*"It's Not Easy Feeling Like Me":*

# Emotion Regulation and Self-Integration in Adolescent Self-Harm

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**DECLARATION**

This thesis has been composed by myself and it is all my own work.

Signed:

Katherine F. V. Phillips

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## CONTENTS

## LIST OF APPENDICES

## ABSTRACT

Previous studies have found that the reduction of negative emotions, and the creation of sensation to counteract loss of sense of self, are the most frequently reported motivations for self-harm. The current study aimed to investigate the influence of emotion regulation and self-integration on self-harm in a sample of adolescents. Analyses found that adolescents who self-harm, from both a non-clinical and a clinical sample, used dysfunctional emotion regulation strategies more frequently, and functional strategies less frequently, than adolescents who had not self-harmed. Significant correlations between emotion regulation and level of self-harm were also found. Analyses also found that adolescents who self-harm had a lower level of self-integration than adolescents who had not self-harmed. Significant correlations between level of self-integration and level of self-harm were also found. Emotion regulation and self-integration predicted self-harm in regression analyses, as did depression. A path analysis supported the hypothesis that attachment was a key developmental factor in emotion regulation, which in turn predicted self-harm directly, as well as indirectly via level of self-integration and depression. The motivation to self-harm, both to create feelings and to avoid feelings, appears to reflect the use of dysfunctional emotion regulation strategies and the sense of poor self-integration.

## INTRODUCTION

### 1. Self-Harm

*"I didn't want to die, I just wanted to hurt."*

('Talking About Self-Harm': p1).

#### What is Self-Harm?

The term 'self-harm' is used to describe a wide range of behaviours where an individual deliberately inflicts harm upon his or her-self. It includes self-cutting, self-poisoning and attempted hanging (Skegg, 2005). Ambiguity still surrounds the meaning of particular terms used to describe different forms of self-harm according to intent and method. For example, the terminology differs between the United Kingdom where 'deliberate self-harm' is used regardless of intent, whilst in the United States this term implies an absence of suicidal intent. Also, the adjective 'deliberate' is now not favoured amongst patients in the United Kingdom (Skegg, 2005).

It is considered important to distinguish between self-harm that occurs with no intent to die and attempted suicide given the hypothesised differences in functions of each behaviour (Brown et al., 2002). Indeed, self-harm is considered by many to be a coping strategy used in an effort to avoid suicide (e.g. Favazza, 1996; Muehlenkamp & Gutierrez, 2004). However, most people who have recently taken an overdose report that they did not expect or want to die (e.g. Bancroft et al., 1979; Morgan et al., 1975). Also,

Schnyder et al. (1999) found that people took overdoses to obtain relief from an aversive state of mind, to seek help or in response to losing control. Therefore, the motivation for some attempted suicides may initially be to cope with distress, but the actions end up posing a serious threat to life. Williams (1997) suggests that all acts of self-harm are best viewed as a 'cry of pain'. For these reasons and following Skegg (2005), the term 'self-harm' will be used to describe all types of non-fatal self-inflicted harm but specific reference to either 'attempted suicide' or 'non-suicidal self-harm' (sometimes termed 'self-injury') will be made where it is considered appropriate to distinguish between the two.

*Epidemiology of Self-Harm*

It is thought that rates of self-harm have been increasing in recent years (Skegg, 2005). For example, rates of self-harm rose in the United Kingdom during the 1960s (Alderson, 1974). Also, the proportion of attempted suicides by young people that required urgent medical attention rose in the United States in the 1990s (Brener, Krug & Simon, 2000). Recently there were one hundred and forty thousand presentations to accident and emergency in England and Wales following self-harm (Sheard et al., 2000). Self-harm is most common in females (Muelenkamp & Gutierrez, 2004; Simeon & Favazza, 2001) and typically emerges in adolescence or early adulthood (Simeon & Favazza, 2001; van der Kolk et al., 1991).

Self-harm is associated with an increased risk of suicide (Williams, 1997). In the year following an episode of self-harm one to two per cent of this population die through suicide; this is one hundred times greater than the rate of the general population (Hawton & Fagg, 1988). Further, approximately three per cent die within the three years following the episode of self-harm (Hawton & Fagg, 1988) and seven per cent die within ten years (Lewis, Hawton & Jones, 1997). Suicide rates may be even higher than reports suggest since a death is recorded as suicide in only the most certain cases (e.g. Anderson, 2000). Therefore, self-harm is an important area to study.

*Self-Harm in Adolescents*

Since self-harm often emerges during adolescence it is important to consider the nature of self-harm in adolescents. Studies of the general population found that between five and nine per cent of adolescents in Australia (Patton et al., 1997), the United States (Grunbaum et al., 2003) and England (Hawton et al., 2003) reported that they had self-harmed in the previous year. However, a recent study showed that sixteen per cent of adolescents in a normal sample from the United States had self-injured at least once in their lifetime (Muehlenkamp & Gutierrez, 2004). Also, twenty-five thousand adolescents present to hospital in the United Kingdom each year following non-fatal self-harm (Fortune & Hawton, 2005).

Fortune and Hawton (2005) suggest that rates of self-harm in young people appear to be rising. Furthermore, Hawton et al (2003) found that the numbers of presentations to

clinical services are increasing, especially in young females. Indeed, Muehlenkamp and Gutierrez (2004) found that almost seventy per cent of adolescents who reported a history of self-injury were female. Reasons for the gender differences in self-harm identified in the literature include earlier puberty in girls and girls facing more problems at this age (Coleman & Hendry, 1999). Also, boys may have greater means of expressing emotional distress through externalising behaviour (Hawton et al., 1996).

Fortune and Hawton (2005) suggest that self-harm in young people is highly prevalent in the community and much does not come to the attention of medical services. In one study, twenty-one per cent of adolescents in a normal sample described hurting themselves on purpose and thirteen per cent could be described as having self-mutilated according to the author's definition (Ross & Heath, 2002). Despite this, Ross and Heath (2002) conclude that there has been little empirical work conducted into self-harm (termed 'self-mutilation' in their paper) in community samples of adolescents. The majority of research conducted into self-harm has been carried out with clinical samples; thus, it is questionable to generalise the results of these studies to non-clinical samples (Laye-Gindhu & Schonert-Reichl, 2005). Ross and Heath (2002) argue that further studies of self-harm in community samples of adolescents are needed, particularly those which do not confuse non-suicidal self-harm with attempted suicide, something the current study aims to do. Indeed, Laye-Gindhu and Schonert-Reichl (2005) found that adolescents clearly differentiated between self-harm and suicide.

Lack of research into community samples of adolescents who self-harm is concerning since there is evidence to suggest that there are important differences between clinical and community populations. For instance, Gould et al. (2004) found that young people who were at risk of suicide were more likely to report attitudes consistent with self-reliant coping, as opposed to seeking social support; thus, very distressed individuals may not present to services for support with their difficulties. Further, Evans, Hawton and Rodham (2005) found that adolescents who self-harmed were less likely to seek help than adolescents who did not self-harm. The current study will examine self-harm in both clinical and non-clinical samples of adolescents.

*Risk Factors for Self-Harm*

A number of vulnerability factors for self-harm have been identified in the literature. Williams (1997) refers to the important contribution that social factors make to self-harm, suggesting that uncontrollable stress arising from both internal and external factors often contributes to self-harm. An important external influence appears to be socio-economic status. For example, research has shown that in the United States of America the suicide rate is higher in communities with poorer housing (Williams, 1997). However, this seems not to be the case in the United Kingdom where rates of suicide are highest in individuals from both the highest and lowest social classes (Williams, 1997). It is likely that these results are inaccurate due to social pressures on coroners not to record suicide because of concerns about family distress or for religious reasons. Studies on the influence of unemployment are also inconclusive. For instance, Boor (1980) found a

significant correlation between unemployment rate and suicide rate in six out of the eight countries investigated. The United Kingdom was one of the countries where an association was not found.

Traumatic experiences often contribute to the emergence of self-injurious behaviour (Simeon & Favazza, 2001). The trauma often occurs in childhood, but the significance and contribution of different types of childhood trauma, such as physical abuse, sexual abuse and emotional abuse, is less clear (Simeon & Favazza, 2001). One study of females who repeatedly self-harmed found that sixty-two per cent had experienced abuse during childhood (Favazza & Contario, 1989). Of these, seventeen per cent had experienced sexual abuse, sixteen per cent had experienced physical abuse, and twenty-nine per cent had experienced both physical and sexual abuse (Favazza & Contario, 1989). Van der Kolk and colleagues (1991) found that disruptions in parental care were present in eighty-nine per cent of individuals with personality disorder who self-harmed. Further, seventy-nine per cent of individuals had experienced childhood trauma (van der Kolk et al., 1991). Interestingly, continuation of self-harm was predicted by neglect and separation from parents in this study (e.g. van der Kolk et al., 1991). The authors suggest that trauma impaired the capacity to form trusting, stable attachments to primary caregivers (van der Kolk et al., 1991).

Various psychiatric disorders have been identified as vulnerability factors for self-harm. Indeed, more than ninety per cent of people who present to hospital after self-harm have at least one psychiatric condition as assessed following standardised diagnostic criteria

(Haw et al., 2001; Suominen et al., 1996). The most common disorder is depression, followed by substance misuse and anxiety disorders (Haw et al., 2001; Suominen et al., 1996). Personality disorders are also common in individuals who self-harm (Haw et al., 2001). Skegg (2005) suggests that although people who frequently self-mutilate are often assumed to have borderline personality disorder, she cautions that too little is known about self-mutilation in the general population sample for this to be established.

Psychological factors have also been highlighted as important risk factors for self-harm. For example, a number of studies have found that individuals who self-harm have poorer coping strategies than those who do not. Coping strategies found to be associated with self-harm include inflexible thinking (Pollock & Williams, 2004), a reluctance to self-disclose (Horesh et al., 2004) and a lack of positive future-directed thinking (MacLeod et al., 2004). Further, people who self-harm often have poor problem-solving skills (Pollock & Williams, 2004).

*Risk Factors for Self-Harm in Adolescents*

Evans and colleagues (2004) classified factors associated with adolescent self-harm into 'vulnerability factors', 'stress factors', or 'both', based on the results of their systematic review of the literature. They suggest that family suicidal behaviour is a significant 'vulnerability factor' for self-harm in adolescents. Another 'vulnerability factor', also linked to family functioning, is poor communication with parents (Tulloch, Blizzard & Pinkus, 1997). Evans and colleagues (2004) suggest that there is also strong evidence

that 'stress factors' include substance abuse, mental health problems, suicidal behaviour by friends, family discord and poor peer relationships. Additionally they found suggestive evidence that 'stress factors' also include hopelessness, eating disorders, smoking, sleep difficulties and media exposure to suicide. Factors found to be both 'vulnerability' and 'stress factors' include living apart from parents, engaging in antisocial behaviour, the experience of sexual or physical abuse, having unsupportive parents, low self-esteem and poor physical health (Evans et al., 2004).

Consistent with findings in adult populations, certain psychiatric disorders are highly correlated with self-harm. For example, a strong link between depression and self-harm has been consistently found in adolescent populations (Evans et al., 2004; Ialongo et al., 2004; Martin et al., 1995). Furthermore, depression is a key factor associated with the risk of repetition of adolescent self-harm (Hawton et al., 1999). However, the relationship between depression and suicidal behaviour is thought to be mediated by hopelessness (Evans et al., 2004). Anxiety also increases the risk of self-harm, particularly when co-morbid with depression (Evans et al., 2004). There also appears to be a link between self-harm and eating disorders in adolescents, particularly bulimia (e.g. McGee & Williams, 2000). Indeed, there are overlaps between eating disorders and self-harm, with both being a way of using the body to gain control of confusing or unwanted internal states (e.g. Gardner, 2001). 'Externalising' disorders, such as antisocial behaviour, may be under-recognised in adolescents who self-harm (e.g. Verona et al., 2004). Also, there may be different risk factors for male and female adolescents (Hawton et al., 2002).

*Developmental Considerations*

In order to understand why self-harm is more prevalent in young people it is necessary to take into account the developmental changes that occur during adolescence. Adolescence is a time of uncontrollable physical, psychological and social change (e.g. Anderson, 2000); thus, self-harm may be a way of coping with this through gaining a sense of control (Gardner, 2001). Further, Fonagy, Gergely, Jurist and Target (2004) suggest that increasing cognitive complexity in adolescence, particularly the development of formal operational thought (e.g. Inhelder & Piaget, 1958), means that the adolescent has to integrate complex thoughts about his or her own feelings and motivations, as well as those of others. This leads to a 'developmental hypersensitivity' to mental states which can be experienced as overwhelming; thus leading to the emergence of bodily symptoms or the use of physical action as a means of coping with feelings (Fonagy et al., 2004: *p319*). This can contribute to difficulties if the adolescent's internal self-structure or external environment are not strong enough to support this (Fonagy et al., 2004).

Peer groups have a special role in adolescence, and youth subcultures set the norms for those who are attracted to identify with their values (Coleman & Hendry, 1999). Favazza (1998) highlights that culturally permitted forms of self-harm, such as tattooing and body-piercing, are seen among non-psychiatric populations, particularly in some adolescent sub-cultures. However, forms of self-harm that are not culturally accepted have also been found to be highly prevalent in youth subcultures. For example, Young,

Sweeting and West (2006) found that identification with the 'Goth' subculture was the best predictor of self-harm, above those including gender, having separated parents, drug use and depression. In addition, 'Goth' was the only subculture that predicted self-harm. The authors explained this finding by suggesting that either self-harm might be a normative part of 'Goth' subculture or young people with a propensity to self-harm might be attracted to the 'Goth' subculture; the latter explanation was considered more likely (Young et al., 2006).

Yates (2004) suggests that a developmental psychopathology perspective is particularly relevant and informative when a certain disorder emerges during specific age periods; thus, since self-harm commonly begins in adolescence a developmental psychopathology model of self-harm may be most appropriate. Yates (2004) proposes that key developmental issues prominent during adolescence are separation/individuation, self-definition and emotion regulation in the context of physical and relational maturation. It might be that self-harm is a source of emotion regulation and self-definition for individuals who have experienced childhood trauma, something that limits capabilities in these areas (Yates, 2004).

*Theoretical Perspectives on Self-Harm*

There are many different theories of self-harm and these often overlap, perhaps because they operate at different levels of explanation. For the purpose of description it is possible to split theories of self-harm into three broad approaches: social, psychological

and biological. However, these are considered to be inter-related. Social theories of self-harm focus on the influence of external factors on the individual. For example, Durkheim's (1952) theory of 'anomic suicide' refers to disturbances of the collective organisation of society. This results in reduction of individuals' resilience to suicidal tendencies. Support for this is found in studies identifying that risk factors for self-harm often include poor circumstances and limited resources (e.g. Boor, 1980). A key factor is lack of social support and consequent isolation from society (Williams, 1997). Cultural influences on self-harm must also be taken into account. The experience of deliberately hurting the body is an aspect of our heritage and culture, embedded in religion and social norms (Gardner, 2001). For example, flagellation involved punishing an unruly body for religious reasons (Gardner, 2001).

Psychological theories focus on internal characteristics, though often recognising social influences on these. One psychological approach to self-harm is based on psychoanalytic thinking. Psychoanalytic theories posit that individuals who have lost a relationship on which they depended for their sense of self find the loss intolerable (e.g. Freud, 1917). Identification with the lost object, which was internalised, evokes intense anger that is directed at the ego. This can manifest as self-harm. Klein (1935), expanding upon this theory, suggested that the individual wishes to preserve the good parts of the internalised object; thus, the attack is focused upon the bad part of the object. Attachment experiences in infancy contribute to the development of self-regulation (Bowlby, 1980). However, in the absence of adaptive self-regulatory processes the individual may come to depend too

much on others, which leaves them anxious about abandonment. This may lead to self-harm in the manner proposed by Freud (1917).

Biological theories propose that individuals who self-harm differ from those who do not in terms of neurobiology: the function of the neurotransmitter serotonin is implicated. For example, low levels of the product of the metabolism of serotonin (5-HIAA) have been found in the cerebrospinal fluid of individuals who have attempted suicide (Asberg et al., 1986). Low levels of 5-HIAA are associated with impulsivity and suicidality measured with self-report questionnaires and also with behavioural measures (Coccaro et al., 1989). This finding is true of individuals with depression, personality disorder, schizophrenia and alcohol dependency (Williams, 1997). An alternative biological theory focuses on the endogenous opioid system, suggesting that enhanced opioid activity may underlie self-harm (e.g. Grossman & Siever, 2001). It is thought that either addiction to self-harm due to its emotion regulating function may increase opioids, or alternatively self-harm may be needed to reduce dissociation caused by a pre-existing high level of opioids (Grossman & Siever, 2001).

Genetic influences have also been hypothesised to play a part. For example, suicide is more common in relatives of people who have completed suicide (e.g. Williams, 1997). However, this could be due to environmental factors since relatives also share this. More evidence for a genetic influence comes from studies that have found that identical twins have a higher concordance rate for suicide than non-identical twins (e.g. Roy et al., 1991). However, a number of other studies have found contradictory results (e.g.

Williams, 1997). Therefore, the evidence is unclear but, according to Williams (1997), the balance of evidence still favours a genetic link of some sort. Indeed, recent research suggests that there is strong evidence for heritability of impulsive aggression (e.g. Coccaro et al., 1993), a factor linked to self-harm (e.g. Grossman & Siever, 2001).

*The Emotion Regulation Model*

*"I'd rather feel that pain (from cutting) than the pain I don't understand."*

('Talking About Self-Harm': p5)

A recent theory that draws on social, psychological and biological approaches to self-harm is termed the 'affect regulation' or 'emotion regulation' model. This model proposes that self-harm functions 'to express, concretise, and/or control overwhelming emotions' (Chapman, Gratz & Brown, 2006). Laye-Gindhu and Schonert-Reichl (2005) studied self-harm in a non-clinical population of adolescents and concluded that their findings supported the view of self-harm as an effective strategy to regulate emotions. There are a number of different mechanisms by which self-harm is believed to regulate emotions. The opioid hypothesis proposes that self-harm elicits endogenous opioids, which creates an analgesic effect which relieves emotional distress (e.g. Coid et al., 1983; Roth et al., 1996). Alternatively, it has been suggested that individuals who self-harm experience increased opioid release in response to distress; this results in a distressing state of dissociation, which is relieved by self-harm due to the stimulating effect of the physical pain (e.g. Saxe et al., 2002). Results of research are inconclusive and more

studies are needed to clarify the precise nature of the relationship between opioid release and self-harm (Chapman et al., 2006).

Another proposal is that the physical pain of self-harm provides a welcome distraction from painful emotional states; this may be particularly relevant for those who are highly sensitive to their emotional world, a problem for individuals with borderline personality disorder (Linehan, 1993). However, a number of individuals who self-harm report that they do not experience physical pain (Russ, 1992); thus, tending to refute this hypothesis. Alternatively, the 'self-punishment hypothesis' states that individuals who harm themselves hold beliefs that they are bad and deserve punishment. These individuals self-harm in order to act consistently with their beliefs, thus reducing the emotional arousal that is elicited with behaviour that is inconsistent with their beliefs. Support for this hypothesis comes from studies indicating that self-punishment is a frequently reported motivation for self-harm (e.g. Brown, Comtois, & Linehan, 2002; Gratz, 2000).

In their Experiential Avoidance Model, Chapman and colleagues (2006) suggest that self-harm falls into the category of 'experiential avoidance' behaviours. Experiential avoidance behaviours are those that function to avoid, or escape from, unwanted experiences; this may include both internal experiences and the external experiences that elicited them. Self-harm is considered to be primarily a behaviour of emotional avoidance (Chapman et al., 2006); therefore it is consistent with the emotion regulation model. Chapman and colleagues (2006) argue that when an aversive emotional response is triggered, the individual experiences an urge to escape from this experience. In response,

they self-harm, which reduces or eliminates the unpleasant experience, thus reinforcing self-harm. Repeated reinforcement in this way is thought to strengthen the association between the experience of unpleasant emotions and self-harm, such that self-harm becomes an automatic response to unpleasant emotions (Chapman et al., 2006).

What Motivates Individuals to Self-Harm?

*"At the same time as feeling numb I felt extreme pain, so I cut. And it got rid of the feeling".*

('Truth Hurts': p25)

Recent research into self-harm has looked at self-report studies of the antecedents, consequences and function of self-harm. The results provide strong support for the emotion regulation model. For example, Brown et al. (2002) found that the most commonly reported reason given for self-harm was to obtain emotional relief or to regulate emotions. The emotion regulatory function of self-harm also applies to the adolescent population specifically. In an in-patient sample of adolescents the desire to 'stop bad feelings' was the most commonly given reason for self-injury (Nock & Prinstein, 2005). Further, Rodham et al. (2004) found that adolescents who cut themselves reported their motivation to be self-punishment and escape from a terrible state of mind. Additionally, Penn et al. (2003) found that sixty per cent of their adolescent sample reported that they self-harmed to stop bad feelings. Therefore, it is apparent that

self-harm is often used to reduce distressing emotions (e.g. Brown et al., 2002; Linehan, 1993; Nock & Prinstein, 2005).

An alternative reason commonly given for self-harm, but that also fits with an emotion regulation model, is to create feeling in the absence of feeling. For instance, Briere and Gil (1998) found that self-harm may function to reduce dissociative symptoms. Furthermore, Low and colleagues (2000) found that dissociation was the strongest predictor of self-harm in a sample of women detained in a high security setting. Additionally, in Penn and colleagues' (2003) self-report study of adolescents' motivations for self-harm, the second most common reason for self-harm was 'to feel something'. This was endorsed by sixty per cent of their adolescent sample. Therefore, self-harm can be used to create feelings in response to dissociation or loss of sense of self (e.g. Ivanoff, Linehan & Brown, 2001; Linehan, 1993).

Although, self-harm is likely to serve multiple functions simultaneously (e.g. Suyemoto, 1998), two of the most common reasons are 'to feel' and 'to not feel'. These apparently contradictory motivations for self-harm might be reconciled through exploring the theory and research on borderline personality disorder, since this psychiatric disorder is associated both with attempts at avoiding emotions, but also with an unstable sense of self and feelings of emptiness. It will, therefore, be discussed in more detail below.

*Borderline Personality Disorder*

Personality Disorder can be defined as ' a pattern of inner experience and behaviour that deviates markedly from the expectations of the individual's culture, is pervasive and inflexible, has an onset in adolescence or early adulthood, is stable over time, and leads to distress or impairment' (DSM-IV: American Psychiatric Association, 1994: *p. 629*). Borderline Personality Disorder (BPD) is 'a pervasive pattern of instability of interpersonal relationships, self-image, and affects, and marked impulsivity' (DSM-IV: American Psychiatric Association, 1994: *p. 650*). The specific features of BPD include self-harm, instability of affect, difficulty controlling anger, an unstable sense of self and feelings of emptiness.

BPD has been referred to as a disorder characterised by difficulties in regulating emotions (Ivanoff et al., 2001; Linehan, 1993) and with having a phobia of emotions (e.g. Linehan, 1993; Low et al., 2001). Associated with this, individuals with BPD often experience intense negative emotions and depression (Ivanoff, Linehan & Brown, 2001). Another main feature of BPD is the experience of an unstable sense of self, which appears to reflect a lack of self-integration (Pollock, et al., 2001). Although many individuals with BPD self-harm (e.g. Linehan, 1993), more than a third of individuals who self-harm do not meet the criteria for BPD (e.g. Casey, 1989). Additionally, there is an illusion that self-harm is explained by a psychiatric label (Gardner, 2001), such as BPD. Moreover, it is commonly considered inappropriate and indeed unreliable to diagnose adolescents as having BPD (e.g. Meekings & O'Brien, 2004). Therefore, a

dimensional approach that investigates factors associated with BPD, but seeks to explain their associations with self-harm is needed. Taking a dimensional approach to these problems, the current study will investigate relationships between self-harm, emotion regulation and self-integration in adolescents. Investigation of these factors might help to explain why adolescents self-harm both 'to avoid feelings' and 'to create feelings', given that the literature indicates that both motivations are possible. Emotion regulation and self-integration will therefore be discussed in more depth in the following chapters.

## 2. Emotion Regulation

*"If you hurt inside for whatever reason, your inside will die. And then you don't feel anything".*

('Truth Hurts', 2006: p. 25)

### *What is Emotion Regulation?*

There is no single accepted definition of 'emotion'. Different approaches to the study of emotion use different language to describe emotions and focus on different aspects of emotion. For example, some theorists use 'emotion' and 'affect' interchangeably, whereas for others the terms have different meanings (Fonagy et al., 2004). Cognitive theories of emotion suggest that emotions are elicited and differentiated according to an individual's subjective evaluation of the personal significance of a situation (Scherer, 1999). For instance, the key appraisal associated with the emotion fear is a threat to self or to a valued role or goal, whereas the key appraisal with the emotion sadness is loss (actual or possible) of a valued role or goal (Power & Dalgleish, 1997). The 'basic emotions' framework proposes that a finite number of basic emotions exist and that these basic emotions are qualitatively distinct from one another (Plutchik, 1962). However, it is proposed that all emotions share the underlying nature that they are concerned with fundamental life tasks in a way that was adaptive in evolutionary terms (Ekman, 1999). For instance, the experience of anxiety is linked to the flight or fight response, which allows people to protect themselves from perceived threat.

Contemporary theories of emotion propose that emotions are a key part of the rational human element, rather than as 'passion at odds with reason' as Plato (1941) argued in 'The Republic'. Consequently, it is now accepted that there is scope for individuals to regulate their own emotional experience, as well as emotions themselves being regulators (e.g. Thompson, 1994). Individuals vary in the intensity, persistence and range of emotions they experience (e.g. Sroufe, 1997). Thompson (1990) suggests that these response parameters are influenced by emotion regulation processes. It is argued that the way individuals regulate their emotions influences the quality and intensity of emotional experience, thus 'colouring' the emotional experience (Thompson, 1994). Research into emotion regulation emerged from both the psychoanalytic tradition and also from the 'stress and coping' tradition (Gross, 1999).

*The Psychoanalytic Approach: Defences*

Defences are processes used by individuals to manage difficult or intolerable emotions. For example, defence mechanisms can be defined as "processes that distort or exclude information or affective experiences with a particular emphasis on the formation and maintenance of multiple inconsistent models of relational experience" (Lemma, 2003: *p, 203).* Defences are considered to be developmentally adaptive in the context of difficult early experiences (e.g. Alvarez, 1992).

In the early analytic literature defences were viewed as arising in response to internal conflict (e.g. Lemma, 2003). However, developmental and attachment theorists have influenced psychoanalytic approaches to defences, such that they are now viewed as responses to recurring interpersonal conflicts (Lemma, 2003). Psychoanalytic approaches postulate that early experiences with caregivers are crucial to the development of a capacity to regulate affective experiences (e.g. Lemma, 2003). The presence of an emotionally responsive figure is crucial to process the infant's primitive anxieties; consequently, a functioning affective regulatory system develops. However, if such a figure is absent then the infant may develop potentially durable defences against intolerable emotional states (Lemma, 2003).

A number of different defence mechanisms have been identified in the literature. These can be classified into 'neurotic defences', which refer to internal conflicts according to the Freudian model, and 'primitive defences', which concern the boundary between self and the external world (Lemma, 2003). Examples of neurotic defences include repression, conversion and acting out. Primitive defences include denial, dissociation and splitting.

Klein (1946) studied the function of interpersonal defences through focusing on projective mechanisms. 'Projection' is considered to be an important feature of all relationships. It refers to the process by which internally derived experiences are unconsciously attributed to another person or source. Klein (1946) suggested that we not only project feelings but parts of the self onto others. A related process, 'projective

identification', refers to the process whereby painful feelings that cannot be managed are unconsciously attributed to another person and the recipient is identified, in the individual's mind, as owning these split-off feelings. This allows the person to avoid experiencing these painful emotions. If the recipient is unaware of this process, they may take on feelings of a similar quality to those the individual is defending against. Since defences function to manage unwanted emotions, the study of emotion regulation draws heavily on the psychoanalytic approach.

*The Coping Approach*

Coping can be defined as a cognitive or behavioural attempt to alleviate stress (Lazarus & Folkman, 1984). Further, coping can be separated into distinct types, such as 'problem-focused' coping and 'emotion-focused' coping (Lazarus & Folkman, 1984). Problem-focused coping involves altering the situation that has caused distress. This type of strategy is more likely to be used when the problem is perceived as changeable. In contrast, emotion-focused coping refers to the use of strategies aimed at altering the emotional state itself.

Lazarus and Folkman's (1984) concept of 'emotion-focused coping' laid the groundwork for much of the contemporary study of emotion regulation (e.g. Gross, 1999; Losoya, Eisenberg & Fabes, 1998). Indeed, emotion regulation can be categorised as part of the broader cateory of 'coping' (Gross, 1999). Coping is considered the broader category because unlike emotion regulation it can include taking actions that are non-emotional to

achieve goals that are also non-emotional (Gross, 1999), such as map-reading to find a specific place in an unfamiliar location (Scheier, Weintraub & Carver, 1986). In contrast, emotion regulation refers specifically to the actions taken to achieve emotional goals.

*Recent Approaches to Emotion Regulation*

Thompson (1994: *p. 27*) defines emotion regulation as 'the processes, both intrinsic and extrinsic, that are responsible for learning to recognise, monitor, evaluate and modify emotional reactions'. Despite a widespread focus in the literature on the reduction of negative emotions, both positive and negative emotions are regulated (Gross, 1998). The processes that are involved may be automatic or controlled, conscious or unconscious and can come into effect at different points in the emotion generation process (Gross, 1998). Since emotions are multifaceted, incorporating both neurophysiological and cognitive components, emotion regulation encompasses a range of associated processes that operate at different levels (Thompson, 1994). Von Salisch (2000: *p50)* proposes that 'emotion regulation takes place not only within the individual but also within interpersonal relationships'. Further, the attachment perspective on emotion regulation (termed 'affect regulation') emphasises the benefits of processing emotions; thus, emotions might be increased, decreased or not altered at all (Fonagy et al., 2001).

*The Development of Emotion Regulation: An Attachment Perspective*

The quality of the relationship between infant and primary caregivers is considered to be critical for socio-emotional development (e.g. Sroufe, et al., 1999). Attachment theory focuses on the processes involved in the development and maintenance of this 'affectional bond' (e.g. Bowlby, 1980). Attachment theorists propose that the capacity to regulate emotions develops from attachment (e.g. Fonagy et al., 2004; Mikulincer, Shaver & Pereg, 2003) and that emotion regulation style is associated with the quality of attachment (e.g. Cassidy, 1994). Further, Sroufe (1997) proposes that an individual's experience of emotions develops according to interactions with caregivers. That is, whilst emotions exist in a precursor form from birth they are given meaning and subjective characteristics through interactions with caregivers; thus, there is scope for individuals to appraise emotions in different ways according to their experience with caregivers.

A key principle of attachment theory is that the child's organisation of emotional experience develops according to parental attunement and responsiveness to the child's emotional signals (Sroufe & Waters, 1977). Kohut (1971) suggests that attachment contributes to the development of emotion regulation style through the process of 'transmuting internalisation'; this term refers to the internalisation of regulatory functions which were originally performed by the attachment figure. The internalisation process is thought to result from interplay between co-regulation and development of a stable sense of self. That is, effective co-regulation enhances self-worth and self-efficacy (Bowlby,

1973), and greater self-worth and self-efficacy facilitates confidence in self-regulation, making co-regulation less critical. A similar process that explains how attachment experience contributes to emotion regulation is that of 'self-expansion' (Aron & Aron, 1997). Self-expansion refers to the inclusion of an attachment figure's resources and strengths into the self-concept. This occurs when, during periods of effective co-regulation, the attachment figure's responses are synchronised with the child's needs such that they are experienced as an extension of the self; thus, the other's resources are incorporated into the self which promotes beliefs about the capacity to cope with distress.

Ainsworth and colleagues (1978) developed a method of assessing attachment between young children and their mothers termed the 'Strange Situation'. Children are classified as 'secure', 'anxious-ambivalent', anxious-avoidant' or 'disorganised', according to their response to a structured procedure involving two brief separations from and reunions with their mother. The behavioural responses are thought to reflect the child's expectations of the attachment figure's responses and their own ability to elicit these behaviours from the caregiver (Ainsworth et al., 1978). These internally organised expectations are termed 'internal working models' by Bowlby (1982, 1988).

Attachment classifications are relatively stable over time (Goosens et al., 1986). Therefore, the experience of the attachment relationship in infancy contributes to long-standing views of self, others and relationships. However, there are difficulties inherent in the classification of attachment (Scott Brown & Wright, 2001). For example, individuals do not often fit one attachment style; rather, most people show a complex

profile (e.g. Bartholomew, 1997) that can include behaviours consistent with up to four attachment styles (Hesse, 1996). Therefore, assessing attachment security along a continuum may be preferable in some instances.

*Attachment and the Development of Individual Differences in Emotion Regulation*

Mills and Piotrowski (2000) describe patterns of parental responding that contribute to emotional development. In 'secure' parent-child dyads the parent accepts the full range of emotions that the child expresses and responds sensitively. Consequently, the child learns that emotion signals are useful in eliciting support from others. Also, Mikulincer et al (2003) suggest that through positive interactions with caregivers, individuals may learn that 'distress is manageable'. In the 'strange situation' experiment (Ainsworth et al., 1978) 'secure' children seek interaction with their mothers on reunion and are able to use their mother as a 'secure base' from which to explore their environment. Therefore, secure attachment relationships contribute to the development of an emotion regulation style that is 'open and flexible' (Cassidy, 1994). It is argued that these strategies are constructive, flexible attempts at reducing distress (e.g. Mikulincer et al., 2003).

In contrast, the insecurely attached child's parent cannot 'hold' the child's feelings of distress (Winnicott, 1971) due to their own internal conflicts or ego weakness (Holmes, 1994). In response, the child utilises primitive strategies to keep affect at a manageable level. For example, in 'anxious-avoidant' dyads the parent rejects the child's emotional expression and as a result the child learns to suppress both positive and negative emotions

in order to co-operate with the parent and avoid rejection (Mills & Piotrowski, 2000). According to Cassidy (1994) these individuals develop an aversion to negative emotion, which means negative emotions are felt but not expressed. These infants respond in a detached way to reunion in the 'strange situation' task, as though they are unaffected by separation. Sroufe (1997) suggests that such children avoid attachment to caregivers in an attempt to reduce the negative emotions experienced as a result of their unavailability. Similarly, according to Shaver and Mikulincer (2002) these individuals seek to minimise emotional distress by utilising 'deactivating' strategies: those that distance the self from attachment figures, since they are the source of pain. Cassidy (1994) suggests that the anxious-avoidant attachment style is associated with an emotion regulation style characterised by an 'over-regulation' of emotion.

In 'anxious-ambivalent' dyads the parent frequently neglects the child's emotion signals and the child learns to heighten negative emotions in order to elicit care (Mills & Piotrowski, 2000). For instance, 'anxious-ambivalent' infants respond to separation in the 'strange situation' task with heightened aggression and take longer to settle on reunion. Such an infant is likely to use 'hyperactivating' strategies; these function to maximise contact with attachment figures, through exaggerating distress cues (e.g. Shaver & Mikulincer, 2002). Since this process heightens affect it contributes to a regulatory style characterised by 'under-regulation' of emotion (Cassidy, 1994). It is not clear whether emotion is expressed beyond the degree to which it is felt in these individuals (Fonagy et al., 2004).

'A fourth classification type, termed 'disorganised', was created in light of a number of infants who were felt to be unclassifiable due to their contradictory approach and avoidance behaviour (e.g. Scott Brown & Wright, 2001). The caregivers of such infants demonstrate 'frightened and frightening' behaviour, which causes the infant to experience conflict over security (Main & Solomon, 1990). The fact that some infants are unclassifiable adds to the argument for measuring attachment security along a continuum (e.g. Bartholomew, 1997; Hesse, 1996), since this approach 'fits' all people.

It is important to remember that the child's genetically determined temperament also plays a significant part in the attachment relationship. For example, 'anxious-avoidant' infants may be temperamentally low in expressiveness and also tolerant of the parent's non-responsiveness, whereas 'anxious-ambivalent' infants may be temperamentally prone to exhibiting distress and therefore difficult for the parent to respond to consistently (Kochanska, 1989).

*Individual Differences in Emotion Regulation*

Recent theories of emotion highlight its biologically adaptive and psychologically constructive features (e.g. Malatesta, 1990), such as the example of anxiety promoting self-preservation discussed previously. According to Thompson (1994), emotion regulation strategies are important since they influence whether emotion is used to support adaptive behavioural strategies. Thompson (1994) suggests that emotion regulation must be regarded functionally; that is, with reference to the individual's goals

in each situation. Thompson (1994) proposes that a model of individual differences in emotion regulation should incorporate a coherent formulation of what constitutes functional and dysfunctional emotion regulation.

Phillips (2005; Phillips & Power, submitted) recently proposed a model of individual differences in emotion regulation. The model takes into account the advantages of regulatory strategies that involve accepting, and therefore processing, emotions as opposed to more unhealthy efforts aimed at 'blocking' emotions. Bowlby (1980) viewed the capacity to process negative affect as central to psychological well-being. Based on a functionalist account of emotions, it is proposed that certain regulatory strategies allow the information conveyed by the emotion to be utilised (Phillips, 2005), thus facilitating the process of emotions as regulators (e.g. Fox, 1994). This idea fits with Fonagy et al.'s (2004) explanation of the term 'mentalized affectivity' which refers to being conscious of an emotional state while remaining in the state. It is suggested that this facilitates emotional and self-understanding. These models also fit with the Experiential Avoidance Model (Chapman et al., 2006) which considers avoidance of emotions to be maladaptive.

Consistent with existing psychological models, such as attribution theory (e.g. Weiner, 1986), emotion regulation strategies can be classified as those that utilise primarily personal or internal resources and those that utilise environmental or external resources (Phillips, 2005; Phillips & Power, submitted). Indeed, Thompson (1994) suggests that emotion regulation encompasses the variety of external influences on emotions in addition to the acquired strategies of emotion self-management. Similarly, Mills and

Piotrowski (2000) propose that emotion regulation includes external regulation by others as well as self-regulation.

According to this model (Phillips, 2005; Phillips & Power, submitted), 'internal' emotion regulation strategies involve the use of something within the person in order to increase, decrease or continue the experience of an emotion. Accepting and processing the information conveyed using internal processes is termed 'internal-functional' emotion regulation. In contrast, blocking the information conveyed using internal processes is termed 'internal-dysfunctional' emotion regulation. 'External' emotion regulation strategies, on the other hand, involve manipulating aspects of the environment in order to increase, decrease or continue the experience of an emotion. 'External-functional' emotion regulation involves accepting and processing the information conveyed using external resources. In contrast, 'external-dysfunctional' emotion regulation involves blocking the information conveyed using external resources.

Shaver and Mikulincer (2002) describe a model of individual differences in emotion regulation that is based specifically on attachment. They suggest that when faced with a threat, an individual's attachment system is activated and the primary attachment system is set in motion. This involves individuals turning to internalised representations of attachment figures or to actual attachment figures currently available; thus, the adequacy of internalised attachment figures in coping with distress is important (Mikulincer et al., 2003). As individuals develop, the internalised attachment-related resources are often likely to be sufficient, but where this is not the case individuals with a secure attachment

history are able to depend on actual attachment-figures for support (Mikulincer at al., 2003). The use of internalised attachment resources is similar to the idea of emotion regulation strategies that utilise internal resources (Phillips, 2005; Phillips & Power, submitted). Further, utilising actual external support can be considered equivalent to emotion regulation utilising external resources (Phillips, 2005; Phillips & Power, submitted). A repertoire of co-regulation (or external) and self-regulation (or internal) strategies is considered most adaptive (Mikulincer et al., 2003).

*Appraisal of Emotion*

*"The first step in dealing with anguish is therefore to make peace with despair...To give permission to oneself to feel whatever it is that one is feeling".*

(Mark Williams, 1997: *p226*).

Thompson (1994) suggests that the evaluation of emotional reactions comprises a constituent part of the emotion regulation process. He proposes that individual differences in emotion regulation can be considered a constituent part of how emotional reactions come to mean different things to different people. For example, anger might be viewed as empowering to some, disorganising to others or threatening for others (Thompson, 1994). Similarly, Fonagy et al (2004) propose that one aspect (or level) of emotion regulation concerns the meaning that emotions have for individuals.

The literature does include references to the influence of cognitions about emotion on psychological distress. For example, 'meta-emotive understanding' (Thompson, 1990) is

a cognitive construct and refers to an individual's knowledge of or understanding about their feelings. Research has shown that level of understanding of emotions is one factor that differentiates young people with psychological problems from those without (Southam-Gerow & Kendall, 2000). This fits with theory suggesting that it is adaptive to be able to understand and label emotions (Cicchetti et al., 1991; Fox, 1994). Indeed, alexithymia (an inability to represent affect in language) is positively correlated with self-harm (Simeon & Favazza, 2001). However, some individuals may be able to identify emotions but appraise them negatively; thus, there is also scope for investigating specific appraisals that individuals make about their emotions.

Literature on attachment suggests that individuals who have a secure attachment history have learned that acknowledging emotions and sharing them with others elicits a supportive response (Mikulincer et al., 2003). Consequently, emotions may have a positive meaning for individuals according to their developmental experiences. For securely attached individuals negative emotions are not seen as threatening in themselves, but are viewed as serving a communicatory function (e.g. Sroufe, 1997). However, individuals who are insecurely attached may be more likely to appraise their emotions as threatening, since they will have experienced aversive (e.g. inconsistent, disorganising or critical) caregiver responses to emotions (Sroufe, 1997). This might include traumatic experiences with caregivers, which can lead to difficulties in naming emotions and a generalised fear of emotions (Connors, 2000). Further, it might also be the case that early developmental experiences contribute to beliefs that certain emotions are unacceptable or 'bad' if an individual's experience and understanding of that emotion has been influenced

by negative responses from caregivers (e.g. Power & Dalgleish, 1997). The emotions of guilt and shame are social emotions that develop in the context of early social interactions (e.g. Power & Dalgleish, 1997); therefore, these emotions might be more susceptible to being perceived as threatening in the context of adverse attachment experience.

Another hypothesis concerning the influence of attachment on appraisal of emotion suggests that individuals who are anxiously attached do not regard either positive or negative emotions as relevant to information processing (Pereg, 2001). Such dismissal, or defensive exclusion (e.g. Dozier & Kobak, 1992), of emotions prevents attachment-system activation which would be painful (Mikulincer et al., 2003). Mikulincer and colleagues (2003) suggest that after prolonged and repetitive use this strategy may result in general disregard for emotional experience; thus, individuals may not believe that emotions are useful at all.

A number of psychological problems are characterised by 'avoidance of affect' (McCubbin & Sampson, 2005). With reference to obsessive-compulsive disorder (OCD), McCubbin and Sampson (2005) suggest that avoidance or inhibition of affect may reflect the way individuals appraise their emotions. In a study with young adults they found that individuals who believed their emotions to be more threatening experienced more OCD symptomatology (McCubbin & Sampson, 2005). McCubbin and Sampson (2005) suggest that the cognitive literature is dominated by consideration of appraisals of cognitions or physical sensations and that research into 'appraisal of emotion' has been largely neglected. Despite this, therapeutic models often aim to facilitate the understanding that

emotions are not permanent, are endurable and are not harmful themselves, by encouraging the experience and acceptance of unwanted emotions (e.g. Hayes et al., 1996; Southam-Gerow & Kendall, 2000). Studying differences in the ways individuals appraise their emotions is an important but as yet under-researched area (McCubbin & Sampson, 2005) in the wider field of emotion regulation.

*Emotion Regulation and Self-Harm*

*"Personally, I think cutting is a way of releasing emotions for people like me who have a lot of trouble with crying and expressing emotional things."*

('Talking About Self-Harm': p.3)

The emotion regulation model of self-harm suggests that self-harm is a form of emotion regulation (e.g. Chapman et al., 2006). It is proposed that individuals who self-harm struggle to regulate their emotions effectively. For example, Williams (1997) argues that individuals who cut themselves often exhibit instability of emotional experience. Further, Grossman and Siever (2001: *p128*) suggest that self-harm is usually 'a response to overwhelming emotional experiences in an individual with few or no other means of affect regulation'. This impaired capacity to regulate emotions may have resulted from insecure attachment, which could explain the relationships between attachment and suicidal behaviour (e.g. de Jong, 1992). However, although the literature suggests that individuals who self-harm may have deficits in emotion regulation and that the function of self-harm is to regulate emotions (Chapman, et al., 2006), there is little research focusing specifically on the emotion regulation style of individuals who self-harm.

Linehan (1993) has studied the emotional experience of adults with borderline personality disorder (BPD) and suggests that emotion 'dysregulation' may be associated with self-harm. However, despite emotion regulation difficulties being highlighted as a major factor in self-harm (Ivanoff, Linehan & Brown, 2001), the research has often been carried out according to diagnostic categories such as BPD which means that it is uncertain whether emotion regulation itself is predictive of self-harm. Indeed, Chapman, Specht and Celluci (2005) found that severity of BPD was associated with frequency of self-harm, but that coping strategies and experiential avoidance (measured by the AAQ: Hayes et al., 2003) were not. Further, although it is hypothesised that individuals who self-harm have deficits in emotion regulation (e.g. Linehan, 1993) it might be that rather than lacking or under-utilising adaptive strategies of emotion regulation, individuals frequently use maladaptive emotion regulation strategies. Alternatively, individuals may use adaptive regulatory strategies infrequently but also use maladaptive strategies frequently, something the current study will explore.

There is an absence of research into whether there is an association between emotion regulation and self-harm in adolescents, though research has been conducted into the coping styles of adolescents who self-harm. For example, homeless adolescents who self-harm have been found to utilise a problematic 'disengagement' style of coping; this includes problem-avoidance, wishful thinking, social withdrawal and avoidance of negative emotions (Votta & Manion, 2004). Additionally, Evans et al (2005) found that adolescents who self-harm were more likely to cope with difficulties through avoidance and focus less on problems. Laye-Gindhu and Schonert-Reichl (2005) suggest that

further research is needed on patterns of coping in adolescents who self-harm. However, given that recent models of self-harm (e.g. Chapman et al., 2006) have focused specifically on emotion regulation, there is a strong case for studying the emotion regulation styles of individuals rather than coping styles, particularly since coping differs from emotion regulation (e.g. Gross, 1999).

Appraisal of emotions is a constituent part of the emotion regulation process (e.g. Thompson, 1994) and research into 'appraisal of emotion' in clinical problems may facilitate understanding and treatment (McCubbin & Sampson, 2005). However, there is little research in this area. The idea that individuals engage in self-harm to avoid 'unwanted' and 'aversive' feelings is common in the literature (e.g. Power & Dalgleish, 1997). For example, Gratz and Roemer (2004) found that emotional non-acceptance was associated with frequency of self-harm in a study with young people. Further, Williams (1997) suggests that individuals who self-harm may have developed maladaptive beliefs about the expression of emotions. Underlying the conditional belief that 'expressing emotions is bad' may be an unconditional belief such as 'emotions are bad'; thus, the way people appraise their emotions may be a significant factor contributing to self-harm. Chapman and colleagues (2006) suggest that self-conscious emotions, such as shame and guilt, may be most likely to trigger behaviours aimed at emotional avoidance, including self-harm. This is supported by Brown et al (2002) who found a link between the experience of shame and self-harm. Therefore, the emotions of shame and guilt will be included in the current study of appraisal of emotion.

## 3. Self-Integration

*"A shattered jigsaw".*

(A patient's experience of self: Burke, 2000).

### *What is Self-Integration?*

Watkins and Watkins (1981) suggest that individuals perceive and express themselves as different at different times, in different situations, while still maintaining a connected sense of self. Such an experience of self would be considered to be a normal ego state (Watkins & Watkins, 1981). Therefore, a connected or integrated sense of self is considered adaptive. Psychoanalytic approaches have contributed much to theory on self-integration, including a focus on developmental factors. However, different terms, such as 'ego strength' and 'selfhood', have been used to refer to the idea of self-integration (Connors, 2000). Kohut uses the term 'self' to refer to all aspects of personality and considers self-integration (also termed self-cohesion) to be the primary motivation guiding human behaviour (Lemma, 2003).

### *Developmental Theories of Self-Integration (or Dis-integration)*

Developmental and psychoanalytic theorists suggest that through a process of bonding with caregivers followed by gradual differentiation, children develop a cohesive sense of self (e.g. Bowlby, 1973; Hamilton, 1992; Kaplan, 1978; Stern, 1985). These theories are informed by attachment theory. Attachment theory views interaction with the caregiver

as fundamentally important for self-development (Bowlby, 1980). Indeed, Stern (1985) suggests that attunement between parent and infant promotes the development of integrated selfhood. Specifically, the reliability of the parent's responses to the infant promotes the child's ability to hold a sense of self in mind (Holmes, 1994).

Kohut's 'self-psychology' suggests that a lack of cohesiveness and continuity of the self is at the root of psychopathology. He emphasised the influence of empathy on the development of self, proposing that others perform a mirroring function for the self. Others provide functions such as soothing and validating; functions such as these are termed 'self objects'. If such empathic functions are not present during development, the child's sense of self remains fragmented. Similarly, Winnicott's (1960) theory of development of a 'false self' structure provides an explanation of how the self may be experienced as incoherent due to internalisation of an 'alien' aspect to the self. This happens if a caregiver does not reflect the infant's own states back, but rather the caregiver represents *their own* states; thus, the infant experiences an invalidation of his or her own states. Winnicott (1960) suggests that a self whose own states have not been recognised in this way is experienced as an empty self.

Ryle's development of Cognitive-Analytic Therapy (CAT) is based on the multiple self-states model (MSSM: Ryle, 1997). According to the MSSM, individuals who experience adverse relationships in early life may develop a number of discrete, contradictory self-states. These contradictory self-states develop according to the experience of 'reciprocal roles' (e.g. Ryle, 1997). For example, for someone who experienced an abusive relationship in early life this might include 'abusing-to-abused' and 'ideally cared for-to-

ideally fused' (Pollock et al., 2001). Identity disturbance is viewed as occurring along a continuum, which increases in severity from normal to borderline personality disorder to dissociated identity disorder (Pollock et al., 2001). Pollock and colleagues (2001) suggest that identity disturbance is associated with a limited capacity to reflect on one's thoughts and feelings; thus, a sense of emptiness or a weak sense of self is common.

Developmental theories of self-integration tend to view coherence of the self as being indicative of greater psychological health. In terms of developmental norms, this would suggest that it would be healthy for adolescents to have a coherent identity, as opposed to a fully developed identity since this is conceptualised as developing and changing over the lifespan of development (e.g. Erikson, 1968). Indeed, Erikson's (1968) theory of the stages of identity development suggests that the key developmental task of adolescence is to establish a coherent identity. However, it is noteworthy that Erikson (1968) considered some uncertainty over identity in adolescence to be a healthy part of long-term development, since this age is considered a time of exploration; though, the experience of a non-coherent identity may still be associated with psychological disturbance at the time.

*Self-Integration and Self-Harm*

*"I personally find that I'll cut if I'm feeling empty inside...cutting is a simple way of feeling real and checking if you can still feel."*

('Talking About Self-Harm': p3)

The unstable sense of self in Borderline Personality Disorder (BPD) may reflect lack of self-integration. Research has found that patients with BPD display a limited capacity to produce coherent narratives (e.g. Fonagy et al., 2004; Liotti, 2002), which is indicative of a less integrated sense of self. Further, Ryle and colleagues have investigated the discontinuities in self-states found in individuals with BPD using the Cognitive Analytic Therapy (CAT)-derived Personality Structure Questionnaire (PSQ: Pollock, Broadbent, Clarke, Dorrian & Ryle, 2001). The PSQ assesses the degree to which people experience themselves to be integrated. They found that it was possible to distinguish between people with BPD and those without using scores obtained on the PSQ (Pollock et al., 2001). This provides further evidence that individuals with BPD do perceive themselves to have a less integrated sense of self than do individuals who do not have this diagnosis. Since self-harm is another defining feature of BPD, a link between the two is indicated.

The literature on the self-structure of individuals who self-harm provides further support for a link. Yates' (2004) model of the developmental psychopathology of self-injury suggests that individuals who self-injure strive to achieve a bounded sense of self, with a coherent personal narrative; this may not have been achieved due to failure to develop the

necessary 'tools', as a consequence of adverse childhood experiences. Indeed, many theorists suggest that people engage in self-harm in order to avoid experiencing disintegration (Connors, 2000; Davies & Frawley, 1994; deYoung, 1982; Mazelis, 1990). Specifically, Connors (2000: *p46*) proposes that "self-injury is a coping strategy employed to maintain 'self-integrity' in the face of what is felt to be overwhelming, unmanageable experience without any help from the outside world". Empirical support for this is provided by research findings indicating a strong link between experiencing dissociation and self-harming (e.g. Connors, 2000; Low et al., 2001).

**Self-ha**rming to avoid 'self-disintegration' is consistent with self-harming 'to feel' something, in other words to provide alleviation from the loss of sense of self and to check the reality of self. Since Connors (2000) suggests that 'unmanageable experience' might trigger self-harm in an attempt to avoid disintegration, this highlights the possible influence of a limited ability to regulate emotions. It could be that people engage in self-harm in order to avoid an aversive state of emotion linked to loss of sense of self, something that will be explored further in the next section.

## 4. Emotion Regulation, Self-Integration and Self-Harm in Adolescents

*"Why do kids hurt themselves? Because they can't feel anything else. Why can't they feel anything else? Because a previous pain has scarred them..."*

('Truth Hurts': p 25)

### *The Relationship Between Emotion Regulation and Self-Integration*

As discussed previously, self-harm is a feature of Borderline Personality Disorder (BPD: American Psychiatric Association, 1994). BPD is also associated with an inability to regulate emotions effectively and with an unstable sense of self (e.g. Ivanoff, Linehan & Brown, 2001; Linehan, 1993; Pollock et al., 2001). This chapter will explore links between emotion regulation and self-integration, considering why the two might be linked with self-harm. Such a link might explain why people report self-harming both to *reduce* and to *create* feelings. Gaps in research into these factors with adolescent populations will also be highlighted.

The manner in which emotions are experienced is considered to affect the experience of self. For example, Spinoza (1955) emphasised the value of allowing emotions to be felt for self-understanding. Further, Thompson (1994) proposed that in the future it may come to be recognised that development of emotion regulation may facilitate growth in self-understanding. Emotion regulation has also been linked specifically with self-integration in the literature. Indeed, Sroufe (1997) views emotion regulation as the capacity to

maintain self-organisation in the face of stress and tension. The impact of unsuccessful emotion regulation on the self is outlined by Linehan (1993), who proposed that unpredictable emotional lability leads to a failure of the development of a stable self-concept or identity. Additionally, Linehan (1993) suggests that inhibition of emotions may contribute to an absence of a strong sense of identity. The numbness associated with inhibited emotion is often experienced as emptiness, which contributes to an individual's absent sense of self (Linehan, 1993).

A relationship between experience and regulation of emotions and development of the self has also been highlighted in the attachment literature. Moreover, a developmental pathway is proposed. The term 'mentalized affectivity' is used to refer to the capacity to connect to the meaning of one's emotions (Fonagy et al., 2004). Recently, through studying 'mentalized affectivity', Fonagy and colleagues (2004) suggest that disturbed attachment relationships, where caregivers fail to mirror the child's self-states, contribute to an individual being unable to experience their own emotions as 'true'. Consequently the secondary representational structures (those used to think about affect) will not provide a means for accessing and attributing emotion states to the self.

Connors (2000: p. 110) suggests that fragmentation of the self occurs when the self-boundary comprises multiple, non-integrated parts. According to Connors (2000) non-integrated individuals experience particularly strong and childlike emotions because parts of the person derived during infancy have not been integrated during their development (Connors, 2000). The 'parts of the person' that Connors refers to as not having been

integrated may actually be emotions. For example, Power and Dalgleish (1997) suggest that individuals may experience a loss of sense of self in relation to experiencing a basic emotion if the emotional experience is excluded from the definition of a sense of self. Such exclusion from sense of self may occur if there is a consistent message about the unacceptability of one or more basic emotions during emotional development (Power & Dalgleish, 1997).

*Emotion Regulation & Self-Integration: Links with Self-Harm?*

*"I felt a warm sense of relief, as though all the bad things about me were flowing out of me and it made me feel alive, real."*

('The Truth about Self-Harm for Young People and their Friends and Families': p20)

Linehan (1993: *p149*) suggests that individuals with BPD attempt 'not to feel whatever it is that they feel'. Dissociation can be considered a specific type of emotional avoidance (i.e. a defence against overwhelming emotions) that is often utilised by individuals who have BPD (Low et al., 2001). This type of emotional avoidance might be used in those individuals who have not integrated certain emotions into their definition of self (i.e. individuals with a less integrated sense of self). This is partly supported by Pollock and colleagues (2001), who found that lack of self-integration is associated with the frequent experience of dissociation.

Although some individuals attempt to avoid their own emotions, the attempt is not necessarily successful. Power and Dalgleish (1997) suggest that the main problem is not that these individuals fail to experience particular emotions through trying not to experience emotions, but rather that certain emotional states are experienced as overwhelming since they lead to a loss of sense of self. This is supported by research which found that individuals tend to report experiencing intolerable emotions, accompanied by loss of sense of self or emptiness, prior to self-harm; this experience is subsequently relieved by self-harm (Favazza, 1989; Favazza & Contario, 1989).

Difficulties in regulating emotions might explain why some individuals self-harm to reduce their experience of negative emotions, but may also self-harm in an attempt to create feelings in response to a loss of sense of self ('self-disintegration'). This fits with Yates' (2004) developmental psychopathology model of self-harm and its emergence in adolescence, since he suggests that self-harm may be used to regulate emotions and to maintain self-integration during adolescence if more adaptive means of achieving these goals have not already been developed. An examination of emotion regulation, self-integration and self-harm in adolescents has not, however, been carried out. The current research will investigate whether difficulties in emotion regulation and a poorly-integrated sense of self are linked to self-harm, as well as examining whether the development of these characteristics is predicted by attachment security.

*Summary*

In summary, it could be that secure attachment has a significant influence on the development of functional emotion regulation strategies and the appraisal of emotions as non-threatening, useful and easily identified. Further, these factors may be associated with self-integration and as protective against depression in adolescence. Conversely, insecure attachment may contribute to adolescents' use of dysfunctional emotion regulation and the appraisal of emotions as threatening, 'bad', not useful and/or not easily identified. Such regulation and appraisal of emotion may lead to both lack of self-integration and also to low mood. These factors in turn may predict self-harm due to its function of reducing unwanted feelings that are not integrated into the self. This might explain why the commonly reported motivation for self-harm is both to relieve feelings and create feelings; that is, to simultaneously reduce negative emotions and create sense of self or self-integration.

No research has investigated the relationships between these variables during adolescence when self-harm most commonly emerges (e.g. Yates, 2004), something the current study does. Since adolescence is a time where young people gain increasing independence in emotion regulation (e.g. Mikulincer et al., 2003), as well as develop cognitive complexity allowing them to reflect on their emotions (e.g. Fonagy et al., 2004), it is arguably a time when these factors might be particularly significant. Furthermore, there is limited research exploring why features of BPD cluster together, based on a continuum model of psychological experience and characteristics (e.g. Chapman et al., 2005). Such models

might provide a more useful explanation of the features that comprise BPD according to the DSM model of classification (e.g. American Psychiatric Association, 1994). Additionally, such explanations may be able to explain self-harm in those who do not meet diagnostic criteria for BPD, as well as in adolescents for whom it might be unreliable to make this diagnosis (e.g. Meekings & O'Brien, 2004).

*Research Objectives*

The objectives of the current study were to investigate factors associated with self-harm in young people. The study investigated whether self-harm is linked to emotion regulation and lack of self-integration in an adolescent population. Specifically, this research explored whether emotion regulation style, appraisal of emotions and self-integration were associated with self-harm, and whether they reliably predicted level of self-harm even once the influence of depression had been accounted for. Further, the study investigated whether the quality of the emotional relationship to attachment figures was a developmental factor predictive of emotion regulation style, appraisal of emotions and self-integration in adolescents.

*Research Aims*

*1. Emotion Regulation*

(a) It has been suggested that self-harm is more likely in individuals with a limited repertoire of adaptive emotion regulation strategies (e.g. Chapman et al., 2006). However, it is uncertain whether people who self-harm frequently utilise maladaptive emotion regulation strategies and/or infrequently utilise adaptive regulatory strategies. Further, most research in this area has been carried out with clinical samples of adults (e.g. Linehan, 1993). This study will explore whether young people

who self-harm utilise more maladaptive (dysfunctional) and/or less adaptive (functional) emotion regulation strategies than young people who do not self-harm.

(b) Comparisons will be made between normal and clinical samples of adolescents reporting self-harm in order to investigate proposals that these populations may use different coping strategies (e.g. Gould et al., 2004).

(c) The study will investigate whether there is a correlation between the frequency with which functional and dysfunctional strategies of emotion regulation are used and level of self-harm.

2. *Appraisal of Emotions*

(a) This study will investigate whether young people who self-harm appraise their emotions more negatively than young people who do not self-harm; a factor that might explain why the majority of individuals who self-harm suggest that its function is to provide relief from unwanted feelings (e.g. Gratz, 2000). The study will explore relationships between appraisal of emotion and depression in order to see whether any influence of this cognitive factor is independent of the experience of the increase in negative emotions characteristic of depression.

(b) Within an attachment theory framework it is suggested that emotions may come to have either a positive meaning for individuals, or alternatively may come to be

disregarded, according to developmental experiences with caregivers (Mikulincer et al., 2003). This study will investigate whether young people who self-harm believe that emotions are less useful than young people who do not self-harm.

*3. Self-Integration*

This study will explore whether young people who self-harm experience themselves as less integrated than those who do not. Also, the relationships between self-integration and the other variables under investigation will be studied.

*4. Emotional Quality of Attachment to Caregivers*

This study will also explore whether security of attachment to primary caregivers is correlated with (a) emotion regulation style, (b) appraisal of emotions, (c) self-integration, and (d) self-harm in young people.

*Hypotheses*

1. (a) The self-harm groups will use dysfunctional emotion regulation strategies significantly more frequently and functional strategies significantly less frequently than the control group of adolescents who do not self-harm.

   (b) There will be a significant positive correlation between the frequency with which dysfunctional emotion regulation strategies are utilised and the level of self-harm. Also, there will be a significant negative correlation between the frequency with which functional emotion regulation strategies are utilised and the level of self-harm.

2. (a) There will be significant differences among the groups (clinical self-harm, non-clinical self-harm and control) in how threatening they perceive their emotions to be.

   (b) There will be significant differences among the groups (clinical self-harm, non-clinical self-harm and control) in how strongly they believe that their emotions are a sign of being 'bad'.

   (c) There will be significant differences among the groups (clinical self-harm, non-clinical self-harm and control) in how strongly they believe their emotions are useful.

   (d) There will be significant differences among the groups (clinical self-harm, non-clinical self-harm and control) in how clearly they believe they can identify emotions.

   (e) There will be a significant positive correlation between level of self-harm and (i) negative appraisal of emotions (e.g. perceived threat from emotions, perception that emotions are bad and perception that emotions are not useful), and (ii) inability to identify emotions.

3. (a) There will be a significant difference in level of self-integration among the three groups (clinical, non-clinical self-harm and control).

   (b) There will be a significant positive correlation between level of self-integration and level of self-harm.

4. (a) Security of attachment to primary caregivers will directly predict (i) emotion regulation style, (ii) beliefs about emotions and (iii) level of self-integration.

   (b) Security of attachment will predict self-harm indirectly.

Relationships between the variables will also be investigated, and the effects of age, gender and family structure on self-harm examined.

## METHOD

### Preparation

Ethical approval for the proposed study was sought and obtained from Lothian Research Ethics Committee (see Appendix 1). Permission to obtain the clinical sample from services in NHS Lothian was also sought and granted from Lothian Research and Development Department and from the Lead Clinician at the Young Peoples' Unit, Edinburgh. Additionally, permission was obtained from the relevant Director of Education, Head Teacher and Head of Personal and Social Education for the schools through which the normal sample was recruited.

### Design

A cross-sectional survey design was used in this research. A normal sample of adolescents and a clinical sample of adolescents receiving treatment for self-harm were recruited to the study. A correlational design, with all participants included, was used for some of the analyses in order to look for significant associations between variables. However, where appropriate, comparisons were made between the following groups: (a) adolescents who had not self-harmed; (b) adolescents who had self-harmed but were not receiving support or treatment; and (c) adolescents who had self-harmed who were receiving clinical input for their difficulties. This allowed the hypotheses regarding differences between groups to be tested.

Number of Participants: Power Analysis & Estimates of Rates of Self-Harm

The number of participants required to answer the research questions was derived in two ways. Firstly, a hypothesis-driven independent t-test to test principal research questions, concerning differences between adolescents who self-harm and those who do not, required at least twenty adolescents who self-harmed and twenty who did not in order to detect a medium-to-large effect size, resulting in the power of the test being 0.7 (Clark-Carter, 2004). The prediction of a medium-to-large effect size was based on previous research into the influence of emotion regulation on aspects of psychosocial functioning. For example, Koven, Heller, Banich and Miller (2003) found a medium effect size for a relationship between fear of anxiety and attention to threat of emotion. Also, Mennin, Heimberg, Tunnin and Fresco (2005) found a medium-to-large effect size for some of their emotion regulation variables in distinguishing between clinical and normal groups.

Secondly, estimates of rates of self-harm in community samples had to be taken into consideration in order that enough adolescents from a normal population were recruited to the study. Recent rates of self-harm estimate that between five and sixteen per cent of adolescents have harmed themselves (e.g. Hawton et al., 2003; Muehlenkamp & Gutierrez, 2004); thus, a normal sample of approximately three hundred adolescents was likely to contain a minimum of twenty who had self-harmed. This sample would permit analyses of variance (ANOVA) between the three groups: normal (control), non-clinical self-harm and clinical self-harm, since it is possible to carry out ANOVA with unequal sample sizes in SPSS (Tabachnick & Fidell, 2007: [printed 2006]). Further, a large sample of this nature would permit regression analyses to predict self-harm providing

other assumptions, such as an absence of multicollinearity, were also met (Tabachnick & Fidell, 2007).

Participants

A total of three hundred and eighteen adolescents participated in the study. These were recruited from two sources as detailed below.

*1. Normal Sample*

A normal sample of two hundred and ninety-seven adolescents aged between fourteen and eighteen took part in the study. They were recruited from secondary schools in Lothian. Four schools were approached and invited to participate and three agreed. This represented a response rate of 75% for school participation. However, due to time constraints one school that initially agreed to participate was not included since their invitation to visit classes was for a date near to the end of study completion. Five pupils from the school sample decided not to participate. This represents a response rate of 98% of young people invited to participate on the day. However, data were not collected on how many pupils were absent from class on the days that pupils completed the questionnaires. Thus, it is possible that some pupils may not have attended in order that they did not have to take part in the research.

The inclusion criteria for this sample were that the young person was between the age of fourteen and eighteen. The exclusion criteria were that the young person had psychosis or that they were deemed to have active suicidal intent. The head of personal and social education was informed of this and asked to inform the researcher if they were concerned about any pupil's participation or to speak to the relevant pupil prior to the researcher visiting the class. Participants were not excluded if they had reading or writing difficulties. Assistance was provided for pupils during questionnaire completion.

The non-clinical sub-group of adolescents who self-harm (N = 167) was obtained from this sample, based on answers to the questionnaire. Additionally, the normal (control) group of adolescents who do not self-harm (N = 124) was also obtained from the school sample. However, two participants did not complete the self-harm measures and therefore were not assigned to either group and were, therefore, excluded from analyses with these groups.

*2. Clinical Sample*

A clinical sample of twenty-five adolescents aged between fourteen and eighteen who were receiving treatment for difficulties including self-harm also took part in the study. Fifty-eight questionnaires were distributed to clinicians who had identified potential participants. However, not all of these were distributed by clinicians due to time constraints and clinical judgements about the suitability of some young peoples' participation in the study due to level of suicidality. In total, thirty-seven questionnaires

were distributed to participants, of which twenty-one were returned; this represents a response rate of 57%. Twenty-one participants in this group were recruited from the Young People's Unit, Edinburgh (an NHS Adolescent Mental Health Service). However, four participants recruited from the schools were included in this clinical sample based on their response to the item in the questionnaire that asked whether participants were currently receiving treatment for self-harm. Since the school sample was recruited from a neighbouring NHS catchment area, these participants would not have attended the Young People's Unit, Edinburgh; therefore, there was no duplication of cases in the clinical group.

The inclusion criteria for this sample were that participants were aged between fourteen and eighteen and that they were currently receiving support or treatment for difficulties that included self-harm. The exclusion criteria were that the young person had psychosis or that they were deemed to have active suicidal intent. Participants were not excluded if they had reading or writing difficulties; two participants received assistance from their clinician in completing the measures.

Measures

The following instruments were used to measure the factors under investigation.

1. *Emotion Regulation Questionnaire (ERQ: Phillips, 2005; Phillips & Power, submitted)*

The ERQ (see Appendix 2) was designed to assess emotion regulation style of adolescents. Scales assess tendency to use regulatory strategies characterised by acceptance of emotions (functional emotion regulation) and those characterised by rejection of emotions (dysfunctional emotion regulation). The 19-item measure is comprised of four sub-scales: 'internal-dysfunctional' (strategies employed to reject or block emotions utilising internal resources), 'internal-functional' (strategies employed to accept and process emotions utilising internal resources), 'external-dysfunctional' (strategies employed to reject or block emotions utilising external resources) and 'external-functional' (strategies employed to accept and process emotions utilising external resources). Answers to each item are assessed according to a five-point scale.

There is evidence for reliability and validity of the scales (Phillips, 2005; Phillips & Power, submitted). The Cronbach's alpha obtained for each scale with a normal sample of adolescents was as follows: internal-dysfunctional = 0.72, internal-functional = 0.76, external-dysfunctional = 0.76, external-functional = 0.66. A revised, 21-item version of this measure was used since it represents an improvement to the 'external-functional'

scale (Power, in preparation). Research with the 21-item version showed evidence of improved reliability of this scale (e.g. Power, in preparation). In the current study the Cronbach's alphas for each scale were as follows: internal-dysfunctional = 0.72, internal-functional = 0.81, external dysfunctional = 0.76, external-functional = 0.76. Validity of the scale was indicated by predicted associations with measures of emotional and behavioural difficulties and quality of life in psychological domains (Phillips, 2005; Phillips & Power, submitted).

2. *Perception of Threat from Emotion Questionnaire (PTEQ: McCubbin & Sampson, 2005).*

The PTEQ (see Appendix 3) assesses individuals' perceptions of the threat posed by their emotions. The authors suggest that the psychometric properties of the instrument indicate that it is a measure of individuals' stable beliefs about their emotions, since it is not highly correlated with measures of mood (McCubbin & Sampson, 2005). The measure was developed with university students with a mean age of twenty-three; the youngest students were eighteen. Thus, although the measure was not developed specifically for use with adolescents it has been used with individuals in their late teens and young adulthood.

Seven items measuring perceived threat are asked of the five basic emotions (e.g. Oatley & Johnson-Laird, 1987): sadness, happiness, anger, fear and disgust. Participants are asked to state how much they believe each statement on a five-point scale from 'not at

all' to 'definitely'. When using the measure to investigate associations with obsessive-compulsive (OCD) symptomatology, the authors also used the seven items to assess perceived threat of 'guilt' and 'lust', based on clinical observation of the significance of these emotions to OCD (McCubbin & Sampson, 2005). In the current study 'guilt' and 'shame' were included in addition to the five basic emotions due to literature suggesting that experience of self-conscious emotions, particularly shame, might be significant to self-harm (e.g. Brown et al., 2002; Chapman et al., 2005; Power & Dalgleish, 1997).

The measure also incorporates items that assess whether the responder is able to identify clearly each emotion included in the measure. In the original study participants were generally able to identify the emotions included. The authors suggested that this was important since it meant that they had an understanding of the experiences to which the PTEQ relates (McCubbin & Sampson, 2005). This sub-scale will be of particular relevance to the current study since it has been found that self-harm is associated with deficits in the ability to mentalize affective experience (e.g. Fonagy et al., 2004; Yates, 2004). Thus, it will be possible to assess whether adolescents who self-harm report that they are less able to identify emotions.

The original instrument was found to be reliable. Test-retest reliability was $r = 0.83$. Further, the Cronbach's alpha scores for each scale were acceptable ranging from 0.70 to 0.87, with the exception of happiness, which had a Cronbach's alpha of 0.41. In the current study Cronbach's alphas for the scales ranged from 0.77 to 0.84, with the exception of happiness which had a Cronbach's alpha of 0.40. Thus, the happiness scale

was not used in subsequent analysis and was not included in the calculation of the total PTEQ scale score.

A short seven-item scale asking participants whether they believe their emotions to be useful was also included. The same item ('____is a useful feeling') is asked of each of the same seven emotions included in the PTEQ. Participants are asked how much they believe the statement on the same five-point scale ('not at all' to 'definitely') used in the PTEQ. In the current study this scale had a Cronbach's alpha of 0.84, indicating that it has excellent internal consistency.

3. *Personality Structure Questionnaire (PSQ: Pollock, Broadbent, Clarke, Dorrian & Ryle, 2001)*

The PSQ (see Appendix 4) was devised to measure deficits in personality (or self-) integration. It represents an assessment measure of the multiple self-states model (MSSM) of cognitive-analytic therapy (CAT). There is no published research on the reliability or validity of this measure with an adolescent population. However, it is the only measure of the MSSM used in CAT and was, therefore, chosen for this study. Also, it is used in clinical practice with adolescents (e.g. Chanen, 2000).

The PSQ has been shown to be reliable and valid with adults (Pollock et al., 2001). For instance, Pollock et al (2001) found that the eight-item measure had a Cronbach's alpha of 0.59 in a normal sample (or 0.78 with one item removed), 0.77 in a clinical sample of

patients participating in CAT and 0.87 in a sample of patients with Borderline Personality Disorder. In the current study the eight-item measure had a Cronbach's alpha of 0.82 with the total population (N = 318); thus, the PSQ has excellent internal consistency in a sample of adolescents.

The measure shows positive associations with measures of multiplicity and dissociation, and negative associations with measures of self-concept clarity and sense of coherence; thus, it is a valid measure of self-integration (Pollock et al., 2001).

*4. Inventory of Parent and Peer Attachment (IPPA: Armsden & Greenberg, 1987)*

The IPPA (see Appendix 5) is a measure of 'the affective-cognitive dimensions of attachment to parental and peer figures' (Armsden & Greenberg, 1987: *p431*). It assesses the degree of security of attachment in adolescence across three domains: (a) trust, (b) communication and (c) alienation. The 'trust' sub-scale assesses the degree to which a person feels that the attachment figure understands and respects their needs and desires. The 'communication' sub-scale assesses the degree to which the young person perceives the attachment figure as sensitive and responsive to their emotional states. The 'alienation' sub-scale assesses the degree to which the young person perceives anger toward or emotional detachment from attachment figures. It is also possible to calculate an overall summary score, which indicates the relative degree of attachment security to each parent (e.g. Lyddon, Bradford & Nelson, 1993). Since the sub-scales are highly correlated this may be the most appropriate use of the measure (e.g. Armsden &

Greenberg, 1987). The IPPA is a self-report measure using a five-point Likert scale response format (from 'very untrue' to 'very true').

The psychometric properties of the measure are good. The trust sub-scale was initially found to have a Cronbach's alpha of 0.91, the communication sub-scale a Cronbach's alpha of 0.91 and the alienation sub-scale a Cronbach's alpha of 0.86. A high level of internal consistency was also found with the overall attachment security scores. The Cronbach's alpha for scores concerning security of attachment to mother was 0.87 and for attachment to father it was 0.89. In the current study the attachment to mother scale had a Cronbach's alpha of 0.93 and the attachment to father scale had a Cronbach's alpha of 0.92. The measure has also demonstrated convergent validity. Expected associations were found with measures of psychological well-being, as well as with measures of depression and anxiety (Armsden & Greenberg, 1987).

Classification of attachment status can be considered crude (e.g. Holmes, 1994) and assessing a spectrum of features can be considered preferable for some purposes.
It was considered appropriate for the purposes of the current study since the aims were to investigate the level of attachment security within different groups and also to examine level of attachment security as a predictor of other variables. Since the aim of this research was to investigate the influence of the emotional quality of attachment to caregivers as a developmental factor that might influence other factors under investigation, only the parent scales were used.

*5. Beck Depression Inventory – Fast Screen (BDI-FS: Beck, Steer & Brown, 2000)*

The BDI-FS (see Appendix 6) is a brief, self-report measure of depression that is appropriate for use with adolescents (Beck et al., 2000). The measure has been shown to be reliable, with an internal consistency of 0.88 in an adolescent sample. In the current study the scale had a Cronbach's alpha of 0.91. The measure has also demonstrated good construct validity, correlating highly with the depression scale of the Hospital Anxiety and Depression scale (Zigmond & Smith, 1983) and with the diagnosis of a DSM-IV mood disorder (Beck et al., 1997). The BDI-FS measures only cognitive and affective symptoms of depression.

The measure contains seven items. Each item is rated on a four-point scale from zero to three. Thus, the minimum score is zero and the maximum score is twenty-one. A cut-off score of 4 is has been shown to have a 91% sensitivity and 91% specificity for differentiating adolescents with and without major depressive disorder (Winters et al., 1999). The following classification can also be used: a score of 0-3 indicates 'minimal' depression, 4-8 indicates 'mild' depression, 9-12 indicates 'moderate' depression and 13-21 indicates 'severe' depression (Beck et al., 2000).

*6. Adolescent Self-Harm Inventory (Schwannauer, unpublished measure)*

The Adolescent Self-Harm Inventory (see Appendix 7) is similar to the Deliberate Self-Harm Inventory (DSHI: Gratz, 2001) since it is a behaviourally based, self-report

measure of deliberate self-harm. It asks adolescents whether they have ever intentionally harmed themselves. Following Gratz (2001), questions inquired about self-harm without suicidal intent (e.g. 'Have you intentionally done any of the following things during the past year, without intending to kill yourself?'). The measure includes eleven items specifying the method of self-harm, but also has a twelfth item asking if the participant has done anything else to intentionally harm themselves. The measure was chosen in preference to the DSHI (Gratz, 2001) since it measures only frequency and perceived severity of self-harm, rather than also having questions concerning duration. Also, it is simpler to score since it has fewer open-ended questions that require subsequent coding. The measure has questions pertaining to frequency and severity of self-harm in both the past year and the past week.

It includes items that assess both 'indirect' (e.g. slower impact, such as liver damage: Simeon & Favazza, 2001) and 'direct' self-harm (e.g. immediate in impact, such as cutting: Simeon & Favazza, 2001). An item concerning non-suicidal pill-abuse is included in the measure, something that has been reported as a method of self-harm used by an adolescent population (Laye-Gindhu & Schonert-Reichl, 2005). It is possible to classify adolescents into self-harm and non-self harm groups based on their responses to the measure as a whole. It is also possible to classify adolescents according to whether they have engaged in repetitive self-harm (characterised as three or more acts of self-harm; following Gratz, 2000) or not. A measure of self-injury (composed of the items pertaining to 'direct' self-harm) was created to compare self-injury to self-harm.

The scales assessing number of methods of self-harm and the frequency of acts of self-harm were used as measures of the level of self-harm. The number of methods of self-harm used in the past week and the past year, and the frequency of acts in the past week are "counts" and can be used as continuous measures (e.g. Velleman & Wilkinson, 1993), though this can be considered problematic (e.g. Wright, 1997); therefore, results with these 'scales' must be viewed cautiously. There is no published psychometric data on the scales of this measure. However, in the current study the Cronbach's alpha for the scale assessing frequency of self-harm in the past year was 0.81. Additionally, the Cronbach's alphas for the perceived severity scales for the past year and the past week were 0.80 and 0.76 respectively.

Procedure

*1. Normal Sample*

Adolescents were recruited from two secondary schools in Lothian; one was a state-funded school, the other was a private school. One hundred and sixty-seven participants came from the state school and one hundred and thirty from the private school. In order to obtain parental consent for pupils under the age of sixteen, letters to parents with attached opt-out sheets (see Appendix 8) were sent home via pupils in classes where any of the pupils were aged fifteen or under prior to the researcher visiting the classes.

Participants were invited to take part in the study during the first part of a personal and social education class taken by the researcher, at which the teacher of the class was also present. All pupils received an information sheet (see Appendix 9) and consent form (see Appendix 10) and had the opportunity to ask questions about the research prior to completing the questionnaire. Pupils who were willing to participate were requested to complete the questionnaire in silence, in order to maintain confidentiality. Once all questionnaires were completed and collected, the researcher conducted a workshop on stress and coping with difficult feelings. This workshop was based on the 'Stress & Anxiety in Teenagers' (Richards et al., 2006) and 'Depression in Teenagers' (Richards et al., 2005) CD-ROMs. Each pupil received a booklet of handouts from the CD-ROMS to keep. This pack also contained details of appropriate support services for pupils experiencing mental health difficulties. In total, seventeen of these classes were

conducted. The five young people who decided not to participate were permitted to read quietly in class or to visit the school library with permission from the teacher.

*2. Clinical Sample*

A clinical sample of 25 adolescents receiving treatment for difficulties that included self-harm took part. The majority (N = 21) were recruited from an adolescent mental health service in Lothian. Clinicians working at the unit were asked to distribute questionnaire packs to young people who were currently receiving support or treatment for difficulties including self-harm. The questionnaire packs contained an invitation letter (see Appendix 11), an information sheet for under-16s (see Appendix 12) or over-16s (see Appendix 13), a consent form (see Appendix 14), and an addressed envelope, as well as the research questionnaire containing the measures described previously. Additionally, parent information sheets (see Appendix 15) and parent consent forms (see Appendix 16) were included for participants under the age of sixteen.

The information sheet instructed participants that if they would like to participate in the study they should sign the consent form and place it in the addressed envelope with the completed questionnaire. They were required to seal the envelope and return it to the researcher via mail or alternatively to hand it in at the reception desk at their next appointment where it would be stored safely.

## RESULTS

### Section 1: Examination of Measures

Prior to analyses to test research hypotheses, the measures used in the survey were examined to ensure that the data were normally distributed.

*Distribution of Data*

Table 1.1: Table to Show Mean, Standard Deviation, Skew and Kurtosis for the Measures of Level of Self-Harm

| Measure | Mean | SD | Skew | Kurtosis |
|---|---|---|---|---|
| N methods of self-harm – past year | 1.65 | 2.46 | 1.66 | 2.22 |
| N methods of self-harm – past week | 0.55 | 1.31 | 3.75 | 12.79 |
| N incidents of self-harm – past year | 3.35 | 5.95 | 2.22 | 4.66 |
| N incidents of self-harm – past week | 1.67 | 8.42 | 9.33 | 19.83 |

Table 1.1 shows that within the total sample the mean number of methods and incidents of self-harm in the past year and past week were quite low, indicating that many participants did not report a high level of self-harm. The measure of the number of incidents of self-harm in the past week reported by the adolescent was positively skewed. A logarithmic transformation (x+1) of this variable was used in subsequent analyses.

Table 1.2: Table to Show Mean, Standard Deviation, Skew and Kurtosis for the Depression, Emotion Regulation, Self-Integration and Attachment Scales

| Measure | Mean* | SD | Skew | Kurtosis |
|---|---|---|---|---|
| BDI-FS | 0.53 | 0.65 | 0.98 | 0.68 |
| ERQ-ID | 2.22 | 0.86 | 0.80 | 0.85 |
| ERQ-IF | 2.80 | 0.69 | 0.30 | 0.30 |
| ERQ-ED | 1.80 | 0.63 | 1.32 | 0.92 |
| ERQ-EF | 2.81 | 0.74 | 0.10 | -0.22 |
| PTEQ | 2.32 | 0.69 | 0.46 | -.27 |
| PSQ | 2.84 | 0.69 | 0.57 | 0.33 |
| IPPA-Mother | 3.80 | 0.75 | -.74 | -.06 |
| IPPA-Father | 3.55 | 0.85 | -.66 | -.09 |

*Mean response to scale

Table 1.2 indicates that most of the measures were normally distributed. However, some scales were skewed and were therefore considered for transformation. The external-dysfunctional scale was positively skewed, indicating that few people reported utilising external-dysfunctional emotion regulation strategies. The scale also demonstrated positive kurtosis. Logarithmic transformation (x+1) did not improve on this. Therefore the original scale was used in further analyses. The BDI-FS scale was also positively skewed, indicating that the majority of the total sample did not report symptoms of depression. Logarithmic transformation (x+1) did not improve the distribution of this

variable; therefore, the original variable was used in subsequent analyses. Since both IPPA scales were negatively skewed, the variables were reflected and then transformed using the logarithmic (log+1) formula. This improved the distribution and therefore the transformed variables were used in subsequent analyses.

*PTEQ Sub-Scales*

The distribution of the PTEQ sub-scales can be seen in Table 1.3 below.

Table 1.3: Table to Show Mean, Standard Deviation, Skew and Kurtosis for PTEQ Sub-Scales

| PTEQ Scale | Mean* | SD | Skew | Kurtosis |
|---|---|---|---|---|
| Sadness | 2.17 | 0.80 | .78 | .06 |
| Guilt | 2.30 | 0.81 | .53 | -.38 |
| Anger | 2.94 | 0.90 | .15 | -.60 |
| Anxiety | 2.39 | 0.92 | .57 | -.56 |
| Shame | 2.10 | 0.84 | .84 | .37 |
| Disgust | 2.00 | 0.80 | .94 | .71 |
| Strong Emotions | 2.25 | 0.81 | .70 | .41 |
| PTEQ-Identify | 3.92 | 0.95 | -.77 | -.11 |
| Emotions-Useful | 2.75 | 0.84 | .98 | .68 |
| PTEQ-'Bad' | 1.76 | 0.68 | 1.14 | 1.14 |

*Mean response to scale

Table 1.3 shows that the highest mean score on a PTEQ sub-scale for a specific emotion was 2.94 on the PTEQ-Anger scale, indicating that participants perceived anger to be most threatening of all the emotions included in the measure. The specific emotion

scales were not used in subsequent analyses and were therefore not considered for transformation.

The high mean score on the PTEQ-Identify scale indicates that participants reported being able to clearly identify the emotions to which the PTEQ refers. Since this scale was negatively skewed, the variable was reflected and transformed for use in subsequent analyses. The low mean score on the PTEQ-Bad scale indicates that few participants believe their emotions to be a sign of 'being evil or bad'. Since both the PTEQ-Bad and Emotions-Useful scales were positively skewed, logarithmic transformations (x+1) were carried out in order that the variables could be included in subsequent analyses.

## Section 2: Sample Descriptives

The descriptive statistics for the three groups and the total sample are reported below since some analyses were conducted with groups and some with the total sample.

*Age*

Within all three groups participants ages ranged from fourteen to eighteen. Table 2.1 below shows the mean age of each group.

Table 2.1: Table to Show Mean Age and SD of Each Group

| **Group** | **Min** | **Max** | **Mean** | **SD** |
|---|---|---|---|---|
| Normal (Control) | 14 | 18 | 15.30 | 0.95 |
| Non-Clinical Self-Harm | 14 | 18 | 15.08 | 0.77 |
| Clinical Self-Harm | 14 | 18 | 15.80 | 1.11 |
| Total Sample | 14 | 18 | 15.25 | 0.92 |

Table 2.1 shows that the age range was identical among the groups. Also, although the mean age of the clinical group was the highest, the mean age was similar across the groups.

A one-way analysis of variance (ANOVA) was conducted to assess for significant differences in age between the three groups: (1) control, (2) non-clinical self-harm and (3) clinical self-harm. There was a significant difference between the three groups ($F(2, 313) = 6.90$, $p<0.01$). Post-hoc Scheffe tests were conducted to assess for significant differences in age between the groups. There were significant differences in age between the clinical self-harm group and both the non-clinical self-harm group and the normal control group at the 0.05 level. Therefore, age was considered as a covariate in subsequent analyses that compared the three groups.

Key analyses, however, showed that age did not have a significant effect. For example, an analysis of variance with age as a covariate was conducted to assess for differences in depression between the groups. There was a significant difference in level of depression between the groups ($F(3, 308) = 58.22$, $p<0.01$) but the effect of age was not significant ($F(1, 308) = 2.46$, N/S). This result is not surprising since the difference in age between the groups occurred due to the method of sampling, where the majority of participants recruited from schools came from one academic year. Indeed, fifty per cent of the normal sample were fifteen years old. Therefore, age was not included as a covariate in subsequent analyses.

*Gender*

In the total sample there were roughly equal numbers of males and females in the total sample: one hundred and sixty males (50.3%) and one hundred and fifty-six females (49.4%). One participant (0.6%) in the normal sample did not state their gender. Chi-Square was used to test the association between self-harm classification (control, non-clinical self-harm and clinical self-harm) and gender.

Table 2.2: Table to Show Observed and Expected Frequencies of Males and Females in Each Group

| | | | Group | | | Total |
|---|---|---|---|---|---|---|
| | | | Control | Non-Clinical Self-Harm | Clinical Self-Harm | |
| Gender | Female | Observed | 71 | 66 | 18 | 155 |
| | | Expected | 81.9 | 60.7 | 12.3 | |
| | Male | Observed | 95 | 57 | 7 | 159 |
| | | Expected | 84.1 | 62.3 | 12.7 | |
| Total | | | 166 | 123 | 25 | 314 |

Table 2.2 shows that there were more females and fewer males in the self-harm groups than would be expected if there was no differences between the genders. There were significantly more females than males in the self-harm groups ($x^2 = 8.92$, $df = 2$, $p<0.05$), thus indicating that adolescent females were more likely to self-harm than adolescent males. However, independent t-tests showed that there were no significant differences

between males and females in the number of methods of self-harm used to self-harm in the past year or the past week, or in the frequency of self-harm in the past week.

*Type of School*

Table 2.3 below shows the number of participants in each group who attended state, private or 'other' type of school.

Table 2.3: Table to Show the Number of Participants in Each Group who Attended State School, Private School or 'Other'

| | State | | Private | | Other | |
|---|---|---|---|---|---|---|
| **Group** | **N** | **%** | **N** | **%** | **N** | **%** |
| Normal (Control) | 86 | 51.5 | 79 | 47.3 | 2 | 1.2 |
| Non-Clinical Self-Harm | 76 | 62.3 | 46 | 37.7 | 0 | 0 |
| Clinical Self-Harm | 14 | 56.0 | 6 | 24.0 | 5 | 20.0 |
| Total Sample | 177 | 55.7 | 134 | 42.1 | 7 | 2.2 |

Table 2.3 shows that the majority of participants in each group attended a state school. In the normal sample the two participants who ticked 'other' had begun college. In the clinical self-harm group the five participants who had ticked 'other' reported the following: one participant (4%) attended a special support school, three (12%) had left school and one (4%) went to college.

Independent t-tests were carried out to assess whether there were any differences in level of self-harm between the private and state school. There were no significant differences in (a) number of methods used to self-harm in the past year, (b) number of methods used to self-harm in the past week, and (c) the frequency of self-harm in the past week, between the state school and private school samples.

*Family Structure*

The majority of participants in the total sample (78%) reported that their parents/ guardians were living together as married/ married. Chi-Square was used to test the association between self-harm classification (control, non-clinical self-harm and clinical self-harm) and relationship status of parents/ guardians. Those that reported 'other' stated different reasons for this and were therefore excluded from this analysis.

Table 2.4: Table to Show the Observed and Expected Number of Participants in Each Group with Parents/Guardians of Each Type of Relationship Status

| | | | Group | | | Total |
|---|---|---|---|---|---|---|
| | | | Control | Non-clinical self-harm | Clinical self-harm | |
| Relationship Status of Parents/ Guardians | Living together/ Married | Observed | 143 | 90 | 14 | 247 |
| | | Expected | 131.1 | 96.5 | 19.3 | |
| | Separated | Observed | 12 | 19 | 3 | 34 |
| | | Expected | 18.1 | 13.3 | 2.7 | |
| | Divorced | Observed | 8 | 11 | 7 | 26 |
| | | Expected | 13.8 | 10.2 | 2.0 | |
| Total | | | 163 | 120 | 24 | 307 |

Table 2.4 shows that there were more participants with parents/ guardians who were separated or divorced in the self-harm groups than would be expected if there were no differences in relationship status of parents/ guardians between the groups. There was a significant difference in the relationship status of parents/ guardians between the three groups ($X^2 = 22.15$, $df = 4$, $p<0.01$).

Table 2.5: Table to Show How Many Participants in Each Group Had Siblings

| **Group** | **Participants who had siblings** | |
|---|---|---|
| | **N** | **%** |
| Normal (Control) | 153 | 91.6 |
| Non-Clinical Self-Harm | 110 | 88.7 |
| Clinical Self-Harm | 22 | 88.0 |
| Total Sample | 285 | 89.6 |

Table 2.5 shows that the majority of participants in all groups had siblings. One participant in the clinical group did not answer this question.

*Living Situation*

Table 2.6 below shows the number and percentage of participants who reported each type of living situation.

Table 2.6: Table to Show the Number and Percentage of Participants who Reported Each Type of Living Situation

| Group | Live at home with parents/guardians | | Live in own flat | | Live in supported accommodation | | Other | |
|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % |
| **Normal** | 167 | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Non-Clinical Self-Harm** | 123 | 99.2 | 0 | 0 | 0 | 0 | 1 | 0.8 |
| **Clinical Self-Harm** | 21 | 84 | 1 | 4 | 2 | 8 | 1 | 4 |
| **Total Sample** | 304 | 95.6 | 0 | 0 | 0 | 0 | 14 | 4.4 |

Table 2.6 shows that fewer participants in the clinical self-harm group lived at home. Within the clinical group two participants (8%) lived in supported accommodation, one (4%) lived in their own flat and one (4%) stated 'other', but did not elaborate on what this meant. In contrast, all participants in the normal (control) group lived at home with parents or guardians.

## Section 3: Level of Self-Harm Among the Groups

*Rate of Self-Harm Found in the Normal Sample*

It was important to examine the rate of self-harm in the normal sample in order that it could be compared with previous research. Of the participants recruited from schools (N = 297) one hundred and twenty-four pupils (42.6%) reported that they had self-harmed at least once in the past year. Results with the self-injury measure (i.e. 'direct' self-harm) showed that one hundred and twenty participants (40.4%) had self-injured at least once in the past year; thus rates were not significantly lower than that for self-harm.

*Rates of Self-Harm Found in Each of the Three Groups*

Table 3.1 below shows the number of participants in each group who had self-harmed either once or repetitively, in both the past year and the past week.

Table 3.1: Table to Show Number of Participants from Each Group Who Had Self-Harmed Once or Repetitively for both the Past Year and the Past Week

| | **Self-harmed at least once in past year** | | **Self-harmed > twice in past year** | | **Self-harmed at least once in past week** | | **Self-harmed > twice in the past week** | |
|---|---|---|---|---|---|---|---|---|
| **Group** | **N** | **%** | **N** | **%** | **N** | **%** | **N** | **%** |
| Normal (Control) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Non-Clinical Self-Harm | 124 | 100 | 64 | 51.6 | 56 | 45.2 | 22 | 17.7 |
| Clinical Self-Harm | 25 | 100 | 21 | 84.0 | 18 | 72.0 | 14 | 56.0 |
| Total Sample | 129 | 40.8 | 85 | 26.8 | 74 | 23.4 | 36 | 11.4 |

Table 3.1 shows that the majority of participants in the clinical sample (84%) had self-harmed more than twice in the past year. Also, more than half (56%) of the clinical sample had self-harmed more than twice in the past week, compared to one fifth (18%) of the non-clinical sample.

*Level of Self-Harm Between the Non-Clinical and Clinical Self-Harm Groups*

Independent t-tests were carried out to test for significant differences in level of self-harm between the two self-harm groups. The clinical self-harm group reported using significantly more methods of self-harm in the past year ($t = 6.09$, $df = 147$, $p<0.01$) and the past week ($t = 4.15$, $df = 147$, $p<0.01$) compared to the non-clinical self-harm group. The clinical group also reported significantly more incidents of self-harm in the past year ($t = 5.23$, $df = 147$, $p<0.01$) and the past week ($t = 3.73$, $df = 147$, $p<0.01$) than the non-clinical group.

*Methods of Self-Harm*

Table 3.2: Table to Show Methods of Self-Harm Used By Participants At Least Once in the Past Year

| **Method of Self-Harm** | **Non-Clinical Self-Harm Group** | | **Clinical Self-Harm Group** | |
|---|---|---|---|---|
| | **N** | **%** | **N** | **%** |
| Excess alcohol | 41 | 33. | 17 | 68 |
| Overdose | 12 | 10 | 18 | 72 |
| Self-poison | 2 | 2 | 2 | 8 |
| Self-burn | 42 | 34 | 13 | 52 |
| Self-cut | 43 | 34 | 20 | 80 |
| Carve words | 22 | 18 | 11 | 44 |
| Scratch self | 59 | 48 | 21 | 84 |
| Stab self | 8 | 6 | 9 | 36 |
| Self-hit | 56 | 45 | 15 | 60 |
| Self-wound | 45 | 36 | 13 | 52 |
| Bite self | 28 | 23 | 9 | 36 |
| Other self-harm | 11 | 9 | 3 | 12 |

Table 3.2 shows that almost half (48%) of the participants in the non-clinical self-harm group had scratched themselves intentionally at least once during the past year. This was also true of self-hitting (45%). In the clinical self-harm group the most frequently used method of self-harm was also scratching (84%). This was followed by cutting (80%) and then overdosing (72%), indicating a pattern of self-harm that poses a more serious risk to life in the clinical group. Since the current study focused on level of self-harm in terms of number of acts and number of methods of self-harm, only these measures were used in

the analyses. However, details regarding perceived severity of self-harm among the groups can be seen in Appendix 20. The clinical self-harm group perceived the self-harm they engaged in to be more serious to their physical health than the non-clinical self-harm group.

Additional methods of self-harm reported by the non-clinical group (see Appendix 19) included hitting or punching a wall (N = 2). Also, features of eating disorders (self-induced vomiting and starvation) were also viewed as methods of self-harm by two participants in the non-clinical group. Additional methods of self-harm reported by the clinical group (see Appendix 19) included hitting head against a wall (N = 1). Also, self-piercing was considered a method of self-harm by one participant in the clinical group. In addition, one female participant described that she entered into abusive relationships with men as a form of self-harm.

## Section 4: Group Comparisons

### *1. Depression*

The three groups were compared for level of depression. Table 4.1 below shows the mean score on the BDI-FS for each group, as well as the number of participants in each group who could be classified as depressed.

Table 4.1: Table to Show Level of Depression in the Three Groups

| | **BDI-FS Score** | | **Classified as Depressed (BDI Score >3)** | |
|---|---|---|---|---|
| **Group** | **Mean** | **SD** | **N** | **%** |
| Control | 1.52 | 2.33 | 19 | 11.7 |
| Non-Clinical Self-Harm | 5.32 | 4.53 | 70 | 57.4 |
| Clinical Self-Harm | 10.88 | 5.89 | 20 | 83.3 |
| Total Sample | 3.74 | 4.58 | 109 | 34.3 |

Table 4.1 shows that a higher percentage of adolescents from the two self-harm groups (clinical self-harm = 83%; non-clinical self-harm = 57.4%) were depressed compared to the control group (11.7%). One-third of the total sample were depressed (34.3%), but most of these cases could be classified as having 'minimal' (62.9%) or 'mild' (21.1%) depression. Table 4.1 also shows that there were differences in mean score on the BDI-FS among the groups. This can be seen clearly in Figure 1 below.

Figure 1: Graph to Show Level of Depression Among the Three Groups

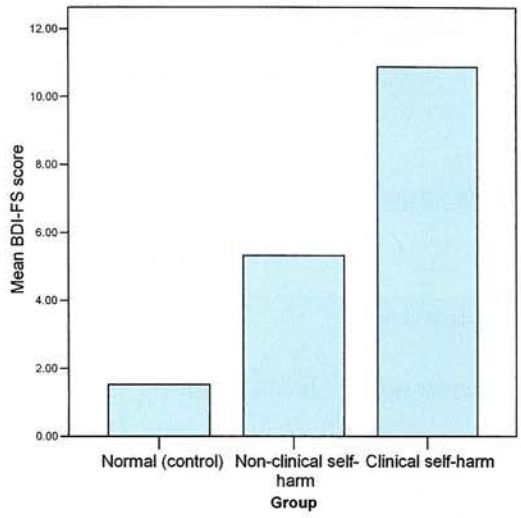



Figure 1 shows the differences in level of depression among the three groups. A one-way analysis of variance (ANOVA) was conducted to see whether these differences were significant. There were significant differences in level of depression among the groups ($F(2, 306) = 85.68$, $p<0.01$). Planned orthogonal contrasts indicated that there was a significant difference in mean scores on the BDI-FS between (a) the self-harm groups (clinical and non-clinical) and the non self-harm group (control), and (b) between each of the self-harm groups at the 0.05 level of significance. Therefore, adolescents who self-harm were significantly more depressed than adolescents who do not, but adolescents from the clinical self-harm group were significantly more depressed than adolescents from the non-clinical self-harm group.

*2. Emotion Regulation*

The degree to which participants in each group used each of the emotion regulation styles can be seen in Table 4.2 below.

Table 4.2: Table to Show the Mean Scores on the ERQ Scales for Each Group

| Group | Internal-Dysfunctional | | Internal-Functional | | External-Dysfunctional | | External-Functional | |
|---|---|---|---|---|---|---|---|---|
| | **Mean** | **SD** | **Mean** | **SD** | **Mean** | **SD** | **Mean** | **SD** |
| **Control** | 1.79 | 0.56 | 2.92 | 0.66 | 1.58 | 0.49 | 2.93 | 0.71 |
| **Non-Clinical Self-Harm** | 2.61 | 0.83 | 2.75 | 0.69 | 2.01 | 0.64 | 2.76 | 0.75 |
| **Clinical Self-Harm** | 3.33 | 0.92 | 2.42 | 0.78 | 2.18 | 0.91 | 2.30 | 0.75 |

Table 4.2 shows that there were differences in use of emotion regulation between the groups. Analysis of variance was used to assess for significant differences in each emotion regulation scale among the three groups.

*Differences in Internal-Dysfunctional Emotion Regulation*

There was a significant difference in mean scores on the internal-dysfunctional emotion regulation scale among the three groups ($F(2, 313) = 79.61$, $p<0.01$). Since the direction of difference was hypothesised beforehand, planned orthogonal contrasts between groups were carried out. These showed that there was a significant difference (at the 0.05 level)

in ERQ-ID scores between (a) the self-harm groups (clinical and non-clinical) and the non self-harm group (control), and (b) between each of the self-harm groups at the 0.05 level of significance. This indicates that adolescents who self-harm used internal-dysfunctional strategies to regulate their emotions more frequently than those who do not, but that the clinical group uses these strategies more frequently than the non-clinical self-harm group.

*Differences in Internal-Functional Emotion Regulation*

Analysis of variance showed that there was a significant difference in mean scores on the internal-functional scale among the three groups ($F(2, 315) = 6.71$, $p<0.01$). Planned orthogonal contrasts showed that the self-harm groups (clinical and non-clinical) used internal-functional emotion regulation strategies significantly less frequently ($p<0.05$) than the non self-harm group (control). There was also a significant difference in scores on the ERQ-IF between the two self-harm groups at the 0.05 level, indicating that the clinical group used these strategies significantly less frequently.

*External-Dysfunctional Emotion Regulation*

Analysis of variance showed that there was a significant difference in mean scores on the external-dysfunctional scale among the three groups ($F(2, 315) = 23.94$, $p<0.01$). Planned orthogonal contrasts showed that there was a significant difference in scores on the ERQ-ED between (a) the self-harm groups (clinical and non-clinical) and the non

self-harm group (control), and (b) between each of the self-harm groups at the 0.05 level of significance. This indicates that the self-harm groups use external-dysfunctional strategies significantly more frequently than the non self-harm group (control), but that the clinical self-harm group uses this style of dysfunctional emotion regulation more frequently than the non-clinical self-harm group.

*External-Functional Emotion Regulation*

Analysis of variance showed that there was a significant difference in means scores on the mean external-functional score among the three groups ($F(2, 315) = 8.73$, $p<0.01$). Planned orthogonal contrasts showed that there was a significant difference between (a) the self-harm groups (clinical and non-clinical) and the non self-harm group (control), and (b) between each of the self-harm groups at the 0.05 level of significance. Therefore, adolescents in the self-harm groups reported using external-functional emotion regulation strategies significantly less frequently than adolescents in the non self-harm group (control), but that the clinical group used the strategies significantly less frequently than those in the non-clinical self-harm group.

*3. Appraisal of Emotion*

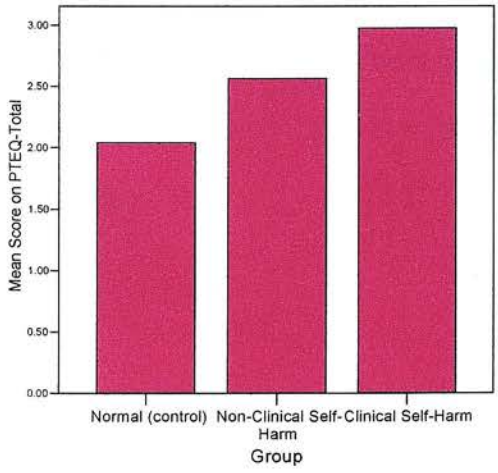
Table 4.3 below shows the mean scores on the appraisal of emotion (PTEQ) scales for each of the three groups.

Table 4.3: Table to Show the Mean Scores on the Appraisal of Emotion (PTEQ) Scales for Each Group

| | PTEQ-Total | | PTEQ-Identify | | PTEQ-Bad | | Emotions-Useful | |
|---|---|---|---|---|---|---|---|---|
| | **Mean** | **SD** | **Mean** | **SD** | **Mean** | **SD** | **Mean** | **SD** |
| **Control** | 2.04 | 0.55 | 4.09 | 1.10 | 1.57 | 0.54 | 2.74 | 0.87 |
| **Non-Clinical Self-Harm** | 2.57 | 0.67 | 3.79 | 0.99 | 1.91 | 0.69 | 2.78 | 0.82 |
| **Clinical Self-Harm** | 2.98 | 0.71 | 3.83 | 0.90 | 2.34 | 0.96 | 2.74 | 0.93 |

Table 4.3 shows that there were differences in appraisal of emotion among the groups. The differences in perception of threat from emotions (PTEQ-Total) can be seen in Figure 2 below.

Figure 2: Graph to Show Mean Scores on PTEQ-Total for Each Group



Analysis of variance (ANOVA) was used to investigate whether any of these observed differences were statistically significant. There was a significant difference in scores on the PTEQ-Total among the three groups ($F(2, 313) = 41.63$, $p<0.01$). Post-hoc Scheffe tests showed that differences were significant between every combination of groups at the 0.05 level; thus indicating that adolescents in the clinical group perceived their emotions to be more threatening than adolescents who also self-harm but have not received clinical attention. However, the latter group perceived their emotions to be more threatening than adolescents who had not self-harmed.

ANOVA indicated that there was also a significant difference in mean scores on the PTEQ-Bad (Log) scale among the three groups ($F(2, 313) = 19.46$, $p<0.01$). Post-hoc Scheffe tests indicated that there were significant differences between all the three groups at the 0.05 level; thus indicating that adolescents from the clinical group who self-harmed held stronger beliefs that their emotions are bad than those who self-harm from the non-clinical group. In turn, adolescents who self-harmed but who had not received clinical input for their difficulties held stronger beliefs that their emotions are bad than adolescents who had not self-harmed.

ANOVA indicated that there were no significant difference in scores on the PTEQ-Identify (Log) scale ($F(2, 312) = 2.92$, NS) or the Emotions-Useful (Log) scale ($F(2, 312) = 0.90$, NS).

*4. Self-Integration*

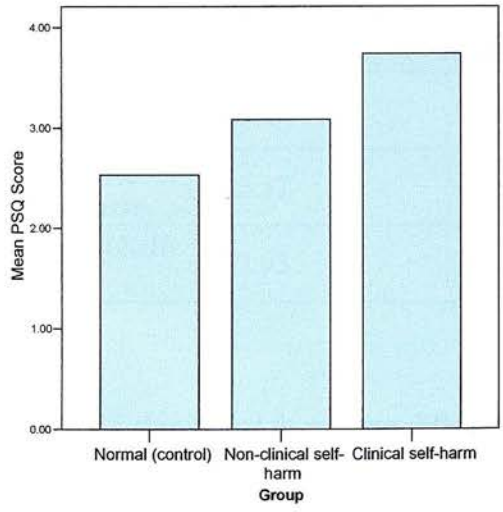
The mean scores on the PSQ for each group are shown in the Table 4.4 below.

Table 4.4: Table to Show Mean Score on the PSQ for Each Group

| | PSQ Score | |
|---|---|---|
| | **Mean** | **SD** |
| Control | 2.53 | 0.53 |
| Non-Clinical Self-Harm | 3.09 | 0.66 |
| Clinical Self-Harm | 3.74 | 0.59 |

Table 4.4 shows that there were differences in self-integration (PSQ scores) among the groups. Figure 3 below illustrates these differences.

Figure 3: Graph to Show Mean PSQ Scores for Each Group



Analysis of variance was conducted to assess whether the differences were significant. Scores on the PSQ were significantly different among the three groups ($F(2, 312) = 62.10$, $p<0.01$); thus indicating significant differences in level of self-integration between the groups. Post hoc Scheffe tests showed that the difference between every combination of groups was significant at the 0.01 level; thus, adolescents from both self-harm groups perceived themselves to be less integrated than adolescents in the control group. Also, adolescents in the clinical self-harm group perceived themselves to be less integrated than those in the non-clinical self-harm group.

*5. Attachment*

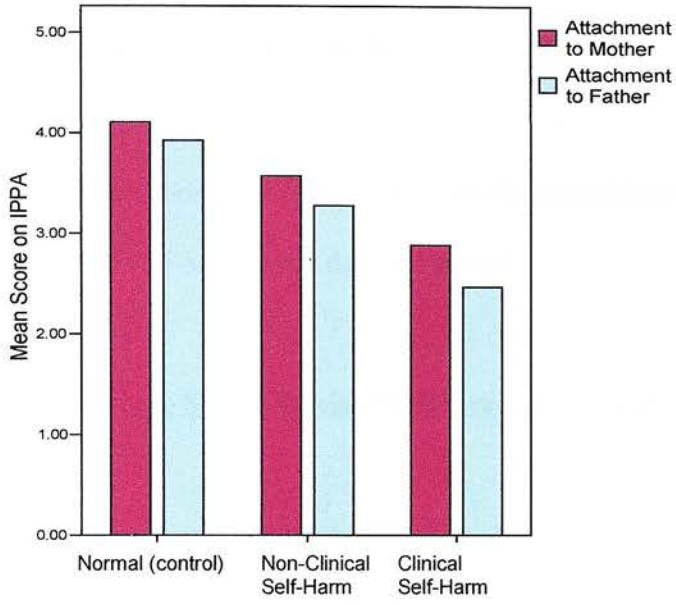
The mean scores on the IPPA scales for each group are shown in the Table 4.5 below.

Table 4.5: Table to Show Mean Scores on the IPPA Scales for Each of the Three Groups

| | **Attachment to Mother (IPPA Scale)** | | **Attachment to Father (IPPA Scale)** | |
|---|---|---|---|---|
| | **Mean** | **SD** | **Mean** | **SD** |
| **Normal (Control)** | 4.10 | 0.56 | 3.92 | 0.64 |
| **Non-Clinical Self-Harm** | 3.57 | 0.73 | 3.28 | 0.84 |
| **Clinical Self-Harm** | 2.93 | 0.93 | 2.47 | 0.87 |

Table 4.5 shows that there were differences in security of attachment to mother and father among the three groups. Figure 4 below graphically represents the scores on both IPPA scales for each group.

Figure 4: Graph to Show Mean Scores on IPPA Scales for Each Group




Analysis of variance was used to see whether the differences were significant, using the reflected and transformed IPPA scales. There were significant differences in security of attachment to mother ($F(2, 312) = 39.75$, $p<0.01$) and father ($F(2, 302) = 44.79$, $p<0.01$) among the three groups. Post-hoc Scheffe tests indicated that there were significant differences between each combination of groups at the 0.05 level for both attachment to mother and attachment to father. This indicates that participants in the control group were significantly more securely attached than those in the non-clinical self-harm group. Participants in the non-clinical self-harm group were, in turn, significantly more securely attached those in the clinical self-harm group.

## Section 5: Factors Associated with Level of Self-Harm

*1. Depression*

Pearson's correlations were conducted to test for associations between scores on the BDI-FS and level of self-harm using the total sample.

Table 5.1: Table to Show Correlations Between BDI-FS and Measures of Level of Self-Harm

| | **N Methods of Self-Harm - Past Year** | **N Methods of Self-Harm - Past Week** | **N Incidents of Self-Harm - Past Year** | **N Incidents of Self-Harm – Past Week (Log)** |
|---|---|---|---|---|
| **BDI-FS** | .72** | .65** | .69** | .67** |

**Correlation is significant at the 0.01 level.

Table 5.1 shows that the BDI-FS is significantly positively correlated with all the measures of level of self-harm, indicating that a higher level of depression is associated with a higher level of self-harm in adolescents.

*2. Emotion Regulation Style and Self-Harm*

Pearson's correlations were conducted to assess for significant relationships between emotion regulation style and number of methods and incidents of self-harm in the total sample.

Table 5.2: Table to Show the Correlations Between Emotion Regulation Scales from the ERQ and Measures of Level of Self-Harm

| | **N Methods of Self-Harm - Past Year** | **N Methods of Self-Harm - Past Week** | **N Incidents of Self-Harm - Past Year** | **N Incidents of Self-Harm – Past Week (Log)** |
|---|---|---|---|---|
| **ERQ-ID** | .65** | .49** | .65** | .52** |
| **ERQ-IF** | -.27** | -.21** | -.22** | -.17** |
| **ERQ-ED** | .38** | .23** | .31** | .16** |
| **ERQ-EF** | -.23** | -.16** | -.23** | -.21** |

**Correlation is significant at the 0.01 level.

Table 5.2 shows that there were significant positive correlations between scales that measure dysfunctional emotion regulation and scales that measure level of self-harm, indicating that the more frequently dysfunctional emotion regulation strategies were used the greater the level of self-harm. Additionally, there were significant negative correlations between scales that measure functional emotion regulation and scales that

measure level of self-harm, indicating that the more frequently functional emotion regulation strategies were used the lower the level of self-harm.

*3. Appraisal of Emotion and Self-Harm*

Pearson's correlations were used to assess the relationship between measures of appraisal of emotions and level of self-harm.

Table 5.3: Table to Show the Correlations Between Appraisal of Emotion Scales and Measures of Level of Self-Harm

| | **N Methods of Self-Harm - Past Year** | **N Methods of Self-Harm - Past Week** | **N Incidents of Self-Harm - Past Year** | **N Incidents of Self-Harm – Past Week (Log)** |
|---|---|---|---|---|
| **PTEQ-Total** | .48** | .45** | .46** | 0.45** |
| **PTEQ-Identify (Reflect.-Log)** | -.16** | N/S | N/S | N/S |
| **PTEQ-Bad (Log)** | .37** | .34** | .37** | .36** |
| **Emotions-Useful (Log)** | N/S | N/S | N/S | N/S |

**Correlation is significant at the 0.01 level.

Table 5.3 shows that there were significant positive correlations between perception of emotions as threatening and all the measures of level of self-harm; thus, the more threatening adolescents perceive their emotions to be, the greater their level of self-harm. Table 5.3 shows the direction of correlations after correcting for the reflected PTEQ-

Identify variable. Therefore, the significant negative correlation with number of methods of self-harm used in the past year showed that the better adolescents reportedly were at identifying emotions, the lower their level of self-harm. Additionally, the stronger the perception of emotions as 'bad', the greater the number of methods of self-harm used in the past year. Strength of belief that emotions are useful was not significantly associated with level of self-harm.

*4. Self-Integration and Self-Harm*

Pearson's correlations were conducted to assess for significant relationships between self-integration and level of self-harm.

Table 5.4: Table to Show Correlations Between PSQ Score and Scales Assessing Level of Self-Harm

| | **N Methods of Self-Harm - Past Year** | **N Methods of Self-Harm - Past Week** | **N Incidents of Self-Harm – Past Year** | **N Incidents of Self-Harm – Past Week (Log)** |
|---|---|---|---|---|
| **PSQ Score** | .60** | .42** | .41** | .46** |

** Correlation is significant at the 0.01 level.

Table 5.4 shows that there was a significant positive correlation between PSQ score and measures of level of self-harm. Since a higher score on the PSQ indicates lower self-

integration, this shows that the less integrated adolescents perceived themselves to be, the greater the level of self-harm.

*5. Attachment and Self-Harm*

Pearson's correlations were conducted to assess for significant relationships between attachment security and level of self-harm.

Table 5.5: Table to Show Correlations Between IPPA Scales and Scales Assessing Level of Self-Harm

| | **N Methods of Self-Harm - Past Year** | **N Methods of Self-Harm – Past Week** | **N Incidents of Self-Harm - Past Year** | **N Incidents of Self-Harm – Past Week (Log)** |
|---|---|---|---|---|
| **IPPA-Mother** | -.52** | -.37** | -.46** | -.21** |
| **IPPA-Father** | -.51** | -.37** | -.46** | -.24** |

** Correlation is significant at the 0.01 level.

Table 5.5 shows the direction of correlations after correcting for the reflected IPPA scales. Therefore, the significant negative correlations between IPPA scales and self-harm scales show that the less securely attached adolescents were to their mother and father, the higher their level of self-harm.

## Section 6: Relationships Between Variables

*1. Emotion Regulation Measures*

Pearson's correlations were used to assess the association between measures of emotion regulation and appraisal of emotion. Table 6.1 below shows the correlations between measures.

Table 6.1: Table to Show Correlations Between ERQ Scales and Appraisal of Emotion Scales

| | ERQ I-D | ERQ I-F | ERQ E-D | ERQ E-F | PTEQ-Total | PTEQ-Identify (R-Log) | PTEQ-'Bad' (Log) | Emotions-Useful (Log) |
|---|---|---|---|---|---|---|---|---|
| **ERQ I-D** | 1 | - | - | - | - | - | - | - |
| **ERQ I-F** | -.11* | 1 | - | - | - | - | - | - |
| **ERQ E-D** | .49** | -.21** | 1 | - | - | - | - | - |
| **ERQ E-F** | -.22** | .39** | -.07 | 1 | - | - | - | - |
| **PTEQ -Total** | .58** | .02 | .27** | -.11* | 1 | - | - | - |
| **PTEQ-Identify(R-L)** | -.05 | .14* | .01 | .12* | .02 | 1 | - | - |
| **PTEQ -'Bad' (Log)** | .47** | -.02 | .19** | -.16** | .76** | -.04 | 1 | - |
| **Emotions-Useful (Log)** | .07 | .08 | .09 | .01 | .03 | .10 | -.07 | 1 |

* Correlation is significant at the 0.05 level.
** Correlation is significant at the 0.01 level.

Table 6.1 shows the direction of correlations after correcting for the reflected PTEQ-Identify variable. There were significant correlations between some of the ERQ scales,

indicating a strong link between different aspects of emotion regulation. Indeed, it shows that adolescents' use of particular emotion regulation strategies is associated with how they appraise their emotions. However, none of the emotion regulation scales were significantly correlated with the Emotions-Useful scale.

*2. Emotion Regulation and Self-Integration*

Pearson's correlations were used to assess the association between measures of emotion regulation and self-integration.

Table 6.2: Table to Show Correlations Between PSQ Score and Score on the four ERQ Scales

| | **ERQ Internal-Dysfunctional** | **ERQ Internal-Functional** | **ERQ External-Dysfunctional** | **ERQ External-Functional** |
|---|---|---|---|---|
| **PSQ Score** | .65** | -.25** | .46** | -.24** |

**Correlation is significant at the 0.01 level.

Table 6.2 shows that there were significant associations between scores on the PSQ Scale and scores on all four ERQ scales. This shows that the more frequently an adolescent reportedly uses dysfunctional emotion regulation strategies, the less integrated they perceived themselves to be. Also, the more frequently an adolescent reportedly uses functional emotion regulation strategies, the more integrated they perceived themselves to be.

Table 6.3: Table to Show Correlations Between PSQ Score and Score on Appraisal of Emotions Scales

| | PTEQ-Total | PTEQ-'Bad' (Log) | PTEQ-Identify (Reflect.-Log) | Emotions-Useful (Log) |
|---|---|---|---|---|
| **PSQ Score** | .43** | .29** | N/S | N/S |

**Correlation is significant at the 0.01 level.

Table 6.3 shows the direction of correlations after correcting for the reflected PTEQ-Identify variable. The PSQ score was significantly positively correlated with the PTEQ total score and the perception of emotions as 'bad' scale. The strongest correlation is between the PSQ and the PTEQ-Strong scale. This shows that the more that strong feelings are perceived as threatening, the less self-integrated adolescents' perceive themselves to be.

3. *Emotion Regulation and Depression*

Pearson's correlations were used to assess the association between scores on the ERQ scales and scores on the BDI-FS.

Table 6.4: Table to Show Correlations Between Scores on the ERQ Scales and Score on the BDI-FS

| | ERQ Internal-Dysfunctional | ERQ Internal-Functional | ERQ External-Dysfunctional | ERQ External-Functional |
|---|---|---|---|---|
| **BDI-FS Scale** | .74** | -.23** | .32** | -.32** |

**Correlation is significant at the 0.01 level.

Table 6.4 shows that scores on both the ERD-ID and ERQ-ED were significantly positively correlated with scores on the BDI-FS, indicating that the more frequently dysfunctional emotion regulation strategies are reportedly used, the higher the level of depression. In addition, scores on both the ERD-ID and ERQ-ED are significantly negatively correlated with scores on the BDI-FS, indicating that the more frequently functional emotion regulation strategies are reportedly used, the lower the level of depression.

The relationship between appraisal of emotion and depression was also assessed. The PTEQ-Total was significantly correlated with the BDI-FS ($r = .55$, $df = 308$, $p<0.01$), indicating that the more severely depressed adolescents were, the more threatening they perceived emotions to be.

4. *Self-Integration and Depression*

Pearson's correlation was used to assess whether there was a significant association between scores on the PSQ and scores on the BDI-FS. There was a significant positive correlation between the two measures ($r = .66$, $df = 316$, $p <0.01$), indicating that the less integrated adolescents perceived themselves to be, the more depressed they were.

*5. Attachment and Emotion Regulation*

Pearson's correlations were conducted to assess for significant associations between attachment and emotion regulation scales.

Table 6.5: Table to Show Correlations Between IPPA Sub-scales and ERQ Sub-Scales

| | **ERQ Internal-Dysfunctional** | **ERQ Internal-Functional** | **ERQ External-Dysfunctional** | **ERQ External-Functional** |
|---|---|---|---|---|
| **IPPA-Mother** | -.57** | .29** | -.36** | .36** |
| **IPPA-Father** | -.56** | .25** | -.36** | .21** |

**Correlation is significant at the 0.01 level.

Table 6.5 shows that scores on both IPPA scales (corrected for reflected variables) were significantly negatively correlated with scores on both the ERQ-ID and ERQ-ED, indicating that the more securely attached adolescents were, the less frequently they reportedly use dysfunctional emotion regulation strategies. In contrast, scores on both IPPA scales were significantly positively correlated with the ERD-IF and ERQ-EF, indicating that the more securely attached adolescents were, the more frequently they reportedly use functional strategies to regulate their emotions.

## Section 7: Predicting Self-Harm & Path Analysis

Two regression analyses that gave a prediction of self-harm are reported below. These predicted the following: (1) whether or not adolescents from the total sample had self-harmed in the past year, and (2) frequency of self-harm during the past week within the sample of adolescents who had self-harmed. Sequential regression was used because there were hypotheses concerning the temporal order of the variables. For example, since emotion regulation was hypothesised to influence self-integration (e.g. Linehan, 1993), emotion regulation was entered into the regression equation first.

Depression was found to be a significant predictor of self-harm in sequential logistic regression (see Appendix 17). Importantly, even once depression was included in the equation other variables (emotion regulation and self-integration) still made a significant contribution to the prediction of self-harm. However, since depression was highly correlated with internal-dysfunctional emotion regulation ($r = .74$, $df = 316$, $p<0.01$), there were problems with multicollinearity. Indeed, Tabachnick and Fidell (2007) recommend that one variable should be omitted when two variables have a correlation of .70 and above; thus, the regression analyses reported below do not include depression as a predictor variable, but do include emotion regulation since this was the variable of most interest to the current study.

1. *Sequential Logistic Regression to Predict Whether or Not Adolescents Had Self-Harmed in the Past Year*

Sequential logistic regression was performed with the total sample to give a prediction of whether or not an adolescent self-harmed, based on the predictor variables of emotion regulation, the ability to identify emotions and self-integration. These variables were chosen since emotion regulation (incorporating appraisal of emotion) and self-integration were the variables of interest in the study. Independent variables do not have to be normally distributed, linearly related or of equal variance in each group in logistic regression (Tabachnick & Fidell, 2007 [printed 2006]).

Table 7.1: Sequential Logistic Regression Analysis of Self-Harm Category as a Function of Emotion Regulation (ERQ-ID), Ability to Identify Emotions (PTEQ-Identify) and Self-Integration (PSQ)

| | | | | 95% Confidence Interval for Odds Ratio | |
|---|---|---|---|---|---|
| Variables | *B* | Wald Chi-Square | Odds Ratio | *Lower* | *Upper* |
| ERQ-ID | 1.40 | 33.50 | 4.08 | 2.53 | 6.56 |
| PTEQ-Identify | -0.34 | 5.04 | 0.71 | 0.53 | 0.95 |
| PSQ | 0.98 | 12.17 | 2.66 | 1.54 | 4.63 |
| (Constant) | -4.64 | 24.61 | | | |

There was a good model fit after addition of the three predictors, $X^2$ (3, N = 318) = 127.49, p<0.01, Nagelkerke $R^2$ = .44. This indicates that the predictors reliably distinguished between adolescents who had self-harmed in the past year and those who had not. Classification was good, with 76.6% of non self-harmers correctly predicted and 67.6% of self-harmers correctly predicted, for an overall success rate of 72.4%. Table 7.1 shows regression coefficients, Wald statistics, odds ratios, and 95% confidence intervals for odds ratios for each of the three predictors. According to the Wald criterion all three predictors reliably predicted self-harm category: ERQ Internal-dysfunctional reliably predicted self-harm category ($X^2$ (1, 318) = 33.50, p<0.01), as did PTEQ-Identify ($X^2$ (1, 318) = 5.04, p<0.05) and PSQ ($X^2$ (1, 318) = 12.17, p<0.01).

2. *Multiple Regression to Predict Frequency of Self-Harm in Adolescents who Self-Harm*

Sequential multiple regression was used to give a prediction of the frequency with which adolescents who had self-harmed (from both non-clinical and clinical self-harm groups) self-harmed in the past week, based on the predictor variables of emotion regulation, appraisal of emotion and self-integration. Appraisal of emotions as bad (PTEQ-Bad) was chosen for entry into this regression since it was strongly correlated with frequency of self-harm in the past week ($r$ = .408, $df$ = 309, p<0.01), whereas other PTEQ scales were not. A logarithmic transformation (x+1) was used with frequency of self-harm (DV) and perception of emotions as bad (PTEQ-Bad) since these were positively skewed.

Figure 5: Residuals Scatterplot Following Regression with Transformed Variables

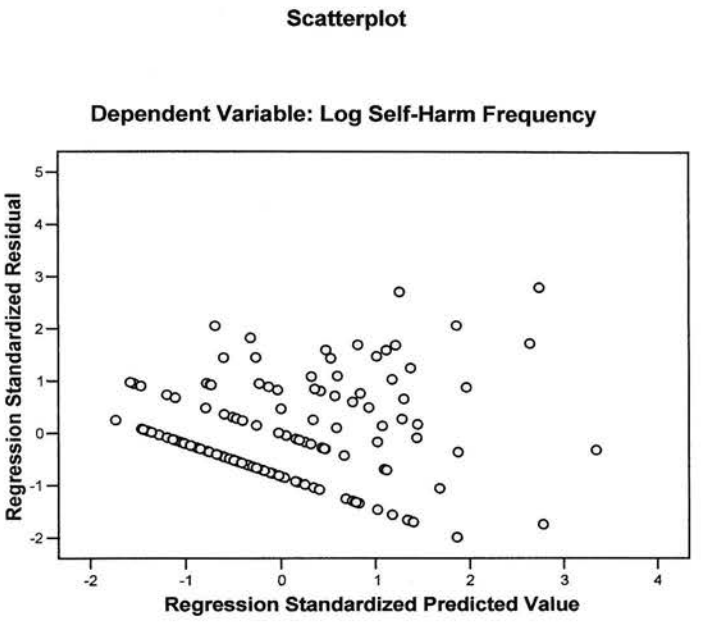



Figure 5 shows that there are no outliers in the solution. Inspection of the results showed that no condition index was greater than 30 and variance proportions were not greater than .50 for two variables; thus, there were no significant problems with multicollinearity (e.g. Belsely et al., 1980). The assumptions for multiple regression were met.

Table 7.2: Sequential Regression of Self-Harm Frequency as a Function of Emotion Regulation (ERQ-ID), Perception of Emotions as Bad (PTEQ-Bad) and Self-Integration (PSQ)

| Variables | Self-Harm Freq. (log) (DV) | ERQ-ID | PTEQ-Bad (log) | PSQ | B | $\beta$ | $Sr^2$ (incremental) |
|---|---|---|---|---|---|---|---|
| ERQ-ID | .44 | - | - | - | .095 | .20 | .19** |
| PTEQ-Bad (log) | .35 | .41 | - | - | .961 | .23 | .04** |
| PSQ | .41 | .55 | .16 | - | .165 | .27 | .05** |
| Mean | 0.30 | 2.72 | 0.46 | 3.19 | $R^2 = .28$<br>Adjusted $R^2 = .27$<br>$R = .53$** | | |
| SD | 0.43 | 0.88 | 0.10 | 0.69 | | | |

**P<0.01

Table 7.2 displays the correlations between the variables, the unstandardised regression coefficients (B), the standardised regression coefficients ($\beta$), the semipartial correlations ($Sr^2$), and $R$, $R^2$ and adjusted $R^2$ after every entry of all three independent variables. After all three steps, with all independent variables in the equation, $R^2 = .28$, F (3, 146) = 18.71, p<0.01. The adjusted $R^2$ value of .28 indicates that almost a third of the variability in frequency of self-harm in the past week was predicted by emotion regulation, appraisal of emotion and self-integration.

R was significantly different from zero after each step. After step one, with internal-dysfunctional emotion regulation (ERQ-ID) in the equation, $R^2 = .19$, $F_{inc}$ (1, 146) = 35.09, p<0.01. After step two, with perception of emotions as bad (PTEQ-Bad) in the

equation, $R^2 = .23$, $F_{inc}(1, 146) = 7.05$, $p<0.01$. After step three, with self-integration (PSQ) in the equation, $R^2 = .28$, $F_{inc}(1, 146) = 9.86$, $p<0.01$. Each independent variable contributed significantly to the prediction of frequency of acts of self-harm.

*Path Analysis Using Regression*

In order to conduct a path analysis within SPSS (SPSS, 2003), a series of regression analyses were run. Since internal-dysfunctional emotion regulation, self-integration and depression (see Appendix 17) predicted self-harm, further regression analyses were conducted with the whole sample to obtain a prediction of these variables. Sequential regression was used since the order of entry of each variable was based on hypotheses concerning the temporal order of development of each of the constructs measured. The regression analyses are reported in Appendix 18. The diagram below (Figure 6) shows the path analysis.

Figure 6: Diagram to Show Path Analysis with Regression Coefficients from a Series of Regression Analyses

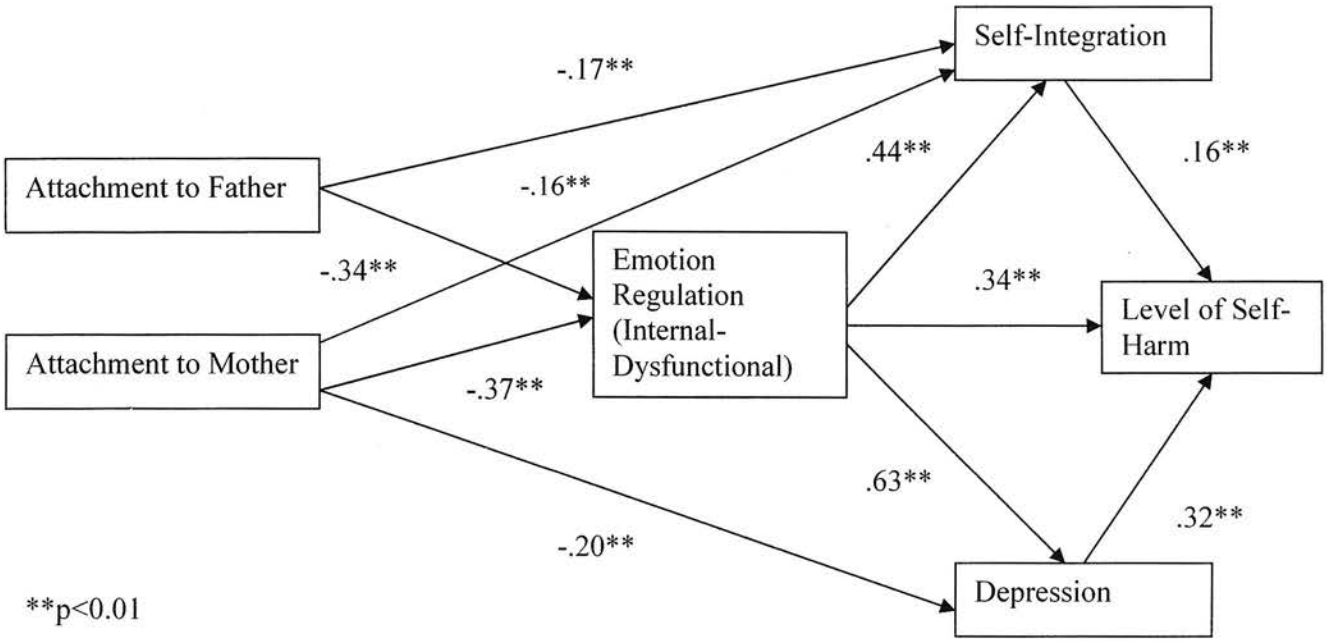



Figure 6 shows that all paths were significant at the 0.01 level. Each path represents a regression coefficient indicating the strength and direction of a prediction, after correcting for reflected variables, based on regression analyses with the total sample. The path analysis shows that insecure attachment to both mother (-.37) and father (-.34), predicted frequent use of internal-dysfunctional emotion regulation. Insecure attachment to mother (-.20) and frequent use of internal-dysfunctional emotion regulation (.63) predicted higher levels of depression. Less secure attachment to mother (-.16) and father (-.17), and frequent use of internal-dysfunctional emotion regulation (.44) predicted poor self-integration. Frequent use of internal-dysfunctional emotion regulation (.34) directly predicted a higher level of self-harm, as did poor self-integration (.16) and higher levels of depression (.32). Interestingly, gender and age were not significant predictors of any of the variables once other predictors were included in each regression analysis.

# DISCUSSION

## Rates and Methods of Self-Harm

The level of self-harm in the normal sample was examined in order that rates could be compared with previous research. Forty-three per cent of the participants recruited from schools reported that they had self-harmed at least once in the past year. This is very high compared with rates of self-harm previously found in normal samples (e.g. Grunbaum et al., 2003; Hawton et al., 2003; Patton et al., 1997) and may reflect that prevalence of self-harm in young people is increasing (e.g. Fortune & Hawton, 2005; Skegg, 2005). Even when the self-harm instrument was used to measure the number of methods of self-injury, which included only forms of 'direct' self-harm (e.g. Simeon & Favazza, 2001), it was still the case that forty per cent of participants from schools had self-injured at least once in the past year. This is higher than recent rates of self-injury found in a community sample of adolescents (e.g. Muehlenkamp & Gutierrez, 2004). The high rates found may reflect the methodology in part. Since the questionnaire was anonymous, adolescents may have felt comfortable in disclosing this information. Alternatively, adolescents may have 'over-reported' self-harm in order to feel that they fit in with peers from a particular sub-culture (e.g. Young, Sweeting & West, 2006).

Since the rates of self-harm found in the current study were particularly high, a retrospective investigation of the possible influence of local factors was carried out. Recent unpublished studies of self-harm in Scottish adolescents, which included a

population of young people from the Lothian area, showed that one in three females aged fifteen had self-harmed (McAra, 2005). This figure also represents a very high self-harm rate not too dissimilar to that found in the current study. One possible explanation for the high rate found in both studies concerns the effect of "clustering". The term "clustering" refers to the finding that exposure to self-harm in others, including friends and family, is associated with increased risk of self-harm in young people (Evans, Hawton & Rodham, 2004). In the current study, the school sample was drawn from areas that had experienced recent episodes of serious self-harm, including the completed suicide of three adolescent pupils. The high rates may reflect exposure to these episodes of self-harm, in addition to media reporting of the incidents: another factor linked to increases in self-harm rates in young people (Martin 1996). Replication of research into self-harm in young people is needed to clarify whether these high rates remain stable or not.

Within the normal sample, the maximum number of methods used to self-harm in the past year was twelve. It was the same figure for the maximum number of methods used in the past week. The highest number of acts of self-harm in the past week was ninety-nine. This participant had not received clinical input, which shows that some adolescents in the normal population frequently self-harm. This level of self-harm in the normal adolescent population was surprising and provided support for Ross and Heath (2002), who suggest that more research is needed into the level and risk of self-harm in community samples. It also supports Fortune and Hawton (2005) who suggest that self-harm in adolescents is highly prevalent in the community and that much does not come to the attention of health services. It is important that adolescents know about and can

access support, although adolescents who self-harm may be less likely to do so due to a tendency to use self-reliant coping strategies (Gould et al., 2004).

The rates and level of self-harm found, taken together, raise key issues about the urgency with which projects aimed at wide-scale intervention for and prevention of self-harm in young people should be developed. "Choose Life" (Scottish Executive, 2002), a national program aimed at the prevention of suicide in Scotland includes a focus on reducing the level of self-harm in young people, partly because people who complete suicide have often self-harmed previously. Specific local initiatives based on 'Choose Life' have been developed. For example, one area in Scotland has produced a staff guide for responding to self-harm in young people in a school setting (East Renfrewshire Council, 2006). It describes helpful ways of managing current episodes of self-harm in order that future episodes of self-harm may be prevented, based on input from clinical psychologists and other professionals. This school-based approach is also in line with the recommendations of the 'Truth Hurts: Report of the National Inquiry into Self-Harm Among Young People' (2006), which advocates prevention work in schools. It specifically recommends educating young people about to help each other, since young people who self-harm report that they most frequently seek help from their peers ('Truth Hurts', 2006). Such initiatives seem a useful way to tackle what appears to be a widespread problem, since they deliver psychological input at the level of need, such that only those adolescents with the most complex needs may require direct input from a clinical psychologist or other mental health professional.

The level of repetitive self-harm was examined in the current study since it is likely that there are differences between repetitive self-harm and occasional self-harm (e.g. Gratz, 2001). Eighty-four per cent of the clinical self-harm group had repetitively self-harmed in the past year, compared to sixty-four per cent of the non-clinical self-harm group, indicating a stronger pattern of repetitive self-harm in the clinical group. A comparison of level of self-harm between the two self-harm groups (non-clinical and clinical) showed that the clinical group reported a significantly higher level of self-harm on all measures (e.g. number of methods used and frequency of acts of self-harm) for both the past year and the past week. This shows that repetitive self-harm in this community sample was lower overall and that most of the adolescents who reported self-harming regularly were receiving support or treatment from the health service for this.

The additional methods of self-harm reported by the participants provide interesting examples of what adolescents themselves consider to be self-harm. For example, two participants cited features of eating disorders (starvation and self-induced vomiting) to be methods with which they intentionally harmed themselves. This contributes to the debate concerning whether eating disorders should be considered forms of self-harm. Clearly, eating disorders cause both physical and psychological harm to sufferers. Also, certain behaviours utilised by people with eating disorders are ways of regulating emotions. These factors are consistent with definitions (e.g. Skegg, 2005) and models of self-harm (e.g. Chapman, Specht & Celluci, 2005). However, the conscious motivation in eating disorders may not be to cause harm, but rather to attain an idealised body shape; thus, the harm caused is secondary rather than the primary aim as with someone who self-cuts, for

example. The current study suggests that, for some people at least, eating disorder behaviours may be consciously viewed as methods of self-harm. For others, however, this may not be the case.

Another method of self-harm cited by an adolescent was re-enacting cycles of abuse; something also considered a method of self-harm by Gardner (2001). An adolescent female described forming close, sexual relationships with men who she then felt abused her emotionally and sexually. Since this participant was in the clinical group this pattern may have become visible during therapy and, therefore, not something that was conscious prior to therapy. However, it was clearly an important and probably accurate description of a form of self-harm for her, since she noted it of her own accord. The fact that this was reported to be a method of self-harm is a reminder that self-harm has many forms and can take place at different behavioural levels. For example, there are the direct methods of self-harm, which have an immediate impact and are explicitly physically harmful (e.g. Simeon & Favazza, 2001), yet there are also the self-defeating or risk-taking behaviours that continue to cause people psychological harm and distress, such as that described by this young female. The appraisals people make about their behaviours could be as important as the actual behaviour in terms of level of psychological distress.

Emotion Regulation and Self-Harm

This study found that adolescents who self-harmed differed from those who had not self-harmed on measures of emotion regulation (ERQ: Phillips, 2005; Phillips & Power, submitted). Specifically, the self-harm groups reported using dysfunctional emotion regulation strategies significantly more frequently than the control group; thus, indicating that adolescents who self-harm use dysfunctional strategies to regulate their emotions significantly more frequently than adolescents who do not self-harm. Also, the clinical self-harm group used dysfunctional emotion regulation strategies significantly more frequently than the non-clinical self-harm group. This shows that adolescents receiving clinical input for self-harm use dysfunctional emotion regulation strategies more frequently than both adolescents who self-harm but are not receiving treatment.

Overall, these findings support the emotion regulation model of self-harm (e.g. Chapman, Gratz & Brown, 2006; Linehan, 1993) for adolescents. More specifically, the findings are consistent with the hypothesis that use of dysfunctional emotion regulation prevents resolution of emotional difficulties, which in turn may contribute to the need to use more extreme methods of numbing emotions. That is, dysfunctional emotion regulation involves attempting to block or reject emotional experience (e.g. Chapman et al., 2006). Unfortunately, this style of emotion regulation may contribute to the maintenance of emotional difficulties because emotions persist until the goal-related events that elicited them are resolved (e.g. Power & Dalgleish, 1997); thus, an adolescent may seek further means of regulating emotional distress. Self-harm can be considered a more extreme

dysfunctional emotion regulation strategy, since it too numbs emotions through a number of psychological and physiological mechanisms (Chapman, et al., 2006).

This study also found a difference in the frequency with which functional emotion regulation strategies were used among the groups. Specifically, the self-harm groups used both internal and external-functional emotion regulation strategies significantly less frequently than the control group. Additionally, the clinical group used these strategies significantly less frequently than the non-clinical self-harm group. These results indicate that adolescents who self-harm utilise functional emotion regulation strategies less frequently. This supports the hypothesis that people who self-harm have deficits in emotion regulation (i.e. use less adaptive forms of emotion regulation) compared to people who do not self-harm (e.g. Linehan, 1993). That is, adolescents may self-harm to regulate emotions due to an absence of more adaptive strategies. For example, the infrequent use of external-functional strategies reflects limited use of interpersonal strategies, such as social support-seeking, to regulate emotions (e.g. Evans, Hawton & Rodham, 2005; Tulloch et al., 1997), something that might mean that self-harm seems the only way to relieve emotional distress.

In contrast with previous research which has examined emotion regulation and self-harm by studying people with borderline personality disorder (BPD; e.g. Chapman et al., 2005), the current study specifically measured the use of emotion regulation strategies along a continuum. This allowed the strength of relationships between emotion regulation and level of self-harm to be measured directly. Significant correlations

between emotion regulation style and level of self-harm were found. The more frequently dysfunctional emotion regulation strategies were reportedly used, the greater the level of self-harm. Additionally, the more frequently functional emotion regulation strategies were reportedly used, the lower the level of self-harm. Therefore, emotion regulation style is itself a factor that is linked to the level of self-harm in adolescents, regardless of other BPD features. This again provides support for the emotion regulation model of self-harm (e.g. Chapman et al., 2006) when applied to adolescents. Since many adolescents in the normal sample had self-harmed, it appears that self-harm is not a problem only for people who have clinical disorders, such as personality disorders or depression, but rather may be viewed as a way of managing intolerable feelings.

As a relationship between emotion regulation and self-harm was established, it was important to investigate relationships between emotion regulation and attachment: the factor hypothesised to influence the development of emotion regulation (e.g. Fonagy et al., 2004; Mikulincer et al., 2003). Scores on attachment security to both mother and father (IPPA scales: Armsden & Greenberg, 1987) were significantly negatively correlated with scores on both dysfunctional emotion regulation scales (ERQ-ID and ERQ-ED), indicating that the more securely attached adolescents are, the less frequently they used dysfunctional emotion regulation strategies. In contrast, scores on both parental attachment (IPPA) scales were significantly positively correlated with both functional emotion regulation scales (ERQ-IF and ERQ-EF), indicating that the more securely attached adolescents are, the more frequently they use functional strategies to regulate their emotions. The current study operationalised these factors and found support

for the widely held theory that attachment security is associated with the capacity to regulate emotions (e.g. Cassidy, 1994; Fonagy et al., 2004; Mikulincer at al., 2003) in a sample of adolescents.

Appraisal of Emotion and Self-Harm

Of all the Perception of Threat from Emotion Questionnaire (PTEQ: McCubbin & Sampson, 2005) scales, scores on the PTEQ-Anger scale were comparatively high, indicating that participants perceived anger to be the most threatening emotion overall. In terms of group differences in how emotions were appraised, the clinical self-harm group had significantly higher scores on the PTEQ than the other two groups; thus, adolescents who receive clinical input for self-harm perceive emotions to be more threatening than the other groups. Also, the non-clinical self-harm group perceived their emotions to be more threatening than adolescents who had not self-harmed. Additionally, there were significant positive correlations between frequency of self-harm in the past week and each of the PTEQ sub-scales. These results support the hypothesis, based on McCubbin and Sampson (2005), that behaviours aimed at emotional avoidance, such as self-harm (Chapman et al., 2006), may reflect underlying perceptions of emotions as threatening.

The mean score on the PTEQ-Bad scale was low overall, indicating that few participants believed their emotions to be a sign of being bad (i.e. 'evil or failing'), something which was expected as this is considered highly dysfunctional (e.g. Thompson, 1994). The

clinical group had significantly higher scores on the PTEQ-Bad scale, indicating that they were more likely to perceive their emotions to be a sign that they were bad. This supports the hypothesis in the current study that adolescents who self-harm may be attempting to neutralise emotions that are viewed negatively. There was a significant positive correlation between the belief that emotions are 'bad' and number of methods of self-harm used both in the past year and in the past week, as well as the frequency of self-harm in the past week. These results show that the greater the strength of belief that emotions are a sign of being 'bad', the higher the level of self-harm.

Although the results suggest that appraisal of emotion is a significant factor in self-harm, it is unclear whether it has a significant effect at the time of self-harm. That is, it might be the case that adolescents consciously process the emotions they are experiencing, appraise them negatively (as bad or threatening), and then engage in self-harm to relieve the aversive emotional state. Alternatively, the experience of an emotion may automatically trigger self-harm (e.g. Chapman et al., 2006) with no propositional level evaluation of the emotion. That is, the link from emotion to self-harm may be an automatic, unconscious process, particularly if an individual is in a dissociative state (e.g. Low et al., 2000). The association between appraisal of emotion and self-harm found in the current research may reflect adolescents' retrospective evaluation of their emotions, as opposed to the appraisal necessarily triggering self-harm. These contrasting hypotheses could be tested in future research using idiographic methods, such as personal journals, alongside psychometric assessment. For example, an experience sampling approach, where adolescents record their internal experiences prior to acts of self-harm,

might help to clarify the relationships found in the present study. However, even this would perhaps alter the natural process, since it requires conscious evaluation of internal experiences.

The mean score on PTEQ-Identify was high, indicating that participants reported being able to identify emotions clearly, something the authors of the measure considered important because it shows that participants are aware of the emotions to which the PTEQ refers (McCubbin & Sampson, 2005). The current study shows that adolescents generally report being able to identify clearly the emotions referred to in the PTEQ. There were no significant differences between groups on this scale, though there is a difference between perceived ability to identify emotions and an actual ability to represent emotions in language, something adolescents who self-harm can have difficulties with (e.g. Simeon & Favazza, 2001). Therefore, the measure used in the current study does not satisfactorily measure this ability. There was, however, a significant negative correlation between PTEQ-identify and the number of methods used to self-harm in the past year, indicating that the less adolescents perceived themselves to be able to identify emotions, the greater the number of methods they used to self-harm in the past year. No significant correlations between this scale and the other measures of level of self-harm were found however.

There was no significant difference between the groups in how useful they perceived emotions to be. This is contrary to the hypothesis, based on Pereg (2001) and Mikulincer and colleagues (2003), who suggest that some people may come to disregard

their emotions as a consequence of an insecure attachment relationship. There were no significant correlations between perceiving emotions as useful and level of self-harm, suggesting that the majority of adolescents perceive emotions to convey useful information. Indeed, the current research indicates that adolescents who self-harm view emotions as conveying useful information, but unfortunately the content of this 'useful' information can be negative. That is, they appraise emotions as threatening or as a sign of being 'bad'.

Significant correlations were found between the emotion regulation (ERQ) scales and the appraisal of emotion (PTEQ) scales, providing evidence for a link between adolescents' use of particular emotion regulation strategies and the way they appraise their emotions. This supports the view that appraisal of emotion can be considered a constituent part of emotion regulation (e.g. Fonagy et al., 2004; Thompson, 1994). None of the emotion regulation scales were significantly correlated with the Emotions-Useful scale, indicating that there is no association between emotion regulation style and how useful emotions are perceived to be. This provides some contradictory evidence to Mikulincer and colleagues' (2003) view that with repeated use of regulatory strategies that exclude emotions, emotions eventually come to be disregarded. However, a belief in 'usefulness' cannot be considered equivalent to attention to (or alternatively disregard for) emotions.

Self-Integration and Self-Harm

The self-harm groups had significantly higher scores on the self-integration scale (PSQ: Pollock et al., 2001) than the normal group. In addition, the clinical self-harm group had

significantly higher scores on the PSQ than the other two groups. This indicates that individuals who self-harm perceived themselves to have a poorer level of self-integration than those who had not self-harmed. This supports the hypothesis, based on Connors (2000), that one of the reasons why adolescents report using self-harm to avoid 'disintegration' and 'to feel', is that they do not have a highly integrated sense of self. Additionally, it supports theory and research which propose that use of self-harm reflects personality disturbance (e.g. Linehan, 1993; Sheard et al., 2001).

There was a significant positive correlation between self-integration (PSQ score) and the number of methods used to self-harm in both the past year and the past week, indicating that the less integrated adolescents perceive themselves to be, the greater the number of methods used to self-harm. Also, there was a significant positive correlation between self-integration (PSQ score) and frequency of acts of self-harm in the past week, indicating that the less integrated adolescents perceived themselves to be, the more frequently they self-harmed. Therefore, level of self-integration is associated with level of self-harm, perhaps reflecting that those who are less integrated use more extreme methods (i.e. more methods of self-harm used more frequently) to avoid self-disintegration and loss of sense of self.

There were significant correlations between self-integration (PSQ Scale) and emotion regulation (ERQ and PTEQ) scales. This shows that the more frequently an adolescent uses dysfunctional emotion regulation strategies, the less integrated they viewed themselves to be. Also, the more frequently an adolescent uses functional emotion

regulation strategies, the more integrated they perceive themselves to be. Further, the more that strong feelings are appraised as threatening, the less self-integrated adolescents' perceive themselves to be. These findings support theory and research that emphasise the influence of emotion regulation on the development of sense of self and specifically self-integration (e.g. Linehan, 1993; Sroufe, 1997; Thompson, 1994).

Attachment Security and Self-Harm

Both attachment scales were negatively skewed, indicating that the majority of participants across the whole sample were securely attached to their mothers and their fathers. The self-harm groups had significantly lower scores on both IPPA scales than the control group, indicating that adolescents who self-harm are less securely attached. The clinical self-harm group had the lowest mean scores on the attachment scales, indicating that they were most insecurely attached group. This supports findings that link the emergence of self-harm to a limited capacity to form secure attachments to primary caregivers (e.g. van der Kolk, 1991).

There were significant negative correlations between scores on attachment (IPPA) scales and scales that assess level of self-harm. This indicates that the less securely attached the adolescent is to his or her mother and father, the higher the level of self-harm in both the past year and past week. Therefore, attachment security is one factor that is associated with self-harm. This pathway was not considered to be direct, but rather a developmental factor that contributes to key competencies or traits (e.g. Fonagy et al., 2004; Mikulincer

et al., 2003), that directly contribute to self-harm (e.g. Yates, 2004); this will be explored further in subsequent sections.

Depression and Self-Harm

From the total sample, one third of the participants could be classified as depressed according to BDI-FS guidelines (Beck, Steer & Brown, 2000). However, the majority of participants classified as depressed had minimal' or 'mild' depression. Participants in the clinical self-harm group were significantly more depressed than the non-clinical self-harm group, who in turn were more depressed than the control group. This supports the finding that adolescents who self-harm are often depressed (e.g. Evans et al., 2004; Ialongo et al., 2004; Martin et al., 1991). It also shows that the group with the highest level of depression was the one with adolescents receiving clinical input for their difficulties.

Level of depression (BDI-FS) was significantly positively correlated with all measures of level of self-harm, indicating that the more severely depressed adolescents were, the greater their level of self-harm. This again supports previous research indicating the link between depression and self-harm in adolescents (e.g. Evans et al., 2004; Ialongo et al., 2004; Martin et al., 1991). According to the emotion regulation model of self-harm (e.g. Chapman et al., 2006) the link between severity of depression and level of self-harm occurs because a higher level of self-harm reflects a greater struggle to regulate a more severely depressed mood.

The relationship between level of depression and the various emotion regulation scales were explored, and significant correlations between the emotion regulation scales and depression (BDI-FS) were found. The more frequently dysfunctional emotion regulation strategies were reportedly used, the higher the level of depression and the more frequently functional emotion regulation strategies were reportedly used, the lower the level of depression. There was a significant positive correlation between appraisal of emotion (PTEQ total score) and depression (BDI-FS), indicating that the more depressed adolescents were, the more threatening they perceived their emotions to be. This again shows an association between emotion regulation and depression. However, it is contrary to the findings of McCubbin and Sampson (2005), who found that appraisal of emotions was not associated with mood in a sample of young adults. The finding that mood is associated with appraisal of emotions in adolescents, but not in adults, might indicate that the experience of low mood in childhood and adolescence contributes to the development of negative beliefs about emotions. In adulthood these beliefs might be more firmly developed and are therefore not influenced by mood. This might be one factor that influences why depression in early life influences later psychosocial functioning (e.g. Petersen et al., 1993). Longitudinal research on the development of appraisal of emotion and depression might further elucidate the pathway and the processes involved.

There was a significant positive correlation between depression (BDI-FS) and self-integration (PSQ), indicating that the less integrated adolescents perceived themselves to be, the more depressed they were. The PSQ measures one form of personality

disturbance found in borderline personality disorder (BPD). Therefore, the association between identity disturbance and depression supports research showing that depression and BPD are positively correlated (e.g. Linehan, 1993). An underlying factor of both depression and BPD is 'emotion dysregulation' (e.g. Linehan, 1993). This finding was also supported by the current study since emotion regulation was correlated with both depression and self-integration. These relationships will be discussed further in subsequent sections. Specifically, hypothesised predictions of self-harm based on these variables will be explored.

The Influence of Age, Gender and Family Structure on Self-Harm

There was a significant difference in age between the three groups, with the clinical group having the highest mean age but this was due to the method of sampling, where the majority of participants recruited from schools came from one academic year. Therefore, the effect of age was not considered to be significant in this sample, perhaps because all the participants were adolescents within a limited age range. Indeed, age was not a significant predictor of self-harm in regression analyses. However, self-harm is highly prevalent in adolescents (e.g. Ross & Heath, 2002; Simeon & Favazza, 2001) and therefore this age-period is considered a significant factor in self-harm (e.g. Yates, 2004).

There were significantly more females than males in the self-harm groups, indicating that females were more likely to self-harm than adolescent males. This supports research by Hawton and colleagues (2003) who found that more females than males self-harmed.

However, this might reflect that females felt more able to admit to having self-harmed. Although more females than males reported a history of self-harm, there were no gender differences in level of self-harm in a sample of those that had self-harmed at least once in the past year. Gender was not a significant predictor of whether an adolescent had self-harmed or not once other variables were entered into sequential regression. This indicates that gender does not make a satisfactory prediction of self-harm once other factors, such as emotion regulation and depression, are accounted for. However, since female adolescents are more likely to be depressed (e.g. Coleman & Hendry, 1999), and since depression is associated with self-harm as in the current study, this may be one key reason that females are more likely to self-harm.

Significantly more participants in the normal sample had parents who were 'married' or 'living together as married'. In contrast, significantly more participants in the clinical self-harm group had parents who were 'divorced'. Further, all the participants in the control group lived at home with parents or guardians, whereas in the clinical self-harm group fewer participants lived at home with parents or guardians. Indeed, two participants from the clinical group lived in supported accommodation. These findings suggest that adolescents who self-harm are more likely to come from disrupted family environments, which is consistent with previous findings showing a link between family problems and self-harm (e.g. Evans et al., 2004; Martin et al., 1995; Tulloch et al., 1997). Indeed, family difficulties may partly explain level of attachment security, since a disrupted family life might result in the parents becoming preoccupied with their own

experience; thus, resulting in the child experiencing the caregiver as emotionally unavailable.

Predicting Self-Harm

In sequential logistic regression with the total sample, emotion regulation, the ability to identify emotions and self-integration reliably distinguished between adolescents who had self-harmed in the past year and those who had not; thus providing further support for the emotion regulation model of self-harm (e.g. Chapman et al., 2006). It also supports the hypothesis of the current study, based on Connors (2000), which suggested that adolescents who self-harm would have a less integrated sense of self. Depression had to be excluded from this analysis due to its strong correlations with the other variables, particularly emotion regulation. However, depression was found to be a significant predictor of self-harm in an exploratory regression. Moreover, even once depression was included in the equation, emotion regulation and self-integration still made significant contributions to the prediction of self-harm. Therefore, these variables add something extra to a prediction of level of self-harm even once part of the variation in level of self-harm has been accounted for by depressed mood. This is important since there is a lot of previous research linking depression and self-harm (e.g. Evans et al., 2004; Hawton et al., 1999; Ialongo et al., 2004; Martin et al., 1991), but the current study shows that emotion regulation and self-integration are also important factors in adolescent self-harm.

Multiple regression was used to give a prediction of the frequency with which adolescents from the self-harm groups (i.e. non-clinical and clinical) had self-harmed in the past week, based on the predictor variables of emotion regulation, appraisal of emotion and self-integration. Approximately one-third of the variability in frequency of self-harm in the past week was predicted by these variables. Furthermore, each independent variable contributed significantly to the prediction of frequency of acts of self-harm. Therefore, these factors not only predicted whether an adolescent had self-harmed or not, they also predicted the frequency of recent acts of self-harm; thus providing further support for the emotion regulation model (e.g. Chapman et al., 2006), as well as the self-integration hypothesis (e.g. Connors, 2000).

A key aim of the current study was to see whether the finding that adolescents self-harm 'to not feel' (e.g. Brown et al., 2002; Nock & Prinstein, 2005) and 'to feel' (e.g. Briere & Gil, 1998; Penn et al., 2003) could be partly explained through studying emotion regulation and self-integration. These factors reliably predicted whether or not adolescents self-harmed; moreover, they predicted level of self-harm. Therefore, trying 'not to feel' appears to be a characteristic emotion regulation strategy of adolescents who self-harm, partly because they view their emotions as bad or threatening. In addition, trying 'to feel' through self-harm seems to occur partly due to an underlying lack of self-integration, something that is associated with dissociative experiences (e.g. Pollock et al., 2001) which are relieved by self-harm (e.g. Penn et al., 2003).

It is interesting to note that the results of the current study reflect a similar pathway to self-harm to that identified by Low and colleagues (2000) in a sample of women detained in a high secure setting. Low et al (2000) found that self-esteem and dissociation significantly predicted self-harm. In the current study, the predictors were dysfunctional emotion regulation, depression and self-integration. The results of both studies support the idea that self-harm is used by people who want to reduce emotions (i.e. due to low self-esteem or depression), as well as to create feeling (i.e. due to dissociation or poor self-integration), perhaps in response to dysfunctional emotion regulation. This pathway to self-harm, as well as the developmental factors hypothesised to contribute to it, will be discussed further below.

Path Analysis: A Developmental Model of Self-Harm

In order to conduct a path analysis in SPSS (version 12: 2003), a series of regression analyses were conducted. Since internal-dysfunctional emotion regulation, self-integration and depression were key variables that predicted frequency of self-harm, further regression analyses were conducted with the whole sample to obtain a prediction of these variables. Sequential regression was used since the order of entry of each variable was based on hypotheses concerning the temporal order of development of each of the constructs measured by the variables. For example, attachment was hypothesised to predict emotion regulation due to theory and research findings indicating that security of attachment is a developmental factor that contributes to the development of emotion regulation competencies (e.g. Fonagy et al., 2004; Mikulincer et al., 2003).

Insecure attachment to both mother and father predicted frequent use of internal-dysfunctional emotion regulation; thus, providing further support for the hypothesis that attachment is a significant factor in the development of emotion regulation (e.g. Fonagy et al., 2004; Mikulincer et al., 2003). The finding that attachment security predicted emotion regulation style, which in turn predicted self-harm, can be partly explained by the idea that the adolescents may have internalised their caregivers' responses. For instance, it is argued that people who have experienced abuse in infancy repeat abusive behaviour to themselves and others (e.g. Gardner, 2001). The same process may be involved in the experience and regulation of emotions. That is, if caregivers responses to expression of emotion during infancy were punishing or rejecting, then this might contribute to the individual's own response to their emotions in this way, thus repeating the cycle. Responding to emotions by self-harming could be one way in which adolescents punish or reject their feelings, particularly if certain emotions have not been integrated into their sense of self (e.g. Power & Dalgleish, 1997).

Frequent use of internal-dysfunctional emotion regulation was a significant predictor of more severe depression. This shows that in addition to making a direct prediction of self-harm, this form of emotion regulation also contributes to depression, which in turn may lead to self-harm. For people who frequently use dysfunctional emotion regulation and who consequently experience severe depressed mood, self-harming may be viewed as the only successful method of avoiding the intense negative emotions. Indeed, the negative emotions experienced in depression are likely to be experienced by these adolescents as intolerable (e.g. Linehan, 1993). Security of attachment to mother also directly predicted

depression; this is likely to be due to ongoing relationship difficulties that trigger feelings of low mood. Attachment to father did not significantly predict depression once attachment to mother was entered into the equation, probably because significant relationship difficulties within the family were already accounted for by the scale assessing attachment to mother.

Frequent use of internal-dysfunctional emotion regulation predicted poor self-integration; thus, emotion regulation made a significant contribution to the experience of sense of self. This supports Sroufe (1997), who considers that a key part of competency in emotion regulation is the ability to maintain self-organisation even when presented with significant stressors. It is also consistent with the view that emotional experience is an important influence on sense of self (e.g. Connors, 2000; Power & Dalgleish, 1997; Spinoza, 1955; Thompson, 1994). Specifically, the finding that frequent use of internal-dysfunctional strategies (i.e. those which aim to block emotions using internal resources) predicted poor self-integration in adolescents supports Linehan's (1993) proposal that inhibiting emotions leads to failure of development of a stable, coherent identity.

Interestingly, quality of experience with caregivers (i.e. attachment security) also directly predicted degree of self-integration. This supports the cognitive analytic therapy (CAT) model of self-integration (e.g. Pollock et al., 2001; Ryle, 1997), which proposes that the experience of the relationship with caregivers contributes to sense of self, based on internalised reciprocal roles. More specifically, the model suggests that inconsistencies in relationships with caregivers lead to the development of contrasting reciprocal roles;

thus, the experience of self is not integrated or coherent. For example, an adolescent who experienced an abusive relationship with a caregiver who also made them feel special in their early years could develop a reciprocal role of 'abusing-to-abused', but also 'ideally cared for-ideally fused' (e.g. Pollock et al., 2001). This adolescent might experience a poorly-integrated sense of self, switching from seeking closeness in relationships, to finding care intolerable. Although inconsistent parenting was not specifically measured, insecure attachment is likely to reflect inconsistent care; thus supporting the model. The attachment relationship is also likely to influence an adolescent's sense of self in the present, at a time when 'containment' is needed (e.g. Anderson, 2000). The experience of inconsistent responses will directly affect adolescents' current internal experiences and view of self.

The results of the path analysis support Yates' (2004) developmental psychopathology approach to adolescent self-harm, since he hypothesised that self-harm may be used by adolescents to regulate emotions and to maintain self-integration if adaptive means of achieving these have not already been developed. The current study found that the emotional quality of the attachment relationship is one key factor in determining the emotion regulation strategies that adolescents use; this in turn contributes to the degree of self-integration. According to Yates, (2004) self-harm is a response to trauma which prevents the development of emotion regulation and self-integration. This study did not collect data on specific traumatic experiences. However, if the emotional quality of an attachment relationship is very poor then this might be traumatic in itself. Additionally, Gardner (2001) suggests that although self-harm may emerge in response to trauma,

internal 'qualities' or 'characteristics' that are established during infancy play a key role in the aetiology of self-harm. The current study provides some support for this view, with regard to the development of emotion regulation competencies and a sense of self-integration. That is, failure to develop effective means of emotion regulation and a coherent sense of self could be considered vulnerability factors, such that self-harm is used as a response to stressful life events that elicit intolerable feelings.

Clinical Implications

This research has important implications for psychological therapies with adolescents who self-harm. Since the study found that dysfunctional emotion regulation predicted level of self-harm, both directly and indirectly, interventions that have an explicit focus on emotion regulation, such as Dialectical Behaviour Therapy (DBT: Linehan, 1993) may be particularly helpful. Indeed, DBT has been adapted for use with adolescents who self-harm (e.g. Katz et al., 2002). Since both dysfunctional and functional emotion regulation were significantly correlated with level of self-harm, interventions should focus on both developing the adolescent's capacity to use adaptive strategies to regulate emotions, and also on reducing their use of dysfunctional emotion regulation strategies.

Since the regulation of, perception of, and ability to identify emotions demonstrated significant relationship with self-harm, interventions that facilitate experiencing and accepting feelings are indicated. Specifically, a therapeutic intervention which models and promotes helpful ways of managing feelings, as well as developing positive

perceptions of emotions and competencies in identifying emotions, may be helpful to young people who self-harm. In contrast, interventions that promote or allow avoidance of emotions might reinforce adolescents' unhelpful perceptions of emotions and their regulation; therefore, maintaining an adolescent's vulnerability to self-harm. For example, therapists should be careful not to reinforce avoidance of negative feelings by steering clear of emotionally-evocative topics, but should try to develop a therapeutic relationship which permits expression of negative emotions as well as positive emotions. Moreover, when working with young people who self-harm, clinicians should be mindful of using treatments that might serve to avoid difficult feelings. For example, 'emotional numbing' may be induced through medication (e.g. May, 2006).

Self-integration was another significant predictor of self-harm; thus, psychological therapies that promote self-awareness and facilitate the development of personal coherence may be helpful to adolescents who self-harm. Cognitive analytic therapy (CAT: Ryle, 1995) aims to assist people in understanding their patterns of behaviour and how these impact on sense of self. In that respect it might be a useful intervention for adolescents who self-harm. Furthermore, CAT also addresses dysfunctional emotion regulation through a focus on naming unmanageable feelings, identifying situations that elicit feelings and dysfunctional behaviours that trigger the unmanageable feelings (e.g. Sheard et al., 2001). Since this approach incorporates identification of and work with transference and countertransference this can reduce collusive reciprocation of roles with the patient (e.g. Sheard et al., 2001); thus, reducing harmful therapist responses which might contribute further to a poorly integrated sense of self. For example, a clinician

might respond in a hostile manner, followed by an 'ideally caring' manner in response to a patient missing appointments but also frequently telephoning while in a distressed state. However, following a CAT approach could assist a clinician in helping the patient explore this pattern of behaviour in a therapeutic way.

Since the use of a dysfunctional emotion regulation style, poor self-integration and high levels of depression were predicted by insecure attachment relationships, interventions that aim to improve the emotional quality of relationships between adolescents and parents may be helpful in preventing or reducing adolescent self-harm. Indeed, promoting positive emotional attachments may facilitate the development of adaptive self-regulatory strategies and emotional competencies (e.g. Fonagy et al., 2004). Therefore, family therapy or involving parents in supporting the intervention may be helpful to some adolescents who self-harm. However, this will not always be possible or even appropriate, particularly if the adolescent is experiencing abuse within the family, a factor linked to self-harm (e.g. van der Kolk, et al., 1991).

One finding directly concerning interventions for adolescent self-harm was that four of the participants in the clinical self-harm group recruited from the Young People's Unit (YPU) stated that they had never received treatment for self-harm. Since participants were only recruited from the YPU if they were already receiving clinical input this finding indicates that adolescents did not consider their treatment to be for self-harm per se. This may reflect that many interventions may not explicitly focus on self-harm. Instead, it is likely that self-harm is viewed as one feature of the person's presentation.

Alternatively, input with these participants may still have been at the assessment or early phase of an intervention. It would be interesting to research this further in order to find out whether appraisal of treatment for adolescent self-harm affects the outcome with regard to self-harm. This finding also represents a limitation since it is possible that more adolescents in the non-clinical self-harm group should actually have been in the clinical group. Further limitations of the research will be discussed below.

Limitations

The use of the Personality Structure Questionnaire (PSQ: Pollock et al., 2001) with an adolescent sample is a limitation of the current study since this measure has not been used in published research with adolescents previously. Therefore, there are no data on reliability and validity of this measure with an adolescent population. This was also the case with the PTEQ (McCubbin & Sampson, 2005), though this measure had been used with young adults, including people in late adolescence. It would have been preferable to carry out validation studies of these measures in both a normal and a clinical adolescent sample prior to use of them in the current study. However, this was not possible due to time constraints. Both measures were normally distributed which provides some evidence that they are suitable for use with adolescents. If the PSQ had been positively skewed, for example, this would have indicated that the majority of adolescents have a low level of self-integration; therefore, this would not necessarily have been considered maladaptive.

There are also some problems with the self-harm measure that was used in this research. For instance, the study contributes to the problem of inconsistencies in self-harm measurement across studies, which prevents reliable comparisons of self-harm rates to be made (e.g. Gratz, 2001). Also, there were no published psychometric data on the measure and therefore the reliability and validity of the scales cannot be ensured. However, the psychometric properties of the scales were found to be acceptable in the current study. Another problem with the use of this measure is that items from the measure of number of incidents of self-harm are open to interpretation. That is, the items enquire about the number of times each method of self-harm was used. This could be interpreted as asking on how many occasions was each method of self-harm used, or it could be interpreted as asking the number of times that behaviour was conducted. There is a subtle difference between the two. For example, someone may have cut themselves on five occasions, but on each occasion they may have made five cuts. This person could have responded to the self-harm measure by giving an answer of five or twenty-five; thus, there are likely to be some inconsistencies in how the participants responded to the measure that will have affected the analyses concerning level of self-harm.

Certain analyses in this study were correlational. This led to some problems in the regression analyses, since it is preferable to have independent variables that are correlated with the dependent variable but not with each other (e.g. Tabachnick & Fidell, 2007 [printed 2006]). Problems with multicollinearity prevented some variables, such as depression, to be entered into all of the relevant regression analyses. Another problem with the correlational design was that although significant relationships between variables

were identified, causal pathways cannot be proven. It was possible to hypothesise the direction of causality in some cases based on previous research, but longitudinal research is needed to confirm whether or not these hypotheses are supported empirically.

The self-report methodology can be considered problematic for the following reasons. Firstly, adolescents may have answered the questions according to social desirability. For instance, they may have responded to questions regarding emotion regulation according to how they think emotions should be regulated rather than based on the strategies they actually use. Also, even if social desirability did not lead to significant inaccuracies, obtaining accurate data on the frequency with which emotion regulation strategies were used via self-report alone would not be possible since much of emotion regulation occurs unconsciously (e.g. Fonagy et al., 2004). Indeed, using questionnaires to assess some of the constructs examined, such as attachment, is considered problematic due to difficulties in capturing the quality of the attachment relationship and also since adolescents with 'de-activating' attachment strategies (e.g. Mikulincer et al., 2003) may under-report problems (e.g. Scott Brow & Wright, 2001). Further, it would have been preferable to obtain information on the variables studied from multiple sources. Obtaining the views of parents, guardians or teachers would have allowed others' perspectives to be taken into account. However, this would have been very time-consuming and also would have resulted in more complicated and lengthy data analysis.

Another limitation is that participants in the clinical group were at various stages of treatment; therefore, this is likely to have confounded the level of self-harm and indeed

the other variables under investigation. Factors such as emotion regulation may have been targeted in interventions, particularly if a therapeutic approach such as Dialectical Behaviour (DBT: Katz et al., 2002; Linehan, 1993) was used in treatment, since this focuses explicitly on emotion regulation. No information regarding length or type of treatment was obtained so it was impossible to control for these effects. It would not have been ethical to recruit participants not already in treatment but who were on the treatment waiting list, since completion of the questionnaire may have been upsetting and triggered further self-harm.

Future Research

Longitudinal research is needed to explore further the developmental pathways to self-harm. Although the current study found support for the prediction that attachment would influence self-harm indirectly, through its influence on emotion regulation, self-integration and depression, longitudinal research is needed to confirm the direction of causality. Alternative developmental pathways are possible. For instance, it could be that adolescents engage in self-harm due to motivations of self-punishment (e.g. Brown et al., 2000) in response to abusive experiences. The effect of self-harm to numb emotions may then result in a desire to further avoid emotions; thus, contributing to the development of a dysfunctional style of emotion regulation.

Future research could investigate whether suicidal behaviour is linked to emotion regulation and self-integration. Research has found that non-suicidal self-harm differs

from attempted suicide (e.g. Muehlenkamp & Gutierrez, 2004). The current study found that emotion regulation and self-integration could reliably predict whether adolescents had self-harmed repetitively or not. Therefore, a study comparing adolescents who have made a suicide attempt to those who repetitively self-harm on measures of emotion regulation and self-integration might prove fruitful.

Research looking at specific parental responses to emotions would be interesting and potentially useful in designing family interventions for self-harm in young people. For example, it would be interesting to know whether shaming responses subsequently lead to adolescent appraisals that emotions are 'bad', whereas punishing responses are more likely to contribute to the development of appraisals of threat. Also, more detailed research into whether appraisals such as these are made prior to, during or after self-harm would be a helpful addition to the evidence base for self-harm.

## Conclusions

This research examined the influence of emotion regulation competencies and sense of self-integration on adolescent self-harm. The study found support for the emotion regulation model of self-harm (e.g. Chapman, et al., 2006) in adolescents, including those from a clinical and non-clinical population. Moreover, the developmental pathway proposed by Yates (2004) was supported by the data, whereby insecure attachment relationships contribute to the development of a maladaptive emotion regulation style, which is then a vulnerability factor for self-harm. Significantly, the findings that emotion

regulation style influences self-harm both directly, but also indirectly via poor self-integration and higher levels of depression, offers an explanation of why adolescents self-harm *to feel* and *to not feel*.

## REFERENCES


Ainsworth, M. B. S., Blehar, M., Waters, E., & Wall, S. (1978). *Patterns of Attachment.* Hillsdale, NJ: Erlbaum.

Alderson, M. R. (1974). Self poisoning – what is the future? *Lancet, 1,* 1040-1043.

Alvarez, A. (1992). *Live Company.* London: Routledge.

American Psychiatric Association. (1994). *Diagnostic and Statistical Manual of Mental Disorders* (4th edition). Washington DC: Author.

Anderson, R. (2000). Assessing the risk of self-harm in adolescents: A psychoanalytic perspective. *Psychoanalytic Psychotherapy, 14 (1),* 9-21.

Armsden, G. C., & Greenberg, M. T. (1987). The inventory of parent and peer attachment: Individual differences and their relationship to psychological well-being. *Journal of Youth and Adolescence, 16 (5),* 427-454.

Aron, A., & Aron, E. N. (1997). Self-expansion motivation including other in the self. In S. Duck (Ed.), *Handbook of Personal Relationships: Theory, Research and Interventions.* (2nd Edition). New York: Wiley.

Asberg, M., Thoren, P., Traksman, L., et al. (1989). 'Serotonin depression: a biochemical subgroup within the affective disorders?' *Science, 191,* 478-480.

Averill, J. R. (1999). Creativity in the domain of emotion. In T. Dalgleish & M. J. Power (Eds.), *Handbook of Cognition and Emotion.* Chichester: Wiley.

Bancroft, J., Hawton, K., Simkin, S., et al. (1979). The reasons people give for taking overdoses. *British Journal of Medical Psychology, 52,* 353-365.

Bartholomew, K. (1997). Adult attachment processes: individual and couple perspectives. *British Journal of Medical Psychology, 70,* 247-263.

Belsely, D., Kuh, E., and Welsch, R. (1980). *Regression diagnostics: Identifying Influential Data and Sources of Collinearity.* New York: John Wiley & Sons

Boor, M. (1980). Relationship between employment rates and suicide rates in eight countries: 1962-1967. *Psychological Reports, 47,* 1095-1101.

Bowlby, J. (1973). *Attachment and Loss.* Volume 2. New York: Basic.

Bowlby, J. (1980). *Attachment and Loss.* Volume 3. New York: Basic.

Bowlby, J. (1982). *Attachment and Loss.* Volume 1 (2nd Edition). New York: Basic.

Bowlby, J. (1988). *A Secure Base: Parent-Child Attachment and Healthy Human Development.* New York: Basic.

Brener, N. D., Krug, E. G., & Simon, T. R. (2000). Trends in suicide ideation and suicidal behavior among high school students in the United States, 1991-1997. *Suicide and Life Threatening Behavior, 30,* 304-312.

Briere, J., & Gil, E. (1998). Self-mutilation in clinical and general population samples: prevalence, correlates and functions. *American Journal of Orthopsychiatry, 68,* 609-620.

Brown, M. Z., Comtois, K. A., & Linehan, M. M. (2002). Reasons for suicide attempts and nonsuicidal self-injury in women with borderline personality disorder. *Journal of Abnormal Psychology, 111,* 198-202.

Burke, M. (2000). The shattered jigsaw. In D. Mercer, N. McKeown, & G. McCann (Eds.), *Forensic Mental Health Care: A Case Study Approach.* Edinburgh: Churchill Livingstone.

Casey, P. R. (1989). Personality disorder and suicide intent. *Acta Psychiatrica Scandinavica, 79,* 290-295.

Cassidy, J. (1994). Emotion Regulation: influences of attachment relationships. In N. A. Fox (Ed.), *The Development of Emotion Regulation: Biological and Behavioral Considerations.* Monographs of the Society for Research in Child Development, 59 (2-3), 228-249.

Chanen A. (2000). Prevention and early intervention for borderline personality disorder in young people. *ACAT Newsletter,* Autumn: 9.

Chapman, A. L., Gratz, K. L., & Brown, M. Z. (2006). Solving the puzzle of deliberate self-harm: the experiential avoidance model. *Behaviour Research and Therapy, 44,* 371-394.

Chapman, A. L., Specht, M. W., Celluci, T. (2005). Borderline personality disorder and deliberate self-harm: Does experiential avoidance play a role? *Suicide and Life-Threatening Behavior, 35 (4),* 388-399.

'Choose Life'. (2002). *Choose Life: a National Strategy and Action Plan to Prevent Suicide in Scotland.* Scottish Executive.

Cicchetti, D., Ganiban, J., & Barnett, D. (1991). Contributions from the study of high-risk populations to understanding the development of emotion regulation. In J. Garber & K. A. Dodge (Eds.), *The Development of Emotion Regulation and Dysregulation.* New York: Cambridge University Press.

Coccaro, E. F., Bergeman, C. S., & McClearn, G. E. (1993). Heritability of irritable impulsiveness: a study of twins reared together and apart. *Psychiatry Research, 48,* 229-242.

Coccaro, E. F., Siever, L. J., Klar, H. M., et al. (1989). Serotonin studies in patients with affective and personality disorders. *Archives of General Psychiatry, 46,* 587-599.

Coid, J., Allolio, B., & Rees, L. H. (1983). Raised plasma metenkephalin in patients who habitually mutilate themselves. *The Lancet, 2,* 545-546.

Coleman, J. C., & Hendry, L. B. (1999). *The Nature of Adolescence.* London: Routledge.

Connors, R. E. (2000). *Self-Injury: Psychotherapy with People Who Engage in Self-Inflicted Violence.* London: Jason Aronson Inc.

Davies, J. M., & Frawley, M. G. (1994). *Treating the Adult Survivor of Childhood Sexual Abuse: A Psychoanalytic Perspective.* New York: Basic Books.

de Jong, M. (1992). Attachment, individuation and risk of suicide in late adolescence. *Journal of Youth and Adolescence, 21 (3),* 357-373.

de Young, M. (1982). Self-injurious behaviour in incest victims: a research note. *Child Welfare, 61,* 577-584.

Durkheim, E. (1952). *Suicide: A Study in Sociology.* London: Routledge and Kegan Paul.

Ekman, P. (1999). Basic emotions. In T. Dalgleish & M. J. Power (Eds.), *Handbook of Cognition and Emotion.* Chichester: Wiley.

Erikson, E. (1968). *Identity, Youth and Crisis.* New York: Norton.

Evans, E., Hawton, K., & Rodham, K. (2004). Factors associated with suicidal phenomena in adolescents: A systemic review of population-based studies. *Clinical Psychology Review, 24,* 957-979.

Evans, E., Hawton, K., & Rodham, K. (2005). In what ways are adolescents who engage in self-harm or experience thoughts of self-harm different in terms of help-seeking, communication and coping strategies? *Journal of Adolescence, 29,* 573-587.

Favazza, A. (1989). Why patients mutilate themselves. *Hospital and Community Psychiatry, 40,* 137-145.

Favazza, A. (1996). *Bodies Under Siege: Self-Mutilation and Body Modification in Culture and Psychiatry.* (2nd Edition). Baltimore: The John Hopkins University Press.

Favazza, A. (1998). The coming of age in self-mutilation. *Journal of Nervous and Mental Disease, 186,* 259-268.

Favazza, A., & Contario, K. (1989). Female habitual self-mutilators. *Acta Psychiatrica Scandinavia, 79,* 283-289.

Fonagy, P., Gergely, G., Jurist, E. L., & Target, M. (2004). *Affect regulation, Mentalization and the Development of the Self.* London: Karnac.

Fortune, S. A., & Hawton, K. (2005). Deliberate self-harm in children and adolescents: A research update. *Current Opinion in Psychiatry, 18,* 401-406.

Fox, N. A. (1994). Dynamic cerebral processes underlying emotion regulation. In N. A. Fox (Ed.), *The Development of Emotion Regulation: Biological and Behavioral Considerations.* Monographs of the Society for Research in Child Development, 59 (2-3), 152-166.

Freud, S. (1917). *Mourning and Melancholia.* London: Hogarth Press.

Gardner, F. (2001). *Self-Harm: A Psychotherapeutic Approach.* Hove: Brunner Routledge.

Goossens, F., van Ijzendoorn, M., Tavecchio, L., & Kroonenberg, P. (1986). Stability of attachment across time and context in a Dutch sample. *Psychological Reports, 58,* 23–32.

Gottman, J. M., Katz, L. F., & Hooven, C. (1997). *Meta-Emotion: How Families Communicate Emotionally.* New Jersey: Lawrence Erlbaum.

Gould, M. S., Velting, D., Kleinman, M., et al. (2004). Teenagers attitudes about coping strategies ad help-seeking for suicidality. *Journal of the American Academy for Child and Adolescent Psychiatry, 43,* 1124-1133.

Gratz, K. L. (2000). *The Measurement, Functions and Etiology of Deliberate Self-Harm.* Unpublished Master's Thesis. University of Massachussetts, Boston.

Gratz, K. L. (2001). Measurement of deliberate self-harm: Preliminary data on the deliberate self-harm inventory. *Journal of Psychopathology and Behavioral Assessment, 23 (4),* 253-263.

Gratz, K. L. (2003). Risk factors for and functions of deliberate self-harm: An empirical and conceptual review. *Clinical Psychology: Science and Practice, 10 (2),* 192-205.

Gratz, K. L., & Roemer, L. (2004). Risk factors for deliberate self-harm among college students. *American Journal of Orthopsychiatry, 72 (1),* 128-140.

Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology, 2 (3),* 271-299.

Gross, J. J. (1999). Emotion Regulation: Past, Present, Future. *Cognition and Emotion, 13* (5), 551-573.

Grossman, R., & Siever, L. (2001). Impulsive self-injurious behaviors: Neurobiology and psychopharacology. In D. Simeon & E. Hollander (Eds.) *Self-Injurious Behaviors: Assessment and Treatment.* London: American Psychiatric Publishing, Inc.

Grunbaum, J. A., Kann, L., Kinchen, S., et al. (2003). *Youth Risk Behavior Surveillance-United States.* In: Surveillance Summaries. Atlanta: Centers for Disease Control and Prevention, 2004, 1-96.

Hamilton, N. (1992). *Self and Others: Object Relations Theory in Practice.* Northvale: Jason Aronson.

Haw, C., Hawton, K., Houston, K., & Townsend, E. (2001). Psychiatric and personality disorders in deliberate self-harm patients. *British Journal of Psychiatry, 178,* 48-54.

Hawton, K., & Fagg, J. (1988). Suicide, and other causes of death, following attempted suicide. *British Journal of Psychiatry, 152,* 359-366.

Hawton, K., Fagg, J. & Simkin, S. (1996). Deliberate self-poisoning and self-injury in children and adolescents under 16 years of age in Oxford, 1976-1993. *British Journal of Psychiatry, 169,* 202-208.

Hawton, K., Kingsbury, S., Steinhardt, K., James, A., & Fagg, J. (1999). Repetition of deliberate self-harm by adolescents: role of psychological factors. *Journal of Adolescence, 22,* 369-378.

Hawton, K., Rodham, K., Evans, E., Weatherell, R. (2002). Deliberate self-harm in adolescents: Self report survey in schools in England. *British Medical Journal, 325,* 1207-1211.

Hawton, K., Harriss, L., Hall, S., Simkin, S., Bale, E., & Bond, A. (2003). Deliberate self-harm in Oxford, 1990-2000: a time of change in patient characteristics. *Psychological Medicine, 33,* 987-995.

Hayes, S. C., Wilson, K. G., Gifford, E. V., Follette, V. M., & Strosahl, K. (1996). Experiential avoidance and behavioral disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology, 64,* 1152-1168.

Hesse, E. (1996). Discourse, memory and the AAI: a note with emphasis on the emerging Cannot Classify category. *Infant Mental Health Journal, 17,* 4-11.

Holmes, J. (1994). *John Bowlby and Attachment Theory.* London: Routledge

Horesh, N., Zalsman G., & Apter, A. (2004). Suicidal behavior and self-disclosure in adolescent psychiatric patients. *Journal of Nervous and Mental Disease, 192,* 837-842.

Ialongo, N. S., Koenig McNaught, A. L., Wagner, B. M., et al. (2004). African American children's reports of depressed mood, hopelessness, and suicidal ideation and later suicide attempts. *Suicide and Life-Threatening Behavior, 34,* 395-407.

Inhelder, B., & Piaget, J. (1958). *The Growth of Logical Thinking.* London: Routledge & Kegan Paul.

Ivanoff, A., Linehan, M. M., & Brown, M. (2001). Dialectical behavior therapy for impulsive self-injurious behaviors. In D. Simeon & E. Hollander (Eds.), *Self-Injurious Behaviors: Assessment and Treatment.* London: American Psychiatric Publishing, Inc.

Kagan, J. (1994). On the nature of emotion. In N. A. Fox (Ed.) *The Development of Emotion Regulation: Biological and Behavioral Considerations.* Monographs of the Society for Research in Child Development, 59 (2-3), 7-24.

Kaplan, L. (1978). *Oneness and Separateness: From Infant to Individual.* New York: Simon & Schuster.

Katz, L. Y., Gunasekara, S., & Miller, A.L. (2002). Dialectical behavior therapy for inpatient and outpatient parasuicidal adolescents. *Adolescent Psychiatry, 26,* 161-178.

Klein, M. (1935). A contribution to the psychogenesis of manic-depressive states. In M. Klein, *Contributions to Psycho-Analysis.* London: Hogarth Press.

Klein, M. (1964). Notes on some schizoid mechanisms. In M. Klein, M. Heimann, S. Isaacs, & J. Riviere (Eds.), *Developments in Psychoanalysis.* London: Karnac.

Kobak, R. R., Cole, H. E., Ferenz-Gillies, R., & Fleming, W. S. (1993). Attachment and emotion regulation during mother-teen problem-solving: a control theory analysis. *Child Development, 64 (1),* 231-245.

Koven, N. S., Heller, W., Banich, M. T., & Miller, G. A. (2003). Relationships of distinct affective dimensions to performance on an emotional stroop task. *Cognitive Therapy and Research, 27 (6),* 671-680.

Kohut, H. (1971). *The Analysis of the Self.* New York: International Universities Press.

Laye-Gindhu, A., & Schonert-Reichl, K. A. (2005). Nonsuicidal self-harm among community adolescents: Understanding the "whats" and "whys" of self-harm. *Journal of Youth and Adolescence, 34 (5),* 447-457.

Lazarus, R., & Folkman, S. (1984). *Stress, Appraisal and Coping.* New York: Springer.

Lemma, A. (2003). *Introduction to the Practice of Psychoanalytic Psychotherapy.* Chichester: Wiley.

Lewis, G., Hawton, K., & Jones, P. (1997). Strategies for preventing suicide. *British Journal of Psychiatry,* 171, 351-354.

Linehan, M. (1993). *Cognitive-Behavioral Treatment of Borderline Personality Disorder.* London: The Guilford Press.

Liotti, G. (2002). The inner schema of borderline states and correction during psychotherapy: A cognitive-evolutionary approach. *Journal of Cognitive Psychotherapy, 16 (3),* 349-366.

Losoya, S., Eisenberg, N., & Fabes, R. A. (1998). Developmental issues in the study of coping. *International Journal of Behavioral Development, 22 (2),* 287-313.

Low, G., Jones, D., MacLeod, A., Power, M., & Duggan, C. (2000). Childhood trauma, dissociation and self-harming behaviour. *British Journal of Medical Psychology, 73,* 269-278.

Low, G., Jones, D., Duggan, C., Macleod, A., & Power, M. (2001). Dialectical behaviour therapy as a treatment for deliberate self-harm: Case studies from a high security psychiatric hospital population. *Clinical Psychology and Psychotherapy, 8,* 288-300.

Lyddon, W. L., Bradford, E., & Nelson, J. P. (1993). Assessing adolescent and adult attachment: A review of current report measures. *Journal of Counseling and Development, 71,* 390-395.

MacLeod, A. K., Tata, P., Tyrer, P., Schmidt, U., Davidson, K., & Thompson, D. (2004). Personality disorder and future-directed thinking in parasuicide. *Journal of personality disorders, 18 (5),* 459-466.

Main, M., & Solomon, J. (1990). Procedures for identifying infants as disorganized/disoriented during the Ainsworth strange situation. In. M. T. Greenberg, D. Cicchetti, & E. M. Cummings (Eds.), *Attachment in the Pre-school Years: Theory, Research and Intervention.* Chicago: University of Chicago Press.

Malatesta, C. Z. (1990). The role of emotions in the development and organization of personality. In. R. A. Thompson (Ed.), *Socioemotional Development* (Nebraska Symposium on Motivation, Vol. 36). Lincoln: University of Nebraska Press.

Martin, G. (1996). The influence of television suicide in a normal adolescent population. *Archives of Suicide Research, 2,* 103-117.

Martin, G., Rozanes, P., Pearce, C., & Allison, S. (1995). Adolescent suicide, depression and family dysfunction. *Acta Psychiatrica Scandinavica, 92,* 336-344.

May, R. (2006). Britain on the couch. In *The Independent*. 08/10/2006, 12-13.

Mazelis, R. (1990). What is SIV about? Self-inflicted violence. *The Cutting Edge, 3 (2),* 1-3.

McAra, L. (2005). In. L. Gray. Scots teenage girls Europe's worst for inflicting self-harm. *The Scotsman (21/05/2005).*

McCubbin, R. A., & Sampson, M. J. (2005). The relationship between obsessive-compulsive symptoms and appraisals of emotional states. *Anxiety Disorders, 20 (1),* 42-57.

McGee, R., & Williams, S. (2000). Does low self-esteem predict health compromising behaviors among adolescents? *Journal of Adolescence, 23,* 569-582.

Meekings, C., & O'Brien, L. (2004). Borderline pathology in children and adolescents. *International Journal of Mental Health Nursing, 13,* 152-163.

Turk, C., Heimberg, R., Luterek, J., Mennin, D., Fresco, D. (2005). Emotion dysregulation in generalized anxiety disorder: A comparison with social anxiety disorder. *Cognitive Therapy and Research, 29 (1),* 89-106.

Mikulincer, M., Shaver, P. R., & Pereg, D. (2003). Attachment theory and affect regulation: The dynamics, development, and cognitive consequences of attachment-related strategies. *Motivation and Emotion, 27 (2),* 77-102.

Mills, R., & Piotrowski, C. C. (2000). Emotional communication and children's learning about conflict. In R. Mills & S. Duck (Eds.), *The Developmental Psychology of Personal Relationships*. Chichester: Wiley.

Morgan, H. G., Burns-Cox, C. J., Pocock, H., & Pottle, S. (1975). Deliberate self-harm: Clinical and socio-economic characteristics of 368 patients. *British Journal of Psychiatry, 127,* 564-574.

Muehlenkamp, J. J., & Gutierrez, P. M. (2004). An investigation of differences between self-injurious behavior and suicide attempts in a sample of adolescents. *Suicide and Life-Threatening Behavior, 34 (1),* 12-23.

Nock, M. K., & Prinstein, M. P. (2004). A functional approach to the assessment of self-mutilative behavior. *Journal of Consulting and Clinical Psychology, 72 (5),* 885-890.

Nock, M. K., & Prinstein, M. P. (2005). Contextual features and behavioral functions of self-mutilation among adolescents. *Journal of Abnormal Psychology, 114 (1),* 140-146.

Patton, G. C., Harris, R., Carlin, J. B., Hibbert, M. E., Coffrey, C., Schwarz, M., et al. (1997). Adolescent suicidal behaviors: A population based study of risk. *Psychological Medicine, 27,* 715-724.

Pereg, D. (2001). *Mood and Cognition: The Moderating Role of Attachment Style.* Unpublished doctoral dissertation, Bar-Ilan University, Israel.

Petersen, A. C., Compas, B. E., Brooks-Gunn, A., Stemmler, M., Ey, S., & Grant, K. E. (1993). Depression in adolescence. *American Psychologist, 48,* 155-168.

Phillips, K. F. V. (2005). *Emotion regulation, psychological health & quality of life in children & adolescents.* M.Sc Thesis. University of Edinburgh, UK.

Phillips, K. & Power, M. J. (submitted). *A new measure of individual differences in emotion regulation: Relationship with emotional and behavioural problems, psychosomatic complaints and quality of life in a sample of adolescents.*

Plato (1941) *The Republic.* Translated by F. M. Cornford. Oxford: Oxford University Press.

Plutchik, R. (1962). *The Emotions: Facts, Figures and a New Model.* New York: Random House.

Pollock, P., Broadbent, M., Clarke, S., Dorrian, A., & Ryle, A. (2001). The personality structure questionnaire (PSQ): A measure of the multiple self-states model if identity disturbance in Cognitive Analytic Therapy. *Clinical Psychology and Psychotherapy, 8,* 59-72.

Pollock, L. R., & Williams, J. M. G. (2004). Problem solving in suicide attempters. *Psychological Medicine, 34(1),* 163-167.

Power, M. J. (in preparation). The revised 21-item emotion regulation questionnaire.

Power, M. J., & Dalgleish, T. (1997). *Cognition and Emotion: From Order to Disorder.* Hove: Psychology Press.

Richards, C., Cannon, N., Scott, E. (2005). *Depression in Teenagers – Interactive CD ROM. Version 2.* NHS Lothian: The Young People's Unit. (website: www.depressioninteenagers.com).

Richards, C., Cogan, N., Hacker, T., Amin, M., & Boeing, L. (2006). *Stress and Annxiety in Teengagers – Interactive CD ROM. Version 1.* NHS Lothian: The Young People's Unit. (website: www.stressandanxietyinteenagers.com)

Rodham, K., Hawton, K., & Evans, E. (2004). Reasons for deliberate self-harm: comparison of self-poisoners and self-cutters in a community sample of adolescents. *Journal of American Academy of Child and Adolescent Psychiatry, 43,* 80-87.

Ross, S., & Heath, N. (2002). A study of the frequency of self-mutilation in a community sample of adolescents. *Journal of Youth and Adolescence, 31 (1),* 67-77.

Roth, A. S., Ostroff, R. B., & Hoffman, R. E. (1996). Naltrexone as a treatment for repetitive self-injurious behavior: An open label trial. *Journal of Clinical Psychiatry, 57,* 233-237.

Roy, N. L., Segal, B. S., & Centerwall, R. (1991). Suicide in twins. *Archives of General Psychiaty, 48,* 29-32.

Russ, M. J. (1992). Self-injurious behavior in patients with borderline personality disorder: Biological perspectives. *Journal of Personality Disorders, 6,* 64-81.

Ryle, A. (1997). *Cognitive Analytic Therapy and Borderline Personality Disorder: The Model and the Method.* Chichester: Wiley.

Samaritans. *Youth and Self-Harm: Perspectives.* Http://www.samaritans.org.uk/know/pdf/Selfharm%20report%20summary.pdf

Saxe, G. N., Chawla, N., & van der Kolk, B. (2002). Self-destructive behavior in patients with dissociative disorders. *Suicide and Life-Threatening Behavior, 32,* 313-320.

Scheier, M. F., Weintraub, J. K., & Carver, C. S. (1986). Coping with stress: Divergent strategies of optimists and pessimists. *Journal of Personality and Social Psychology, 51,* 1257-1264.

Scherer, K. R. (1999). Appraisal theory. In T. Dalgleish & M. J. Power (Eds.) *Handbook of cognition and emotion.* Chichester: Wiley.

Schnyder, U., Valach, L., Bichsel, K., & Michel, K. (1999). Attempted suicide: Do we understand the patients' reasons? *General Hospital Psychiatry, 21,* 62-69.

Schwannauer, M. (Unpublished measure). *Self-Harm Inventory.*

Scott Brown, L., & Wright, J. (2001). Attachment theory in adolescence and its relevance to developmental psychopathology. *Clinical Psychology and Psychopathology, 8,* 15-32.

Shaver, P. R., & Mikulincer, M. (2002). Attachment-related psychodynamics. *Attachment and Human Development, 4,* 133-161.

Sheard, T., Evans, J., Cash, D., Hicks, J., King, A., Morgan, N., Nereli, B., Porter, I., Rees, H., Sandford, J., Slinn, R., Sunder, K., & Ryle, A. (2000). A CAT-derived one to three session intervention for repeated deliberate self-harm: A description of the model and initial experience of trainee psychiatrists in using it. *British Journal of Medical Psychology, 73,* 179-196.

Simeon, D., & Favazza, A. R. (2001). Self-injurious behaviors: Phenomenology and assessment. In D. Simeon & E. Hollander (Eds.) *Self-Injurious Behaviors: Assessment and Treatment.* London: American Psychiatric Publishing, Inc.

Simon, O. R., Swann, A. C., Powell, K. E., Potter, L. B., Kresnow, M. J., & O'Carroll, P. W. (2001). Characteristics of impulsive suicide attempts and attempters. *Suicide and Life-Threatening Behavior, 32,* 49-59.

Skegg, K. (2005). Self-harm. *The Lancet, 366,* 1471-1483.

Southam-Gerow, M. A., & Kendall, P. C. (2000). Cognitive therapy with youth: Advantages, challenges and future directions. *Clinical Psychology and Psychotherapy, 7,* 343-366.

Spinoza, B. (1955). *The Ethics.* New York: Dover.

SPSS (2003). *SPSS for Windows.* (Version 12). SPSS, Inc.

Sroufe, L. A. (1997). *Emotional Development: The Organization of Emotional Life in the Early Years.* Cambridge: Cambridge University Press.

Sroufe, L. A., Carlson, E. A., Levy, A. K., et al. (1999). Implications of attachment theory for developmental psychopathology. *Development and Psychopathology, 11,* 1-13.

Sroufe, L. A., & Waters, E. (1977). Attachment is an organizational construct. *Child Development, 48,* 1184-1199.

Stein, N. L., & Levine, L. L. (1999). The early emergence of emotional understanding and appraisal: implications for theories of development. In T. Dalgleish & M. J. Power (Eds.), *Handbook of cognition and emotion.* Chichester: Wiley.

Stein, N. L., & Trabasso, T. (1989). Children's understanding of changing emotion states. In C. Taarni & P. Harris (Eds.), *The Development of Emotional Understanding.* New York: Cambridge University Press.

Stengel, E. (1964). *Suicide and Attempted Suicide.* Harmondsworth: Penguin Books Ltd

Stern, D. N. (1985). *The Interpersonal World of the Infant: A View from Psychoanalysis and Developmental Psychology.* New York: Basic Books.

Suominen, K., Hendriksson, M., Suokas, J., Isometsa, E., Ostamo, & Lonnqvist, J. (1996). Mental disorders and comorbidity in attempted suicide. *Acta Psychiatrica Scandinavica, 94,* 234-240.

Suyemoto, K. L. (1998). The functions of self-mutilation. *Clinical Psychology Review, 18,* 531-554.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using Multivariate Statistics* (Fifth Edition). Pearson International Edition.

*Talking About Self-Harm.* Health Education Board for Scotland (HEBS). Edinburgh. Website: http://www.hebs.scot.nhs.uk

*The Truth about Self-Harm for Young People and their Friends and Families.* (2006). The Camelot Foundation and Mental Health Foundation.

Thompson, R. A. (1990). Emotion and self-regulation. In R. A. Thompson (Ed.), *Socioemotional Development* (Nebraska Symposium on Motivation, Vol. 36). Lincoln: University of Nebraska Press.

Thompson, R. A. (1994). Emotion regulation: a theme in search of definition. In N. A. Fox (Ed.) *The Development of Emotion Regulation: Biological and Behavioral Considerations.* Monographs of the Society for Research in Child Development, 59 (2-3), 25-52.

'Truth Hurts'. (2006). *Truth Hurts: Report of the National Inquiry into Self-Harm Among Young People.* Camelot Foundation & Mental Health Foundation.

Tulloch, A. L., Blizzard, L., & Pinkus, Z. (1997). Adolescent-parent communication in self-harm. *Journal of Adolescent Health, 21,* 267-275.

van der Kolk, B. A., Perry, J. C., and Herman, J. L. (1991). Childhood origins of self-destructive behavior. *American Journal of Psychiatry, 148 (2),* 185-192.

Velleman, P. F. & Wilkinson, L. (1993). Nominal, ordinal, interval, and ratio typologies are misleading. *The American Statistician, 47(1),* 65-72.

Verona, E., Sachs-Ericsson, N., & Joiner, T. E. (2004). Suicide attempts associated with externalizing psychopathology in an epidemiological sample. *American Journal of Psychiatry, 161,* 444-451.

Von Salisch, M. (2000). The emotional side of sharing, social support, and conflict negotiation between siblings and between friends. In R. Mills & S. Duck (Eds.), *The Developmental Psychology of Personal Relationships.* Chichester: Wiley.

Votta, E., & Manion, I. (2004). Suicide, high-risk behaviours, and coping style in homeless adolescent males' adjustment. *Journal of Adolescent Health, 34,* 237-243.

Watkins, J. G., & Watkins, H. H. (1981). Ego states therapies. In R. Corsini (Ed.), *Handbook of Innovative Psychotherapies.* New York: Wiley.

Weiner, B. (1986). *An Attributional Theory of Motivation and Emotion.* New York: Springer-Verlag.

Williams, M. (1997). *Cry of Pain: Understanding Suicide and Self-Harm.* London: Penguin.

Winnicott, D. (1960). Ego distortion in terms of true and false self. In: *The Maturational Processes and the Facilitating Environment.* New York: International Universities Press, 1965.

Winnicott, D. (1971). *Playing and reality.* London: Tavistock.

Wright B.D. (1997). Fundamental measurement for outcome evaluation. *Physical Medicine and Rehabilitation: State of the Art Reviews, 11(2)*, 261-288.

Yates, T. M. (2004). The developmental psychopathology of self-injurious behaviour: Compensatory regulation in posttraumatic adaptation. *Clinical Psychology Review, 24,* 35-74.

Young, R., Sweeting, H., & West, P. (2006). Prevalence of deliberate self-harm and attempted suicide within contemporary Goth subculture: longitudinal cohort study. *British Medical Journal, 332,* 1058-1061.

Zweig-Frank, H., Paris, J., & Guzder, J. (1994). Psychological risk factors for dissociation and self-mutilation in female patients with borderline personality disorder. *Canadian Journal of Psychiatry, 39,* 259-264.

# APPENDICES

# APPENDIX 1: ETHICS APPROVAL LETTER

Lothian NHS Board

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Edinburgh
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NHS Lothian

07 February 2006

Ms Katy Phillips
7/4 Glengyle Terrace
Edinburgh
Midlothian EH3 9LL

Dear Ms Phillips

**Full title of study:** **Attachment and Emotion Regulation: Relationship with Deliberate Self-Harm in Adolescents.**

**REC reference number:** **05/S1103/58**

Thank you for your letter of 25 January 2006, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information was considered on behalf of the Committee by the Chair, Dr Christine West.

**Confirmation of ethical opinion**
On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised.

**Conditions of approval**
The favourable opinion is given provided that you comply with the conditions set out in the attached document. You are advised to study the conditions carefully.

**Approved documents**
The final list of documents reviewed and approved by the Committee is as follows:

| *Document* | *Version* | *Date* |
|---|---|---|
| Application | | 28 November 2005 |
| Investigator CV | 1 - for Katy Phillips | 28 November 2005 |
| Investigator CV | for Professor Michael John Power | |
| Protocol | 1 | 28 November 2005 |
| Covering Letter | 3 - with changes | 09 January 2006 |
| Covering Letter | 1 - with Parts A & B | |
| Covering Letter | 2 - explaining later arrival of BDI-Fast screen, Self-Harm Questionnaire & PSQ | |
| Covering Letter | 4 - with further changes | 25 January 2006 |
| Compensation Arrangements | Letter from Alan Parker of Aon Commercial Insurance | 22 August 2005 |
| Questionnaire | 1 - Emotion Regulation Questionnaire | 28 November 2005 |
| Questionnaire | 1 - PTEQ | 28 November 2005 |
| Questionnaire | 1 - BDI-FastScreen | 28 November 2005 |
| Questionnaire | 1 - Self-Harm Questionnaire | 28 November 2005 |
| Questionnaire | 1 - Personality Structure Questionnaire | 28 November 2005 |
| Letter of invitation to participant | 1 | 28 November 2005 |
| Participant Information Sheet | 3 - for Parent of Clinical Sample [Under 16s] | 25 January 2006 |

| | | |
|---|---|---|
| Participant Information Sheet | 2 - for Parent of School Sample [Under 16s] | 25 January 2006 |
| Participant Information Sheet | 3 - for Clinical Sample [Over 16s] | 25 January 2006 |
| Participant Information Sheet | 3 - for Clinical Sample [Under 16s] | 25 January 2006 |
| Participant Information Sheet | 3 - for School Sample | 25 January 2006 |
| Participant Information Sheet | 2 - control | 12 January 2006 |
| Participant Information Sheet | 2 - for self-harmers | 12 January 2006 |
| Participant Consent Form | 1 - for clinical sample of young people | 28 November 2005 |
| Participant Consent Form | 1 - for normal sample of young people | 28 November 2005 |
| Participant Consent Form | 1 - for parents of clinical sample [under 16s] | 28 November 2005 |
| Response to Request for Further Information | | 09 January 2006 |
| Response to Request for Further Information | | 25 January 2006 |
| Cover sheet for questionnaire | 1 | 28 November 2005 |
| Inventory of Parent and Peer Attachment [IPPA] | 1 | 28 November 2005 |
| Letter to Director of Education | | 09 January 2006 |
| Letter to Parent | 2 | 12 January 2006 |

**Research governance approval**
The study should not commence at any NHS site until the local Principal Investigator has obtained final research governance approval from the R&D Department for the relevant NHS care organisation.

**Statement of compliance**
The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

| | | |
|---|---|---|
| **REC Reference Number** | **05/S1103/58** | **Please quote this number on all correspondence** |

With the Committee's best wishes for the success of this project

Yours sincerely

Liz Harden

pp **Chair**
**Lothian Local Research Ethics Committee 03**
Email: elizabeth.harden@lhb.scot.nhs.uk

*Enc:* *Standard approval conditions*

Copy to: Professor Mick Power
University of Edinburgh
Section of Clinical and Health Psychology, University of Edinburgh
Medical School, Teviot Place, Edinburgh

R&D Department

# APPENDIX 2: EMOTION REGULATION QUESTIONNAIRE

## Emotion Regulation Questionnaire

We all experience lots of different feelings or emotions. For example, different things in our lives make us feel happy, sad, angry and so on...

The following questions ask you to think about **how often** you do certain things **in response to your emotions**. You do not have to think about specific emotions but just how often you **generally** do the things listed below.

Please tick the box corresponding to the answer that fits best. We all respond to our emotions in different ways so there are no right or wrong answers.

| **In GENERAL** how do you respond to your emotions? | **Never** | **Seldom** | **Often** | **Very Often** | **Always** |
|---|---|---|---|---|---|
| 1. I talk to someone about how I feel | | | | | |
| 2. I take my feelings out on others verbally (e.g. shouting, arguing) | | | | | |
| 3. I seek physical contact from friends or family (e.g. a hug, hold hands) | | | | | |
| 4. I review (rethink) my thoughts or beliefs | | | | | |
| 5. I harm or punish myself in some way | | | | | |
| 6. I do something energetic (e.g. play sport, go for a walk) | | | | | |
| 7. I dwell on my thoughts and feelings (e.g. It goes round and round in my head and I can't stop it) | | | | | |
| 8. I ask others for advice | | | | | |
| 9. I review (rethink) my goals or plans | | | | | |

| In **GENERAL** how do you respond to your emotions? | Never | Seldom | Often | Very Often | Always |
|---|---|---|---|---|---|
| 10. I take my feelings out on others physically (e.g. fighting, lashing out) | | | | | |
| 11. I put the situation into perspective | | | | | |
| 12. I concentrate on a pleasant activity | | | | | |
| 13. I try to make others feel bad (e.g. being rude, ignoring them) | | | | | |
| 14. I think about people better off and make myself feel worse | | | | | |
| 15. I keep the feeling locked up inside | | | | | |
| 16. I plan what I could do better next time | | | | | |
| 17. I bully other people (e.g. saying nasty things to them, hitting them) | | | | | |
| 18. I take my feelings out on objects around me (e.g. deliberately causing damage to my house, school or outdoor things) | | | | | |
| 19. Things feel unreal (e.g. I feel strange, things around me feel strange, I daydream) | | | | | |
| 20. I telephone friends or family | | | | | |
| 21. I go out and do something nice (e.g. cinema, shopping, go out for a meal, meet people) | | | | | |

# APPENDIX 3: PERCEPTION OF THREAT FROM EMOTIONS QUESTIONNAIRE

## PTEQ

**R.A. McCubbin and M. J. Sampson, 2005**

This questionnaire lists different beliefs that people sometimes have about emotions. The same nine statements are made about each of seven different emotions (covering all aspects of life) and 'emotion' in general.

For each emotion, first try to recall a few times that you have felt that way. Then, read each question and **tick the box** that most closely describes how you think, most of the time. Be sure to choose only **one answer** for each statement. Because people are different, there are no right or wrong answers to these questions.

| SADNESS | Not at all | A little bit | Moderately | Quite a bit | Definitely |
|---|---|---|---|---|---|
| 1. Do you think it is dangerous to feel sad? | | | | | |
| 2. Could sadness cause you to lose control and do things you later regret? | | | | | |
| 3. Is feeling sad 'bad'? (a sign of being evil or failing) | | | | | |
| 4. Is it extremely important to stop yourself from feeling sad? | | | | | |
| 5. Can feeling sad be frightening? | | | | | |
| 6. When you feel sad does it seem it will last forever? | | | | | |
| 7. Could sadness overwhelm you so that you are unable to function? | | | | | |
| 8. Are you able to clearly identify what you mean by 'sadness'? | | | | | |

| | Never | Seldom | Quite often | Very often | Always |
|---|---|---|---|---|---|
| 9. How often do you feel SAD? | | | | | |

| GUILT | Not at all | A little bit | Moderately | Quite a bit | Definitely |
|---|---|---|---|---|---|
| 1. Do you think it is dangerous to feel guilty? | | | | | |
| 2. Could guilt cause you to lose control and do things you later regret? | | | | | |
| 3. Is feeling guilty 'bad'? (a sign of being evil or failing) | | | | | |
| 4. Is it extremely important to stop yourself from feeling guilty? | | | | | |
| 5. Can feeling guilty be frightening? | | | | | |
| 6. When you feel guilty does it seem it will last forever? | | | | | |
| 7. Could guilt overwhelm you so that you are unable to function? | | | | | |
| 8. Are you able to clearly identify what you mean by 'guilt'? | | | | | |

| | Never | Seldom | Quite often | Very often | Always |
|---|---|---|---|---|---|
| 9. How often do you feel GUILTY? | | | | | |

| HAPPINESS | Not at all | A little bit | Moderately | Quite a bit | Definitely |
|---|---|---|---|---|---|
| 1. Do you think it is dangerous to feel happy? | | | | | |
| 2. Could happiness cause you to lose control and do things you later regret? | | | | | |
| 3. Is feeling happy 'bad'? (a sign of being evil or failing) | | | | | |
| 4. Is it extremely important to stop yourself from feeling happy? | | | | | |
| 5. Can feeling happy be frightening? | | | | | |
| 6. When you feel happy does it seem it will last forever? | | | | | |
| 7. Could happiness overwhelm you so that you are unable to function? | | | | | |
| 8. Are you able to clearly identify what you mean by 'happiness'? | | | | | |

| | Never | Seldom | Quite often | Very often | Always |
|---|---|---|---|---|---|
| 9. How often do you feel HAPPY? | | | | | |

| ANGER | Not at all | A little bit | Moderately | Quite a bit | Definitely |
|---|---|---|---|---|---|
| 1. Do you think it is dangerous to feel angry? | | | | | |
| 2. Could anger cause you to lose control and do things you later regret? | | | | | |
| 3. Is feeling angry 'bad'? (a sign of being evil or failing) | | | | | |
| 4. Is it extremely important to stop yourself from feeling angry? | | | | | |
| 5. Can feeling angry be frightening? | | | | | |
| 6. When you feel angry does it seem it will last forever? | | | | | |
| 7. Could anger overwhelm you so that you are unable to function? | | | | | |
| 8. Are you able to clearly identify what you mean by 'anger'? | | | | | |

| | Never | Seldom | Quite often | Very often | Always |
|---|---|---|---|---|---|
| 9. How often do you feel ANGRY? | | | | | |

| ANXIETY (fear) | Not at all | A little bit | Moderately | Quite a bit | Definitely |
|---|---|---|---|---|---|
| 1. Do you think it is dangerous to feel anxiety? | | | | | |
| 2. Could anxiety cause you to lose control and do things you later regret? | | | | | |
| 3. Is feeling anxious 'bad'? (a sign of being evil or failing) | | | | | |
| 4. Is it extremely important to stop yourself from feeling anxious? | | | | | |
| 5. Can feeling anxious be frightening? | | | | | |
| 6. When you feel anxious does it seem it will last forever? | | | | | |
| 7. Could anxiety overwhelm you so that you are unable to function? | | | | | |
| 8. Are you able to clearly identify what you mean by 'anxiety'? | | | | | |

| | Never | Seldom | Quite often | Very often | Always |
|---|---|---|---|---|---|
| 9. How often do you feel ANXIOUS? | | | | | |

| SHAME | Not at all | A little bit | Moderately | Quite a bit | Definitely |
|---|---|---|---|---|---|
| 1. Do you think it is dangerous to feel ashamed? | | | | | |
| 2. Could shame cause you to lose control and do things you later regret? | | | | | |
| 3. Is feeling ashamed 'bad'? (a sign of being evil or failing) | | | | | |
| 4. Is it extremely important to stop yourself from feeling shame? | | | | | |
| 5. Can feeling shame be frightening? | | | | | |
| 6. When you feel shame does it seem it will last forever? | | | | | |
| 7. Could shame overwhelm you so that you are unable to function? | | | | | |
| 8. Are you able to clearly identify what you mean by 'shame'? | | | | | |

| | Never | Seldom | Quite often | Very often | Always |
|---|---|---|---|---|---|
| 9. How often do you feel SHAME? | | | | | |

| DISGUST (repulsion) | Not at all | A little bit | Moderately | Quite a bit | Definitely |
|---|---|---|---|---|---|
| 1. Do you think it is dangerous to feel disgust? | | | | | |
| 2. Could feelings of disgust cause you to lose control and do things you later regret? | | | | | |
| 3. Is feeling disgust 'bad'? (a sign of being evil or failing) | | | | | |
| 4. Is it extremely important to stop yourself from feeling disgust? | | | | | |
| 5. Can feeling disgust be frightening? | | | | | |
| 6. When you feel disgust does it seem it will last forever? | | | | | |
| 7. Could disgust overwhelm you so that you are unable to function? | | | | | |
| 8. Are you able to clearly identify what you mean by 'disgust'? | | | | | |

| | Never | Seldom | Quite often | Very often | Always |
|---|---|---|---|---|---|
| 9. How often do you feel DISGUST? | | | | | |

| 'STRONG EMOTIONS' IN GENERAL | Not at all | A little bit | Moderately | Quite a bit | Definitely |
|---|---|---|---|---|---|
| 1. Do you think it is dangerous to feel strong emotions? | | | | | |
| 2. Could strong emotions cause you to lose control and do things you later regret? | | | | | |
| 3. Is feeling strong emotion 'bad'? (a sign of being evil or failing) | | | | | |
| 4. Is it extremely important to stop yourself from feeling strong emotion? | | | | | |
| 5. Can feeling strong emotions be frightening? | | | | | |
| 6. When you feel strong emotions does it seem it will last forever? | | | | | |
| 7. Could strong emotions overwhelm you so that you are unable to function? | | | | | |
| 8. Are you able to clearly identify what you mean by 'strong emotions'? | | | | | |

| | Never | Seldom | Quite often | Very often | Always |
|---|---|---|---|---|---|
| 9. How often do you feel 'STRONG EMOTIONS'? | | | | | |

This next part asks how much you believe that emotions are useful.

How much do you believe the following statements? Please put a tick in the box to indicate your answer.

| | Not at all | A little bit | Moderately | Quite a bit | Definitely |
|---|---|---|---|---|---|
| 1. "Sadness is a useful feeling" | | | | | |
| 2. "Guilt is a useful feeling" | | | | | |
| 3. "Happiness is a useful feeling" | | | | | |
| 4. "Anger is a useful feeling" | | | | | |
| 5. "Anxiety (fear) is a useful feeling" | | | | | |
| 6. "Shame is a useful feeling" | | | | | |
| 7. "Disgust (repulsion) is a useful feeling" | | | | | |
| 8. "Strong emotions are useful" | | | | | |

# APPENDIX 4: PERSONALITY STRUCTURE QUESTIONNAIRE

## PSQ: Pollock et al., 2001

This questionnaire looks at aspects of your personality. It aims to see whether you feel yourself to be constant, or alternatively shifting between two or more states of mind (or somewhere in the middle).

Please indicate which description applies to you most closely by ticking the appropriate circle. Please tick only one answer for each pair of statements.

| | | Very True | True | May or May not be true | True | Very true | |
|---|---|---|---|---|---|---|---|
| 1 | My sense of myself is always the same | O | O | O | O | O | How I act or feel is constantly changing |
| 2 | The various people in my life see me in much the same way | O | O | O | O | O | The various people in my life have different views of me |
| 3 | I have a stable and Unchanging sense of myself | O | O | O | O | O | I am so different at different times that I wonder who I really am |
| 4 | I have no sense of Opposed sides to my nature | O | O | O | O | O | I feel I am split between two (or more) ways of being, sharply differentiated from each other |
| 5 | My mood and sense of self seldom change suddenly | O | O | O | O | O | My mood can change abruptly in ways which make me feel unreal or out of control |
| 6 | My mood changes are always understandable | O | O | O | O | O | I am often confused by my mood changes which seem either unprovoked or quite out of scale with what provoked them |
| 7 | I never lose control | O | O | O | O | O | I get into states in which I lose control and do harm to myself and/or others |
| 8 | I never regret what I have said or done | O | O | O | O | O | I get into states in which I do and say things which I later deeply regret |

# APPENDIX 5: INVENTORY OF PARENT AND PEER ATTACHMENT

**IPPA**

(Armsden & Greenberg, 1987)

This questionnaire asks you about your relationships with important people in your life; your mother and your father. Please read the directions to each part carefully.

Part 1

Some of the following statements ask about your feelings about your *mother or the person who has acted as your mother*. If you have more than one person acting as your mother (e.g. a natural mother and a step-mother) answer the questions for the one you feel has most influenced you.

Please read each statement and circle the ONE number that tells how true the statement is for you now.

| | | Almost Never or Never True | Not Very Often True | Sometimes True | Often True | Almost Always or Always True |
|---|---|---|---|---|---|---|
| 1. | My mother respects my feelings | 1 | 2 | 3 | 4 | 5 |
| 2. | I feel my mother does a good job as my mother | 1 | 2 | 3 | 4 | 5 |
| 3. | I wish I had a different mother | 1 | 2 | 3 | 4 | 5 |
| 4. | My mother accepts me as I am | 1 | 2 | 3 | 4 | 5 |
| 5. | I like to get my mother's point of view on things I'm concerned about | 1 | 2 | 3 | 4 | 5 |
| 6. | I feel it's no use letting my feelings show around my mother | 1 | 2 | 3 | 4 | 5 |
| 7. | My mother can tell when I'm upset about something | 1 | 2 | 3 | 4 | 5 |
| 8. | Talking over my problems with my mother makes me feel ashamed or foolish | 1 | 2 | 3 | 4 | 5 |
| 9. | My mother expects too much from me | 1 | 2 | 3 | 4 | 5 |
| 10 | I get upset easily around my mother | 1 | 2 | 3 | 4 | 5 |

| | | Almost Never or Never True | Not Very Often True | Sometimes True | Often True | Almost Always or Always True |
|---|---|---|---|---|---|---|
| 11. | I get upset a lot more than my mother knows about | 1 | 2 | 3 | 4 | 5 |
| 12. | When we discuss things, my mother cares about my point of view | 1 | 2 | 3 | 4 | 5 |
| 13. | My mother trusts my judgement | 1 | 2 | 3 | 4 | 5 |
| 14. | My mother has her own problems, so I don't bother her with mine | 1 | 2 | 3 | 4 | 5 |
| 15. | My mother helps me to understand myself better | 1 | 2 | 3 | 4 | 5 |
| 16. | I tell my mother about my problems and troubles | 1 | 2 | 3 | 4 | 5 |
| 17. | I feel angry with my mother | 1 | 2 | 3 | 4 | 5 |
| 18. | I don't get much attention from my mother | 1 | 2 | 3 | 4 | 5 |
| 19. | My mother helps me to talk about my difficulties | 1 | 2 | 3 | 4 | 5 |
| 20. | My mother understands me | 1 | 2 | 3 | 4 | 5 |
| 21. | When I am angry about something, my mother tries to be understanding | 1 | 2 | 3 | 4 | 5 |
| 22. | I trust my mother | 1 | 2 | 3 | 4 | 5 |
| 23. | My mother doesn't understand what I'm going through these days | 1 | 2 | 3 | 4 | 5 |
| 24. | I can count on my mother when I need to get something off my chest | 1 | 2 | 3 | 4 | 5 |
| 25. | If my mother knows something is bothering me, she asks me about it | 1 | 2 | 3 | 4 | 5 |

Part II

This part ask about your feelings about your *father or the person who has acted as your father*. If you have more than one person acting as your father (e.g. natural and step-father) answer the questions for the one you feel has most influenced you.

| | | Almost Never or Never True | Not Very Often True | Sometimes True | Often True | Almost Always or Always True |
|---|---|---|---|---|---|---|
| 1. | My father respects my feelings | 1 | 2 | 3 | 4 | 5 |
| 2. | I feel my father does a good job as my father | 1 | 2 | 3 | 4 | 5 |
| 3. | I wish I had a different father | 1 | 2 | 3 | 4 | 5 |
| 4. | My father accepts me as I am | 1 | 2 | 3 | 4 | 5 |
| 5. | I like to get my father's point of view on things I'm concerned about | 1 | 2 | 3 | 4 | 5 |
| 6. | I feel it's no use letting my feelings show around my father | 1 | 2 | 3 | 4 | 5 |
| 7. | My father can tell when I'm upset about something | 1 | 2 | 3 | 4 | 5 |
| 8. | Talking over my problems with my father makes me feel ashamed or foolish | 1 | 2 | 3 | 4 | 5 |
| 9. | My father expects too much from me | 1 | 2 | 3 | 4 | 5 |
| 10 | I get upset easily around my father | 1 | 2 | 3 | 4 | 5 |

| | | Almost Never or Never True | Not Very Often True | Sometimes True | Often True | Almost Always or Always True |
|---|---|---|---|---|---|---|
| 11. | I get upset a lot more than my father knows about | 1 | 2 | 3 | 4 | 5 |
| 12. | When we discuss things, my father cares about my point of view | 1 | 2 | 3 | 4 | 5 |
| 13. | My father trusts my judgement | 1 | 2 | 3 | 4 | 5 |
| 14. | My father has his own problems, so I don't bother him with mine | 1 | 2 | 3 | 4 | 5 |
| 15. | My father helps me to understand myself better | 1 | 2 | 3 | 4 | 5 |
| 16. | I tell my father about my problems and troubles | 1 | 2 | 3 | 4 | 5 |
| 17. | I feel angry with my father | 1 | 2 | 3 | 4 | 5 |
| 18. | I don't get much attention from my father | 1 | 2 | 3 | 4 | 5 |
| 19. | My father helps me to talk about my difficulties | 1 | 2 | 3 | 4 | 5 |
| 20. | My father understands me | 1 | 2 | 3 | 4 | 5 |
| 21. | When I am angry about something, my father tries to be understanding | 1 | 2 | 3 | 4 | 5 |
| 22. | I trust my father | 1 | 2 | 3 | 4 | 5 |
| 23. | My father doesn't understand what I'm going through these days | 1 | 2 | 3 | 4 | 5 |
| 24. | I can count on my father when I need to get something off my chest | 1 | 2 | 3 | 4 | 5 |
| 25. | If my father knows something is bothering me, he asks me about it | 1 | 2 | 3 | 4 | 5 |

# APPENDIX 6: BECK DEPRESSION INVENTORY – FAST SCREEN

# BDI®-FastScreen for medical patients

Today's Date:

Name: _____ Marital Status: _____ Age: _____ Sex: _____

Occupation: _____ Education: _____

## BDI–FastScreen

This questionnaire consists of groups of statements. Please read each group of statements carefully, then pick out the one statement in each group which best describes the way you have been feeling during the past 2 weeks, including today! Circle the number beside the statement you picked. If several statements in the group seem to apply equally well, circle the statement which has the largest number.

**1.**

0 I do not feel sad.
1 I feel sad much of the time.
2 I am sad all the time.
3 I am so sad or unhappy that I can't stand it.

**2.**

0 I am not discouraged about my future.
1 I feel more discouraged about my future than I used to be.
2 I do not expect things to work out for me.
3 I feel my future is hopeless and will only get worse.

**3.**

0 I do not feel like a failure.
1 I have failed more than I should have.
2 As I look back, I see a lot of failures.
3 I feel I am a total failure as a person.

**4.**

0 I get as much pleasure as I ever did from the things I enjoy.
1 I don't enjoy things as much as I used to.
2 I get very little pleasure from the things I used to enjoy.
3 I can't get any pleasure from the things I used to enjoy.

**5.**

0 I feel the same about myself as ever.
1 I have lost confidence in myself.
2 I am disappointed in myself.
3 I dislike myself.

**6.**

0 I don't criticize or blame myself more than usual.
1 I am more critical of myself than I used to be.
2 I criticize myself for all of my faults.
3 I blame myself for everything bad that happens.

**7.**

0 I don't have any thoughts of killing myself.
1 I have thoughts of killing myself, but I would not carry them out.
2 I would like to kill myself.
3 I would kill myself if I had the chance.

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_____ Total

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# APPENDIX 7: ADOLESCENT SELF-HARM INVENTORY

# Self-Harm Questionnaire

## Section A: The Past Year

Please think about whether you have done any of the following things to intentionally harm yourself (without intending to kill yourself) during the **past year**. Place a tick in the relevant box to indicate whether your answer is 'yes' or 'no'.

**If you indicate 'yes'** to any item please also indicate ***'how many times'*** you did it and ***'how serious'*** you think it was for your physical health by putting one of the following codes in the relevant box:

**How many times?:**
1 = once,
2 = 2-10 times,
3 = 11-20 times,
4 = more than 20 times

**How serious?:**
1 = not at all serious,
2 = quite serious,
3 = moderately serious,
4 = very serious,
5 = extremely serious

| | Have you done any of the following to intentionally harm yourself during the **PAST YEAR** (without intending to kill yourself)? | No | Yes | If yes, how many times? | If yes, how serious? |
|---|---|---|---|---|---|
| 1. | Drank excessive alcohol (enough to harm yourself) | | | | |
| 2. | Taken an overdose of drugs/medication | | | | |
| 3. | Drank poison or something toxic | | | | |
| 4. | Burned or scalded yourself | | | | |
| 5. | Deliberately cut yourself | | | | |
| 6. | Cut words or symbols into your skin | | | | |
| 7. | Made scratches on your skin | | | | |
| 8. | Stabbed/wounded yourself | | | | |
| 9. | Hit/punched yourself | | | | |
| 10 | Stopped a wound from healing | | | | |
| 11 | Bitten yourself | | | | |
| 12 | Something else? Please describe: | | | | |

## Section B: The Past Week

Now, please think about whether you have done any of the following things to intentionally harm yourself (without intending to kill yourself) during the **past week**. Place a tick in the relevant box to indicate whether your answer is 'yes' or 'no'.

**If you indicate *'yes'*** to any item please also write ***'how many times'*** you did it and indicate ***'how serious'*** you think it was for your physical health by putting one of the following codes in the relevant box:

**How serious?:**
1 = not at all serious,
2 = quite serious,
3 = moderately serious,
4 = very serious,
5 = extremely serious

| | Have you done any of the following to intentionally harm yourself during the **PAST WEEK** (without intending to kill yourself)? | **No** | **Yes** | **If yes, how many times?** (please write this) | **If yes, how serious?** (use the code above) |
|---|---|---|---|---|---|
| 1. | Drank excessive alcohol (enough to harm yourself) | | | | |
| 2. | Taken an overdose of drugs/medication | | | | |
| 3. | Drank poison or something toxic | | | | |
| 4. | Burned or scalded yourself | | | | |
| 5. | Deliberately cut yourself | | | | |
| 6. | Cut words or symbols into your skin | | | | |
| 7. | Made scratches on your skin | | | | |
| 8. | Stabbed/wounded yourself | | | | |
| 9. | Hit/punched yourself | | | | |
| 10 | Stopped a wound from healing | | | | |
| 11 | Bitten yourself | | | | |
| 12 | Something else? Please describe: | | | | |

# APPENDIX 8: PARENT LETTER FOR SCHOOL SAMPLE

Version 2: 25/01/2006

**Parent Information Sheet: School Sample (Under 16s)**

**Research Project:** Relationships, Emotions and Deliberate Self-Harm in Young People.

**Researcher:** Katy Phillips, Trainee Clinical Psychologist, Young Peoples Unit, Royal Edinburgh Hospital, Edinburgh EH10 5HF

Dear Parent,

I am writing to let you know that I have approached your child's school for help with a research project. I would like to invite your son / daughter to take part in this research. Before you decide whether you are happy for them to take part it is important that you understand why the research is being done and what it involves. Please take time to read the following information carefully and discuss your son / daughter's participation with them.

***What is the purpose of this research?***

This research is being carried out as part of the researcher's training in clinical psychology. It aims to look at some factors that might be linked to young people deliberately harming themselves. Past research has found that people sometimes harm themselves in an attempt to cope with difficult feelings. This study aims to see how young people view different emotions, and whether this affects the way they deal with their emotions in general. Comparisons will be made between young people who report that they have deliberately harmed themselves and young people who have not.

It is hoped that this research will contribute to a better understanding of factors that are associated with deliberate self-harm, and that this in turn will help more effective and appropriate support to be offered to young people who deliberately harm themselves.

***Permission to carry out the research***

I have received permission from Lothian Research Ethics Committee to proceed with this research.

***What would it involve?***

If your son / daughter were willing to take part it would involve them completing a questionnaire at school. This would take about 30-40 minutes. Your child is completely free not to participate in this study and would be free to withdraw from the study at any time without any explanation.

***Is it anonymous and confidential?***

The questionnaire is anonymous – no information that identifies your child would be recorded on the questionnaire. Your child's answers would remain confidential and would not be shared with anyone else. The questionnaires and consent forms would be stored separately from each other in a safe place.

***Independent advice?***

If you would like some independent advice about your child's participation in this research, you may contact:

Dr Neil Millar
Section of Clinical & Health Psychology
Medical School, Teviot Place, Edinburgh EH8 9AG
Tel No: 0131-651-3950

***What if I have further questions?***

If you have any questions or would like to discuss the research further please feel free to ask now, or you may contact me, Katy Phillips, or my supervisor, Charlotte Nevison (Clinical Psychologist, Young Peoples Unit) by telephoning 0131 537 6364.

***What if I am happy for my son /daughter to take part?***

If you are willing for your son / daughter to take part you do not have to do anything further. If they would like to take part they can fill in the questionnaire at school.

***What if I am not happy for my son / daughter to take part?***

If you are NOT willing for your son / daughter to take part in this research please complete the slip at the bottom of this sheet and return it to the school office by (date to be inserted here).

***Many thanks for taking the time to read this information sheet.***

Yours sincerely,
Katy Phillips.

**********

**OPT OUT SLIP**
Please complete if you **do not** want your son / daughter to participate in the study.

I do not want my son / daughter to participate in the research project titled:
"Relationships, Emotions and Deliberate Self-Harm in Young People".

Name of son / daughter (please specify which year he/she is in).

Name_____Year_____

## APPENDIX 9: PARTICIPANT INFORMATION SHEET FOR SCHOOL SAMPLE

NHS
Lothian

Version 3: 25/01/2006

**Participant Information Sheet: School Sample**

**Research Project:** Relationships, Emotions and Deliberate Self-Harm in Young People.

**Researcher:** Katy Phillips, Trainee Clinical Psychologist, Young Peoples Unit, Royal Edinburgh Hospital, Edinburgh EH10 5HF

You are being invited to take part in a research project. Before you decide whether to take part it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Take some time to decide whether or not you would like to take part.

***What is the purpose of this research?***

This research is being carried out as part of the researcher's training in clinical psychology. It aims to look at some factors that might be linked to young people deliberately harming themselves. Past research has found that people sometimes harm themselves in an attempt to cope with difficult feelings. This study aims to see how young people view different emotions, and whether this affects the way they deal with their emotions in general. Comparisons will be made between young people who report that they have deliberately harmed themselves and young people who have not.

It is hoped that this research will contribute to a better understanding of factors that are associated with deliberate self-harm, and that this in turn will help more effective and appropriate support to be offered to young people who harm themselves.

***What would it involve?***

Taking part in this study would involve completing a questionnaire. This would take about 30-40 minutes.

***Why have I been asked to take part?***

You are being asked to take part as part of a 'community sample' from schools and colleges. The answers of young people who report that they have deliberately harmed themselves will be compared to the answers of those who report that they have not deliberately harmed themselves.

***Is it anonymous and confidential?***

The questionnaire is anonymous – no information that identifies you will be recorded on the questionnaire. Your answers will remain confidential and will not be shared with anyone else. The questionnaires and consent forms will be stored separately from each other in a safe place.

***Independent advice?***

If you would like some independent advice about participating in this research, you may contact:

Dr Neil Millar
Section of Clinical & Health Psychology
Medical School, Teviot Place, Edinburgh EH8 9AG
Tel No: 0131-651-3950

***What happens if I don't want to take part?***

If you do not wish to take part you may just read quietly while others complete the questionnaires.

***What if I do want to take part?***

If you do want to take part please sign the attached consent form and then complete the questionnaire. If you have any questions please put up your hand and the researcher will attempt to assist you. If you finish before others, please read quietly. The researcher will collect the questionnaires and consent forms when everyone has finished.

You are completely free not to participate in this study and you are free to withdraw from the study at any time without any explanation.

***What if I have further questions?***

If you have any questions or would like to discuss the research further please feel free to ask now, or you may contact me, Katy Phillips, or my supervisor, Charlotte Nevison (Clinical Psychologist, Young Peoples Unit) by telephoning 0131 537 6364.

***Many thanks for taking the time to read this information sheet.***

Yours sincerely,
Katy Phillips, Trainee Clinical Psychologist.

## APPENDIX 10: CONSENT FORM FOR SCHOOL SAMPLE

NHS
Lothian

Version 1: 28/11/2005

## Consent Form for Young People

**Research Project:** Relationships, Emotions and Deliberate Self-Harm in Young People.

**Researcher:** Katy Phillips, Trainee Clinical Psychologist, Young Peoples Unit, Royal Edinburgh Hospital, Edinburgh EH10 5HF

| | Consent required | Please tick |
|---|---|---|
| 1 | I have read and understood the participant information sheet for this research study and have had the opportunity to ask questions. | |
| 2 | I understand that participation is entirely voluntary and I am free to withdraw at any time. | |
| 3 | I agree to take part in this study. | |

Name_____

Date_____

Signature_____

**Please hand this form in with the questionnaire. Many thanks.**

## APPENDIX 11: PARTICIPANT INVITATION LETTER FOR CLINICAL SAMPLE

NHS
Lothian

**Invitation Letter**

Dear Young Person,

I would like to invite you to participate in a research study that aims to investigate links between relationships, feelings and deliberate self-harm in young people.

It is hoped that achieving a better understanding of factors that are linked to self-harm will lead to more appropriate and effective support for young people who harm themselves.

Since young people who harm themselves are often very distressed, research in this area is very important.

I do hope you will choose to participate in this study.
Many thanks for reading this.

Yours sincerely,

Katy Phillips,
Trainee Clinical Psychologist, Young Peoples Unit

## APPENDIX 12: PARTICIPANT INFORMATION SHEET FOR CLINICAL SAMPLE (UNDER-16S)

NHS
Lothian

Version 3: 25/01/2006

**Participant Information Sheet: Clinical Sample (Under 16s)**

**Research Project:** Relationships, Emotions and Deliberate Self-Harm in Young People.

**Researcher:** Katy Phillips, Trainee Clinical Psychologist, Young Peoples Unit, Royal Edinburgh Hospital, Edinburgh EH10 5HF

You are being invited to take part in a research project. Before you decide whether to take part it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with your parents, and others if you wish. Take some time to decide whether or not you would like to take part.

***What is the purpose of this research?***

This research is being carried out as part of the researcher's training in clinical psychology. It aims to look at some factors that might be linked to young people deliberately harming themselves. Past research has found that people sometimes harm themselves in an attempt to cope with difficult feelings. This study aims to see how young people view different emotions, and whether this affects the way they deal with their emotions in general. Comparisons will be made between young people who report that they have deliberately harmed themselves and young people who have not.

It is hoped that this research will contribute to a better understanding of factors that are associated with deliberate self-harm, and that this in turn will help more effective and appropriate support to be offered to young people who deliberately harm themselves.

***What would it involve?***

Taking part in this study would involve completing a questionnaire. This would take about 30-40 minutes.

***Why have I been asked to take part?***

A number of young people who live in Lothian, who have reported that they have deliberately harmed themselves at some point, will be asked whether they would like to take part in this study. You are being asked to take part because the person who you are seeing in relation to your current difficulties is aware that this research is being carried out and is aware that you have deliberately harmed yourself.

***Is it anonymous and confidential?***

The questionnaire is anonymous – no information that identifies you will be recorded on the questionnaire. Your answers will remain confidential and will not be shared with anyone else. The questionnaires and consent forms will be stored separately from each other in a safe place. The person who gave you this questionnaire will not know whether you take part in this study or not, unless you choose to tell them – it is up to you.

***Independent advice?***

If you would like some independent advice about participating in this research, you may contact:

Dr Neil Millar
Section of Clinical & Health Psychology
Medical School, Teviot Place, Edinburgh EH8 9AG
Tel No: 0131-651-3950

***What happens if I don't want to take part?***

If you do not wish to take part you may just dispose of the questionnaire pack. The treatment you receive from the Young Peoples Unit will not be affected in any way.

***What if I do want to take part?***

If you do want to take part in this study please discuss it with your parent/s after they have read the parent information sheet. If you are in agreement about taking part please ask your parent to sign the parent consent form.

You can then sign the attached consent form for young people, complete the questionnaire, and place it (with consent forms) into the addressed-envelope provided and seal it. You may then drop it in to the Young Peoples Unit reception, where it will be stored safely until the researcher collects it. Alternatively, you could post it if you prefer.

It is your choice whether to discuss your experience of taking part in this study with the person who gave you this questionnaire pack. The researcher will not discuss your responses, or whether or not you participated, with them.

You are completely free not to participate in this study and you are free to withdraw from the study at any time without any explanation.

***What if I have further questions?***

If you have any questions or would like to discuss the research further, please feel free to contact me, Katy Phillips, or my supervisor, Charlotte Nevison (Clinical Psychologist, Young Peoples Unit) by telephoning 0131 537 6364.

***Many thanks for taking the time to read this information sheet.***

Yours sincerely,
Katy Phillips, Trainee Clinical Psychologist.

## APPENDIX 13: PARTICIPANT INFORMATION SHEET FOR CLINICAL SAMPLE (OVER 16S)

NHS
Lothian

Version 3: 25/01/2006

**Participant Information Sheet: Clinical Sample (Over16s)**

**Research Project:** Relationships, Emotions and Deliberate Self-Harm in Young People.

**Researcher:** Katy Phillips, Trainee Clinical Psychologist, Young Peoples Unit, Royal Edinburgh Hospital, Edinburgh EH10 5HF

You are being invited to take part in a research project. Before you decide whether to take part it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Take some time to decide whether or not you would like to take part.

***What is the purpose of this research?***

This research is being carried out as part of the researcher's training in clinical psychology. It aims to look at some factors that might be linked to young people deliberately harming themselves. Past research has found that people sometimes harm themselves in an attempt to cope with difficult feelings. This study aims to see how young people view different emotions, and whether this affects the way they deal with their emotions in general. Comparisons will be made between young people who report that they have deliberately harmed themselves and young people who have not.

It is hoped that this research will contribute to a better understanding of factors that are associated with deliberate self-harm, and that this in turn will help more effective and appropriate support to be offered to young people who deliberately harm themselves.

***What would it involve?***

Taking part in this study would involve completing a questionnaire. This would take about 30-40 minutes.

***Why have I been asked to take part?***

A number of young people who live in Lothian, who have reported that they have deliberately harmed themselves at some point, will be asked whether they would like to take part in this study. You are being asked to take part because the person who you are seeing in relation to your current difficulties is aware that this research is being carried out and is aware that you have deliberately harmed yourself.

***Is it anonymous and confidential?***

The questionnaire is anonymous – no information that identifies you will be recorded on the questionnaire. Your answers will remain confidential and will not be shared with anyone else. The questionnaires and consent forms will be stored separately from each other in a safe place. The person who gave you this questionnaire will not know whether you take part in this study or not, unless you choose to tell them – it is up to you.

***Independent advice?***

If you would like some independent advice about participating in this research, you may contact:

Dr Neil Millar
Section of Clinical & Health Psychology
Medical School, Teviot Place, Edinburgh EH8 9AG
Tel No: 0131-651-3950

***What happens if I don't want to take part?***

If you do not wish to take part you may just dispose of the questionnaire pack. The treatment you receive from the Young Peoples Unit will not be affected in any way.

***What if I do want to take part?***

If you do want to take part in this study please sign the attached consent form, complete the questionnaire, and place it (with consent form) in the addressed-envelope provided and seal it. You may then drop it in to the Young Peoples Unit reception, where it will be stored safely until the researcher collects it. Alternatively, you could post it if you prefer.

It is your choice whether to discuss your experience of taking part in this study with the person who gave you this questionnaire pack. The researcher will not discuss your responses, or whether or not you participated, with them.

You are completely free not to participate in this study and you are free to withdraw from the study at any time without any explanation.

***What if I have further questions?***

If you have any questions or would like to discuss the research further, please feel free to contact me, Katy Phillips, or my supervisor, Charlotte Nevison (Clinical Psychologist, Young Peoples Unit) by telephoning 0131 537 6364.

***Many thanks for taking the time to read this information sheet.***

Yours sincerely,
Katy Phillips, Trainee Clinical Psychologist.

## APPENDIX 14: CONSENT FORM FOR CLINICAL SAMPLE

Version 1: 28/11/2005

## Consent Form for Young People

**Research Project:** Relationships, Emotions and Deliberate Self-Harm in Young People.

**Researcher:** Katy Phillips, Trainee Clinical Psychologist, Young Peoples Unit, Royal Edinburgh Hospital, Edinburgh EH10 5HF

| | Consent required | Please tick |
|---|---|---|
| 1 | I have read and understood the participant information sheet for this research study and have had the opportunity to ask questions. | |
| 2 | I understand that participation is entirely voluntary and I am free to withdraw at any time, with no consequences for the care I receive. | |
| 3 | I agree to take part in this study. | |

Name_____

Date_____

Signature_____

**Please return this consent form with the questionnaire in the envelope provided. Many thanks.**

## APPENDIX 15: PARENT INFORMATION SHEET FOR CLINICAL SAMPLE

## (FOR UNDER-16S)

NHS
Lothian

Version 3: 25/01/2006

## Parent Information Sheet: Clinical Sample (Under 16s)

**Research Project:** Relationships, Emotions and Deliberate Self-Harm in Young People.

**Researcher:** Katy Phillips, Trainee Clinical Psychologist, Young Peoples Unit, Royal Edinburgh Hospital, Edinburgh EH10 5HF

**Dear Parent,**

I would like to invite your son / daughter to take part in a research project. Before you decide whether you are happy for them to take part it is important that you understand why the research is being done and what it involves. Please take time to read the following information carefully and discuss your son / daughter's participation with them.

***What is the purpose of this research?***

This research is being carried out as part of the researcher's training in clinical psychology. It aims to look at some factors that might be linked to young people deliberately harming themselves. Past research has found that people sometimes harm themselves in an attempt to cope with difficult feelings. This study aims to see how young people view different emotions, and whether this affects the way they deal with their emotions in general. Comparisons will be made between young people who report that they have deliberately harmed themselves and young people who have not.

It is hoped that this research will contribute to a better understanding of factors that are associated with deliberate self-harm, and that this in turn will help more effective and appropriate support to be offered to young people who deliberately harm themselves.

***What would it involve?***

Taking part in this study would involve your son / daughter completing a questionnaire. This would take them about 30-40 minutes.

***Why has my son / daughter been asked to take part?***

A number of young people who live in Lothian will be asked whether they would like to take part in this study. Your son / daughter has been asked to take part because the person they are seeing in relation to their current difficulties is aware that this research is being carried out and thought that they might be interested in taking part.

***Is it anonymous and confidential?***

The questionnaire is anonymous – no information that identifies your son / daughter will be recorded on the questionnaire. Their answers will remain confidential and will not be shared with anyone else. The questionnaires and consent forms will be stored separately from each other in a safe place. The person who gave your son / daughter this questionnaire will not know whether they take part in this study or not, unless they choose to tell them – it is up to them.

***Independent advice?***

If you would like some independent advice about your son / daughter's participation in this research, you may contact:

Dr Neil Millar
Section of Clinical & Health Psychology
Medical School, Teviot Place, Edinburgh EH8 9AG
Tel No: 0131-651-3950

***What happens if either you are not happy about your son / daughter taking part or they do not wish to take part?***

If either you or they do not wish to take part then you may just dispose of the questionnaire pack. The treatment your son / daughter receives from the Young Peoples Unit will not be affected in any way.

***What if I they do want to take part?***

Your son / daughter has been advised that if they do want to take part in this study they should discuss it with yourself before making a final decision. If you are in agreement that they may take part please sign the parent consent form.

Your son / daughter can then sign the attached consent form for young people, complete the questionnaire, and place it (with both consent forms) into the addressed-envelope provided and seal it. One of you may then drop it in to the Young Peoples Unit reception, where it will be stored safely until the researcher collects it. Altematively, you could post it if you prefer.

Your son / daughter is completely free not to participate in this study and is free to withdraw from the study at any time without any explanation.

***What if I have further questions?***

If you have any questions or would like to discuss the research further, please feel free to contact me, Katy Phillips, or my supervisor, Charlotte Nevison (Clinical Psychologist, Young Peoples Unit) by telephoning 0131 537 6364.

***Many thanks for taking the time to read this information sheet.***

Yours sincerely,
Katy Phillips, Trainee Clinical Psychologist.

## APPENDIX 16: PARENT CONSENT FORM FOR CLINICAL SAMPLE

## (FOR UNDER-16S)

NHS Lothian

Version 1: 28/11/2005

## Parent Consent Form

**Research Project:** Relationships, Emotions and Deliberate Self-Harm in Young People.

**Researcher:** Katy Phillips, Trainee Clinical Psychologist, Young Peoples Unit, Royal Edinburgh Hospital, Edinburgh EH10 5HF

| | Consent required | Please tick |
|---|---|---|
| 1 | I have read and understood the participant information sheet for this research study and have had the opportunity to ask questions. | |
| 2 | I understand that my child's participation is entirely voluntary and that they are free to withdraw at any time, with no consequences for the care they receive. | |
| 3 | I give my consent for my child to take part in this study. | |

Name_____

Date_____

Signature_____

**Please return this consent form with the questionnaire in the envelope provided. Many thanks.**

## APPENDIX 17: REGRESSION ANALYSIS WITH DEPRESSION AS A PREDICTOR OF SELF-HARM

*Sequential Logistic Regression to Predict Whether or Not Adolescents Have Self-Harmed in the Past Year*

Sequential logistic regression was performed with the total sample to give a prediction of whether or not an adolescent self-harmed, based on the predictor variables of depression, internal-dysfunctional emotion regulation and self-integration.

Table 17.1: Sequential Logistic Regression Analysis of Self-Harm Category as a Function of Depression (BDI-FS), Emotion Regulation (ERQ-ID) and Self-Integration (PSQ)

| | | | | 95% Confidence Interval for Odds Ratio | |
|---|---|---|---|---|---|
| Variables | *B* | Wald Chi-Square | Odds Ratio | *Lower* | *Upper* |
| BDI-FS | 0.17 | 7.50 | 1.18 | 1.05 | 1.33 |
| ERQ-ID | 1.13 | 16.53 | 3.12 | 1.80 | 5.37 |
| PSQ | 0.76 | 6.17 | 2.14 | 1.17 | 3.89 |
| (Constant) | -5.19 | 34.99 | | | |

There was a good model fit after addition of the three predictors, $X^2$ (3, N = 318) = 133.65, p<0.01, Nagelkerke $R^2$ = .47. This indicates that the predictors reliably distinguished between adolescents who had self-harmed in the past year and those who had not. Classification was good, with 82.2% of non self-harmers correctly predicted and 66.9% of self-harmers correctly predicted, for an overall success rate of 75.0%. Table 17.1 shows regression coefficients, Wald statistics, odds ratios, and 95% confidence intervals for odds ratios for each of the three predictors. According to the Wald criterion all three predictors reliably predicted self-harm category: Depression (BDI-FS) reliably predicted self-harm category ($X^2$ (1, 318) = 7.50, p<0.01), as did emotion regulation (ERQ-ID: $X^2$ (1, 318) = 16.53, p<0.01) and self-integration (PSQ: $X^2$ (1,318) = 6.17, p<0.01).

## APPENDIX 18: REGRESSION ANALYSES FOR PATH ANALYSIS

1. Prediction of Internal-Dysfunctional Emotion Regulation

**Sequ**ential regression gave a prediction of internal-dysfunctional emotion regulation based on the predictor variables of attachment to mother and attachment to father. Since both IPPA scales were negatively skewed, the variables were reflected and then transformed using the logarithmic (log+1) formula.

Figure A.1: Histogram to Show Distribution of Scores on the IPPA-Mother Scale Following Transformation

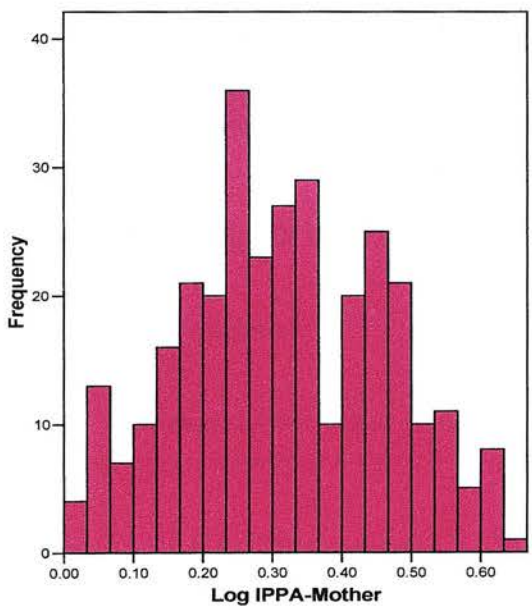


Figure A.1 shows that the transformed variable is normally distributed.

Figure A.2: Histogram to Show Distribution of scores on the IPPA-Father Following Transformation

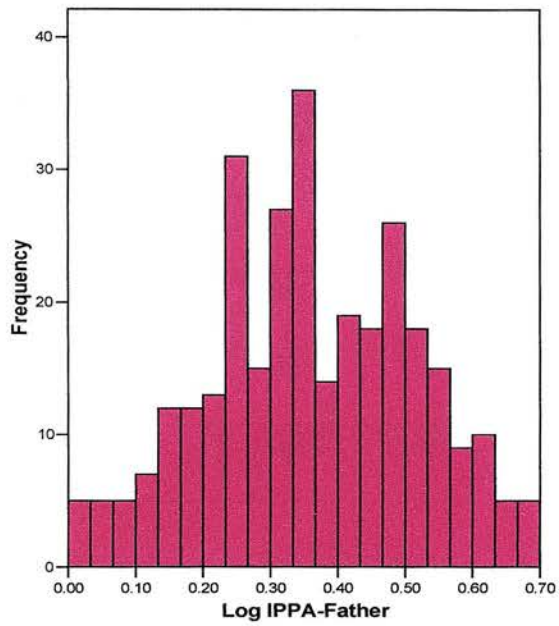


Figure A.2 shows that the transformed variable is normally distributed.

Figure A.3: Residuals Scatterplot Following Regression with Transformed Variables

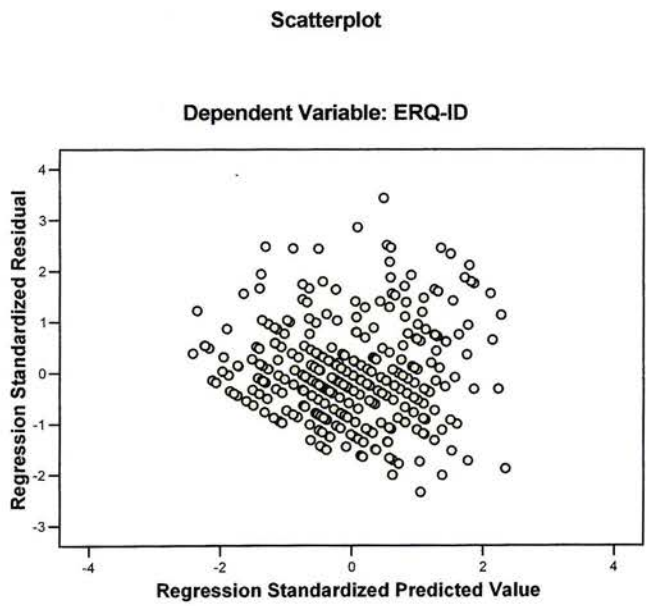

Table 18.1: Sequential Regression to Give a Prediction of Emotion Regulation (ERQ-ID) Based on the Predictor Variables of Attachment to Mother (Log IPPA-Mother) and Attachment to Father (Log IPPA-Father)

| Variables | ERQ-ID (DV) | Log IPPA-Mother | Log IPPA-Father | B | *B* | $Sr^2$ (incremental) |
|---|---|---|---|---|---|---|
| Log IPPA-Mother | -.56 | - | - | 2.06 | .37 | .32** |
| Log IPPA-Father | -.56 | .63 | - | 1.85 | .35 | .06** |
| Mean | 2.23 | 0.32 | 0.36 | $R^2 = .41$** Adjusted $R^2 = .41$ $R = .62$** | | |
| SD | 0.87 | 0.15 | 0.15 | | | |

**p<0.01

With both independent variables in the equation, $R^2 = .41$, $F(2, 303) = 94.50$, $p<0.01$. The adjusted $R^2$ value of .41 indicates that almost half of the variance in internal-dysfunctional emotion regulation is predicted by attachment to mother and attachment to father.

R was significantly different from 0 at each step. With Log IPPA-Mother in the equation $R^2 = .34$, $F_{inc}(1, 303) = 142.35$, $p<0.01$. After addition of Log IPPA-Father to the prediction of ERQ Internal-dysfunctional, $R^2 = .41$, $F_{inc}(1, 303) = 32.09$, $p<0.01$.

2. Prediction of Depression

Sequential regression gave a prediction of depression based on the predictor variables of attachment to mother and emotion regulation. The logarithmically transformed (x+1) IPPA-Mother scale was used.

Figure A.4: Residuals Scatterplot Following Regression with Transformed Variables

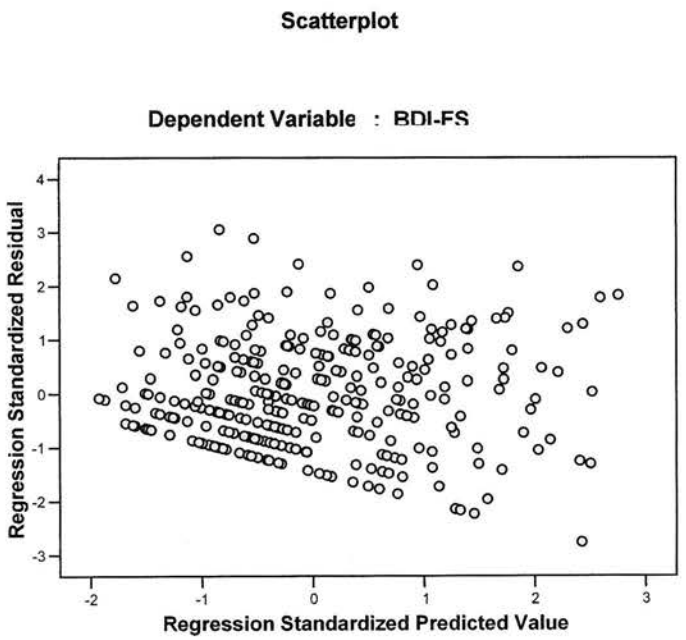

Table 18.2: Sequential Regression of Depression (BDI-FS) as a Function of Attachment to Mother (Log IPPA-Mother) and Emotion Regulation (ERQ-ID)

| Variables | BDI-FS (DV) | Log IPPA-Mother | ERQ-ID | B | *B* | *Sr²* (incremental) |
|---|---|---|---|---|---|---|
| Log IPPA-Mother | .56 | - | - | 6.42 | .20 | .32** |
| ERQ-ID | .74 | .57 | - | 3.35 | .63 | .26** |
| Mean | 3.74 | 0.31 | 2.22 | $R^2 = .58$** Adjusted $R^2 = .58$** $R = .76$** | | |
| SD | 4.58 | 0.15 | 0.87 | | | |

**P<0.01

With all independent variables in the equation, $R^2 = .58$, $F(2, 314) = 211.58$, $p<0.001$. The adjusted $R^2$ value of .58 indicates that more than half the variance in depression is predicted by attachment to mother and emotion regulation. R was significantly different from 0 at each step. With Log IPPA-Mother in the equation $R^2 = .32$, $F_{inc}(1, 314) = 144.19$, $p<0.01$. After addition of ERQ-ID to the prediction of PTEQ-Bad, $R^2 = .58$, $F_{inc}(1, 314) = 189.94$, $p<0.01$.

Attachment to father did not result in a significant increase in $R^2$ once attachment to mother was included, though it should be noted that the same was also true the other way round, with attachment to father entered into the equation first.

3. Prediction of Self-Integration

Sequential regression gave a prediction of self-integration based on the predictor variables of attachment to mother, attachment to father and emotion regulation. The transformed IPPA scales were used.

Figure A.5: Residuals Scatterplot Following Regression with Transformed Variables

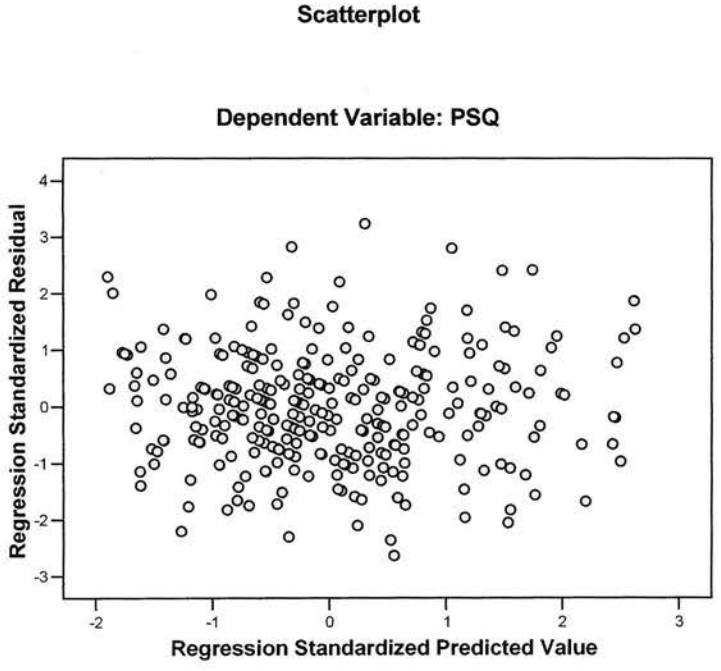

Table 18.3: Sequential Regression of Self-Integration (PSQ) as a Function of Attachment to Mother (Log IPPA-Mother), Attachment to Father (Log IPPA-Father) and Emotion Regulation (ERQ-ID)

| Variables | Self-Integration (DV) | Log IPPA-Mother | Log IPPA-Father | ERQ-ID | B | *B* | *Sr²* (incremental) |
|---|---|---|---|---|---|---|---|
| Log IPPA-Mother | .52 | - | - | - | .76 | .16 | .28** |
| Log IPPA-Father | .53 | .63 | - | - | .78 | .17 | .06** |
| ERQ-ID | .65 | .56 | .56 | - | .36 | .44 | .12** |
| Mean | 2.84 | 0.32 | 0.36 | 2.23 | $R^2 = .46$** Adjusted $R^2 = .45$** $R = .67$** | | |
| SD | 0.70 | 0.15 | 0.15 | 0.87 | | | |

**P<0.01

With all three independent variables in the equation, $R^2 = .46$, $F(3, 303) = 83.89$, $p<0.01$. The adjusted $R^2$ value of .46 indicates that almost half of the variance in internal-dysfunctional emotion regulation is predicted by attachment to mother, attachment to father and emotion regulation style.

R was significantly different from 0 at each step. With Log IPPA-Mother in the equation $R^2 = .28$, $F_{inc}(1, 303) = 114.83$, $p<0.01$. After addition of Log IPPA-Father to the prediction of PSQ, $R^2 = .34$, $F_{inc}(1, 303) = 27.40$, $p<0.01$. After step three, with ERQ-ID in the equation, $R^2 = .46$, $F_{inc}(1, 303) = 66.15$, $p<0.01$.

*4.* Prediction of Level of Self-Harm in the Past Year

Sequential regression gave a prediction of level of self-harm based on the predictor variables of depression, internal-dysfunctional emotion regulation and self-integration.

Figure A6: Residuals Scatterplot Following Regression

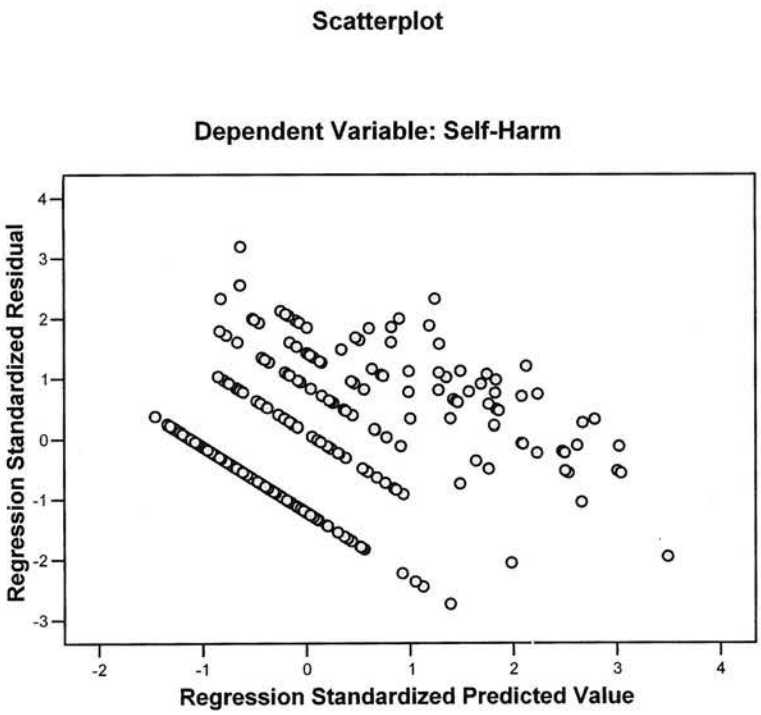

Table 18.4: Sequential Regression of Self-Harm as a Function of Depression (BDI-FS), Emotion Regulation (ERQ-ID) and Self-Integration (PSQ)

| Variables | Self-Harm (DV) | BDI-FS | ERQ-ID | PSQ | B | *B* | *Sr²* (incremental) |
|---|---|---|---|---|---|---|---|
| BDI-FS | .68 | - | - | - | .02 | .32 | .46** |
| ERQ-ID | .66 | .74 | - | - | .13 | .34 | .07** |
| PSQ | .59 | .66 | .65 | - | .08 | .16 | .14** |
| Mean | .27 | .53 | 2.23 | 2.84 | $R^2 = .55$** Adjusted $R^2 = .54$** $R = .73$** | | |
| SD | .33 | .65 | .86 | .69 | | | |

**P<0.01

With all three independent variables in the equation, $R^2 = .55$, $F(3, 303) = 121.95$, $p<0.01$. The adjusted $R^2$ value of .54 indicates that approximately half of the variance in level of self-harm is predicted by depression, internal-dysfunctional emotion regulation and self-integration.

R was significantly different from 0 at each step. With BDI-FS in the equation $R^2 = .46$, $F_{inc}(1, 303) = 263.32$, $p<0.01$. After addition of ERQ-ID to the prediction of self-harm, $R^2 = .53$, $F_{inc}(1, 303) = 45.60$, $p<0.01$. After step three, with PSQ in the equation, $R^2 = .55$, $F_{inc}(1, 303) = 9.04$, $p<0.01$.

## APPENDIX 19: ADDITIONAL METHODS OF SELF-HARM REPORTED BY NON-CLINICAL SELF-HARM GROUP & CLINICAL SELF-HARM GROUPS

Table 19.1: Table to Show Frequency of Additional Methods of Self-Harm Used By Participants in the Non-Clinical Self-Harm Group during the Past Year

| **Method of Self-Harm** | **N** | **%** |
|---|---|---|
| Ask others to hit self | 1 | 0.3 |
| Use belt buckle to strike hand | 1 | 0.3 |
| Hit/punch a wall | 2 | 0.6 |
| Lie upside down so that blood rushes to head, then | 1 | 0.3 |
| Self-induced vomiting | 1 | 0.3 |
| Starvation | 1 | 0.3 |
| Pick skin on fingers until bleeding occurs | 1 | 0.3 |
| Pouring surgical spirit into a wound | 1 | 0.3 |
| Writing on self | 1 | 0.3 |

Table 19.2: Table to Show Frequency of Additional Methods of Self-Harm Used By Participants in the Clinical Self-Harm Group During the Past Year

| **Method of Self-Harm** | **N** | **%** |
|---|---|---|
| "Self-piercing" | 1 | 4 |
| "Hit head off wall" | 1 | 4 |
| "Going out with men who rape me and hurt me" | 1 | 4 |

## APPENDIX 20: PERCEIVED SEVERITY OF SELF-HARM AMONG THE GROUPS

Scales assessing the perceived severity of self-harm were calculated according to the mean answer given on the scale, providing that six out of the ten items had been answered (i.e. MEAN.6).

**Table** 20.1: Table to Show Descriptive Statistics of the Perceived Severity of Self-Harm (**Past** Year) Measure with the Self-Harm Groups (Clinical Self-Harm and Non-Clinical Self-Harm Groups)

| | Min | Max | Mean | SD |
|---|---|---|---|---|
| Perceived Severity of Self-Harm in the Past Year | 0 | 2.8 | 0.44 | 0.49 |

Table 20.2: Table to Show Descriptive Statistics of the Perceived Severity of Self-Harm (Past Week) Measure with the Self-Harm Groups (Clinical Self-Harm and Non-Clinical Self-Harm Groups)

| | Min | Max | Mean | SD |
|---|---|---|---|---|
| Perceived Severity of Self-Harm in the Past Week | 0 | 5.0 | 0.14 | 0.45 |

Table 20.3: Table to Show Differences in Perceived Severity of Self-Harm Between the Groups

| | Severity-Past Year | | Severity-Past Week | |
|---|---|---|---|---|
| Group | Mean | SD | Mean | SD |
| Non-Clinical Self-Harm | 0.34 | 0.35 | 0.12 | 0.47 |
| Clinical Self-Harm | 0.92 | 0.74 | 0.26 | 0.36 |

Independent t-tests showed that the clinical self-harm group perceived their self-harm to be significantly more serious than the non-clinical self-harm group ($t = 3.78$, $df = 147$, $p<0.01$), but there was no significant difference between the groups in perceived severity of self-harm in the past week.