudo et al., 2018). Yates (2009) noted that up to 79% of those who self-injure report a history of childhood abuse or neglect. Cyr et al. (2005) found that 62% of sexually abused teenage girls engage in at least one type of self-mutilating behaviour. Despite this the relationship between childhood adversity and NSSI does not appear to be a simple one. In an Australian study of over 10,000 randomly selected adults, Swannell et al. (2012) found that physical abuse and neglect independently increased the odds of NSSI among females, while physical abuse increased the odds of NSSI among males. This suggests that both the type of adversity experienced and gender may be important moderating factors for NSSI. This appears consistent with the results of a meta-analysis examining the relationship between childhood sexual abuse and NSSI, which suggested the strength of the relationship

was relatively small, particularly after controlling for psychiatric risk factors (Klonsky & Moyer, 2008).

Taken together, the research appears to suggest that, while childhood adversity may be a vulnerability factor in the development of self-injurious behaviour, not everyone who experiences adversity will go on to self-injure. What seems generally consistent is that the relationship between childhood adversity and NSSI is not a direct one and may be mediated by a range of cognitive variables (Glassman et al., 2007; Swannell et al., 2012), including possibly early maladaptive schemas. While clinical observations suggest there is a role of these deeper level cognitive factors in self-injurious behaviours, very little research has systematically identified what this role might be. Even in clinical settings, where the focus is on short-term therapeutic approaches, attention tends to be paid to the more accessible levels of cognition, particularly negative automatic thoughts, rather than schema level structure and content (Riso & McBride, 2007). This highlights the need for a greater understanding of the relationship between early maladaptive schemas and NSSI, as well as a range of other variables such as the function of NSSI and emotion regulation, in young people where the behaviour is most common.

Chapter 4. Early Maladaptive Schemas in Young People who Self-Injure

4.1 Overview

Results of the systematic review (chapter two) demonstrated links between early maladaptive schemas and psychopathology in youth. Similar to adults, young people endorse a range of maladaptive beliefs about themselves and the world. These beliefs have been shown to be related to different types of psychopathology, including depression and anxiety. The systematic review also found evidence for links between early maladaptive schemas and dysfunctional behaviours, particularly aggression. As noted, however, little research has examined the role of schemas in NSSI. This chapter presents the first of three empirical studies examining relationships between early maladaptive schemas and NSSI in young people. In this study, the relationship between early maladaptive schemas and NSSI in a community group of young people are examined. Given the perceived gendered nature of NSSI, moderating influence of gender in the relationship between schemas and NSSI was also explored. A total of 403 school and university students were surveyed, with around a third of these reporting a previous or current experience of self-injurious behaviour.

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Following is a version of the published article (Appendix C), which contains changes to ensure consistency of language and reduce repetition. I acknowledge the contribution of my co-authors, Anita Mak, Kristen Murray and Phil Kavanagh, who assisted in the research design and editing of the final document. As the primary author, I contributed approximately 90% to the overall design, data collection, data analysis and writing of the article.

4.2 Abstract

BACKGROUND: There is emerging evidence that early maladaptive schemas may be a cognitive vulnerability factor in NSSI. The current study sought to examine the relationship between schemas and NSSI history, and whether this is moderated by gender, in a community youth sample.

METHOD: Participants were 403 Australian secondary and university students aged between 16 and 25 years, who completed a survey of NSSI history, early maladaptive schemas, and general emotional distress.

RESULTS: Logistic regression analysis indicated that being female, depression, and schema scores were useful for differentiating between youth reporting NSSI history and those who did not. High levels of Defectiveness/Shame and Abandonment/Instability schema scores, and low levels of Emotional Inhibition schema scores, were associated with NSSI history. Gender did not moderate the relationships between these schema scores and NSSI history.

CONCLUSIONS: Present results suggest that aspects of the schema domain of Disconnection and Rejection are important for identifying NSSI history beyond young people's emotional distress. This provides researchers and clinicians with an opportunity to better target key schemas, especially beliefs about self-defectiveness and feelings of shame, which may be driving the regulatory function of NSSI among youth.

4.3 Introduction

Non-suicidal self-injury (NSSI) is increasingly recognised as a public health concern, particularly in adolescent and young adult populations. Defined as the direct intention to damage one's body tissue without suicidal intent, NSSI is associated with a number of negative mental and social health outcomes including mood, anxiety, and eating disorders (Jacobson & Gould, 2007; Laye-Gindhu & Schonert-Reichl, 2005; Victor & Klonsky, 2014), as well as increased risk of suicide (Miller et al., 2013). NSSI typically emerges in early adolescence (Cipriano et al., 2017; Jacobson & Gould, 2007), with prevalence rates higher in younger populations (Plener et al., 2016). Identifying those at risk of NSSI and implementing effective treatment and prevention strategies is essential to improve outcomes for this population.

While NSSI was historically believed to be a largely female behaviour (e.g., Favazza & Conterio, 1989; Suyemoto & MacDonald, 1995), more recent evidence indicates that males also engage in NSSI at rates approaching those of females (Andover et al., 2010; Briere & Gil, 1998; Gratz, 2001; Klonsky et al., 2003), particularly in community samples (Bresin & Schoenleber, 2015). There appear to be gender differences in methods of NSSI, with cutting and scratching favoured by females and males preferring burning and self-hitting (Andover et al., 2010; Bresin & Schoenleber, 2015; Dellinger-Ness & Handler, 2007; Sornberger et al., 2012). There is broad consensus that the primary function of NSSI is to regulate distressing or painful emotions (see Klonsky, 2007a for a review). Following a self-injurious episode, young self-injurers report lower anxiety, frustration, anger, and tension (Weinberg & Klonsky, 2012), reduced boredom (Chapman & Dixon-Gordon, 2007), and increased feelings of calm, relaxation, and relief (Klonsky, 2009). Indeed, both females and males appear to predominantly use NSSI to regulate affect (Gratz & Chapman, 2007); however, there may be differences in emotions associated with the behaviour. Whitlock et al.

(2011), for example, found that NSSI was associated with sadness for females and anger for males. Andover et al. (2007) noted gender differences in coping styles among males and females with NSSI history, with more heterogeneity found in groups of females who self-injure compared to males (Andover et al., 2010). As such, gender appears to moderate key functions of NSSI.

Cognitive factors are also implicated in the onset and maintenance of NSSI in youth. For example, Claes et al. (2010) reported that adolescents who self-injured were more likely to describe themselves as less intelligent, less emotionally stable, and less attractive than peers who did not self-injure. Cognitive theories suggest that various levels of cognitions (automatic thoughts, assumptions and core beliefs, or schemas) are critical in determining both emotional responses and patterns of behaviour (Beck, 1976), such as NSSI. Young et al. (2003) developed a model of psychopathology that explores cognitive vulnerabilities to a range of disorders and dysfunctional behaviours, including NSSI. They identified a taxonomy of 18 early maladaptive schemas, organised thematically around five domains, representing patterns of specific distress (see Table 1.1 for a description of the 18 schemas linked to the five domains). Young (1990) hypothesised that schemas are continually reinforced across the lifespan through feedback from others and the environment. These are triggered automatically, which results in high levels of negative affect. The systematic review of the relationship between schemas and psychopathology in young people, detailed in chapter two, found that schemas discriminated between depression, anxiety and externalising behaviours, however, to date, little research has been conducted on the role of schemas in NSSI.

There is some evidence that schemas are implicated in NSSI; however, there is variation in the specific schemas found to be related to NSSI. Findings from existing studies are complicated by the use of diverse populations and differing methodologies. Castille et al. (2007) examined the schemas of 105 participants in a mixed clinical and non-clinical sample

and found that Social Isolation/Alienation, Emotional Deprivation, Mistrust/Abuse and Insufficient Self-Control/Self-Discipline schemas differentiated between participants with and without a history of NSSI. In a replication of this study using 390 university students, Lewis et al. (2015) found that Social Isolation/Alienation and Emotional Inhibition were associated with NSSI history. In contrast, Dench et al. (2005), in a sample of 50 psychiatric in-patients, found Abandonment/Instability was related to NSSI among females via dissociation. Quirk et al. (2015) created two distinct clusters of schemas, related to intrapersonal themes (Emotional Deprivation, Defectiveness/Shame, Social Isolation/Alienation, Insufficient Self-Control) and interpersonal themes (Abandonment/Instability, Mistrust/Abuse, Subjugation) in 228 university students, and found that more severe NSSI was characterised by greater schema endorsement in the intrapersonal schema cluster. Finally, Pauwels et al. (2016) examined schemas in 491 female inpatients with eating disorders and found that all schemas, with the exception of Entitlement/Grandiosity and Insufficient Self-Control, were significantly higher in those who had a history of NSSI. These research findings have shown elevated rates of schemas are associated with NSSI, particularly in clinical samples. Together, these findings suggest that schemas may have a role to play in the development and maintenance of NSSI, however it remains unclear as to which specific schemas may be relevant for NSSI in young adult populations.

Despite the research detailed above, there is a knowledge gap in the literature on the relationship between individual schemas and NSSI in younger, non-clinical populations, especially among adolescents and young people, which is when the behaviour typically emerges and is most prevalent (Klonsky et al., 2014). There are indications that NSSI among community youth populations is very different in terms of its function and severity from psychiatric patients (Klonsky & Olino, 2008; Whitlock et al., 2008). Existing evidence of

gender differences in NSSI further suggests that schemas may operate differently in males and females to trigger NSSI. A lack of research in this area hampers an improved understanding of the cognitive vulnerabilities that can increase NSSI risk in young people, and whether these differ by gender.

4.3.1 The Current Study

The current study seeks to extend the literature by examining whether individual schema scores are related to NSSI history in community sample of young people aged 16 to 25 years when self-injurious behaviour is still emerging, while controlling for levels of emotional distress. Based on previous research, it was expected that higher schema scores in the domain of Disconnection/Rejection could be particularly pertinent in identifying a history of NSSI. Given that no previous study has specifically examined the role of gender in the relationship between schemas and NSSI, a further exploratory aim of the study was to examine whether gender would moderate the relationship between schema scores and NSSI history.

4.4 Method

4.4.1 Participants and Procedure

Participants were 404 youth, aged 16 to 25, recruited from multiple sites across regional, urban, and inner-city locations in Australia, including four co-educational secondary schools, one single-sex girls' school, and a sample of university undergraduates enrolled in an introductory psychology course. Both public and private schools participated. School students were recruited via a letter sent home to parents, with active parental consent sought for those under 18 years. All students provided consent to participate in the study. School students completed the anonymous survey, which took approximately 30 minutes, during class. The researcher was present to observe student reactions and to debrief participants immediately after the survey. University students were recruited as part of course research

participation requirements and completed the anonymous survey online in their own time. All participants received information about mental health resources following the completion of the study. Ethics approval was provided by the University of Canberra Human Research Ethics Committee.

The final sample ($n = 403$) consisted of 200 university undergraduate students (128 females: $M_{age} = 20.38$, $SD_{age} = 2.29$; 72 males: $M_{age} = 20.83$, $SD_{age} = 2.31$) and 203 secondary students (138 females: $M_{age} = 16.64$, $SD_{age} = 0.64$; 65 males: $M_{age} = 16.88$, $SD_{age} = 0.76$), aged between 16 and 25 years. One participant was excluded as they identified their gender as “other” and were not able to be included in the gender analysis. The majority (89%) reported being born in Australia, with 36 participants speaking a language other than English at home. A total of 125 young people (31%) indicated they had or were currently self-injuring, with numbers reasonably equally split across secondary school ($n = 61$, 30%) and university ($n = 64$, 32%) sub-samples. Thirty-eight young people reported a self-injurious act in the previous month. An a priori power analysis was conducted using G*Power (Faul et al., 2007) to determine the minimum sample size required to test the study hypothesis. Results indicated the obtained sample size was adequate for detecting a medium effect, at a significance criterion of $\alpha = .05$, to achieve 80% power.

4.4.2 Measures

Non-Suicidal Self-Injury. Engagement in NSSI was assessed using a single screening question for self-injurious behaviour, “Have you ever physically harmed yourself on purpose?”, with a dichotomous *yes/no* response. Participants who responded “yes” were then asked an open-ended question to describe in their own words what they have done to hurt themselves, inviting them to list as many methods as relevant. Each response was then dichotomously coded into 12 items: banging/hitting, biting, burning, carving, cutting, wound picking, needle-sticking, pinching, hair pulling, rubbing skin against rough surfaces,

scratching and swallowing chemicals, based on the NSSI checklist developed by Klonsky and Glenn (2009); all responses were classified as NSSI. Participants were then asked whether they still engage in the behaviour (yes/no); to estimate the number of times they had engaged in the behaviour (NSSI frequency); the approximate time since the last self-injurious act (NSSI recency); and the age they first engaged in the behaviour (NSSI onset). The latter items were recorded as continuous variables.

Early Maladaptive Schema. These were measured using the 90-item *Young Schema Questionnaire – Short Form* (YSQ-S3) (Young & Brown, 2005). Each of the 18 schemas are measured with five items. Participants rated their level of agreement on a 6-point scale (1 = *completely untrue of me*; 6 = *describes me perfectly*) for a range of statements consistent with schema theory. The mean score for each schema was then calculated, with higher values indicating stronger endorsement of the related schema. In previous studies (Bach et al., 2017; Calvete, Orue, & González-Diez, 2013; Kriston et al., 2013), support has been found for the first order structure of the YSQ-S3. The measure has been found to have good discriminant and convergent validity, sufficient internal consistency, and acceptable item discrimination, with good stability over a six-month period.

Table 4.1 lists the means, standard deviations, and Cronbach alpha internal consistency coefficients for the 18 individual schema measures in the current study. Most of the schemas had satisfactory internal consistency reliabilities in the .70s and .80s. Three schemas - Unrelenting Standards, Entitlement/Grandiosity, and Enmeshment measures had lower reliability coefficients in the .60s.

Emotional distress. The Depression Anxiety Stress Scale Short form (DASS-21) (Lovibond & Lovibond, 1995) was used to assess the presence of 21 symptoms of emotional distress in participants over the previous week, across three subcategories: depression, anxiety, and stress. Examples of items included “I felt I had nothing to look forward to”

(depression); “I felt scared without any good reason” (anxiety); and “I found it hard to wind down” (stress). Participants responded on a 4-point frequency scale (0 = *did not apply to me at all over the last week*; 3 = *applied to me very much or most of the time over the past week*). Higher scores indicated higher levels of negative emotionality. In samples of adolescents, the DASS-21 has demonstrated good internal consistency and validity (Willemsen et al., 2011). In the current study, Cronbach alpha coefficients were .90_{Depression} ($M = 6.88, SD = 5.19$), .83_{Anxiety} ($M = 6.07, SD = 4.57$), and .86_{Stress} ($M = 8.38, SD = 4.63$).

Table 0.1*Comparisons of Early Maladaptive Schema Scores among Youth With, and Without, NSSI History*

Schema	NSSI history (<i>n</i> = 125)		No history (<i>n</i> = 278)		<i>t</i>	<i>p</i>	Hedge's <i>g</i> (95% CI)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Disconnection/Rejection							
Emotional Deprivation	2.99	1.41	2.32	1.12	4.67	<.001	.55 (.34, .77)
Abandonment/Instability	3.52	1.33	2.63	1.13	6.46	<.001	.74 (.53, .96)
Mistrust/Abuse	3.33	1.42	2.65	1.17	4.65	<.001	.54 (.33, .76)
Social Isolation	3.21	1.31	2.61	1.06	4.50	<.001	.53 (.31, .74)
Defectiveness/Shame	3.30	1.39	2.34	1.17	6.70	<.001	.77 (.55, .99)
Impaired Autonomy and Performance							
Dependence/Incompetence	2.82	1.14	2.28	.95	4.63	<.001	.53 (.32, .75)
Enmeshment/Undeveloped self	2.26	.95	1.98	0.78	2.83	.005	.33 (.12, .55)
Vulnerability to harm/Illness	3.04	1.24	2.31	1.03	5.73	<.001	.66 (.45, .88)
Failure	3.52	1.33	2.84	1.22	5.04	<.001	.54 (.33, .76)
Impaired Limits							

Schema	NSSI history (<i>n</i> = 125)		No history (<i>n</i> = 278)		<i>t</i>	<i>p</i>	Hedge's <i>g</i> (95% CI)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Entitlement/Grandiosity	2.71	.93	2.63	.83	.83	.408	.09 (-.12, .31)
Insufficient self-control/self-discipline	3.35	1.17	3.00	1.07	3.01	.003	.32 (.10, .53)
Other Directedness							
Subjugation	3.01	1.19	2.45	1.04	4.79	<.001	.51 (.30, .73)
Self-sacrifice	3.67	1.24	3.01	1.13	5.15	<.001	.57 (.35, .78)
Approval seeking/Recognition seeking	3.22	0.97	2.95	1.02	2.50	.013	.27 (.05, .48)
Over-vigilance and Inhibition							
Negativity/Pessimism	3.39	1.24	2.66	1.14	5.76	<.001	.62 (.41, .84)
Emotional inhibition	3.22	1.22	2.80	1.10	3.34	.001	.36 (.15, .58)
Unrelenting standards	3.60	1.17	3.44	1.06	1.31	.192	.15 (-.07, .36)
Punitiveness	3.27	1.14	2.83	0.99	3.90	<.001	.42 (.21, .64)

4.4.3 Data Analysis

Statistical analyses were performed using the Statistical Package for the Social Sciences – Version 25 (SPSS, Inc., Chicago, USA). Logistic regression analysis was conducted to investigate which schemas were associated with NSSI history while controlling for gender and DASS scores. All statistical tests were two-tailed, and a limit for statistical significance was set at $p < .05$. The false-discovery rate correction was applied to control for Type I error inflation (Narum, 2006), which lead to an adjusted value of $p < .0143$ for independent samples t -tests for the 18 schemas in the model. Skewness and kurtosis values were within acceptable limits for all variables (< 1). VIF (< 5) and Tolerance ($> .2$) were also within acceptable limits (Menard, 2002).

4.5 Results

4.5.1 NSSI Characteristics, Gender, and Relationship with Emotional Distress

Approximately 31% of participants reported a history of at least one episode of engaging in NSSI ($n = 125$). Of these, 30% ($n = 38$) reported that their most recent NSSI incident was in the past month, 33% ($n = 41$) reported an incidence of at least weekly, and almost half (47%, $n = 57$) noted that they had self-injured on at least 10 occasions. Mean age of onset was 14.45 years with a range between 8 and 22 years. Females were less likely to report hitting themselves ($\chi^2(1, 98) = 7.28, p = .007, \phi = -.3$). There was no difference between the proportion of males and females who cut ($\chi^2(1, 98) = 1.51, p = .25, \phi = .16$), which was the most common form of NSSI for both males and females. Around a quarter of self-injurers (26%) reported using multiple methods, which did not differ by gender ($\chi^2(1, 98) = 1.02, p = .31, \phi = -.13$). Females (37.6%) were more likely to report a history of NSSI than males (18.2%; $\chi^2(1, 403) = 14.93, p < .001, \phi = .198$). Compared to respondents without an NSSI history, those with an NSSI history also reported more symptoms of depression ($t(189) = 6.31, p < .001$), anxiety ($t(182) = 5.88, p < .001$), and stress ($t(194) = 5.82, p < .001$).

4.5.2 Comparison of Early Maladaptive Schemas for Youth With and Without NSSI

Table 4.1 presents mean schema scores by NSSI history. Independent samples *t*-tests, corrected for multiple tests, revealed that participants with a history of NSSI scored significantly higher on all schemas except Entitlement/Grandiosity and Unrelenting Standards, compared to participants not reporting an NSSI history. Effect sizes for schemas significantly related to NSSI were generally in the medium range, with Defectiveness/Shame recording the largest effect size (Hedge's $g = .77$), followed by Abandonment/Instability (Hedge's $g = .74$).

4.5.3 Associations Between Gender, NSSI, and Early Maladaptive Schemas

Table 4.2 lists correlation coefficients among gender, NSSI, and the 18 schemas. All the schema scores were positively and significantly correlated. The magnitudes of correlations were within an acceptable range, with no pair of schemas recording a correlation above .8. Sixteen schemas had significant associations with NSSI history, with Entitlement/Grandiosity and Unrelenting Standards recording a non-significant relationship. Subsequent separate correlation analysis for males and females revealed that Entitlement/Grandiosity scores were significantly correlated with NSSI history for males, but not females. Frequency of NSSI was positively and significantly correlated with nine schemas. Recency of the last NSSI episode was negatively and significantly correlated with 12 schemas.

Table 0.2*Correlations Between NSSI History, Gender, Age of Onset, Recency and Frequency, and Early Maladaptive Schemas*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1.Gender (Female)	1																										
2.Age	-.09	1																									
3.NSSI history	.20**	.08	1																								
4.NSSI age of onset	-.17	.20*	-	1																							
5.Recency of last incident	.11	.24**	-	-.13	1																						
6.Frequency of NSSI	.01	.03	-	-.22*	-.35**	1																					
7.Emotional Deprivation	-.08	-.16**	.25**	.06	-.27**	.17	1																				
8.Abandonment/Instability	.15**	-.18**	.32**	.06	-.23**	.29**	.51**	1																			
9.Mistrust/Abuse	.12*	-.16**	.24**	.04	-.18	.21*	.56**	.75**	1																		
10.Social Isolation	-.01	-.03	.24**	-.04	-.25**	.20*	.65**	.56**	.63**	1																	
11.Defectiveness/Shame	-.01	-.17**	.34**	-.11	-.32**	.25**	.76**	.65**	.66**	.72**	1																
12.Dependence/Incompetence	.06	-.13**	.24**	-.13	-.37**	.20*	.50**	.58**	.54**	.56**	.63**	1															
13.Enmeshment	.03	-.12*	.15**	.01	-.15	.06	.41**	.42**	.44**	.41**	.47**	.55**	1														
14.Vulnerability to harm	.03	-.10	.29**	-.10	-.23*	.23*	.52**	.63**	.67**	.66**	.67**	.67**	.53**	1													
15.Failure	.11*	-.15**	.24**	-.04	-.19*	.14	.56**	.58**	.57**	.56**	.71**	.67**	.42**	.62**	1												
16.Entitlement/Grandiosity	-.05	.01	.04	.05	-.18*	.00	.28**	.30**	.39**	.34**	.28**	.36**	.35**	.38**	.24**	1											
17.Insufficient self-control	-.08	-.02	.15**	-.03	-.10	.11	.40**	.45**	.44**	.41**	.46**	.51**	.29**	.48**	.57**	.46**	1										
18.Subjugation	.10	-.15**	.23**	.06	-.22**	.11	.58**	.67**	.38**	.61**	.34**	.65**	.53**	.65**	.62**	.28**	.47**	1									
19.Self-sacrifice	.24**	-.01	.26**	.06	-.11	.11	.40**	.58**	.62**	.42**	.46**	.41**	.35**	.52**	.46**	.29**	.30**	.54**	1								
20.Approval seeking	-.02	-.03	.12*	.11	-.12	.03	.31**	.52**	.49**	.37**	.37**	.46**	.35**	.47**	.46**	.55**	.62**	.49**	.39**	1							
21.Negativity/Pessimism	-.06	-.11*	.28**	-.09	-.21*	.34**	.58**	.69**	.72**	.62**	.69**	.69**	.50**	.79**	.66**	.38**	.55**	.66**	.55**	.49**	1						
22.Emotional inhibition	-.04	-.11*	.17**	-.10	-.29**	.22*	.63**	.57**	.64**	.63**	.64**	.52**	.49**	.59**	.53**	.35**	.45**	.64**	.51**	.38**	.61**	1					
23.Unrelenting standards	-.02	.06	.07	.04	-.08	.02	.17**	.24**	.28**	.31**	.22**	.19**	.18*	.29**	.13*	.36**	.14**	.22**	.35**	.28**	.30**	.38**	1				
24.Punitiveness	-.04	-.09	.20**	-.01	-.31**	.28**	.49**	.48**	.49**	.49**	.59**	.57**	.37**	.57**	.51**	.33**	.38**	.49**	.39**	.34**	.63**	.51**	.47**	1			
<i>M</i>							12.63	14.53	14.32	14.0	13.17	15.27	17.75	12.68	15.27	13.28	15.53	10.49	16.06	15.17	14.45	14.65	13.97	17.81			
<i>SD</i>							6.27	6.3	6.45	5.88	6.6	6.28	4.21	5.75	6.47	4.29	5.55	4.47	6.02	5.08	6.09	5.76	4.38	6.34			
Alpha							.83	.82	.86	.81	.87	.8	.62	.77	.86	.61	.79	.73	.81	.74	.82	.76	.66	.79			

* $p < .05$ ** $p < .001$

4.5.4 The Relationship Between Early Maladaptive Schemas and NSSI

After confirming assumptions were met, binary logistic regression was used to assess the relationship between 18 schema scores and NSSI history, controlling for gender, depression, anxiety, and stress scores (see Table 4.3). The model overall was significant $\chi^2(22) = 92.35, p < .001$ Nagelkerke $R^2 = .29$, and correctly classified 76.1% of cases. Together with gender (being female) and higher levels of depression, three schemas made a unique statistically significant contribution to NSSI history. These were high levels of Defectiveness/Shame ($OR = 1.64; p = .01; 95\% CI: 1.3-2.37$), and Abandonment/Instability ($OR = 1.41; p = .04; 95\% CI: 1.01-1.98$), and low levels of Emotional Inhibition ($OR = 0.68; p = .03; 95\% CI: 0.49-0.97$).

Table 0.3

Logistic Regression of NSSI History as a Function of Emotional Distress and Early Maladaptive Schemas

Predictor	β (SE)	Wald	OR (95% CI)
Female ¹	1.01 (.32)	10.13**	0.63 (0.20, 0.67)
Depression	.08 (.04)	4.15*	1.09 (1.00, 1.18)
Anxiety	.02 (.05)	0.23	1.02 (0.93, 1.20)
Stress	.02 (.05)	0.12	1.02 (0.93, 1.12)
Emotional Deprivation	.16 (.16)	0.95	1.17 (0.85, 1.61)
Abandonment/Instability	.34 (.17)	3.93*	1.41 (1.00, 2.00)
Mistrust/Abuse	-.26 (.18)	1.87	0.77 (0.54, 1.28)
Social Isolation/Alienation	-.10 (.19)	0.33	0.90 (0.64, 1.28)
Defectiveness/Shame	.49 (.20)	6.66*	1.64 (1.23, 2.37)
Dependence/Incompetence	-.01 (.19)	0.00	0.99 (0.67, 1.45)
Enmeshment/Undeveloped self	-.03 (.19)	0.02	1.03 (0.71, 1.49)
Vulnerability to harm/illness	.27 (.21)	1.68	1.31 (0.87, 1.96)
Failure	-.20 (.16)	1.52	0.82 (0.60, 1.13)
Entitlement	-.28 (.20)	1.99	0.76 (0.51, 1.12)
Insufficient self-control	-.08 (.17)	0.02	1.08 (0.77, 1.51)
Subjugation	-.11 (.19)	0.03	0.90 (0.62, 1.30)
Self-sacrifice	.20 (.15)	1.83	1.22 (0.92, 1.63)

Approval / recognition seeking	-.01 (.19)	0.00	1.00 (0.69, 1.45)
Negativity/Pessimism	-.05 (.21)	0.07	0.95 (0.63, 1.42)
Emotional inhibition	-.38 (.18)	4.51*	0.68 (0.48, 0.97)
Unrelenting standards	.10 (.15)	0.47	1.11 (0.83, 1.49)
Punitiveness	-.06 (.18)	0.12	0.94 (0.66, 1.33)
Constant	-2.03 (.60)	11.28	

* $p < .05$; ** $p < .001$; ¹Dummy coded

4.5.5 Gender as a Moderator

To determine whether gender moderated the relationships between schemas and NSSI history, the analysis was repeated using gender in two-way interactions with the schemas significant in the previous analysis (that is, Defectiveness/Shame, Abandonment/Instability, and Emotional Inhibition). Depression, anxiety, and stress scores were entered as covariates. The full model was statistically significant, $\chi^2(10) = 84.24$, $p < .001$, explaining 26.6% (Nagelkerke R^2) of the variance in NSSI history, and correctly classifying 75.4% of cases. Results revealed significant main effects of high levels of Defectiveness/Shame and low levels of Emotional Inhibition. Gender did not moderate the relationships between the selected schema scores and NSSI history (Table 4.4).

Table 0.4

Logistic Regression Analysis of NSSI History as a Function of Emotional Distress and Early Maladaptive Schemas Incorporating Gender as a Potential Moderator

Predictor	β (SE)	Wald	OR (95% CI)
Female ¹	1.57 (.98)	2.58	0.21 (0.03, 1.41)
DASS Depression	.07 (.04)	3.87*	1.07 (1.00, 1.15)
DASS Anxiety	.03 (.04)	0.62	1.03 (0.95, 1.23)
DASS Stress	.02 (.04)	0.18	1.02 (0.93, 1.12)
Defectiveness/Shame	.34 (.16)	4.61*	1.41 (1.03, 1.92)
Abandonment/Instability	.27 (.15)	3.21	1.31 (0.98, 1.77)
Emotional inhibition	-.39 (.17)	5.26*	0.67 (0.49, 0.95)
Defectiveness/Shame \times gender	.23 (.28)	0.65	1.26 (0.72, 2.22)
Abandonment/Instability \times gender	-.23 (.31)	0.57	0.79 (0.44, 1.44)
Emotional inhibition \times gender	.20 (.35)	0.34	1.22 (0.62, 1.41)
Constant	-2.07 (.44)	22.53*	

* $p < .05$; ¹ Dummy coded

4.6 Discussion

The current study sought to examine early maladaptive schemas in a community sample of adolescents and young adults with and without a history of NSSI. A secondary aim was to explore whether gender moderated the relationship between schemas and NSSI. A concerning proportion—31 percent—of the sample indicated they had or were currently self-injuring, similar to other community youth studies of NSSI (Fitzgerald & Curtis, 2017; Garisch & Stewart Wilson, 2015; Gratz, 2001; Naidoo, 2019; Somer et al., 2015).

Consistent with previous research (Castille et al., 2007; Lewis et al., 2015), current results found that participants with a history of NSSI scored significantly higher across all

schemas (with the exception of Entitlement/Grandiosity and Unrelenting Standards) in comparison to those without such a history. This is likely to reflect a general psychopathology among those who self-injure, particularly given the high rate of NSSI comorbidity with depression and other mental disorders (Rodav et al., 2014).

However, there was also evidence for the specific effects of schemas in NSSI over and above general psychopathology in the present study. After controlling for symptoms of depression, anxiety, and stress, and effects from other schemas, elevated scores on two early maladaptive schemas were found to be linked to a history of engaging in NSSI. These were Abandonment/Instability and Defectiveness/Shame, which both belong to the schema domain of Disconnection/Rejection. Early maladaptive schemas in this domain are regarded as the most damaging and pervasive in terms of wellbeing outcomes (Young et al., 2003). For example, Dutra et al. (2008) reported that among schemas, Defectiveness/Shame was the most highly correlated with suicidal ideation, suicidal planning, and a suicide attempt. Individuals with schemas of Defectiveness/Shame and Abandonment/Instability are thought to feel an intense sense of isolation from others, expecting to be exploited or abandoned, often associated with intense feelings of shame, fear, loneliness, grief, or anger (Calvete et al., 2015; Sigre-Leiros et al., 2013; Specht et al., 2009). Among the items in the YSQ-S3 (Young & Brown, 2005), frequently endorsed beliefs include statements such as “I’m unworthy of the love, attention and respect of others” (Defectiveness/Shame) and “I cling to people I’m close to because I am afraid they’ll leave me” (Abandonment/Instability). Young et al. (2003) postulated that individuals with these schemas come from families that are detached, cold and withholding, lonely, unpredictable and often abusive, consistent with research that has reported higher levels of negative early life experiences (e.g., childhood abuse and neglect) in adolescents who self-injure, compared to their non-injuring peers (Swannell et al., 2012; Yates, 2009).

Themes of defectiveness, shame and self-criticism emerge regularly in research that explores the emotional experiences of young people who self-injure. For example, Rudd et al. (2000) noted that individuals who self-injured were more likely to be characterised by a sense of hopelessness, helplessness, and a belief in themselves as inherently unlovable, when compared to their non-injuring counterparts. This is consistent with research reporting that adolescents who self-injure describe themselves as less intelligent, less emotionally stable and less attractive compared with peers who do not self-injure (Claes et al., 2010). Using interpretive phenomenological analysis, Adams et al. (2005) investigated self-perceptions in a group of 22 young people who self-injured, finding high levels of negative self-judgements, and self-beliefs that they are inadequate and inherently worthless, with many reporting a sense of hopelessness about the future. Theories of shame-proneness hypothesise that the tendency to experience shame increases vulnerability to NSSI by narrowing the sufferer's focus towards the immediate goal of eliminating distress, making it increasingly difficult for shame-prone individuals to think rationally or implement adaptive problem solving strategies (e.g., Schoenleber et al., 2014; Tangney et al., 1992; VanDerhei et al., 2014).

Based on present logistic regression analysis results, when all the predictor variables were simultaneously considered, respondents reporting higher levels of Emotional Inhibition were less likely to report a history of NSSI. This schema was assessed by items including "I find it embarrassing to express my feelings to others" and "I control myself so much that people think I am unemotional". This unexpected finding contrasts with a small positive association between Emotional Inhibition and NSSI history (Table 4.2 refers), and Lewis et al. (2015) finding of a positive relationship between this schema and NSSI. Emotional Inhibition is related to the avoidance of emotional expression, and people with this schema have a constricted emotional range and appear affectively flat (Young et al., 2003). Given NSSI's primary function is to regulate intense emotions (Klonsky, 2007a), it may be that

some individuals who are unable to express, or are fearful of expressing, emotion, are attracted to using other self-regulatory strategies. Additionally, Hawke and Provencher (2012b) and Hawke et al. (2011) found that this schema was negatively related to bipolar disorder symptoms, suggesting lower levels of Emotional Inhibition in some types of psychopathology. Further investigation is needed to better understand the relationship of this schema to NSSI, particularly in the context of other schemas and general emotional distress.

To date, little is known about the role of gender in moderating the relationship of schemas on NSSI. Research has identified significant differences in the incidence, frequency, and method of NSSI between males and females. For example, a meta-analysis of 116 studies found that females were 1.5 times more likely to report self-injury than males, with the largest differences observed in clinical samples (Bresin & Schoenleber, 2015). The method of NSSI also appears to vary according to gender, with methods such as cutting and scratching most commonly reported by females, and self-hitting and burning more typically reported by males (Andover et al., 2010; Dellinger-Ness & Handler, 2007; Klonsky & Muehlenkamp, 2007). Moreover, emerging evidence suggests NSSI may serve different functions for males and females. For males, it has been suggested that NSSI may serve a social function (e.g., seeking attention) in comparison to females where the function appears to be more intrapersonal (e.g., avoidance of negative feelings or self-punishment) (Claes et al., 2007). Given this literature, it was expected that differences in schemas between males and females would be found, without having a clear hypothesis about specific patterns. Yet, Defectiveness/Shame emerged as significant and positively associated with NSSI history for both females and males. As no interaction effects were observed in the sample, this suggests that similar schemas may underlie NSSI, despite differences in the incidence, form and function between males and females.

4.6.1 Limitations and Future Directions

There were some limitations with the current study. The relative size of the sample, given the number of independent variables and multiple comparisons, may not have been sufficient to identify statistically significant relationships, elevating the risk of a Type II error, particularly for moderation analyses. For the current study, a more conservative measure of NSSI, which required participants to self-identify if they had self-injured, was used. This contrasts with measures that checklist self-injuring behaviours, including the original version of the Inventory of Statements about self-injury (Klonsky, 2009). As such, it is possible that some young people who self-injure were not identified in the study if they did not recognise their behaviour as self-injurious. This may have been particularly the case for young men, given the gendered image of NSSI (e.g., Inckle, 2014). Nevertheless, Stanford and Jones (2010) found that adolescents are able to accurately self-code NSSI behaviour, and this method has been used in previous NSSI research (Stanford et al., 2018). The internal consistency of some of the scales, notably Entitlement/Grandiosity, was relatively low, which may have precluded accurately assessing relationships for this schema.

Future research could continue to explore the role of schemas in self-injurious behaviour, including the use of more refined measures and longitudinal investigations. The present study used a correlational design and relied on self-report of past behaviour that resulted in a binary measure of NSSI; it did not directly address causal links between schemas and NSSI behaviour. Although the current study found that gender did not moderate the relationship between schemas and NSSI history, this line of research could be replicated in diverse samples. In addition, it would be useful for future research to contextualise the findings as they relate to frequency, severity, and temporal factors. It will be clinically useful to explore the relationship between schemas and functions of NSSI, including its emotion regulation function. It may be that functions served by NSSI could mediate the relationship between schemas and NSSI. Future research could explore other concepts within the schema

framework, such as schema coping and schema modes; this will provide a richer understanding of the pathways between schemas and NSSI.

4.6.2 Conclusion and Clinical Implications

Over the last decade there have been important advances in our understanding of the reasons why some young people engage in NSSI and the functions associated with maintaining and reinforcing the behaviour. Present findings highlight the importance of underlying beliefs of defectiveness and shame in NSSI and can assist in early identification and treatment of NSSI. While schema therapy is often used to treat individuals diagnosed with borderline personality disorder (Bamelis et al., 2014; Dickhaut & Arntz, 2014; Sempertegui et al., 2013), the study has shown that early maladaptive schemas can also be meaningful in a community population and are associated with discrete problem behaviours such as NSSI. An awareness of the schema background of young self-injurers may provide clinicians with a better understanding of their clients' core beliefs, which is likely to contribute to the behaviour. Knowledge of schema theory may provide clinicians with an opportunity to better target schemas, such as those in the Disconnection and Rejection domain, which may be driving the regulatory function of the behaviour. Specifically, feelings of shame and beliefs about defectiveness may be a potential key target of intervention for young self-injurers. Given previous research, schemas of Defectiveness/Shame indicate a risk for future suicidal behaviour (Langhinrichsen-Rohling et al., 2017) and should alert clinicians in young people who present with this schema.

Chapter 5. The Relationship Between Early Maladaptive Schemas and the Functions of Self-Injury

5.1 Overview

The previous chapter found evidence that schemas of Defectiveness/Shame, Abandonment/Instability are positively related to self-injury in young people, while Emotional Inhibition is negatively related. Like previous research (Castille et al., 2007; Lewis et al., 2015), the study examined self-injury as a homogenous behaviour. Self-injury, however, serves different purposes for different individuals (Nock & Prinstein, 2004), hence it is better described as heterogenous. It is not clear whether the relationship between early maladaptive schemas and self-injury, accounting for these different purposes, remain the same. This chapter presents the second empirical study of the project, in which the relationship between early maladaptive schemas and the self-reported purpose, or function, of self-injury for the individual is examined. Intrapersonal (attempting to manipulate one's internal experience) and interpersonal (attempting to influence one's social world) functions are differentiated. Alongside non-suicidal functions, the study contrasted these functions with participants who reported self-injury with some intent to die. Given this paper contrasted non-suicidal and possible suicidal functions of self-injury, the broader term, self-injurious behaviour was used in this chapter.

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Following is a version of the published article (Appendix D), which contains changes to ensure consistency of language and reduce repetition. I acknowledge the contribution of my co-authors, Anita Mak, Kristen Murray and Phil Kavanagh, who assisted in the research

design and editing of the final document. As the primary author, I contributed approximately 90% to the overall design, data collection, data analysis and writing of the article.

5.2 Abstract

BACKGROUND: There is emerging research demonstrating relationships between specific early maladaptive schemas and self-injurious behaviour in young people. Evidence also highlights the importance of conceptualising self-injury in terms of its motivating function, differentiating between intrapersonal and interpersonal functions of the behaviour. Despite this, there is a relative absence of evidence linking schemas and functions of self-injury. The current study sought to explore the relationship between schemas and motivations for self-injury in a community sample of young people with a history of self-injury.

METHOD: 125 Australian secondary and university students aged between 16 and 25 years who reported a history of self-injury completed the Young Schema Questionnaire and the Inventory of Statements about Self-Injury.

RESULTS: Multiple regression analyses found that the schemas of Abandonment/Instability and Entitlement/Grandiosity predicted intrapersonal functions of self-injury. In contrast, Insufficient Self-Control predicted interpersonal functions. Defectiveness/Shame and Entitlement/Grandiosity predicted self-injury with suicidal intent.

CONCLUSIONS: Findings are discussed regarding distinct patterns in the associations between schemas and the functions of self-injurious behaviour among youth with self-injury history, as well as how early maladaptive schemas may further understanding of the motivations behind self-injury and assist clinicians in the assessment of risk for self-injury and suicide among youth. Formulating plans for treatment and early intervention are also explored.

5.3 Introduction

Self-injurious behaviour has increased dramatically over the last two decades, particularly in young people (Hiscock et al., 2018; McManus et al., 2019; Mercado et al.,

2017). Frequently found in clinical populations, self-injury is also prevalent in community samples of youth (e.g., Hasking et al., 2008). Defined as the deliberate and direct damage to body tissue without the intent of suicide (Klonsky, 2007b), self-injury is an area of serious concern among youth, with research suggesting strong links with suicidal ideation and future suicidal behaviour (e.g., Gillies et al., 2018). self-injury is also associated with many other negative outcomes, including social isolation, shame, guilt, and psychopathology, as well as risks relating to infection, scarring, and accidental suicide (Gratz & Roemer, 2008; Jacobson & Gould, 2007; Laye-Gindhu & Schonert-Reichl, 2005; Victor & Klonsky, 2014). A better understanding of the aetiology and functions of self-injury in young people will have important clinical implications.

Self-injury is often explained using a behavioural or functional framework. These models suggest that self-injury is reinforced over time by a range of outcomes which are a direct result of the behaviour. Pure functional models focus on the immediate reinforcers of self-injury and tend to be proximal in nature. Here, self-injurious behaviour is viewed as the result of the relationship between its immediate antecedents (such as unpleasant feelings) and its direct consequences (a reduction in unpleasant feelings). Klonsky's (2007a) review of the literature described seven primary functions: affect regulation (to alleviate acute aversive emotions); self-punishment (to express self-directed anger); anti-dissociation (to end a dissociative experience); anti-suicide (to manage suicidal urges); interpersonal influence (to seek help from others); interpersonal boundaries (to assert one's identity); and sensation-seeking (to generate excitement). These were expanded by Klonsky and Glenn (2009) who identified a further six functions: marking distress (to communicate internal pain); autonomy (to demonstrate self-reliance); peer bonding (to connect with others); revenge (to retaliate against another); self-care (to take physical action to care for oneself when in emotional distress); and toughness (to demonstrate personal strength). Together, these functions were

hypothesised to represent two general factors – an intrapersonal factor (attempting to change one's internal state) and an interpersonal factor (attempting to influence one's external environment).

The distinction between intrapersonal and interpersonal functions was further elaborated by Nock and Prinstein (2004) who proposed a functional model of self-injury that theorised that self-injury differed along two dimensions, with one dimension representing context (intrapersonal or automatic versus interpersonal or social) and the other representing reinforcement contingencies (negative and positive). This model, therefore, proposed that self-injury could be characterised as meeting one of four functions: 1) an intrapersonal negatively reinforcing function (i.e., ending an aversive internal state, such as a painful emotion or upsetting thought); 2) an intrapersonal positively reinforcing function (i.e., achieving a desired internal state, such generating feeling as opposed to dissociation); 3) an interpersonal negatively reinforcing function (i.e., avoiding external demands or an unpleasant social experiences); and 4) an interpersonal positively reinforcing function (i.e., obtaining a needed thing from others, such as eliciting care or social support).

There is evidence of specific patterns between the functions of self-injury and related constructs, such as the type of distress experienced. For example, Hilt et al. (2008) assessed depressive symptoms and peer victimisation in self-injuring adolescent girls and found that depressive symptoms specifically related to intrapersonal but not interpersonal functions, while peer victimisation related to interpersonal but not intrapersonal functions. Najmi et al. (2007) found that endorsement of intrapersonal negatively reinforcing functions was associated with heightened emotional reactivity and hopelessness, and greater attempts at thought suppression. In contrast, an intrapersonal positively reinforcing function was associated with psychological numbness, anhedonia, and inactivity (Nock & Prinstein, 2005; Weierich & Nock, 2008). Evidence for the specificity of the interpersonal functions was also

noted by Nock and Berry Mendes (2008), who found that deficits in social problem-solving skills were related to the interpersonal functions of self-injury. However, it is important to note that functions are not necessarily mutually exclusive (Klonsky, 2007a; Lloyd-Richardson et al., 2007), and self-injurers have been found to endorse a range of different functions simultaneously or at different stages of the behaviour, such as initiation or maintenance (Kortge et al., 2013).

While the non-suicidal functions of self-injury are well understood, the relationship between non-suicidal and suicidal motivations for the behaviour is less clear (Brausch et al., 2016). Early conceptualisations of self-injury viewed the behaviour as existing along the same continuum as suicidal behaviours (Stanley et al., 1992), suggesting that self-injurious behaviour acted as a kind of “gateway”, sharing the same qualities with suicide (Stanley et al., 2001). According to Joiner’s (2006) theory of acquired capability for suicide, self-injury habituates and desensitises individuals to the pain and fear of suicide, making suicide more likely for the self-injurer. However, there is also a paradoxical relationship between the behaviours, such that some young people use self-injury as a way of stopping suicidal thoughts (Kraus et al., 2020). Theorists have also suggested that self-injury may be associated with ambivalent and changing intent (Miller & Smith, 2008), such that both suicidal and non-suicidal functions may occur simultaneously. While there appears to be consensus that the behaviours are conceptually distinct (Klonsky & Muehlenkamp, 2007), self-injurious behaviour is highly correlated with suicidal ideation and attempts (Brausch et al., 2016).

To better understand the pathways leading to self-injury, researchers have attempted to explore the relationship between vulnerability factors and the reinforcing functions of self-injury. For example, Nock (2009) proposed a pathway by which distal risk factors, such as childhood maltreatment, and specific vulnerability factors, such as intense negative emotions, predispose an individual to engage in self-injurious behaviour when confronted with stress.

Hankin and Abela (2011) found that both distal factors (cognitive style and mothers' prior depression) and proximal factors (depressive symptoms, poor relationship quality, and excessive reassurance seeking) differentiated youth who engaged in self-injury from those who did not.

These studies highlight the role that cognitive vulnerability plays in the behaviour. Using a daily diary and retrospective measures of emotional experience, Victor and Klonsky (2014) found that self-dissatisfaction showed the strongest relationship to history of self-injury, even after controlling for symptoms of personality disorder and depression. Analysing responses to an online discussion board, Breen et al. (2013) also identified themes of negative self-appraisals associated with self-injury, with participants linking the behaviour to thoughts that one is deeply flawed and inadequate. This mirrors studies highlighting the roles of intense self-directed criticism in self-injurious behaviour (Adams et al., 2005). Thus, examining a broader range of factors, such as cognition, can offer insight into self-injurious behaviour beyond function.

The first study of this thesis (chapter two) found that specific type of cognitions, early maladaptive schemas, are able to differentiate specific types of psychological distress, consistent with Beck's (1976) cognitive content specificity hypothesis, while the second study (chapter four) found early maladaptive schemas distinguished between youth with and without a history of self-injury. Together with existing research (Lewis et al., 2015; Pilkington, Younan, et al., 2021), these findings suggest that schemas have a role to play in self-injury; however, it is not clear whether schemas may differ according to the function of the behaviour. Understanding the relationships between schemas and the functions of self-injury, both non-suicidal and suicidal, could inform risk assessment and treatment frameworks for young people who present with this behaviour.

5.3.1 The Current Study

To date, there is limited research on the relationship between schemas and the functions of self-injury. Thus, the aims of the current study are to explore whether schemas are associated with intrapersonal and interpersonal functions of self-injury among youth who report a history of self-injury. Specifically, seven schemas identified in previous research to be related to self-injury were examined. These were: Emotional Deprivation, Abandonment/Instability, Social Isolation, Defectiveness/Shame, Entitlement/Grandiosity, Insufficient Self-Control, and Emotional Inhibition (Castille et al., 2007; Lewis et al., 2015; Quirk et al., 2015). Further, the patterns of schemas in youth who endorse a suicidal function of self-injury (and who may simultaneously endorse non-suicidal functions) was examined. It was predicted that differential patterns of schemas would be evident across functions of self-injury but there was no hypothesis about specific links given the exploratory nature of this research.

A minimum sample size of 125 was determined a priori to meet the requirements for multiple linear regression analyses of functions of self-injury on seven schemas. This was based on a power analysis assuming a medium effect size of .15, alpha of .05, power of .80 and eight predictors). Age, important in determining lifetime history of self-injury, would serve as a co-variate or the eighth predictor in the regression analyses.

5.4 Method

5.4.1 Participants and Procedure

Participants and procedure are described in chapter four.

5.4.2 Measures

Early Maladaptive Schemas. The Young Schema Questionnaire – Short Form (YSQ-S3; Young & Brown, 2005) was used to assess early maladaptive schemas. While this measure consists of 90 items measuring 18 schemas as described by Young et al. (2003), only 35 items assessing the seven schemas relevant to the current study were used for analyses.

Each schema is measured by five items using rating scales (1 = *completely untrue of me*; 6 = *describes me perfectly*). The mean score for each schema was then calculated, with higher values indicating stronger endorsement of the schema. In previous studies (i.e., Bach et al., 2017; Calvete, Orue, & González-Diez, 2013; Kriston et al., 2013), support has been found for the first-order structure of the YSQ-S3, with good discriminant and convergent validity, sufficient internal consistency, and acceptable item discrimination, with good stability over a six-month period. In the current study, schema measures displayed adequate to satisfactory internal consistency reliabilities (See Table 5.1).

Table 0.1*Content, Means, Standard Deviations, and Cronbach's Alpha's of Early Maladaptive Schemas*

Schema	Description	Sample Item	<i>M (SD)</i>	Cronbach's Alpha
Emotional deprivation	Belief that emotional needs will not be met by others	<i>I don't have people to give me warmth, holding or affection</i>	2.99 (1.41)	.85
Abandonment/Instability	Perception of the unreliability of significant others	<i>I worry that people I feel close to will leave me or abandon me</i>	3.52 (1.33)	.81
Defectiveness/Shame	Belief that one is inherently defective or unlovable	<i>No person I desire could love me once they saw my defects or flaws</i>	3.30 (1.39)	.86
Social Isolation	Perception that one is a fundamentally different from others	<i>I don't belong; I'm a loner</i>	3.21 (1.32)	.83
Entitlement/Grandiosity	Belief that one is entitled to special rights over others	<i>I feel that I shouldn't have to follow the normal rules that other people do</i>	2.71 (0.93)	.61
Insufficient self-control	Inability to tolerate frustration or control emotional impulses	<i>I can't force myself to do things I don't enjoy, even when I know it's for my own good</i>	3.35 (1.17)	.79
Emotional inhibition	Excessive inhibition of emotion	<i>I find it embarrassing to express my feelings to others</i>	3.22 (1.22)	.75

Functions of self-injury. The Inventory of Statements about Self-Injury (ISAS; Klonsky & Glenn, 2009) comprises two sections. In the current study, the first section was replaced by a single screening question asking participants whether they had ever self-injured, followed by an open-ended item asking participants who replied in the affirmative to complete the second section, which assesses the original 13 functions of self-injurious behaviour (affect regulation, self-punishment, anti-dissociation, anti-suicide, interpersonal influence, interpersonal boundaries, sensation-seeking, marking distress, autonomy, peer bonding, revenge, and self-care). Each function was assessed by three items, rated as 0 = *not relevant* to 2 = *very relevant* with scores for each of the 13 ISAS functions ranging from 0 to 6. These were then categorised into two higher-order functions, labelled Intrapersonal and Interpersonal, according to factors identified by earlier research (Klonsky & Glenn, 2009; Klonsky et al., 2015; Turner et al., 2012). Mean aggregate intrapersonal function and interpersonal function scores were employed in current analyses (see Table 5.2). An additional single item, “to die”, designed to assess a suicidal function, was also included in the current adapted ISAS.

Table 0.2*Means and Standard Deviations of Self-Injury Function Scores*

Function	<i>M (SD)</i>
Intrapersonal	.69 (.42)
To punish oneself	.92 (.62)
To regulate affect	.92 (.62)
To stop dissociation	.76 (.62)
To stop suicide	.51 (.55)
To express care for oneself	.50 (.54)
To signify personal distress	.50 (.55)
Interpersonal	.40 (.30)
To maintain interpersonal boundaries	.60 (.57)
To demonstrate personal autonomy	.60 (.57)
To demonstrate personal strength	.54 (.54)
To exert influence over others	.27 (.41)
To seek sensation	.22 (.38)
To seek revenge	.15 (.32)
To connect with others	.13 (.25)
Suicidal/To die	.25 (.52)

Previously, ISAS measure has been found to have good reliability, validity (Klonsky & Glenn, 2009), and test-retest reliability over a one-year period (Glenn & Klonsky, 2011). In the current study, the higher order functions were found to have adequate reliability with a Cronbach alpha of $\alpha = .82$ and $.75$ for the intrapersonal and interpersonal functions respectively.

5.5 Results

5.5.1 Data Analysis Framework

Statistical analyses were performed using the Statistical Package for the Social Sciences – Version 25 (SPSS, Inc., Chicago, USA). Following the computation of relevant descriptive statistics and coefficient alphas, the correlations between seven schemas and three functions of self-injury (intrapersonal, interpersonal, and suicidal functions) were examined through Pearson correlations. Next, three hierarchical multiple regressions were conducted to investigate the associations between the seven schemas as independent variables and each function as a dependent variable, controlling for age. All statistical tests were two-tailed, and a limit for statistical significance was set at .05. Skewness and Kurtosis values were within acceptable limits for all variables (< 1). *VIF* (< 5) and Tolerance ($> .2$) were also within acceptable limits (Menard, 2002).

5.5.2 Descriptive Statistics and Correlations

Table 5.2 shows the distributions of aggregate and individual level self-injury function scores. The mean number of endorsed functions was 7.8 ($SD = 2.8$), with all participants endorsing at least one intrapersonal function and approximately 92% endorsing at least one interpersonal function. In addition to reporting non-suicidal functions, 19.8% of participants reported a suicidal function. When examining the unaggregated data, self-punishment (90.9%) and affect regulation (89.3%) were the most frequently endorsed functions, and revenge (23.1%) and connecting with others (24.8%) were the least frequently endorsed. Youth in the current sample who reported a history of self-injury had an overall moderate level of agreement with each of the seven relevant early schemas (with possible scores ranging from 1 to 6). Table 5.3 presents Pearson's correlations between seven schemas and three functions of self-injury. Intrapersonal and suicidal functions were moderately and positively correlated to each schema. In contrast, only three schemas (Social Isolation,

Entitlement, and Insufficient Self-Control) were significantly correlated with the interpersonal function of self-injurious behaviour.

Table 0.3

Correlations between Age, Early Maladaptive Schema and Functions of Self-Injury Scores

Schema	Intrapersonal functions	Interpersonal functions	Suicidal function
Age	-.23**	.37***	-.19**
Emotional Deprivation	.35***	.04	.22**
Abandonment/Instability	.56***	.09	.26***
Defectiveness/Shame	.43***	.03	.35***
Social Isolation	.44***	.19**	.27***
Entitlement/Grandiosity	.48***	.28***	.42***
Insufficient self-control	.32***	.26***	.25***
Emotional Inhibition	.49***	.14	.33***

** $p < .01$; *** $p < .001$

5.5.3 Relationship Between Functions of Self-Injury and Early Maladaptive Schemas

Three hierarchical multiple regressions were used to assess the associations between seven schemas empirically supported in the context of self-injury (i.e., Emotional Deprivation, Abandonment/Instability, Social Isolation, Defectiveness/Shame, Entitlement/Grandiosity, Insufficient Self-Control, and Emotional Inhibition) and interpersonal, intrapersonal, and suicidal functions of self-injury, controlling for age. Preliminary analyses were conducted to ensure there were no violations of the assumptions of normality, linearity, multicollinearity, and homoscedasticity.

As presented in Table 5.4, results suggested that higher endorsement of Abandonment/Instability ($\beta = .32, p < .001$) and Entitlement/Grandiosity ($\beta = .25, p < .001$) schemas predicted higher endorsement of intrapersonal functions of self-injury with medium

effect sizes. Higher endorsement of Insufficient Self-Control ($\beta = .23, p = .02$), significantly predicted higher endorsement of interpersonal functions with a small effect size. Higher endorsement of Entitlement/Grandiosity ($\beta = .35, p < .001$) and Defectiveness/Shame ($\beta = -.32, p = .02$) were significantly associated with higher endorsement of a suicidal function with medium effect sizes. Only interpersonal functions were significantly associated with age. The models significantly explained 40%, 27%, and 21% of the variance in intrapersonal, interpersonal, and suicidal functions respectively, using an adjusted R^2 .

Table 0.4

Summary of Three Multiple Regression Analyses of Functions of Self-Injury on Early Maladaptive Schemas Controlling for Age

Independent variable	Intrapersonal Functions $F(8,121) = 11.12^{***}$ Adj $R^2 = .40$			Interpersonal Functions $F(8,122) = 6.63^{***}$ Adj $R^2 = .27$			Suicidal Function $F(8,121) = 5.06^{***}$ Adj $R^2 = .21^{***}$		
	β (95% CI)	SE	SR^2	β (95% CI)	SE	SR^2	β (95% CI)	SE	SR^2
Age	-.08 (-.03, -.01)	.01	-.07	.43 (.03, .07) ^{***}	.01	.40	-.10 (-.00, .01)	.02	-.09
Abandonment/Instability	.32 (.05, .16) ^{***}	.03	.25	.02 (-.04, .05)	.02	.02	-.03 (-.09, .07)	.04	-.02
Emotional Deprivation	-.18 (-.13, .02)	.04	-.11	-.14 (-.09, .03)	.03	-.09	-.25 (-.19, .01)	.05	-.15
Social Isolation	.11 (-.03, .10)	.04	.07	.13 (-.03, .09)	.03	.08	.01 (-.90, .10)	.05	.00
Defectiveness/Shame	.11 (-.04, .11)	.04	.07	-.15 (-.10, .03)	.03	-.09	.33 (.02, .23) [*]	.05	.19
Entitlement/Grandiosity	.25 (.04, .19) ^{***}	.04	.21	.18 (-.00, .12)	.03	.15	.35 (.09, .31) ^{***}	.05	.30
Emotional inhibition	.20 (-.00, .15)	.04	.13	.20 (-.01, .12)	.03	.12	.13 (-.06, .17)	.06	.08
Insufficient self-control	-.02 (-.07, .05)	.03	-.02	.23 (.01, .11) [*]	.03	.19	.00 (-.09, .09)	.04	.00

* $p < .05$; *** $p < .001$

5.6 Discussion

The aim of this chapter was to explore the relationships between early maladaptive schemas and the intrapersonal, interpersonal, and suicidal functions of self-injury, and to assess whether there were patterns in terms of their cognitive content. For each function the total schema model was significant, explaining 40%, 27%, and 21% of the variance in intrapersonal, interpersonal, and suicidal functions respectively. As predicted, schemas were more strongly related to intrapersonal functions compared with interpersonal functions given that individuals who endorse these functions tend to experience increased clinical severity than those who endorse interpersonal functions (Klonsky et al., 2015). In addition, patterns emerged in terms of the relationship between schemas and functions of self-injury. Schemas of Abandonment/Instability and Entitlement/Grandiosity emerged as significant predictors of intrapersonal functions of self-injurious behaviour, Insufficient Self-Control predicted interpersonal functions, and Defectiveness/Shame and Entitlement/Grandiosity emerged as significant predictors of suicidal function.

Schemas are hypothesised to have an important role in maintaining problematic functioning, including self-injury, via an entrenched pattern of dysfunctional thoughts, memories, feelings, and sensations (Young et al., 2003). According to schema theory, the triggering of intense emotions associated with the activation of schemas often results in maladaptive responses, such as self-injurious behaviours, that work to provide immediate relief of distress. Over the longer term, however, these responses maintain the schema, failing to provide the sufferer with corrective experiences (Young et al., 2003). There is emerging evidence demonstrating specificity in the relationship between schemas and self-injury in young people. For example, Quirk et al. (2015) found schemas of Emotional Deprivation, Defectiveness/Shame, and Insufficient Self-Control were associated with greater severity, recency and variety of self-injury, and Lewis et al. (2015) found a role for Social Isolation,

Emotional Inhibition, and Entitlement/Grandiosity in predicting a history of self-injury.

Evidence also highlights the importance of conceptualising self-injury in terms of its motivating function (e.g., Dahlström et al., 2015), differentiating between intrapersonal and interpersonal functions of the behaviour. Despite this, there is a relative absence of evidence linking schemas and functions of self-injury.

In the current research, Abandonment/Instability schema and intrapersonal functions were found to be strongly related. This is not unexpected given the links that the schema has with borderline symptomology, as evidenced in the systematic review described in chapter two. It is possible that intrapersonal, rather than interpersonal, functions may be a stronger indicator of borderline symptomology, reflected in the schemas that underlie the behaviour. Abandonment/Instability schema relates to the expectation that loved ones cannot be relied upon for consistent support. Theorised to develop in response to inconsistent or absent caregiving during childhood, people with this schema live in constant fear of losing those closest to them. They are hypervigilant for signs that loved ones will leave them, and will often cling to others to prevent this eventual abandonment (Young et al., 2003).

Abandonment/Instability schema leads to intense feelings of anxiety, grief, and anger when triggered (Van Genderen et al., 2012). Self-injury may be initiated as a coping mode to avoid feelings of intense fear related to being alone, or to over-compensate for anger when there is a perception that significant others will leave them. Alongside anger, shame and anxiety, loneliness is often described as an emotion associated with self-injurious behaviour (McClelland et al., 2020). Closely linked to abandonment, experiences of rejection have also been shown to have a direct link with self-injury (Cawley et al., 2019). Nock et al. (2009) found emotions most involved in self-injury were not “overwhelmed” but rather “sad/worthless”, “anger” (at self and others), and feeling “rejected”. Zeigler-Hill et al. (2011) highlights the relationship that Abandonment has with vulnerable narcissism, a term that

describes an intense form of emotional dysregulation, characterised by self-criticism, negative emotional experiences, interpersonal sensitivity, and a deprecating self-image. Given the interpersonal quality of this schema, it is curious that it did not also predict the interpersonal function, particularly given the relationship with borderline symptomatology and the prominence of interpersonal difficulties. It could be that the role of self-injury in this instance is more a function of moderating the affective consequences of the schema rather than attempting to manage the schema itself (for instance, in preventing people from leaving or communicating distress when alone).

This may reflect aspects of an Entitlement/Grandiosity schema. This schema relates to feelings and beliefs that the individual holds about themselves that they are special and therefore entitled to rights and privileges that others are not. Young et al. (2003) differentiated between three types of entitlement, which he describes as “pure”, “fragile”, and “dependent”. While the YSQ is not able to distinguish between them, given Entitlement/Grandiosity predicts both intrapersonal and suicidal functions of self-injurious behaviour, it appears more likely that self-injury is connected to fragile entitlement, where the function of the behaviour is to manage one’s own inner distress, rather than the social context. Fragile entitlement is often regarded as an overcompensation strategy, used to manage underlying feelings of shame and defectiveness. It is not unexpected, therefore, that Entitlement/Grandiosity with Defectiveness/Shame should be related to a suicidal function as these schemas are often found together (Nematy et al., 2014). Khosravani, Mohammadzadeh, Sharifi Bastan, et al. (2019), for example, found that Entitlement/Grandiosity with Defectiveness/Shame were associated with suicidal ideation in inpatients with bipolar disorder, while Dale et al. (2010) found that Entitlement/Grandiosity was related to the repetition of suicidal behaviours.

In contrast to the intrapersonal and suicidal functions of self-injury, young people who reported self-injuring for interpersonal reasons differed in their schema presentation. These young people appear to have a different profile of underlying psychological difficulties rather than those who harm for intrapersonal or suicidal reasons. Only Insufficient Self-Control schema significantly predicted interpersonal self-injury. People with this schema have difficulty managing impulses and tolerating frustration. They demonstrate intense expression of emotion, pursuing short-term gratification at the expense of long-term goals (Young et al., 2003). Young et al. (2003) highlight that this schema does not tend to be associated with core beliefs per se, but rather an inability to sustain self-control over a longer period. The results of the current study seem to indicate that for young people who self-injure for interpersonal reasons, deeper held core beliefs about themselves do not feature as prominently, rather the behaviour appears more driven by a deficit in the capacity of the individual to self-discipline, such that they use others to generate support in managing distress. Given that age was a significant predictor only in relation to interpersonal functions, this may suggest that, for interpersonally motivated self-injurers, the behaviour is transitional while the young person develops more sophisticated self-regulatory behaviours.

Together, this supports suggestions that there may be two distinct patterns of self-injury, one described as life-course persistent, the other limited to the adolescent period of development (Moffitt, 1993). It is now well established that individuals who engage in self-injury are not a homogenous group (Bjärehed et al., 2012; Bracken-Minor et al., 2012; Stanford & Jones, 2009). Klonsky and Olinio (2008), for example, identified four latent classes of self-injurers, with the most severe group likely to endorse intrapersonal functions, using self-injurious behaviour as a deliberate and premeditated strategy to regulate aversive emotions. Though small, this group was also the most likely to have required medical attention and attempted suicide. Curtis (2017) noted that self-injury has become increasingly

normalised over time, particularly among younger people, highlighting that it is no longer the precursor to serious mental illness and suicide that it once was. Other research suggests functions may differ at different stages in the development of self-injury such as retaliation, wanting others to notice injuries (e.g., marking distress), and peer bonding which appear to be most salient in the first initiation of the behaviour (Muehlenkamp et al., 2013; Tatnell et al., 2014). In contrast, functions that are most commonly endorsed for self-injury, such as affect regulation and self-punishment (e.g., Klonsky, 2011), appear to play a larger role in its repetition (Muehlenkamp et al., 2019).

5.6.1 Limitations and Future Directions

There were some limitations with the current study. The size of the present sample of youth with a history of self-injury, while meeting the minimum requirement for regression analyses, was small. This, along with the rather small proportion of participants who endorsed interpersonal functions of self-injurious behaviour, might not have been sufficient to identify statistically significant relationships. Further, it was decided to examine a smaller number of schemas that had previously been associated with self-injury, providing sufficient power to uncover statistically meaningful relationships; however, there is a possibility that other schemas, such as Mistrust/Abuse, Failure, or Punitiveness may predict specific functions of self-injury. This is likely to be the case regarding the relationship between specific schemas and first-order functions, for example, the self-punishment functions and Punitiveness schema. Ideally, a larger sample of self-injurers will be able to provide a more nuanced understanding of these relationships and will be clinically useful. Of note, in the current study Entitlement/Grandiosity had a low Cronbach's alpha, a finding also noted elsewhere (Cecero et al., 2004; Hawke & Provencher, 2012a).

The study also required self-injuring participants to understand why they self-injure, which requires a level of self-awareness some young self-injurers may not possess,

particularly if they have not self-injured for some time. This may also be the case with the YSQ. Although there is evidence of reliability and validity in youth (Van Vlierberghe et al., 2010), Young et al. (2003) noted that schema avoidance can artificially lower scores on the YSQ in the presence of distress. In the current study, a single measure, rather than a checklist, was used to screen for self-injury, which may not have picked up all young people who self-injure. (Swannell et al., 2014). So, some young people who may not perceive their behaviour as self-injurious may not be included. Finally, the relationship between schemas and self-injury is likely to be complex, and given the study was correlational in nature, it cannot directly address causal links between schemas and the behaviour. It is equally possible, for example, that the function of self-injury lead to increases in maladaptive beliefs about the self, or is at least bidirectional.

Future research should continue to explore the role of schemas in self-injury. Using more diverse samples and sampling methods (such as ecological momentary assessment), studies could ascertain whether these patterns of relationships hold between different populations of self-injurers, as well as remove problems with recall and social desirability biases. In addition, it would be useful for future research to explore the relationship between some of the more primary functions of self-injury, such as the emotion regulation function, schemas, and self-injury to explore the pathways between these important predictor variables. Ideally, future research will explore other concepts within the schema framework, such as schema coping and schema modes, which will provide a richer understanding of the pathway between schemas and self-injury. It is also important to note that while commonly viewed as overlapping suicidal and self-injurious behaviours are conceptually distinct, varying not only in function but also in risk factors and theoretical mechanics (Gratz et al., 2020). It is also therefore important to include a range of other contextual variables to better understand the relationships between schemas, self-injury and suicide.

5.6.2 Conclusion and Clinical Implications

There have been useful advances in our understanding of why some young people engage in self-injury and the functions that reinforce and maintain the behaviour. Given the strong links between self-injury and suicidal ideation and behaviour, clinicians and researchers need more detailed assessment mechanisms to identify those individuals who are at risk for suicide. The findings of the current study assist in informing treatment of self-injury, particularly highlighting the importance of underlying beliefs when responding to the behaviour. Nevertheless, there remain gaps in our understanding of self-injury, particularly the types of internal experiences that may make a young person more vulnerable to engaging in these kinds of behaviours. Existing theoretical and treatment models of self-injury often assume an emotion regulation function, such as the case with dialectical behaviour therapy, which is often used to treat self-injurious behaviour. As highlighted by Pilkington, Younan, et al. (2021), these findings reinforce the clinical need for an understanding of schemas in addition to the functions of self-injury, such as routinely administering the YSQ as an additional screen for suicide risk.

The findings of the current study have relevance for clinicians working with young people who self-injure. In particular, it is important for clinicians to appreciate the function of the self-injury. The current study suggests that young people who self-injure for interpersonal motivations may not need intense interventions at a schema level, rather a focus on interpersonal skill-building and impulse control. For those who self-injure for intrapersonal motivations, a treatment such as schema therapy (Young et al., 2003) may be warranted.

While schema therapy is often used to treat individuals diagnosed with borderline personality disorder (Bamelis et al., 2014; Dickhaut & Arntz, 2014; Sempertegui et al., 2013), the study has shown that schemas can also be meaningful in a community population and associated with discrete behaviours, such as self-injury. This study highlights the role of

schemas of Abandonment/Instability, Insufficient Self-Control, Defectiveness/Shame and Entitlement/Grandiosity and their differential association with functions of self-injurious behaviour. As such, clinicians could benefit from an understanding of schemas to inform assessments and treatment in young self-injurers.

Chapter 6. Emotion regulation as a mediator between Early Maladaptive Schemas and Non-Suicidal Self-injury in Youth

6.1 Overview

Thus far, this research program has demonstrated that early maladaptive schemas can predict a range of psychopathology in youth, that schemas are associated with NSSI, and that they can differentiate between different purposes or functions of NSSI. Given the predominant function of NSSI is to regulate difficult or distressing emotions, the next stage of the project was to examine the relationship between emotion regulation difficulties, early maladaptive schemas and NSSI. This chapter presents the third and final empirical study in which six emotion regulation difficulties are examined to assess whether they mediate the relationship between two schemas, Defectiveness/Shame and Abandonment/Instability, and NSSI.

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Following is a version of the published article (Appendix E), which contains changes to ensure consistency of language and reduce repetition. I acknowledge the contribution of my co-authors, Anita Mak, Kristen Murray and Phil Kavanagh, who assisted in the research design and editing of the final document. As the first and primary author, I contributed approximately 90% to the overall design, data collection, data analysis and writing of the article.

6.2 Abstract

BACKGROUND: NSSI is commonly explained using an emotion regulation framework. Increasingly, early maladaptive schemas are also used to conceptualise NSSI. However, there is an absence of research examining the relationship between schemas, emotion regulation, and NSSI. The current study attempted to address this gap by comparing youth with and without a history of NSSI on measures of emotion regulation difficulties and schemas, specifically Abandonment/Instability and Defectiveness/Shame. The study also assessed whether difficulties in emotion regulation mediated the relationship between schemas and NSSI.

METHOD: Four hundred and three Australian secondary and university students aged between 16 and 25 years, completed measures of NSSI, schemas, and difficulties in emotion regulation.

RESULTS: There were significant and positive relationships between Abandonment/Instability, Defectiveness/Shame and six emotion regulation difficulties. Young people with a NSSI history reported more difficulties in emotion regulation compared to those who had never self-injured. For each of the schemas tested, there was a direct effect on NSSI status, as well as an indirect effect via total emotion regulation difficulties. There was a significant indirect effect of Abandonment/Instability on NSSI via limited access to emotion regulation strategies.

CONCLUSIONS: Results contribute to our understanding of the mechanisms underlying the association between schemas and NSSI, that is, through emotion regulation difficulties.

Results are discussed with reference to clinical implications, suggesting that targeting both schemas and emotion regulation difficulties may be appropriate when working with young self-injurers.

6.3 Introduction

Effective emotion regulation is critical in navigating the often complex social and emotional changes encountered during adolescence and young adulthood (Steinberg, 2005). When young people experience difficulties regulating their emotions, social and psychological problems - such as NSSI - can occur (Silk et al., 2003). NSSI is typically conceptualised as a problem associated with poor emotional regulation (Andover & Morris, 2014). However, NSSI is also being increasingly examined through the lens of schema theory (Pilkington, Younan, et al., 2021), in which early maladaptive schemas represent pervasive dysfunctional themes individuals hold about themselves and their relationship with others (Young et al., 2003). As described in chapter four, young self-injurers endorse schemas about themselves that they are deeply flawed (Defectiveness/Shame schema) and that others are unreliable and will eventually leave (Abandonment/Instability schema). When these schemas are activated, they are hypothesised to generate levels of negative affect beyond the capacity of the individual to regulate (Young et al., 2003). This, in turn, is expected to increase the likelihood of unhealthy coping strategies, such as NSSI (Arntz & Jacob, 2012). Despite this, there is no published research examining the relationship between early maladaptive schemas, emotion regulation, and NSSI.

6.3.1 Emotion Regulation

Emotion regulation is multi-dimensional. Typically it is viewed as both having access to a repertoire of regulation strategies, as well as the flexibility to use these strategies as required (Perez et al., 2012). Emotion regulation enables goal-directed behaviour, helping the individual manage relationships and deal with interpersonal difficulties when they arise. It thus facilitates adaptive functioning. Gratz and Roemer (2004) define effective emotion regulation as the ability to be aware of, understand, and accept one's emotions, as well as flexibly use strategies to modulate emotional responses in ways that meet the individual's

goals and situational demands. In contrast, Gratz and Roemer (2008) identified a number of features of emotion dysregulation, including the non-acceptance of emotions, difficulty controlling behaviours amidst emotional distress, and problematic use of emotions as information. In young people, difficulties in emotion regulation have been linked to externalising and internalising problems (Neumann et al., 2009), including depression (Silk et al., 2003), disordered eating (Cooper et al., 2014), maladaptive interpersonal behaviour (Schwartz-Mette et al., 2021), generalised anxiety disorder (Tull et al., 2009), and NSSI (Brereton & McGlinchey, 2019).

Emotion regulation develops early in life, when children are reliant upon attachment relationships to help them navigate emotional experiences (Calkins & Hill, 2007). Early experiences of trauma, particularly associated with caregivers, are thought to disrupt the healthy development of emotion regulation. Survivors of interpersonal trauma, for example, have higher levels of alexithymia (McLean et al., 2006), lower acceptance of negative emotions (Briere & Rickards, 2007), and greater fear of emotions (Tull et al., 2007). Experiences of parental invalidation have also been linked with difficulties in emotion regulation (Sturrock & Mellor, 2014), with invalidating childhood environments believed to hinder the learning of skills to acknowledge, label, and communicate their emotions (Linehan, 1993).

Theories of emotion regulation are commonly used to explain NSSI. Generally emerging in adolescence, when feelings of dysphoria, anxiety and negative mood are heightened (Klonsky et al., 2014), NSSI may be used to express and externalise emotions (Andover & Morris, 2014; Brereton & McGlinchey, 2019). Self-injurers report more intense, frequent, and dysregulated negative affect, and lower levels of positive affect, compared with their non-injuring peers (Andover et al., 2005; Brown et al., 2007; Gratz & Roemer, 2008; Najmi et al., 2007; Nock & Berry Mendes, 2008). In daily diary studies, young self-injurers

report higher levels of shame, anxiety, loneliness, and self-disgust, as well as lower levels of positive emotions such as joyfulness, cheerfulness, and happiness (Victor & Klonsky, 2014). According to the affect-regulation model, NSSI functions to alleviate acute negative affect (Brereton & McGlinchey, 2019), as well as express anger towards the self (Burke, Fox, Kautz, Rodriguez-Seijas, et al., 2021).

6.3.2 Early Maladaptive Schemas

Schema therapy is a transdiagnostic model that conceptualises difficulties in emotion regulation as a consequence of negative early life experiences, when a child's basic emotional needs were thwarted (Fassbinder et al., 2016). Under a schema framework, adversity in childhood is hypothesised to lead to emotion regulation difficulties through early maladaptive schemas, as the individual may not have had appropriate role models for coping adaptively with intense emotions (Rezaei et al., 2016). Alternatively, they may have learned to associate negative emotions with increased fear and distress, leading to avoidance of these emotions (Fassbinder et al., 2016). Simons et al. (2018) found that schemas undermine the development of distress tolerance, contributing to poor behavioural outcomes. Facets of emotion regulation have also been found to mediate the relationship between schemas and general psychopathology (Yakın et al., 2019), grief responses (Kaya-Demir & Çırakoğlu, 2021), and interpersonal problems (Janovsky et al., 2019). As found in the systematic review (see chapter two), in youth, schemas are present in both clinical and non-clinical populations, differing by severity and pervasiveness. Higher levels of early maladaptive schemas have been associated with NSSI in a number of studies (see Pilkington, Younan, et al., 2021 for a review).

In recent studies, Defectiveness/Shame and Abandonment/Instability were two schemas found to be particularly relevant to NSSI (Quirk et al., 2015, see also chapter four). These schemas are within the schema domain of Disconnection and Rejection, and are

thought to be particularly debilitating when activated as they relate to unconditional negative beliefs about the self and others (Young et al., 2003). Individuals with a Defectiveness/Shame schema believe they are inherently flawed, worthless or unlovable. They experience chronic feelings of shame, often withdrawing from relationships for fear of exposure. Individuals with an Abandonment/Instability schema live in constant fear of losing those they are closest to and are vigilant for any sign they are about to lose a loved one, experiencing feelings of anxiety, grief and anger. They perceive others as unreliable and unpredictable.

It is plausible that maladaptive schemas centred around defectiveness, shame and abandonment, may lead to difficulties in emotion regulation, which, in turn, increase the likelihood of maladaptive behaviours, such as NSSI. As such, emotion regulation may best be conceptualised as a mediator in the pathway linking schemas and psychopathology. Yet, there is surprisingly little empirical evidence examining relationships between schemas and emotion regulation difficulties in youth.

6.3.3 The Current Study

To date no studies have examined emotion regulation as a mediator of the relationship between schemas and NSSI. Addressing this gap will strengthen a transdiagnostic approach to treatment among this population. The present study aims to address this deficit by examining difficulties in emotion regulation in a large community sample of youth, some of whom report NSSI. The research objectives were threefold: (1) to investigate the relationship between difficulties in emotion regulation and schemas of Abandonment/Instability and Defectiveness/Shame; (2) to compare youth with a history of NSSI to youth without such a history on measures of emotion regulation difficulties; and (3) to examine whether emotion regulation difficulties act as a mediator between Abandonment/Instability and NSSI, and between Defectiveness/Shame and NSSI.

Three corresponding predictions were postulated. First, it was hypothesised that there would be positive associations between Defectiveness/Shame, and Abandonment/Instability, and difficulties in emotion regulation, such that as people have higher levels of each schema, they experience greater levels of emotional dysregulation. Second, youth with a NSSI history were hypothesised to report more difficulties in emotion regulation than youth without a NSSI history. Third, it was predicted that difficulties in emotion regulation would mediate the relationship between each of the selected schemas and NSSI.

6.4 Method

6.4.1 Participants and Procedure

Participants and procedure are described in chapter four.

6.4.2 Measures

Non-Suicidal Self-Injury

Assessment of NSSI history is described in chapter four.

Early Maladaptive Schema

Assessment of early maladaptive schema is described in chapter four. For the current study, only two schemas - Abandonment/Instability and Defectiveness/Shame – were examined, with satisfactory internal consistencies, $\alpha = .82$ and $.87$ respectively.

Emotion Regulation

Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004) is a 36-item self-report questionnaire that assesses multiple aspects of emotion dysregulation. The measure yields a total score or six subscale scores which were employed in the current study, specifically - Non-acceptance: non-accepting stance toward emotional distress (e.g. “when I’m upset, I feel ashamed with myself for feeling that way”); Goals: difficulties in maintaining goal-directed behaviour when upset (e.g. “when I’m upset, I have difficulty focusing on other things”); Impulse: difficulties remaining in control of one’s behaviour

when upset (e.g. “when I’m upset, I become out of control); Awareness; inattention to emotional responses and lack of emotional awareness (e.g. “I pay attention to how I feel” – reverse scored); Strategies: limited access to effective and functional emotion regulation strategies when upset (e.g. “when I’m upset I believe there is nothing I can do to make myself feel better”); and Clarity - lack of emotional understanding and clarity (e.g. “I have no idea how I’m feeling”). Participants report the relevance of each item on a five-point scale (1 = *almost never*; 5 = *almost always*), with higher scores representing greater difficulties in emotion regulation. The DERS has good test–retest reliability ($\rho_1 = .88, p < .01$; Gratz & Roemer, 2004), and in adolescent samples, it has shown significant and positive associations with externalising and internalising problems (Neumann et al., 2009). The Cronbach’s α for the DERS overall in the current study was .95 (subscale reliabilities ranged from .82 to .92).

6.4.3 Data Analytic Plan

First, Pearson product-moment correlations were conducted between NSSI status, schemas of Abandonment/Instability and Defectiveness/Shame, and difficulties in emotion regulation. Second, MANCOVA was used to explore differences in emotion regulation by NSSI status. The independent variable was NSSI status, with two levels (no history, history, and all six emotion regulation strategies (Non-acceptance, Goals, Impulse, Awareness, Strategies and Clarity) as dependent variables. This was followed by seven ANCOVAs (for each subscale and DERS total score). Partial eta squared (η_p^2) and Hedge’s g were used to assess effect sizes, with $\eta_p^2 > .01 / g > 0.2$ considered small, $\eta_p^2 > .06 / g > 0.5$ considered medium, and $\eta_p^2 > 0.14 / g > 0.8$ considered large. Third, multiple mediation models using the PROCESS macro (Hayes, 2014) were performed to test the hypothesis that difficulties in all six emotion regulation strategies would mediate the association between Abandonment/Instability and Defectiveness/Shame schemas and NSSI history. This method uses a bootstrapping approach, generating 10,000 samples to test the significance of the

indirect effects of difficulties in emotion regulation. Results provide both unstandardised direct and unique indirect effects of each mediator, as well as the combined overall effect of the mediating variables on the relationship between each schema and NSSI. This has the benefit of testing multiple mediators simultaneously, while minimizing the number of inferential tests, thus reducing the chances of Type I error (Hayes & Rockwood, 2017). Age was included as a covariate in each multivariate analysis given the expectation that NSSI history would increase with age.

All analyses were run in SPSS version 25, with a p value set at $<.05$. There were four univariate outliers in the data, as assessed by standardized residuals greater than ± 3 standard deviations, which were retained given the large sample. Assumptions for linearity, multivariate outliers, and homogeneity of variances and covariances, as assessed by Box's M test, $p > .001$, were met. There were some violations of residuals, as assessed by Shapiro-Wilk's test. It was decided to continue the analysis with non-transformed data as MANCOVA is robust to violations of normality (Glass et al., 1972; Mardia, 1971). Parallel multiple mediation also does not rely upon the assumption of a normal sampling distribution (MacKinnon et al., 2004; Preacher & Hayes, 2004; Shrout & Bolger, 2002).

6.5 Results

6.5.1 Correlational Analyses

Bivariate correlations revealed that the schemas of Abandonment/Instability and Shame/Defectiveness were significantly and positively associated with NSSI status and DERS scores. Table 1 presents correlations, means, standard deviations and Cronbach's alpha internal consistency coefficients for all variables.

6.5.2 Difficulties in Emotion Regulation and NSSI

To assess for differences in emotion regulation difficulties by NSSI status, a one-way MANCOVA was conducted. There was a significant difference in emotion regulation

difficulties on the basis of NSSI status, after controlling for age, $F(6,13.507) = 13.51, p < .001$; Wilks' $\Lambda = .83$; $\eta_p^2 = .17$. Univariate one-way ANCOVAs using a Bonferroni-adjusted alpha level of .007 found statistically significant differences in adjusted means for each subscale of the DERS. Table 2 presents pairwise comparisons with adjusted means and standard errors, revealing that participants with a NSSI history reported greater difficulties with emotional regulation than those who had never self-injured. Effect size was large for lack of access to emotion regulation strategies, and moderate for other emotion regulation difficulties.

Table 0.1

Correlations Between NSSI Status, Early Maladaptive Schemas and Difficulties in Emotion Regulation Scores, with Means and Standard

Deviations.

	NSSI	A/I	D/S	Non- Accept	Goals	Impulse	Awareness	Strategies	Clarity
NSSI Status									
Abandonment/Instability (A/I)	.33*								
Defectiveness/Shame (D/S)	.34*	.65*							
Non-acceptance (Non-accept)	.35*	.57*	.55*						
Goal direction (Goals)	.25*	.52*	.42*	.56*					
Impulse control (Impulse)	.33*	.50*	.44*	.61*	.61*				
Emotional awareness (Awareness)	.21*	.20*	.34*	.19*	.13*	.17*			
Strategies (Strategies)	.41*	.62*	.65*	.70*	.71*	.72*	.26*		
Emotional clarity (Clarity)	.26*	.55*	.45*	.52*	.43*	.44*	.43*	.58*	
Mean		2.91	2.64	2.73	3.28	2.38	2.70	2.63	2.66
Standard Deviation		1.26	1.33	1.00	0.89	0.86	0.76	0.95	0.80

* $p < .001$

Table 0.2

Adjusted Means and Standard Errors for Difficulties in Emotion Regulation (DERS) Scores by NSSI Status.

DERS	No NSSI History	NSSI History	<i>F</i>	<i>Hedge's g</i>
	<i>M_{adj}</i> (<i>SE</i>) (<i>n</i> = 278)	<i>M_{adj}</i> (<i>SE</i>) (<i>n</i> = 126)		
Non-acceptance	2.51 (.06)	3.22 (.08)	50.02	.73
Goals	3.14 (.05)	3.61 (.08)	26.33	.52
Impulse	2.20 (.05)	2.78 (.07)	45.23	.70
Awareness	2.60 (.04)	2.91 (.07)	15.41	.38
Strategies	2.38 (.05)	3.16 (.08)	69.26	.86
Clarity	2.52 (.05)	2.98 (.07)	31.40	.57

Notes: All *F*-ratios significant at $p < .001$

6.5.3 Difficulties in Emotion Regulation as Mediators Between Early Maladaptive Schemas and NSSI

Two separate parallel multiple mediation models were used to test the indirect effects of each of the two schemas - Abandonment/Instability (Figure 6.1) and Defectiveness/Shame (Figure 6.2) on NSSI status via each of the six components of emotion regulation difficulties (i.e., non-acceptance, goals, impulse control, emotional awareness, strategies, and emotional clarity), following the criteria recommended by Hayes (2014) and Preacher and Hayes (2008). There was a significant direct effect of Abandonment/Instability on NSSI history ($b[SE] = -.316[.128]$, $p = .013$, 95% $CI = -.565, -.066$). The total indirect effect of Abandonment/Instability on NSSI through emotion regulation difficulties in total (i.e., the combined effect of all individual mediators) was also significant ($b[SE] = -.367[.103]$, 95% $CI = -.591, -.183$); however, access to emotion regulation strategies ($b[SE] = -.273[.121]$, 95%

CI = -.519, -.043) was the only individual emotion regulation strategy that demonstrated a significant unique indirect effect (see Figure 6.1 and Table 6.3).

For the mediation analyses examining the effects of Defectiveness/Shame on NSSI history through emotional regulation strategies, there was a significant direct effect of Defectiveness/Shame on NSSI history ($b[SE] = -.259[.118]$, $p = .028$, 95% CI = -.491, -.028). The total indirect effect of Defectiveness/Shame on NSSI was also significant ($b[SE] = -.403[.095]$, 95% CI = -.616, -.243), representing a small to moderate effect. There was no significant indirect effect for any of the six individual emotion regulation difficulties (see Figure 6.2 and Table 6.4).

Table 0.3

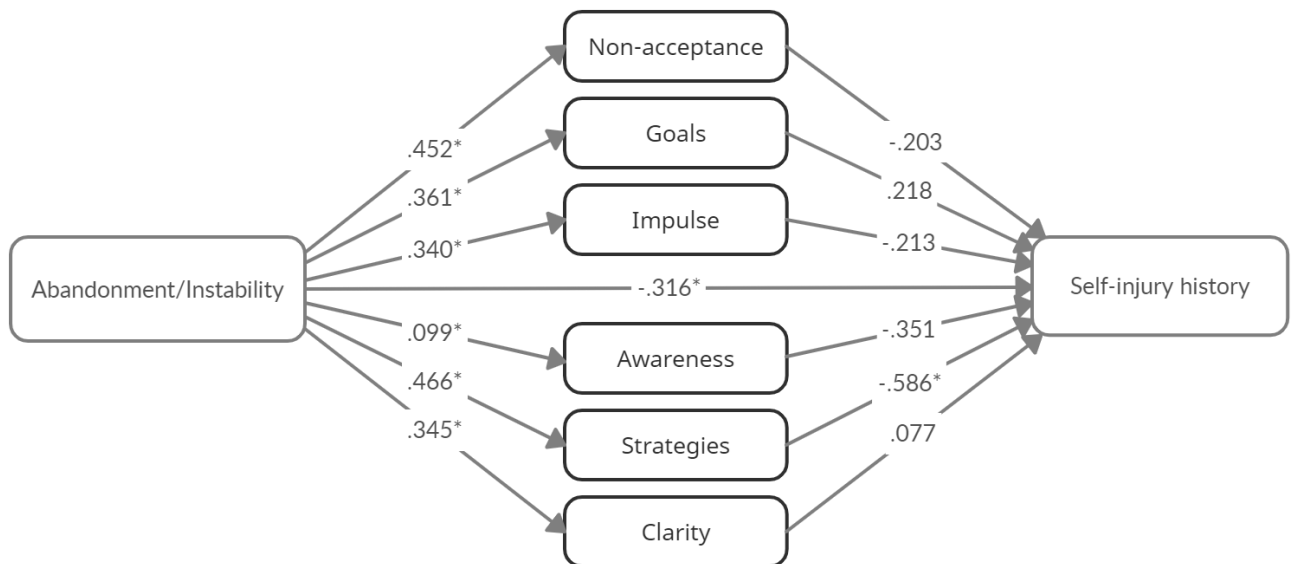
Coefficients for the Total Indirect Effect and Individual Indirect Effects of Each Mediator of the Relationship Between Abandonment/Instability and NSSI

	Standardised coefficients		Bootstrapping (BCa 95% CI)	
	Effect	SE	Lower	Upper
Total indirect effect	-.367	.103	-.591	-.183
Non-acceptance	-.092	.088	-.274	.073
Goals	.079	.078	-.076	.230
Impulse control	-.072	.072	-.209	.073
Emotional awareness	-.035	.023	-.089	.001
Strategies	-.273	.121	-.519	-.043
Emotional clarity	.027	.078	-.131	.180

Note: Results are expressed in a log-odds metric

Figure 0.1

Emotion Regulation Model of the Relationship Between Abandonment/Instability Schema and NSSI History



* $p < .001$

Table 0.4

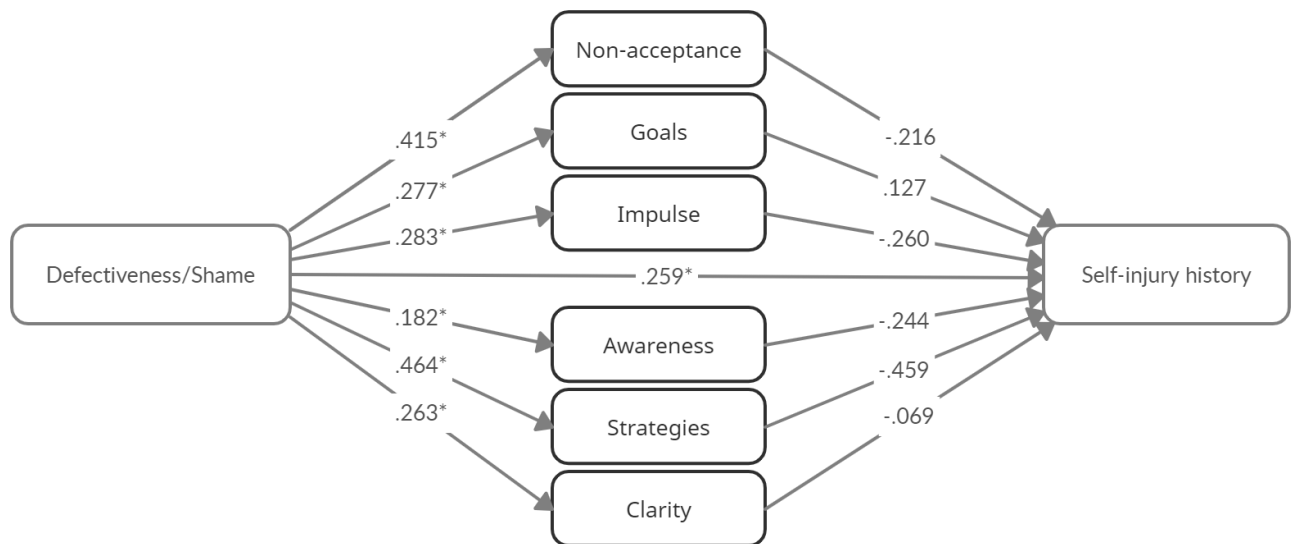
Coefficients for the Total Indirect Effect and Individual Indirect Effects of Each Mediator of the Relationship Between Defectiveness/Shame and NSSI.

	Standardised coefficients		Bootstrapping (BCa 95% CI)	
	Effect	SE	Lower	Upper
Total indirect effect	-.403	.095	-.616	-.243
Non-acceptance	-.090	.080	-.252	.065
Goals	.035	.059	-.085	.148
Impulse control	-.074	.060	-.195	.046
Emotional awareness	-.044	.037	-.125	.021
Strategies	-.213	.124	-.475	.018
Emotional clarity	.018	.057	-.132	.093

Note: Results are expressed in a log-odds metric

Figure 0.2

Emotion Regulation Model of the Relationships Between Defectiveness/Shame Schema and NSSI History



6.6 Discussion

While generally conceptualised as reflecting difficulties in emotion regulation, research also suggests early maladaptive schemas may be important in its initiation and maintenance (Faura-Garcia et al., 2021b; Lewis et al., 2015). Despite this, there is little research examining the relationship between early maladaptive schemas, emotion regulation, and NSSI. The current study investigated associations between difficulties in emotion regulation, NSSI history, and two schemas, Abandonment/Instability and Defectiveness/Shame. It was hypothesised there would be positive associations between Abandonment/Instability, Defectiveness/Shame and six emotion regulation difficulties: non-acceptance of emotional distress; difficulties maintaining goal-directed behaviour when upset; difficulties remaining in control of one's behaviour when upset; lack of emotional awareness; limited access to effective emotion regulation strategies when upset; and lack of emotional understanding. Further, it was predicted that young people with a NSSI history would report more difficulties in emotion regulation compared to those who had never self-

injured, and that there would be indirect effects through difficulties in emotion regulation in the relationship between the two schemas and NSSI.

Current findings were generally consistent with hypotheses. There were positive and moderately strong associations between schemas and each emotion regulation difficulty, although the correlation was weaker for emotional awareness. As predicted, and in line with the second hypothesis, there were also significant differences in emotion regulation difficulties between participants with a NSSI history and those who had never self-injured. Compared with their non-injuring peers, self-injurers reported lower acceptance of their emotional distress, they were more likely to lack emotional awareness, had poorer emotional understanding and clarity, and, when upset, had more difficulties maintaining goal directed behaviour, more difficulties remaining in control of their behaviour, and more limited access to effective and functional emotion regulation strategies. Moreover, each of the Abandonment/Instability and Shame/Defectiveness schemas had direct effects on NSSI, as well as significant indirect effects on NSSI via composite emotion regulation difficulties. Nevertheless, when the unique contributions of each emotion regulation strategy were considered, only one of them - limited access to effective emotion regulation strategies – was a significant mediator, and only in the Abandonment/Instability model.

These results contribute to our understanding of the processes through which schemas may translate into unhelpful coping responses, such as NSSI. Young et al. (2003) suggests the presence and activation of schemas generates high levels of intense negative affect which the individual seeks to regulate, often automatically and unconsciously. Consistent with previous research (e.g. McDonnell et al., 2018; Yakim et al., 2019), there were positive and significant relationships between schemas of Abandonment/Instability and Defectiveness/Shame and each emotion regulation difficulty. Specifically, those with greater fears of abandonment or beliefs about their own defectiveness also reported greater

difficulties accepting their emotional distress and, when upset, maintaining goal-directed behaviour, and accessing effective emotion regulation strategies. The relationship was weak, however, for emotional awareness, suggesting that schemas may not exert as strong an impact on an individual's ability to be aware of their feelings generally, as it does on emotion regulation abilities when the schema is activated and distress is generated.

Limited access to effective and functional emotional regulation strategies was found to indirectly explain the relationship between Abandonment/Instability and NSSI. This aspect of emotion regulation reflects an individual's belief that there is little they can do to regulate or soothe themselves when upset (Gratz & Roemer, 2004). Individuals with an Abandonment/Instability schema live in constant fear of losing those to whom they are closest. They are continuously vigilant for any sign that they are about to lose a loved one, experiencing feelings of anxiety, grief, and anger. They perceive others as unreliable or unpredictable. This schema is said to emerge as a result of unstable, unreliable or absent caregiving (Young et al., 2003). It is possible that as a result of this early childhood environment, the individual was not provided with the skills or strategies to self-regulate when upset, as caregivers were not available to respond to their distress. This supports theories that people who engage in NSSI seek to reduce or avoid intense negative affect in often maladaptive ways (Chapman et al., 2006). Both Young et al's (2003) schema model and Linehan's (1993) transactional model suggest that the interaction of early environmental invalidation and biological vulnerability to intense emotions can increase reliance on impulsive and short-term strategies such as NSSI. The results of the current study suggest that this is particularly the case for individuals with an Abandonment/Instability schema, who are hypothesised not to have had reliable and consistent caregivers in order to learn skills to regulate emotions in an adaptive way.

In contrast with other emotion regulation difficulties, limited access to regulation strategies seems to be particularly relevant for NSSI. Perez et al. (2012) explored the relationship between different aspects of emotion regulation difficulties and lifetime NSSI in an adolescent sample and found that only limited access to regulation strategies accounted for a significant portion of variance in NSSI after controlling for other aspects of emotion dysregulation. Gratz and Roemer (2004, 2008) and Gratz and Tull (2010) also found that limited access to regulation strategies independently predicted self-injurious behaviour. Gratz and Roemer (2008) examined self-harm and emotion dysregulation in a sample of female undergraduates and found an indirect effect of maltreatment on NSSI through limited access to strategies. Emery et al. (2016) explored the relationship between emotion regulation difficulties and NSSI in a community sample of young adults and found that limited access to regulation strategies was the only emotion regulation subscale that was a significant multivariate predictor of NSSI. Finally, Whitlock et al. (2015) found that young adults who had ceased NSSI reported more effective emotion regulation strategies compared to young adults who currently engaged in the behaviour. Together, this suggests that the amount of effective emotion regulation strategies is an important mechanism through which schemas, particularly Abandonment/Instability, may increase risk for NSSI.

For Defectiveness/Shame schema, there were a slightly different pattern of results. The intense self-criticism and shame generated by this schema may explain the current finding that various emotion regulation difficulties in concert may explain the link between Defectiveness/Shame and NSSI, as individuals attempt to manage the negative unwanted emotions associated with the schema. However, current findings suggest no significant unique indirect effects for specific emotion regulation strategies for Defectiveness/Shame. This may suggest that unlike youth endorsing the Abandonment/Instability schema, those endorsing greater Defectiveness/Shame schemas might not have experienced absent

caregiving as young children. Rather, they may have been more likely to have been heavily criticised and told they were bad, and led to believe they were to blame for negative events or outcomes (Young et al., 2003). As a result of these early life experiences, individuals with this schema may believe they are inherently flawed, worthless, or unlovable. They experience chronic feelings of shame, often withdrawing from relationships for fear they will be exposed (Young et al., 2003). Thus, rather than possessing explicit deficits in emotion regulation skills, these individuals may be more likely to self-injure to express anger towards the self rather than alleviate distress. Thus, it is plausible that self-punishment, rather than emotion regulation, is a more prominent pathway to NSSI for those with a Defectiveness/Shame schema. Hooley et al.'s (2010) Defective-Self model of NSSI suggests that some people self-injure to respond to feelings of self-hatred by punishing themselves, perceiving pain as deserved (Hooley & St. Germain, 2014; St Germain & Hooley, 2013). In an ecological momentary assessment study, Burke, Fox, Kautz, Siegel, et al. (2021) found self-critical and self-punishment cognitions were associated with NSSI urge intensity. Indeed, self-criticism is a strong correlate of NSSI (Zelkowitz & Cole, 2019) and self-punishment is often cited as one of the major functions of NSSI (Taylor et al., 2018).

While schema theory does not explicitly address emotion regulation (Fassbinder et al., 2016), the schema mode model has been developed to further explain the intense dysregulated emotional states that arise when schemas are activated (Lobbestael et al., 2007). Schema modes are used to explain momentary emotional states, arising suddenly in response to an environmental trigger to which an individual is sensitive (Lobbestael, van Vreeswijk, & Arntz, 2007). A schema mode is activated when particular schemas, or styles of schema coping, dominate the individual's functioning. Like early maladaptive schemas, Young et al. (2003) presents modes in terms of themes, or patterns. These are based on a distinct set of behaviours, feelings and thoughts of the individual manifested at any point in time. Child

modes are defined by intense feelings when schemas are activated, coping modes reflect unhealthy attempts by the individual to reduce or negate these feelings, and critic modes reflect the select negative internalisation of early attachment figures. It seems plausible, based on the findings of the current study, that different modes may be activated in response to schemas leading to NSSI. The pathway to NSSI from Abandonment/Instability, for example, appears to be through one emotion regulation strategy, hence is more reflective of an inability of the individual to manage or cope with intense emotions, suggestive of a coping mode. In contrast, a similar result for Defectiveness/Shame was not found, suggesting there may be an alternative process at play. Given the links to early criticism, it is possible that a critic mode may be a more likely mediator, which could explain the broader emotion regulation indirect effect. There has been only one published empirical study conducted into the schema modes of self-injurers. Saldias, Power, Gillanders, Campbell, and Blake (2013) examined schema modes in a sample of adult psychiatric outpatients and found both child modes and critic modes related to NSSI; however, they did not account for underlying schemas in this pathway to NSSI. Such a possibility warrants further attention to understand processes underlying NSSI in youth.

6.6.1 Limitations and Future Directions

There were several limitations noteworthy in the current study. The present study used a cross-sectional design and relied on self-report of past behaviour, resulting in a binary measure of NSSI; which means it cannot directly address causal links between schemas and NSSI behaviour. Although research suggests that adolescents and young adults are mostly accurate in self-perceptions (Brewin et al., 1992), evidence suggests that the YSQ can be influenced by mood (Stopa & Waters, 2005), which means that the self-report nature of this study may have also biased findings. The relative size of the sample, given the number of independent variables and multiple comparisons, may not have been sufficient to identify

statistically significant relationships, elevating the risk of a Type II error. It also made it difficult to control for other psychopathology, such as depression, which is likely to be comorbid with NSSI. It would be useful for future research to contextualise the findings as they relate to frequency, severity, and temporal factors associated with NSSI. Future research could explore other concepts within the schema framework, such as schema coping and schema modes to provide a richer understanding of the pathways between schemas and NSSI, and the role of emotion regulation difficulties (Arntz et al., 2021).

6.6.2 Conclusion and Clinical Implications

Poor emotion regulation has often been considered a core process underlying NSSI. The results of the current study make an important contribution to aid clinicians in better understanding the processes which may contribute to NSSI in youth. The results highlight that interventions aimed at building emotion regulation skills may be promising, such as that taught through dialectical behaviour therapy (Linehan, 1993). However, targeting schemas directly, particularly Abandonment/Instability and Defectiveness/Shame, such as through schema-informed treatment approaches, may also be beneficial (Dadomo et al., 2016; Fassbinder et al., 2016). It is important to not only teach young people more adaptive ways of responding to their emotions, but also improve their beliefs about their capacity to regulate their own emotions and modulate emotional arousal. Focusing on emotions and schemas rather than self-harming behaviours per se may be particularly beneficial for individuals who self-injure.

Chapter 7. General Discussion

7.1 Introduction

Non-suicidal self-injury (NSSI) is a major public health concern. It has increased dramatically in recent years, most notably among younger people who may not necessarily present to clinics or seek help (Michelmore & Hindley, 2012). It is associated with increased symptoms of depression (Marshall et al., 2013; Tilton-Weaver et al., 2019), anxiety (Bentley et al., 2015), substance use (Bracken-Minor et al., 2012; Moller et al., 2013) and disordered eating (Turner et al., 2016; Wang et al., 2018), as well as being an indicator for borderline personality disorder (Vega et al., 2017). Young people who self-injure report elevated levels of self-criticism (Burke, Fox, Kautz, Siegel, et al., 2021) and self-disgust (Smith et al., 2015) and, compared to non-injurers, are more likely believe they are inherently unlovable, inadequate and worthless (Slee et al., 2007). NSSI is also associated with increased risk of suicide over time (Stockburger, 2017; Taliaferro et al., 2019).

Given the serious outcomes associated with NSSI, a major goal of this project was to understand the early maladaptive schemas that may be associated with NSSI in youth. In particular, the original empirical investigations reported in this thesis sought to (i) examine whether early maladaptive schemas could provide a framework for understanding psychopathology in youth (chapter two), (ii) explore how young people who self-injure differ from those who do not self-injure in terms of their underlying early maladaptive schemas (chapter four), (iii) determine whether early maladaptive schemas could predict the functions of NSSI (chapter five), and; (iv) test whether emotion regulation skills mediate the relationship between schemas (as a vulnerability factor for NSSI) and NSSI (chapter six).

The current project examined NSSI in a sample of young people, aged between 16 and 25 years, from both high school and university settings. While NSSI was once considered evidence of significant pathology requiring inpatient care (Graff & Mallin, 1967), results

reported in this thesis suggest that many young people in the community engage in NSSI, consistent with other research (Wester et al., 2018). Around 30% reported that they had self-injured at least once in their lifetime, with age of onset ranging from eight years for some to 22 years for others. Many self-injurers had only self-injured once or twice; however, about half of the self-injurers reported that they had engaged in the behaviour on at least 10 occasions. Most self-injurers used only one method, generally cutting, while a large minority used multiple forms.

The functions, or reasons, for NSSI also differed. Most of the self-injuring sample endorsed an intrapersonal function for the behaviour. In other words, they self-injured to manage an undesirable internal experience, generally either to punish themselves or regulate distressing and unwanted negative emotions. There were several other intrapersonal functions endorsed, including dissociation cessation, stopping the urge to suicide, and expressing care for themselves. Maintaining social boundaries, demonstrating personal autonomy, and displaying strength also figured prominently among the interpersonal, or social, functions for NSSI reported by youth in the study.

Together, these results highlight the considerable heterogeneity in the developmental pathway (i.e. age of onset), frequency (i.e. weekly), form (i.e. cutting) and function (i.e. emotion regulation) of NSSI. There is no one profile of a typical young self-injurer.

7.1 Summary of Findings

7.1.1 Early Maladaptive Schemas and Psychopathology in Young People

Early maladaptive schemas are broad, pervasive and dysfunctional themes about oneself and one's relationship with others, hypothesised to develop during childhood and adolescence and continue to be elaborated upon into adulthood (Young et al., 2003). Related to a range of psychological difficulties in adulthood (Janovsky et al., 2020), the findings from this research program suggest that early maladaptive schemas can also provide a meaningful

framework for understanding psychopathology in youth. It is clear from a systematic examination of the literature that early maladaptive schemas are consistently related to a range of psychological distress in youth (see chapter two). Adolescents are starting to form and consolidate core beliefs about themselves, others and the world during this period, and these appear to be consistently related to symptoms of psychopathology. Young people, for instance, with symptoms of depression are more likely to endorse beliefs that “no-one will ever care for me” (Emotional Deprivation), youth with anxiety symptoms report beliefs that “something terrible is going to happen to me” (Vulnerability to Harm/Illness), and those with emerging borderline symptomology hold beliefs that “everyone I care about will eventually leave me” (Abandonment/Instability). Some early maladaptive schemas, notably Emotional Deprivation and Defectiveness/Shame, appear to occur across many different clusters of symptoms, suggesting that these schemas, in particular, may have a role in generalised distress that can manifest in a diverse range of ways.

It is important to note that, while schema endorsement is generally higher in clinical populations, schemas such as Enmeshment, Unrelenting Standards, and Self-Sacrifice, which are hypothesised be associated with psychological distress in adults (Young et al., 2003), do not appear to be maladaptive in this period of the lifespan and may even have a protective role (Langhinrichsen-Rohling et al., 2017; Muris, 2006). For example, these schemas may strengthen young people’s capacity to build social connections, improve relationships with parents and peers, and increase engagement with school and the community. Nevertheless, being aware of the early maladaptive schemas that young people hold can provide insight into, and improved conceptualisation of, many forms of psychological distress, including NSSI.

7.1.2 Early Maladaptive Schemas and NSSI in Young People

This research program offered a unique and important insight into the role of early maladaptive schemas and NSSI, which to date has received limited empirical attention. Alongside heterogeneity in developmental pathway, frequency, form and function (i.e. emotion regulation) of the behaviour, NSSI was also found to differ in the early maladaptive schemas that may make young people vulnerable to engaging in the behaviour. In particular, this research found that young people with a history of NSSI endorsed maladaptive schemas at rates far greater than those without such a history, suggesting a schema framework may be able to assist in explaining and conceptualising NSSI. High levels of both Abandonment/Instability and Defectiveness/Shame, and low levels of Emotional Inhibition, predicted NSSI history; a finding similar for both males and females (see chapter four). These results held after controlling for symptoms of depression, anxiety, and stress, suggesting that early maladaptive schemas may have a role to play in NSSI over and above the effects of general psychological functioning.

Further, early maladaptive schemas were found to differ based on the function of NSSI. Those who reported at least some suicidal intent alongside NSSI (around a quarter of participants) were more likely to endorse beliefs associated with a Defectiveness/Shame schema, a result similar to Dutra et al. (2008), who found that among early maladaptive schemas, Defectiveness/Shame was the most highly correlated with suicidal ideation, suicidal planning, and a suicide attempt. Individuals reporting high levels of this schema believe they are inherently flawed, worthless, and unlovable. They experience chronic feelings of shame, fearing they will be exposed as defective or broken. Individuals with this schema are believed to come from homes in which they were heavily criticised and lead to believe that they were to blame when bad things happened (Young et al., 2003). In contrast, those who reported they self-injured for intrapersonal reasons were more likely to endorse beliefs associated with the Abandonment/Instability schema. Individuals with this schema live in constant fear of losing

those they are closest to, they are vigilant to any sign that they are about to lose a loved one and perceive others as unreliable or unpredictable. They experience chronic feelings of anxiety, grief, and anger and are said to come from backgrounds where attachment figures were unreliable or unavailable and lacked a stable caregiver (Young et al., 2003). Finally, youth who reported interpersonal functions of NSSI appear to have a very different schema profile, tending to endorse the Insufficient Self-Control schema. Young people with this schema are said to have difficulties managing impulses and tolerating frustration. They demonstrate intense expression of emotion, pursuing short-term gratification at the expense of long-term goals (Young et al., 2003). It is hypothesised that this reflects an inability to sustain self-control over a longer period, rather than a core belief per se (Young et al., 2003). It is curious to note that younger age was also an associated predictor of NSSI for those who endorsed interpersonal functions. This was not found for the other NSSI functions. This may suggest that for young people who self-injure for interpersonal reasons, the behaviour may be transitional, rather than life-course persistent.

These findings may provide further insight into the pathways for young people who self-injure. For youth whose primary function of NSSI is to communicate distress or seek help from others, the behaviour may reflect a deficit in the capacity of the individual to self-discipline or self-regulate. It is possible that these young people manage distress by using other people as a means to nurture or soothe themselves. The results suggest that, for interpersonally motivated self-injurers, the behaviour may be transitional while the young person develops more sophisticated self-regulatory behaviours, although prospective work is needed to further test this hypothesis. In contrast, intrapersonally motivated self-injurers may have a more persistent pattern of NSSI, reflective of more serious and damaging early maladaptive schemas. That Abandonment/Instability and Defectiveness/Shame are so intrinsic to poor mental health and tend to be associated with more entrenched forms of

psychopathology, such as borderline personality disorder (Barazandeh et al., 2016), suggests more chronic and life-course persistent problems. Of note, although risk assessment is always important for NSSI, those who endorse a Defectiveness/Shame schemas are at a particular risk for suicidal ideation.

7.1.3 Emotion Regulation, Schemas and NSSI

Recognising that emotion regulation is one of the most commonly reported functions of NSSI (Taylor et al., 2018), the final study of this research program examined the relationship between NSSI, emotion regulation difficulties and two early maladaptive schemas implicated in NSSI: Defectiveness/Shame and Abandonment/Instability. The results indicated that those who endorsed these schemas, regardless of their NSSI history, had lower acceptance of their emotional distress, were more likely to lack emotional awareness, had poorer emotional understanding and clarity, and, when upset, had more difficulties maintaining goal-directed behaviour, more difficulties remaining in control of their behaviour, and more limited access to effective and functional emotion regulation strategies. In addition, as in other studies, emotion regulation difficulties were found to be strongly related to NSSI (Brereton & McGlinchey, 2019). Moreover, in the mediation model reported in this thesis, there were direct effects of the two schemas on NSSI, as well as indirect effects via overall difficulties in emotion regulation. When the unique contributions of each emotion regulation strategy were considered, only one - limited access to effective emotion regulation strategies - was significant, and only for the Abandonment/Instability model.

These results contribute to our understanding of the processes through which early maladaptive schemas may translate into unhelpful coping responses, such as NSSI. Young et al. (2003) suggest the presence and activation of schemas generate high levels of intense negative affect, which individuals would seek to regulate, often automatically and unconsciously. That limited access to effective emotion regulation strategies emerged within

the Abandonment/Instability model suggests that self-injuring individuals with this schema believe there is little else they can do to regulate or soothe themselves when upset (Gratz & Roemer, 2004). As noted, these are individuals who are hypothesised to come from families where attachment figures were regularly unavailable (Young et al., 2003). Research highlights the important role that early attachment has in building healthy emotion regulation, and where secure attachment was not provided in childhood, difficulties in emotion regulation in adulthood often emerge. For example, a longitudinal study by Girme et al. (2021) found that unstable and insecure infants were more likely to present with distinct patterns of maladaptive emotion regulation strategies twenty years later, while Shipman et al. (2005) found that neglected children had poorer understanding of negative emotions, fewer adaptive emotion regulation skills and were more likely to inhibit the expression of negative emotions. Zlotnick et al. (2001) suggest that a history of childhood abuse may cause difficulties with regulating emotional experiences as these families are unlikely to teach effective and alternative self-soothing strategies for distress. For self-injurers with an Abandonment/Instability schema, it is possible the individual did not adequately receive the skills or strategies to self-regulate when upset, possibly because caregivers were unavailable when the child was distressed. As such, these individuals may not have appropriately learnt skills from reliable caregivers to regulate emotions in an adaptive way. Evidence of an increased amount of alexithymia in self-injurers lends weight to this hypothesis, suggesting that adolescents who self-injure have poorer emotional articulation skills when compared to other adolescents (Miller & Smith, 2008). Swannell et al. (2012) found that alexithymia partially mediated the relationship between child maltreatment and NSSI, although it is unclear whether alexithymia and lack of emotional coping strategies refer to the same thing, highlighting a role for future research.

In the current research, while aggregate emotion regulation difficulties were a general mediator of NSSI for those with a Defectiveness/Shame schema, there were no specific difficulties that were significant in the Defectiveness/Shame model. This may suggest that, unlike Abandonment/Instability, the pathway to NSSI for Defectiveness/Shame does not necessarily reflect a specific deficit in emotion regulation skills per se. Rather, given their hypothesised childhood experience of chronic criticism (Young et al. 2003), these individuals may have internalised a self-critical voice, hence developing cognitions that they are inherently flawed, worthless, or unlovable, and translating into internal punitive critic messages. It is, therefore, possible that self-punishment, rather than emotion regulation, is the pathway to NSSI for those with a Defectiveness/Shame profile. Hooley et al.'s (2010) Defective-Self model of NSSI hypothesises that individuals use NSSI to regulate highly aversive and negative self-directed thoughts by means of self-punishment. They speculate that these individuals have high levels of self-criticism, with core beliefs that they are deeply flawed and deserve punishment, having higher levels of willingness to endure pain (Hooley & St. Germain, 2014). There is increasing evidence for this model. Using a daily diary study, Lear et al. (2019) found that the experience of negative thoughts and emotions towards oneself was associated with both self-injurious urges and behaviour, while Burke et al. (2021) found self-critical and self-punishment cognitions were associated with NSSI urge intensity. Similarly, there is some evidence that interventions designed to target self-criticism and improve personal self-worth may reduce NSSI (Hooley & St. Germain, 2014). The results in this thesis may suggest that the Defective-Self model of NSSI may hold true, but only for individuals with a Defectiveness/Shame schema.

Taken together, these results suggest differential pathways to NSSI depending on the presence and activation of particular schemas. They highlight the importance of assessing for early maladaptive schemas in young self-injurers.

7.2 Limitations

The results of the current research findings should be interpreted considering certain limitations.

7.2.1 Measures

The current study relied on self-report measures. These have value and can be a reliable and convenient method of assessing beliefs about self, others, and the world. Indeed, self-report measures have been found to be more reliable than parent and teacher reports when assessing adolescent cognitions (DiBartoli et al., 1998). Nevertheless, they are limited. Specifically, accurate assessment of early maladaptive schemas is challenging as schemas are said to be at the deepest level of processing, making them difficult to access and evaluate (Oei & Baranoff, 2007). Moreover, when schemas are activated, the likely increase in negative affect can impact upon individuals' responses to self-report questionnaires. Young et al. (2003) suggest that schema avoidance can artificially lower scores on the YSQ in the presence of distress, while Hoffart et al. (2005) note that schemas are likely to be state-dependent and relatively inaccessible when not activated. The current study also required self-injuring participants to understand the reasons they self-injure, which requires a level of self-awareness some young self-injurers may not possess, particularly if they have not self-injured for some time. Despite these concerns, there is good evidence of the reliability and validity of both Young's Schema Questionnaire (Van Vlierberghe et al., 2010) and the Inventory of Statements of Self-Injury (Faura-Garcia et al., 2021a). Ideally, using teacher and parent reports alongside self-report will provide a richer picture of schemas and NSSI.

Given the sensitivity of the topic and iatrogenic concerns (such as normalising NSSI among adolescents or inadvertently offering new methods of self-injuring behaviour), it was decided to use a single item to identify the presence of NSSI. This may not have identified all young people who self-injure (Swannell et al., 2014), particularly those who may not

perceive their behaviour as self-injurious. Zetterqvist et al. (2013) used both methods and found a large discrepancy between the number of students who reported NSSI via a checklist (35%) compared to a single screening item (17%). There is also evidence, however, that adolescents are able to accurately self-code self-injurious behaviour, using this single item method (Stanford & Jones, 2010; Stanford et al., 2018). This highlights one of the challenges of conducting ethically sensitive research. If anything, the current results are likely to produce a conservative estimate of NSSI prevalence in the sample.

7.2.2 Methodological Limitations

There are some methodological limitations that must also be considered. The relative size of the sample, given the number of independent variables and multiple comparisons, may not have been sufficient to identify statistically significant relationships, elevating the risk of a Type II error. This is particularly relevant to chapter five, when examining the functions of NSSI. Given the size of the sample, it was not possible to assess individual functions against individual early maladaptive schemas, which would have made for more nuanced results. As noted in the chapter, there is a possibility that other schemas, such as Mistrust/Abuse; Failure or Punitiveness may predict specific functions of self-injurious behaviour. This is likely to be the case regarding the relationship between specific schemas and first-order functions, for example, the self-punishment functions and Punitiveness schema. Ideally, a larger sample of self-injurers will be able to provide an improved understanding of these relationships and will be clinically useful.

The cross-sectional nature of the research makes it difficult to predict causal pathways, and this relationship is likely to be very complex. The schema model hypothesises that early maladaptive schemas lead to increases in NSSI, but it is also likely that this relationship is bi-directional, such that NSSI may reinforce a young person's schema beliefs, or at least further entrench them, for example, by affirming a young person's beliefs about

their defectiveness. Ideally, longitudinal research can help to better understand the temporal nature of these relationships.

Although the current research program sought to investigate early maladaptive schemas and NSSI in a community sample because of the increasing prevalence in this group (McManus et al., 2019), results may not generalise to other populations. In community samples, NSSI is likely to be less severe than in clinical populations, so it is quite possible that schemas may differ between the two samples.

7.2.3 Limitations of the Schema Model

Using a schema approach to understand NSSI presents its own unique set of challenges. Schema theory tends to be used to understand chronic disorders and it is not immediately clear that NSSI falls into this category. Conceptually NSSI is poorly understood and historically has tended to be labelled as a diagnostic criterion for borderline personality disorder. However, recent research suggests that NSSI, while a distinct behaviour, is more heterogeneous than once previously thought (Stanford & Jones, 2009). Understanding this diversity is essential for developing frameworks to understand and treat the behaviour, which makes transdiagnostic constructs such as early maladaptive schemas especially helpful in order to inform practice.

7.2.4 Strengths of the Research Program

The results of this thesis highlight the importance of early maladaptive schemas in understanding and conceptualising NSSI. The presence and role of early maladaptive schemas in NSSI strengthens developmental theories of NSSI which suggest that, as a result of consistently negative early life experiences, the abused or abandoned child learns to internalise representations of themselves as defective and undeserving of care, of others as unavailable, and of relationships as harmful (Yates, 2009). Individuals are continually creating their own models of self, based upon the personal experiences that serve to shape

their reality of themselves, of others, and of the world. This process of continual structuring and restructuring of experiences is critical to the formation of early maladaptive schemas (Rijkeboer & de Boo, 2010). Yates (2009) hypothesises that these self-representational models lead to NSSI as the individual attempts to turn to the body to self-soothe or self-punish. Based on the results of this thesis, both self-soothing and self-punishment may be indicated by underlying early maladaptive schemas, albeit through different pathways and serving different functions.

7.3 Clinical and Research Implications

This research program has a number of implications, both clinically and theoretically. Specifically, these relate to the assessment and conceptualisation of NSSI, as well as therapeutic considerations for treatment.

7.3.2 Assessment and Conceptualisation

The results of this research program confirms previous research suggesting there is no one profile of a typical young person who self-injures (Bracken-Minor et al., 2012). Young people who engage in this behaviour are not a homogenous group (Bjärehed et al., 2012), and without an adequate assessment and case formulation there is a danger that assumptions are made about NSSI, for example, regarding the function that NSSI may serve for a client, the early maladaptive schemas underlying NSSI, or the risks associated with the behaviour. Assessment and case formulation is essential to conceptualise NSSI and provide both the client and the clinician a shared insight into the factors (environmental, developmental, cognitive and emotional) that have influenced the onset and maintenance of the behaviour to guide the treatment and therapy process. By including tools such as the Young Schema Questionnaire (YSQ; Young & Brown, 2005) and assessing for early maladaptive schemas, core beliefs underpinning NSSI may be elicited. As demonstrated in this thesis, schemas are

associated with NSSI and therefore can, in addition to the functions of the behaviour, be a target for intervention.

The results of this thesis also highlight the importance of risk assessment, particularly in those with a Defectiveness/Shame schema. While suicide and NSSI are conceptually distinct, the two are highly related with evidence suggesting that those with a history of NSSI are at a far greater risk for future suicidal attempts and completed suicide (Prinstein, 2008). It is therefore essential to assess suicide risk and to put in place safety behaviours where necessary to protect against suicide, even where there is no apparent intent or desire to die. Miller and Smith (2008) highlight that intent is often ambiguous and can change easily, especially in the midst of escalating emotional experiences. As found in the current research, some young people report suicidal intent alongside non-suicidal functions. While not examined in this thesis, it is important to be aware that NSSI can still lead to accidental death. With further research, early maladaptive schemas may offer additional insight to inform risk management, offering further indicators to vulnerability factors to suicidal ideation and behaviour.

7.3.2 Emotion Dysregulation and Early Maladaptive Schemas

NSSI has typically been considered a manifestation of emotion regulation difficulty (Andover & Morris, 2014; Brereton & McGlinchey, 2019). Like previous research (Zielinski et al., 2018), emotion dysregulation was found to be a key factor in mediating the relationship between schemas and NSSI in the current research. This highlights a role for interventions that emphasise skill building, particularly around emotion regulation and distress tolerance (Gratz, 2007; Slee et al., 2008). Dialectical Behaviour Therapy (DBT) specifically targets deficits in these areas, supporting clients to build skills to manage distressing emotions (Linehan, 1993). Despite evidence suggesting existing interventions for NSSI produce relatively small outcomes (Fox et al., 2020), and a lack of quality randomised control trials

available for assessing the efficacy of treatments addressing NSSI (Brausch & Girresch, 2012; Fischer et al., 2013), DBT has been shown to have some success with self-injuring adults (Groves et al., 2012; Harned et al., 2014; Prada et al., 2018). DBT combines mindfulness strategies with traditional cognitive-behavioural therapy (CBT), specifically targeting emotional dysregulation. DBT encourages young people to develop a nonjudgmental attitude towards themselves, their own thoughts and emotions, as well as external events (Linehan, 1993). The therapy specifically teaches skills to increase emotional awareness and understanding, supporting young people to better tolerate and accept their distressing emotions, while at same time addressing deficits in problem solving skills (Linehan, 1993).

The current research also points to important implications for better understanding and responding to NSSI from a schema therapy perspective. This suggests that treatment may be strengthened by specifically targeting schemas, particularly Abandonment/Instability and Defectiveness/Shame. In addition to using traditional cognitive, behavioural, and emotion-focused techniques, schema therapy directly targets schemas originating from early adversity via the therapeutic relationship, as well as a range of experiential techniques designed to meet core emotion needs that were not met in childhood (Farrell & Shaw, 2012; Nordahl et al., 2005). There is a small but growing evidence base that schema therapy is effective at producing positive change for many psychological disorders (Bamber, 2004; Carter et al., 2013; Dickhaut & Arntz, 2014; Dozois et al., 2014; Farrell et al., 2009; Giesen-Bloo et al., 2006; Leppänen et al., 2015), and it is increasingly being applied to children and young people (Loose et al., 2020). Although Schema therapy and DBT are two very different treatment approaches to managing psychological distress and maladaptive behaviours, utilising both of these treatment modalities can improve outcomes for clients. For schema therapy the target is maladaptive schema generating distress, and for DBT, the target is

maladaptive behaviours used by individuals to regulate the distress. The results of this study suggest that targeting both maladaptive schemas and emotion dysregulation could be useful approaches in the treatment of NSSI. In addition, they offer insight into individuals with whom these approaches may be especially well suited.

7.4 Future Research Directions

There are a number of important avenues for future research to build on the contributions of this research program. Future research would ideally continue to explore the role of early maladaptive schemas in NSSI in youth, with a need to employ more refined measures of NSSI and different methodologies. For example, the present study used a correlational design and relied on self-report of past behaviour that resulted in a binary measure of NSSI. To this end, the causal links between schemas and self-injurious behaviour was not able to be directly addressed. Using diverse samples, including different ages and clinical groups, will determine whether the patterns of schema and self-injurious functions will be the same in different populations. In addition, it would be useful for future research to contextualise the findings as they relate to frequency, severity, and temporal factors. Using different sampling methods (such as ecological momentary assessment) could also address problems with recall and social desirability biases.

Future research would also benefit from exploring other components of the schema framework, such as schema coping and schema modes, which would provide a richer understanding of the pathways between schemas and NSSI. Schema modes, in particular, hypothesise a pathway through which schemas may translate into NSSI. Schema modes are used to explain momentary emotional states, arising suddenly in response to an environmental trigger to which an individual is oversensitive (Lobbestael, van Vreeswijk, & Arntz, 2007). A schema mode is activated when particular schemas, or styles of schema coping, dominate the individual's functioning. Saldias, Power, Gillanders, Campbell, and

Blake (2013) examined schema modes in a sample of adult psychiatric outpatients and found both particular schema modes (in this case child and critic modes) related to NSSI. Together, this suggests that schema modes may be an important next step in the development of a schema-based explanatory model of self-injurious behaviour.

7.5 Conclusion

NSSI is a major public health concern. It has increased in recent years, most notably among younger people. This research program suggests that early maladaptive schemas – ways of thinking about self, others and the world – may play an important role in understanding this problem. The findings across a sequence of studies offer insights to strengthen theory and practice aimed at reducing NSSI in young people. Specifically, they suggest that early maladaptive schemas in adolescents and young people are consistently related to symptoms of psychopathology and NSSI, and that there may be differential links between specific schemas and these outcomes. Furthermore, young people with a history of NSSI were found to endorse schemas at rates far greater than those without such a history, with schemas of Defectiveness/Shame and Abandonment/Instability especially salient in both girls and boys. Investigation of the functions of NSSI suggested differential roles for schemas across intrapersonal, interpersonal and suicidal. Finally, emotion regulation difficulties explained the association between Defectiveness/Shame and Abandonment/Instability schemas and NSSI, with limited access to strategies particularly important for the latter. These findings highlight the importance of integrating schemas, functions of self-injurious behaviours, and theories of emotion regulation to understand, assess and address NSSI in youth.

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Appendices

Appendix A. Systematic Review

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REVIEW



The Relationships Between Early Maladaptive Schemas and Youth Mental Health: A Systematic Review

Annemarie Nicol¹ · Anita S. Mak¹ · Kristen Murray² · Iain Walker¹ · Dean Buckmaster¹

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Abstract

Background Although early maladaptive schemas (EMS) have been strongly associated with psychopathology in adults, this association is less clear in young people since schemas are still emerging. This systematic review examines the relationship between EMS and psychopathology in young people to assess the degree to which EMS discriminate between psychopathologies, consistent with the cognitive content specificity hypothesis.

Methods PsycINFO, MEDLINE, PsycARTICLES, Psychology and Behavioral Sciences Collection, CINAHL Plus, Web of Science, and Scopus databases were systematically searched.

Results Fifty-eight studies were identified for inclusion, with 24,005 participants across all studies. We found evidence of the relationship between EMS and psychopathology in young people. EMS were found to discriminate between depression, anxiety, eating pathology, borderline symptomatology, and externalizing behaviors.

Conclusion Findings are discussed in the context of treatment approaches for psychopathology in youth, specifically through an increased understanding of the role of EMS in this developmental period. We also suggest future research directions and discuss the methodological limitations of the studies reviewed, including a bias towards community samples, and a lack of consistency in EMS measures. These findings suggest that EMS may be an important area to target when treating youth presenting with psychological distress.

Keywords Early maladaptive schemas · Psychopathology · Youth mental health

Traditionally a time of growth and change, transition to adulthood can be a period of instability and vulnerability for many adolescents and emerging adults. The ability to manage one's emotional experiences during this time is crucial for healthy navigation through adolescence and into adulthood. Not all young people manage this transition successfully. Rates of major depressive disorder, for example, have been found to increase dramatically in adolescence (Hankin et al. 1998) and a substantial minority of youth show signs of psychopathology at some point during this period (Rickwood et al. 2007).

A dominant framework for understanding this increased vulnerability focuses on the influence of cognitive content

and process on both emotional responses and patterns of behaviors (Beck 1976). Cognitive theories suggest that cognitions are organized hierarchically. Automatic thoughts are said to be at the most accessible level of cognition and are activated in response to specific triggering events. In contrast, schemas operate at the broadest level of generality, underpinning both automatic thoughts and intermediate beliefs (such as assumptions), and are distinguished by their persistence across time and situations. Beck described schemas as structures for screening, encoding, and evaluating stimuli, helping individuals to make sense of reality, interpret events, organize information, and guide thinking and behavior. He described these globalized structures as integral in understanding an individual's vulnerability to psychopathology, predisposing them to distress in stressful situations.

Young (1990, 1999) re-articulated the role of schemas in chronic psychological distress, identifying a set of specific maladaptive schemas. These are hypothesized to emerge early in life in response to the frustration of early

✉ Anne marie Nicol
 Anne.marie.Nicol@canberra.edu.au

¹ Centre for Applied Psychology, University of Canberra, Canberra, ACT, Australia

² Research School of Psychology, Australian National University, Canberra, ACT, Australia

Appendix B. Early Maladaptive schemas and self-injury



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RESEARCH ARTICLE

WILEY

Early maladaptive schemas in young people who self-injure

Annemarie Nicol¹ | Anita S. Mak¹ | Kristen Murray² | Phillip S. Kavanagh¹ ¹Centre for Applied Psychology, University of Canberra, Kinnaird Street, Bruce, ACT, Australia²Research School of Psychology, Australian National University, Canberra, ACT, Australia

Correspondence

Annemarie Nicol, Centre for Applied Psychology, Faculty of Health, University of Canberra, Bruce, ACT 2617, Australia.
Email: Annemarie.Nicol@canberra.edu.au

Abstract

Background: There is emerging evidence that early maladaptive schemas (EMS) may be a cognitive vulnerability factor in nonsuicidal self-injury (NSSI). The current study sought to examine the relationship between EMS and NSSI history, and whether this is moderated by gender, in a community youth sample.

Method: Participants were 403 Australian secondary and university students aged between 16 and 25 years, who completed a survey of NSSI history, EMS, and general emotional distress.

Results: Logistic regression analysis indicated that being female, depression, and EMS scores were useful for differentiating between youth reporting NSSI history and those who did not. High levels of *Defectiveness/Shame* and *Abandonment/Instability* schema scores, and low levels of *Emotional Inhibition* schema scores, were associated with NSSI history. Gender did not moderate the relationships between these EMS scores and NSSI history.

Conclusions: Present results suggest that aspects of the schema domain of Disconnection and Rejection are important for identifying NSSI history beyond young people's emotional distress. This provides researchers and clinicians with an opportunity to better target key EMS, especially beliefs about self-defectiveness and feelings of shame, that

Abbreviations: EMS, early maladaptive schemas; NSSI, non-suicidal self-injury.

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Appendix C. Early Maladaptive Schemas and the Functions of Self-Injury**Clinical Psychologist**ISSN: (Print) (Online) Journal homepage: <https://www.tandfonline.com/loi/rcnp20>

The relationship between early maladaptive schemas and the functions of self-injurious behaviour in youth

Annemarie Nicol, Anita S. Mak, Kristen Murray & Phillip S. Kavanagh

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Appendix D. Emotion regulation as a mediator between Early Maladaptive Schemas and Non-Suicidal Self-injury in Youth



RESEARCH PAPER

Emotion regulation as a mediator between early maladaptive schemas and non-suicidal self-injury in youth

Annemarie Nicol^{a,*}, Phillip S. Kavanagh^{a,c}, Kristen Murray^b, Anita S. Mak^a

^a Discipline of Psychology, Faculty of Health, University of Canberra, Canberra, ACT, Australia

^b Research School of Psychology, Australian National University, Canberra, ACT, Australia

^c Justice and Society, University of South Australia, Adelaide, SA, Australia

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KEYWORDS

Early maladaptive schemas;
Non-suicidal self-injury;
Emotion Regulation;
Youth mental health

Abstract Non-suicidal self-injury is commonly explained using an emotion regulation framework. Increasingly, early maladaptive schemas (EMS) are also used to conceptualise self-injury. However, there is an absence of research examining the relationship between EMS, emotion regulation, and self-injury. The current study attempted to address this gap by comparing youth with and without a history of self-injury on measures of emotion regulation difficulties and EMS, specifically Abandonment/Instability and Defectiveness/Shame. Specifically, we were interested in assessing whether difficulties in emotion regulation mediated the relationship between EMS and self-injury. Four hundred and three Australian secondary and university students aged between 16 and 25 years, completed measures of self-injury, EMS, and difficulties in emotion regulation. We found significant and positive relationships between Abandonment/Instability, Defectiveness/Shame and six emotion regulation difficulties. Young people with a self-injury history reported more difficulties in emotion regulation compared to those who had never self-injured. For each of the EMS, there was a direct effect on self-injury status, as well as an indirect effect via total emotion regulation difficulties. There was a significant indirect effect of Abandonment/Instability on self-injury via limited access to emotion regulation strategies. Results contribute to our understanding of mechanisms underlying the association between EMS and self-injury, that is, through emotion regulation difficulties. Results are discussed with reference to clinical implications, suggesting that targeting both EMS and emotion regulation difficulties may be appropriate when working with young self-injurers.
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* Corresponding author. Discipline of Psychology, Faculty of Health, University of Canberra, Locked Bag 1, ACT 2601, Australia.
E-mail address: Annemarie.Nicol@canberra.edu.au (A. Nicol).

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Appendix E. Risk Management Plan

Understanding self-harm in young people using a schema therapy framework

Risks and mitigation strategies

Risk: Participants may feel distressed by some of the questions.

Mitigation: This risk is expected to be low, as the items have been well used and tested on adolescent populations in the past, and there has been little evidence of negative effects. Nevertheless, I am working with the Directorate's Student Engagement team to minimise this risk. I will be present in the classroom when surveys are administered to observe any students who may be distressed. All participants will be provided with a list of mental health resources that they can take away with them should they experience any negative responses to the study. I will work with participating schools to explore other opportunities to provide support to students. This may include a presentation to students and/or staff on psychological health and wellbeing, or being present during the day if students want to approach me with questions or concerns. A facility can be provided on the Questionnaire for students to leave their contact details should they wish to talk about their mental health (these details will not be linked with their survey responses and will be available only to the researchers). A provisionally registered psychologist will be available to contact students by phone, and make appropriate referrals if needed. These options will be worked through with the school counsellor and other staff.

Any student who experiences mental health or psychological issues arising out of their participation in the research can be provided with appropriate support services (such as clinical or counselling services) free of cost.

Risk: There are additional questions for students who report self-harming behaviour. This may identify these students in the classroom, given the longer time it will take for them to complete the survey.

Mitigation: I have added a measure which captures attitudes to self-harm among young people. This will only be completed by those who do not report self-harming behaviours. This will ensure the questionnaire is roughly the same length for all participants. The measure was also included at the request of the Student Engagement Team, who asked to capture attitudes in the research. This will help us to identify potential barriers to help-seeking behaviour among young people who self-harm.

Risk: It is possible that a study of this kind may lead to increased demand on school's counselling resources.

Mitigation: While this is potentially a good outcome, it may stretch the school's resources. The researcher will provide resources to each participating school on self-harm and will be available to participating schools to give a presentation on self-harm. These include *Self-harm: An information booklet for young people who self-harm and those who care for them*, produced by Queensland Health and *Seeking solutions to self-injury: A guide for school staff*, produced by the UQ Group for Suicide Prevention Studies at the University of Queensland. I will be present during the administration of all surveys and will be on hand in the unlikely event that a student may experience distress (the researcher is a provisionally registered clinical psychologist with 15 years' experience as Lifeline counsellor).

In addition, as a thank you to schools for their participation, all schools that participate will also receive a copy of the book *Stopping the pain: A workbook for teens who self-injure* (valued at \$20). The book contains many useful resources to assist young people who may be

at risk of self-harm, ways to work with them and their parents as well as activities to build resilience.

Once my research is complete, I'm keen to make myself available to staff at the Directorate and schools more broadly to discuss the findings and how these may help schools to work with young people who self-harm.

Risk: There may be possible contagion effects, the survey may appear to normalise self-harm behaviour

Mitigation: Care has been taken to prevent giving participants ideas about possible methods of self-harm. A single screening item has been used to identify the presence of self-harm - "have you ever harmed yourself on purpose?" This in contrast to self-injury checklists, which are more commonly used in studies of this kind. In cases where the questionnaire is undertaken online only students who respond positively to the screening question will be directed to questions on self-harm, which are deliberately worded to limit the number of times self-harm is mentioned, e.g. " how many times have you done this?" and "when you do this, are you alone?"

Appendix F. University of Canberra Ethics Approval



23 October 2014

APPROVED - Project number 14-207

Ms Annemarie Nicol
Faculty of Health
University of Canberra
Canberra ACT 2601

Dear Annemarie,

The Human Research Ethics Committee has considered your application to conduct research with human subjects for the project titled **Understanding self-harm in young people using a schema therapy framework**.

Approval is granted until 22 October 2017.

The following general conditions apply to your approval.

These requirements are determined by University policy and the *National Statement on Ethical Conduct in Human Research* (National Health and Medical Research Council, 2007).

Monitoring:	You must, in conjunction with your supervisor, assist the Committee to monitor the conduct of approved research by completing and promptly returning project review forms, which will be sent to you at the end of your project and, in the case of extended research, at least annually during the approval period.
Discontinuation of research:	You must, in conjunction with your supervisor, inform the Committee, giving reasons, if the research is not conducted or is discontinued before the expected date of completion.
Extension of approval:	If your project will not be complete by the expiry date stated above, you must apply in writing for extension of approval. Application should be made before current approval expires; should specify a new completion date; should include reasons for your request.
Retention and storage of data:	University policy states that all research data must be stored securely, on University premises, for a minimum of five years. You must ensure that all records are transferred to the University when the project is complete.
Contact details and notification of changes:	All email contact should use the UC email address. You should advise the Committee of any change of address during or soon after the approval period including, if appropriate, email address(es).

Yours sincerely
Human Research Ethics Committee

Hendryk Flaegel
Research Ethics & Compliance Officer
Research Services Office
T (02) 6201 5220 F (02) 6201 5466
E hendryk flaegel@canberra.edu.au

www.canberra.edu.au

Postal Address:
University of Canberra ACT 2601 Australia
Location:
University Drive Braddon ACT

Australian Government Higher Education Register
Provider Number: 128 0251 006124



UNIVERSITY OF
CANBERRA

Appendix G. School Information Letter

Research Study: Emotional health and wellbeing in youth and young adults

Invitation for your participation in research study

Dear Sir/Madam,

My name is Annemarie Nicol and I am conducting a research project on young people, their thoughts and feelings about themselves, and how this may affect self-harming behaviour. This is part of a PhD in Clinical Psychology at the University of Canberra.

As you are aware, a number of studies have shown that self-harm has increased dramatically in recent years, particularly among adolescents. Of concern, this increase appears greatest among those who may not necessarily seek treatment or help for this behaviour. Many existing studies have examined factors that may increase the risk or likelihood of the behaviour; other studies have explored the motivations adolescents have for engaging in self-harm. However, very little research has been conducted on the thoughts and feelings young people have of themselves in relation to self-harm. In my study, I aim to use a schema framework to try and understand the deeply held beliefs that young people who self-harm may have about themselves and their relationship with the others. A second goal is to then use this information to understand how those beliefs impact on an adolescent's decision to engage in self-harm as part of their strategy for coping with difficult or stressful events.

I hope to use this information to assist in designing a program that will help adolescents who self-harm to better manage difficult or unpleasant thoughts about themselves. In addition, this information may be useful to school counsellors and clinicians in selecting treatment options for young people. It may also be beneficial to schools in managing self-harm and in highlighting the extent of self-harm within the school.

I would very much like your school to participate in the research. I am writing to colleges within the Canberra region (and some nearby New South Wales schools) and hope to survey around 500 students. The survey will be in the form of an anonymous and confidential questionnaire which can be completed either online or on a paper based questionnaire depending on the school's preference. In the questionnaire, I have deliberately kept references to self-harm at a minimum, and am presenting the research as a study into the emotional health and wellbeing of young people.

I intend to provide parents with information about the study and seek their active consent for their child to participate. In addition, the students will have the option of choosing not to participate in the research. I will work with the school to ensure that any student that requires it receives appropriate support. This includes making myself available to give a presentation on self-harm to teachers, parents or students at the request of the school.

At this stage, I am seeking your tentative interest only, so I can provide you with more information on the study. I would very much like to meet with you (or the relevant staff member) to discuss my research and answer any queries you may have. This in no way obliges you to participate.

As a thank you to schools for their participation, all schools that participate will also receive a copy of the book *Stopping the Pain: A Workbook for Teens who Self-Injure*. The book contains many useful resources to assist young people who may be at risk of self-harm, ways to work with them and their parents as well as activities to build resilience.

The study has been approved by the University of Canberra Committee for Ethics in Human Research and the ACT Education and Training Directorate.

I look forward to hearing from you.

Yours sincerely

Annemarie Nicol

Researcher

Annemarie Nicol
Centre for Applied Psychology
Faculty of Health
annemarie.nicol@canberra.edu.au

Supervisor

Dr Peter Chamberlain
Centre for Applied Psychology
Faculty of Health
peter.chamberlain@canberra.edu.au

Appendix H. Parent Information and Consent

Research Study: Emotional health and wellbeing in youth and young adults

Information sheet for parents and guardians

Dear Parent / Guardian,

My name is Annemarie Nicol and I would like to invite your son/daughter to participate in a research project on young people and their emotional health and wellbeing. This is part of a PhD in Clinical Psychology at the University of Canberra. A number of young people throughout the region are taking part in the study.

In this study, I am interested in understanding how young people think and feel about themselves. I am hoping this study can help us better understand some of the difficulties young people face, and find ways we can help them.

I am seeking permission to ask your son/daughter to participate in this study.

What will be involved?

The study involves asking students to complete a questionnaire that asks them their thoughts and feelings about themselves and the ways in which they cope with difficult situations, including some questions on self-harm. It is important to get responses from a wide range of young people, so we are able to see why some people do well in difficult situations, while others may struggle.

The questionnaires will be completed during normal class time and take about 30 minutes. A copy of the questionnaire is at the front office of the school if you wish to have a look at it or can be obtained by sending me an email at the address below.

What if I don't want my child to take part in the research?

That's okay. Participation in the study is completely voluntary. Both you and your son/daughter have to agree to take part. You can let the school know if you wish your child to participate by filling out the form attached and returning it to the school.

I will also ask your son or daughter if they would like to take part in the research. They may choose not to take part at all, not to answer any questions or to withdraw from the research at any time.

Can my child or I be identified as participants?

No. At no time will you or your child be able to be identified.

Is there anything that might make my child upset if they take part?

Your child is not expected to find the questions upsetting. However, if there is anything about the research that upsets them they can stop taking part. I will also give them a list of

resources that may be able to help should they have any questions or concerns. You, or your child, are also welcome to contact me at any time and I am able to provide further help if needed.

What will happen to the information collected?

Your child's responses will be put together with the responses of other young people who have completed the questionnaire. These will be used in a thesis for my doctoral studies and I will publish articles from this research in academic journals or present them at conferences. I will also give a summary of what I find to your school. It will not be possible to identify any student from the results.

All the information will be securely stored at the University of Canberra for five years from the completion of the project and then destroyed.

What do I need to do?

If you agree for your child to take part in the project, please complete the consent form attached to this letter and return it to the school by <date>. Your child will also be given an information sheet about the research.

The research has been approved by the University of Canberra Committee for Ethics in Human Research, the ACT Education and Training Directorate and your school principal.

If you have any questions, please do not hesitate to contact me (details below).

Yours sincerely

Researcher

Annemarie Nicol
Centre for Applied Psychology
Faculty of Health
annemarie.nicol@canberra.edu.au

Supervisor

Dr Peter Chamberlain
Centre for Applied Psychology
Faculty of Health
peter.chamberlain@canberra.edu.au

Research Study: Emotional health and wellbeing in youth and young adults**Consent form for parents or guardians**

Please complete this form and return to <name of school > by <date>.

I, _____
(please print name of parent)

declare that I have legal responsibility for _____
(please print name of child)

and I am legally competent to give consent to his/her participation in the *Emotional health and wellbeing in youth and young adults* study to be held on <date> .

In giving my consent, I:

- am happy for my child to participate in the *Emotional health and wellbeing in youth and young adults* study
- have read the information about the project and understand what is involved.
- have discussed participation in the project with my child and they are willing to take part.
- understand that my child's name or any identifying information will not be used.

Details of Parent/Carer

Name:

Signature

Date:

Appendix I. Participant Information Sheet

Emotional health and wellbeing in youth and young adults

Participant Information Sheet

My name is Annemarie Nicol and I am conducting a research project on young people and their emotional health and wellbeing. This is part of a PhD in Clinical Psychology at the University of Canberra.

I would like to invite you to take part in this study. Before you decide, it is important that you understand what the research is about and what you are being asked to do. Please read the following information carefully. My details are at the end of this information sheet and you are welcome to contact me if you have any questions or would like more information on the research.

What is this research about?

In this study, I am interested in understanding how young people think and feel about themselves. I am doing this to test a psychological idea, or 'theory' that is used to treat different mental health difficulties in adults. I am hoping this study can help us better understand some of the difficulties young people face, and find ways we can help them.

Why have I been asked to take part?

For this study, we need about 500 young people aged from 16 to 25 years of age to take part. You have been asked to take part because your school has agreed to be in the study, although you don't have to take part if you don't want to.

What will I have to do?

If you agree to take part, you will be asked to complete a survey which will ask questions about your thoughts, feelings, emotions and some of the things you might do when things are difficult. This will take you up about 30 minutes to complete.

You are allowed to change your mind and stop taking part in the study at any time, without giving a reason.

Is my information private?

Your responses will be treated with complete confidentiality and the only people who will see your answers are the research team (myself and my supervisor), although we won't know they are from you. Your teachers, the principal or your classmates will not know your answers.

We will keep the information you give to us safe and store it securely so no-one else will be able to get access to it.

How will the information be used?

Your responses will be put together with the responses of other young people who have completed the questionnaire. These will be used in a thesis for my doctoral studies and I will publish articles from this research in academic journals or present them at conferences. I will also give a summary of what I find to your school. It will not be possible to identify any student or school from the results.

Where can I get help/information about mental health?

This survey includes personal questions about your thoughts and feelings. Some people may find these questions upsetting. If you feel upset at any time, even after filling in the survey, you can talk to your school counsellor, or contact kids helpline (www.kidshelp.com.au or phone 1800 55 1800) or headspace (www.headspace.org.au) where you can receive free support, online or over the phone, at any time.

Please contact me also if you have any questions about the research you would like answered.

The study has been approved by the University of Canberra Committee for Ethics in Human Research, the ACT Education and Training Directorate and your school principal.

Thank you

Researcher

Annemarie Nicol
Centre for Applied Psychology
Faculty of Health
annemarie.nicol@canberra.edu.au

Supervisor

Dr Peter Chamberlain
Centre for Applied Psychology
Faculty of Health
peter.chamberlain@canberra.edu.au

Appendix J. Questionnaire: Emotional Health and Wellbeing in Young Adults

Thank you for taking part in this survey. The information you provide is **CONFIDENTIAL**. There are no right or wrong answers, so please simply circle the answer you feel most applies to YOU.

It would help us if you answered all items as best you can even if you are not absolutely certain.

1. Are you (please circle)...
 - Male
 - Female
 - Other

2. How old are you now? _____ years

3. Are you of Aboriginal or Torres Strait Islander heritage?
 - No
 - Yes

4. Were you born in Australia?
 - Yes
 - No, I was born in _____

5. What language do you most often speak at home?
 - English
 - Other – please specify _____

6. Who do you live with? (Circle one only)
 - I live with my mother and father (birth or adoptive)
 - I live part of the time with my mother and part of the time with my father
 - I live with my mother
 - I live with my father
 - I live with my mother and her partner
 - I live with my father and his partner
 - I live with other family members (such as grandparents, an aunt/uncle)
 - I live with a foster family
 - I live with someone else – please specify _____

Section A. The next questions ask about how you **generally** experience your feelings.

Please circle the response that best fits for you.



Generally, how true is this of you...	Almost never		About half the time		Almost always
1. I am clear about my feelings	1	2	3	4	5
2. I pay attention to how I feel	1	2	3	4	5
3. I experience my emotions as overwhelming and out of control	1	2	3	4	5
4. I have no idea how I am feeling	1	2	3	4	5
5. I have difficulty making sense out of my feelings	1	2	3	4	5
6. I am attentive to my feelings	1	2	3	4	5
7. I know exactly how I am feeling	1	2	3	4	5
8. I care about what I am feeling	1	2	3	4	5
9. I am confused about how I feel	1	2	3	4	5
10. When I'm upset, I acknowledge my emotions	1	2	3	4	5
11. When I'm upset, I become angry with myself for feeling that way	1	2	3	4	5
12. When I'm upset, I become embarrassed for feeling that way	1	2	3	4	5
13. When I'm upset, I have difficulty getting work done	1	2	3	4	5
14. When I'm upset, I become out of control	1	2	3	4	5
15. When I'm upset, I believe that I will remain that way for a long time	1	2	3	4	5
16. When I'm upset, I believe that I'll end up feeling very depressed	1	2	3	4	5
17. When I'm upset, I believe that my feelings are valid and important	1	2	3	4	5
18. When I'm upset, I have difficulty focusing on other things	1	2	3	4	5
19. When I'm upset, I feel out of control	1	2	3	4	5
20. When I'm upset, I can still get things done	1	2	3	4	5
21. When I'm upset, I feel ashamed with myself for feeling that way	1	2	3	4	5
22. When I'm upset, I know that I can find a way to eventually feel better	1	2	3	4	5
23. When I'm upset, I feel like I am weak	1	2	3	4	5
24. When I'm upset, I feel like I can remain in control of my behaviours	1	2	3	4	5
25. When I'm upset, I feel guilty for feeling that way	1	2	3	4	5
26. When I'm upset, I have difficulty concentrating	1	2	3	4	5

Generally, how true is this of you...	Almost never		About half the time		Almost always
27. When I'm upset, I have difficulty controlling my behaviours	1	2	3	4	5
28. When I'm upset, I believe that there is nothing I can do to make myself feel better	1	2	3	4	5
29. When I'm upset, I become irritated with myself for feeling that way	1	2	3	4	5
30. When I'm upset, I start to feel very bad about myself	1	2	3	4	5
31. When I'm upset, I believe that wallowing in it is all I can do	1	2	3	4	5
32. When I'm upset, I lose control over my behaviours	1	2	3	4	5
33. When I'm upset, I have difficulty thinking about anything else	1	2	3	4	5
34. When I'm upset, I take time to figure out what I'm really feeling	1	2	3	4	5
35. When I'm upset, it takes me a long time to feel better	1	2	3	4	5
36. When I'm upset, my emotions feel overwhelming	1	2	3	4	5

Section B. Please read each statement and circle the response which most applied **over the past two weeks.**

In the past two weeks, how true is this for you...	Never	Sometimes	Often	Almost always
1. I found it hard to wind down	1	2	3	4
2. I was aware of dryness in my mouth	1	2	3	4
3. I couldn't seem to experience any positive feeling at all	1	2	3	4
4. I experienced difficulty breathing	1	2	3	4
5. I found it difficult to work up the initiative to do things	1	2	3	4
6. I tended to over-react to situations	1	2	3	4
7. I experienced trembling (eg in my hands)	1	2	3	4
8. I felt that I was using a lot of nervous energy	1	2	3	4
9. I was worried about situations in which I might panic and make a fool of myself	1	2	3	4
10. I felt I had nothing to look forward to	1	2	3	4
11. I found myself getting agitated	1	2	3	4
12. I found it difficult to relax	1	2	3	4
13. I felt down-hearted and blue	1	2	3	4
14. I was intolerant of anything that kept me from getting on with what I was doing	1	2	3	4
15. I felt I was close to panic	1	2	3	4
16. I was unable to become enthusiastic about anything	1	2	3	4
17. I felt I wasn't worth much as a person	1	2	3	4
18. I felt that I was rather touchy	1	2	3	4
19. I was aware of the action of my heart in the absence of physical exertion	1	2	3	4
20. I felt scared without any good reason	1	2	3	4
21. I felt that life was meaningless	1	2	3	4

22. Do you know of anyone who has ever physically harmed themselves on purpose?

<input type="checkbox"/>	Yes
<input type="checkbox"/>	No

23. Have you ever physically harmed yourself on purpose?

<input type="checkbox"/>	Yes	Go to Section C
<input type="checkbox"/>	No	Go to Section D

Section C: This section asks about a number of different things that people sometimes do to hurt themselves. Often, people who do these kinds of things to themselves keep it a secret, for a variety of reasons. However, honest responses to these questions will provide us with greater understanding and knowledge about these behaviours and the best way to help people.



Please be assured that your answers are completely confidential.

24. What have you done to hurt yourself (you can list more than one if this is relevant for you)?
25. How old were you the first time you did this? _____
26. How many times have you done this?
- 1
 - 2-5
 - 6-10
 - 10+
27. Do you still do this? Yes No
28. Are you currently experiencing an urge to do this? Yes No
29. When was the last time you did this?
- This week
 - Last week
 - Last month
 - Last 6 months
 - More than a year ago
30. How often do/did you do this?
- Daily
 - 2-3 times a week
 - 2-3 times a month
 - 2-3 times a year
 - less than once a year
31. Usually how long is it from the time you feel the urge to do this until you act on the urge?
- Less than an hour
 - 1-3 hours
 - 3-6 hours
 - 6-12 hours
 - more than 12 hours
32. Have you ever needed medical attention for your injury? Yes Sometimes No
33. Have you ever talked to a counsellor or therapist about this? Yes Sometimes No

34. Do/did you experience physical pain when you do/did this?	Yes	Sometimes	No
35. When you do/did this, are/were you alone?	Yes	Sometimes	No
36. Do/Did you want to stop doing this?	Yes	Sometimes	No
37. Would you like your school counsellor to know about this?	Yes	No	

The next questions are written to help us better understand your experiences when you harm yourself deliberately. Below is a list of statements that may or may not be relevant to your experience. Please:

- Circle **0** if the statement **not relevant** for you at all
- Circle **1** if the statement is **somewhat relevant** for you
- Circle **2** if the statement is **very relevant** for you

When I harm myself, I am ...	Not relevant	Somewhat relevant	Very relevant
1. ... calming myself down	0	1	2
2. ... creating a boundary between myself and others	0	1	2
3. ... punishing myself	0	1	2
4. ... giving myself a way to care for myself (by attending to the wound)	0	1	2
5. ... causing pain so I will stop feeling numb	0	1	2
6. ... avoiding the impulse to attempt suicide	0	1	2
7. ... doing something to generate excitement or exhilaration	0	1	2
8. ... bonding with peers	0	1	2
9. ... letting others know the extent of my emotional pain	0	1	2
10. ...getting out of something unpleasant that I don't want to do	0	1	2
11. ... seeing if I can stand the pain	0	1	2
12. ... creating a physical sign that I feel awful	0	1	2
13. ... getting back at someone	0	1	2
14. ... ensuring that I am self-sufficient	0	1	2
15. ... releasing emotional pressure that has built up inside of me	0	1	2
16. ... demonstrating that I am separate from other people	0	1	2
17. ... expressing anger towards myself for being worthless or stupid	0	1	2
18. ... creating a physical injury that is easier to care for than my emotional distress	0	1	2
19. ... trying to feel something (as opposed to nothing) even if it is physical pain	0	1	2
20. ... responding to suicidal thoughts without actually attempting suicide	0	1	2
21. ... avoiding being with people	0	1	2
22. ... entertaining myself or others by doing something extreme	0	1	2
23. ... fitting in with others	0	1	2

When I harm myself, I am ...	Not relevant	Somewhat relevant	Very relevant
24. ...trying to end my life	0	1	2
25. ...avoiding punishment or other consequences	0	1	2
26. ... seeking care or help from others	0	1	2
27. ... demonstrating I am tough or strong	0	1	2
28. ... proving to myself that my emotional pain is real	0	1	2
29. ... getting revenge against others	0	1	2
30. ... demonstrating that I do not need to rely on others for help	0	1	2
31. ... reducing anxiety, frustration, anger, or other overwhelming emotions	0	1	2
32. ... establishing a barrier between myself and others	0	1	2
33. ... reacting to feeling unhappy with myself or disgusted with myself	0	1	2
34. ... allowing myself to focus on treating the injury	0	1	2
35. ... making sure I am still alive when I don't feel real	0	1	2
36. ... putting a stop to suicidal thoughts	0	1	2
37. ... pushing my limits in a manner similar to skydiving or other extreme activities	0	1	2
38. ... creating a sign of friendship or kinship with friends or loved ones	0	1	2
39. ... keeping a loved one from leaving or abandoning me	0	1	2
40. ... proving I can take the physical pain	0	1	2
41. ... signifying the emotional distress I'm experiencing	0	1	2
42. ... trying to hurt someone close to me	0	1	2
43. ... establishing that I am autonomous/independent	0	1	2

44. In the space below, please list any statements that you feel would be more accurate for you than the ones listed above (Optional):

Please go to Section E

Section D: Please read the following story and answer the questions below.

Chris is a 15-year-old girl who was recently sent to see a doctor. She cut herself with a knife **on purpose** and needed to get 15 stitches in her arm. When her doctor examined her, the doctor found that Chris had many scars on her arms and legs from other times she had cut herself on purpose. Chris admitted that she had been cutting herself on purpose for nearly a year but did not want to kill herself. Sometimes she had to get stitches because the cuts were so deep, but other times the cuts healed without needing stitches.

How likely do you think it is that Chris:	Very unlike Chris		Neutral		Very much like Chris
	1	2	3	4	5
1. Has a lot of friends	1	2	3	4	5
2. Is depressed	1	2	3	4	5
3. Is 'weird'	1	2	3	4	5
4. Has been abused	1	2	3	4	5
5. Is tougher or stronger than most people	1	2	3	4	5
6. Would stop hurting herself if no-one paid any attention	1	2	3	4	5
7. Wants to kill herself	1	2	3	4	5
8. Does not know how to cope with problems	1	2	3	4	5
9. Plays sport or does other activities outside school	1	2	3	4	5
10. Likes to make other people do things for her	1	2	3	4	5
11. Has a number of different things she does to deal with stress	1	2	3	4	5
12. Gets on well with her parents	1	2	3	4	5
13. Will 'grow out' of hurting herself	1	2	3	4	5
14. Would kill herself accidentally	1	2	3	4	5
15. Has a mental illness	1	2	3	4	5
16. Does well at school	1	2	3	4	5
17. Has been admitted to hospital	1	2	3	4	5
18. Does drugs	1	2	3	4	5
19. Thinks life is hopeless	1	2	3	4	5

20. Would stop hurting herself if someone paid enough attention to her	1	2	3	4	5
21. Does not like herself very much	1	2	3	4	5
22. Gets stressed easily	1	2	3	4	5
23. Does not have anyone to talk to about her problems	1	2	3	4	5
24. Does things to make people feel sympathy for her	1	2	3	4	5
25. Won't be able to remember what she did when she stops hurting herself	1	2	3	4	5
26. Is just like any other teenager	1	2	3	4	5
27. Hangs around with other people who get in trouble a lot	1	2	3	4	5
28. Is just going through a 'phase'	1	2	3	4	5
29. Is likely to wag school	1	2	3	4	5
30. Should see a counsellor or psychologist	1	2	3	4	5
31. Is likely to hurt herself in private and not tell anyone	1	2	3	4	5
32. Is isolated and does not talk to many people	1	2	3	4	5

Please go to Section E

Section E: Listed below are statements that people might use to describe themselves. Please read each statement, then rate it based on how accurately it fits you **over the past year**. When you are not sure, base your answer on what you **emotionally feel**, not on what you think to be true.

A few of the items ask about your relationships with your girlfriend/boyfriend. If you are not currently in a relationship, please answer the item based on your most recent significant girlfriend/boyfriend, or a close friend.

Over the past year, how true is this of me...	Completely untrue of me	Mostly untrue of me	Slightly more true than untrue	Moderately true of me	Mostly true of me	Describes me perfectly
1. I haven't had someone to nurture me or care deeply about everything that happens to me.	1	2	3	4	5	6
2. I cling to people I'm close to because I am afraid they'll leave me.	1	2	3	4	5	6
3. I feel that people will take advantage of me.	1	2	3	4	5	6
4. I don't fit in.	1	2	3	4	5	6
5. No one I like could love me once he or she saw my faults.	1	2	3	4	5	6
6. Almost nothing I do at school is as good as other people can do.	1	2	3	4	5	6
7. I don't feel capable of getting by on my own in everyday life.	1	2	3	4	5	6
8. I feel like something bad is about to happen.	1	2	3	4	5	6
9. I have not been able to separate myself from my parent(s) the way other people my age seem to do.	1	2	3	4	5	6
10. I think that if I do what I want, I'm only asking for trouble.	1	2	3	4	5	6
11. I'm the one who usually ends up taking care of the people I'm close to.	1	2	3	4	5	6
12. I am too self-conscious to show positive feelings to others (e.g. affection, showing I care).	1	2	3	4	5	6
13. I must be the best at most of what I do; I can't accept second best.	1	2	3	4	5	6
14. I have a lot of trouble accepting "no" for an answer when I want something from other people.	1	2	3	4	5	6
15. I can't seem to discipline myself to complete routine or boring tasks	1	2	3	4	5	6
16. Having money and knowing important	1	2	3	4	5	6

This is a really long questionnaire - but hang in there, you're doing well 😊

Over the past year, how true is this of me...	Completely untrue of me	Mostly untrue of me	Slightly more true than untrue	Moderately true of me	Mostly true of me	Describes me perfectly
17. Even when things seem to be going well, I feel that it is only temporary.	1	2	3	4	5	6
18. If I make a mistake, I deserve to be punished.	1	2	3	4	5	6
19. I don't have people to give me warmth and affection.	1	2	3	4	5	6
20. I need other people so much that I worry about losing them.	1	2	3	4	5	6
21. I feel that I cannot let my guard down or else others will intentionally hurt me.	1	2	3	4	5	6
22. I'm fundamentally different from other people.	1	2	3	4	5	6
23. No one I like would want to stay close to me if he or she knew the real me.	1	2	3	4	5	6
24. I'm incompetent when it comes to achievement.	1	2	3	4	5	6
25. I think of myself as a dependent person when it comes to everyday functioning.	1	2	3	4	5	6
26. I feel that a disaster could strike at any moment	1	2	3	4	5	6
27. My parent(s) and I tend to be overinvolved in each other's lives.	1	2	3	4	5	6
28. I have to give in to other peoples' wishes, or else they will retaliate or reject me in some way.	1	2	3	4	5	6
29. I am a good person because I think of others more than of myself	1	2	3	4	5	6
30. I find it embarrassing to express my feelings to others	1	2	3	4	5	6
31. I try to do my best; I can't settle for "good enough"	1	2	3	4	5	6
32. I'm special and shouldn't have to accept many of the restrictions placed on other people	1	2	3	4	5	6
33. If I can't reach a goal, I become easily frustrated and give up	1	2	3	4	5	6
34. Accomplishments are most valuable to me if other people notice them	1	2	3	4	5	6
35. If something good happens, I worry that something bad is likely to follow	1	2	3	4	5	6

**Wow, this questionnaire is like pushing a boulder up Mt Everest...
You're doing a great job**



Over the past year, how true is this of me...	Completely untrue of me	Mostly untrue of me	Slightly more true than untrue	Moderately true of me	Mostly true of me	Describes me perfectly
36. If I don't try my hardest, I should expect to lose out	1	2	3	4	5	6
37. I haven't felt that I am special to someone.	1	2	3	4	5	6
38. I worry that people I feel close to will leave me or abandon me.	1	2	3	4	5	6
39. It is only a matter of time before someone betrays me.	1	2	3	4	5	6
40. I don't belong; I'm a loner.	1	2	3	4	5	6
41. I'm unworthy of the love, attention and respect of others.	1	2	3	4	5	6
42. Most other people are more capable than I am.	1	2	3	4	5	6
43. I lack common sense.	1	2	3	4	5	6
44. I worry about being physically attacked by people.	1	2	3	4	5	6
45. It is very difficult for my parent(s) and me to keep intimate details from each other, without feeling betrayed or guilty.	1	2	3	4	5	6
46. In friendships, I usually let the other person have the upper hand.	1	2	3	4	5	6
47. I am so busy doing stuff for the people that I care about that I have little time for myself	1	2	3	4	5	6
48. I find it hard to be free-spirited and spontaneous around people.	1	2	3	4	5	6
49. I must meet all my responsibilities.	1	2	3	4	5	6
50. I hate to be constrained or kept from doing what I want	1	2	3	4	5	6
51. I have a very difficult time sacrificing immediate gratification or pleasure to achieve a long-range goal	1	2	3	4	5	6
52. Unless I get a lot of attention from others, I feel less important	1	2	3	4	5	6
53. If I don't do the job right I should suffer the consequences	1	2	3	4	5	6
54. I have not had someone who really listens to me, understands me or is tuned into my needs and feelings	1	2	3	4	5	6

Phew...mammoth effort...you're nearly there



Over the past year, how true is this of me...	Completely untrue of me	Mostly untrue of me	Slightly more true than untrue	Moderately true of me	Mostly true of me	Describes me perfectly
55. You can't be too careful. Something will always go wrong	1	2	3	4	5	6
56. When someone I care for seems to be pulling away or withdrawing from me, I feel desperate	1	2	3	4	5	6
57. I am quite suspicious of other people's motives	1	2	3	4	5	6
58. I feel alienated or cut off from other people.	1	2	3	4	5	6
59. I feel that I'm not lovable.	1	2	3	4	5	6
60. I am not as talented as most people are.	1	2	3	4	5	6
61. My judgment cannot be counted on in everyday situations.	1	2	3	4	5	6
62. I worry that my family will lose our money and become very poor.	1	2	3	4	5	6
63. I often feel as if my parent(s) are living through me - that I don't have a life of my own.	1	2	3	4	5	6
64. I've always let others make choices for me, so I really don't know what I want for myself.	1	2	3	4	5	6
65. I've always been the one who listens to everyone else's problems.	1	2	3	4	5	6
66. I control myself so much that many people think that I am unemotional or unfeeling.	1	2	3	4	5	6
67. I feel there is constant pressure for me to achieve and get things done.	1	2	3	4	5	6
68. I feel that I shouldn't have to follow the normal rules and conventions that other people do	1	2	3	4	5	6
69. I can't force myself to do things I don't enjoy, even when I know it's for my own good.	1	2	3	4	5	6
70. It's important for me to get recognition and admiration.	1	2	3	4	5	6
71. No matter how hard I work, I worry that I could be wiped out financially and lose almost everything	1	2	3	4	5	6
72. It doesn't matter why I make a mistake. When I do something wrong I should pay the consequences	1	2	3	4	5	6

You're on the home stretch now - only one more page to go



Over the past year, how true is this of me...	Completely untrue of me	Mostly untrue of me	Slightly more true than untrue	Moderately true of me	Mostly true of me	Describes me perfectly
73. I haven't had a strong or wise person to give me sound advice or direction when I am not sure what to do	1	2	3	4	5	6
74. Sometimes I am so worried about people leaving me that I drive them away	1	2	3	4	5	6
75. I am usually on the lookout for other people's ulterior or hidden motives	1	2	3	4	5	6
76. I always feel on the outside of groups	1	2	3	4	5	6
77. I am too unacceptable in very basic ways to reveal myself to other people or let them get to know me well.	1	2	3	4	5	6
78. I am not as intelligent as most people when it comes to school.	1	2	3	4	5	6
79. I don't feel confident about my ability to solve everyday problems that come up.	1	2	3	4	5	6
80. I worry that I'm developing a serious illness, even though nothing serious has been diagnosed by a doctor.	1	2	3	4	5	6
81. I often feel that I do not have a separate identity from my parent(s).	1	2	3	4	5	6
82. I have a lot of trouble demanding that my rights be respected and that my feelings be taken into account.	1	2	3	4	5	6
83. Other people see me as doing too much for others and not enough for myself.	1	2	3	4	5	6
84. People see me as uptight emotionally.	1	2	3	4	5	6
85. I can't let myself off the hook easily or make excuses for my mistakes.	1	2	3	4	5	6
86. I feel that what I have to offer is of greater value than the contributions of others.	1	2	3	4	5	6
87. I have rarely been able to stick to my resolutions.	1	2	3	4	5	6
88. Lots of praise and compliments make me feel like a worthwhile person	1	2	3	4	5	6
89. I worry that a wrong decision could lead to disaster.	1	2	3	4	5	6
90. I'm a bad person who deserves to be punished.	1	2	3	4	5	6

**Thank you very much for taking part in this research.
Please place the survey in the sealable envelope provided and hand it to the researcher.**



Appendix K. Student Resource Sheet



Sometimes it can feel like life is just too hard and problems can seem overwhelming. Some young people hurt themselves as a way of coping with distress, feeling numb, intense pain, or unbearable negative feelings, thoughts or memories.

You don't to have to face this challenge alone. It's important to let others know how you feel when things don't go to plan. Don't build up worries, anger or disappointments – talk about them.

There are also places you can go to get help. If you feel upset at any time you can talk to a trusted teacher or school counsellor.

If you do not feel comfortable talking to someone in your school you can also ring **Kids Help Line**, the number is 1800 55 1800. The call is free and confidential and there is someone available to talk 24 hours a day. Kids Help Line is also available on the web at www.kidshelp.com.au

You can also get in touch with **eheadspace** at www.eheadspace.org.au

eheadspace is a confidential, free and secure space where young people can chat, email or speak on the phone with a qualified youth mental health professional.

eheadspace can help you deal with a broad range of things like bullying, drug and alcohol issues, depression and anxiety, relationships, concerns about a friend, fitting in and isolation.

The headspace website also provides information on these issues as well as personal stories of how other young people got through a tough time. Go to www.headspace.org.au or check out their Facebook page www.facebook.com/headspacecanberra

If you would like more information on any of these services, if you feel upset after filling in this survey or if you just want more information on this research please get in touch with me at Annemarie.nicol@canberra.edu.au