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Intrusive Thoughts, Mindfulness and Dissociation in Self-Harm

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**INTRUSIVE THOUGHTS, MINDFULNESS
AND DISSOCIATION IN SELF-HARM**

By

HELEN BATEY

A thesis submitted to the University of Plymouth
in partial fulfilment for the degree of

DOCTOR OF PHILOSOPHY

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Abstract

This thesis presents four studies that examine the potential role that intrusive thoughts, dissociation and mindfulness in self-harming behaviours in young people and adults.

A large online study was conducted with students and staff at a UK university. This examined a range of risk factors for self-harm derived from the literature, including dissociation, family background/trauma history and intrusive thoughts. This study was followed up with a qualitative study investigating triggers of self-harm, and the role of intrusive thoughts. A third study then looked at these factors in young people who were inpatients in an American psychiatric hospital, and who had all expressed intent to self-harm or commit suicide. This study also introduced a measure of trait mindfulness in order to investigate this potential way of dealing with intrusive thoughts. Finally, the risk factors identified in these studies were further investigated with an online survey with undergraduate students at a second UK university, dissociation, mindfulness and thought suppression.

Intrusive thoughts were found to differ in content, frequency and effect between people with experience of self-harm and those without. A subgroup of potentially maladaptive behaviours were found to be associated with high scores on the predictors of self-harm, and therefore potentially predictive of self-harm. In the young people in hospital, the extent to which they reacted to their intrusive thoughts was inversely associated with the extent to which they were naturally mindful. Trait mindfulness scores were lower for those individuals with a history of childhood trauma, and for those meeting diagnostic criteria for Borderline Personality Disorder, in which self-harm is a key feature.

These findings together suggest that mindfulness skills may play an important role in both dealing with intrusive thoughts and for protecting against self-harm.

Overall, intrusive thoughts and dissociation were associated with experience of self-harming behaviours, while mindfulness skills were negatively associated with self-harm. Some potentially maladaptive behaviours (including smoking and eating pathology) represent risk factors for self-harm, and therefore may provide professionals with a way of identifying people for early intervention, if further longitudinal research shows evidence of progression. Alternatively, the differences in mindfulness between this group and the self-harmers may indicate that mindfulness training could benefit people who self-harm.

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AUTHOR'S DECLARATION

At no time during the registration for the degree of Doctor of Philosophy has the author been registered for any other University award without prior agreement of the Graduate Committee.

This study was financed with the aid of a studentship from the Economic and Social Research Council. The study described in chapter five was further funded by an ESRC Overseas University Visit grant, and was conducted in collaboration with Dr Shirley Yen at Brown University, Rhode Island, USA. The study described in chapter four was conducted with the assistance of Dawn Hastings at Cornwall College, who collected data for the study in the form of qualitative interviews. In the case of both of these studies, as with all other studies in this thesis, all data was analysed by the author with the aid of my supervisor.

The study described in the chapter three has resulted in the following publication:
Batey, H., May, J. & Andrade, J. (2010). Negative intrusive thoughts and dissociation as risk factors for self-harm. *Suicide and Life Threatening Behavior*, 40(1), 35-49. The same study was presented to the University of Sheffield Graduate Research Office Postgraduate Conference, 2007. The studies described in chapters five and six are currently being prepared for submission to peer reviewed journals.

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Signed. Helen Batey.....

Date. 7/6/11.....

Chapter 1. Definitions and Functions of Self-Harm

This thesis presents the findings of a series of studies examining the role of intrusive thoughts in self-harm alongside some other risk factors. The role of intrusive thoughts in self-harm is not well known, and this thesis brings them together with what is known about other, related areas to broaden the evidence base to inform the work of mental healthcare professionals.

The first study presents findings from a large online survey completed by undergraduates, postgraduates and staff at a large UK university. The study addresses risk factors around self-worth, childhood experience and trauma as well as frequency, content and reactions to intrusive thoughts. This study also investigates further risk status and suggests an overall profile to identify those people most at risk of future self-harm.

The second study reports qualitative findings from a series of email and interview-based open questions in a semi-structured format. Participants in this study were students at university or local college, and all had some experience of self-harm. Questions in this study investigated triggers and functions of self-harm, including intrusive thoughts but provided scope for participants to identify whatever was pertinent to them.

The third study presented in this thesis is a questionnaire study involving young people in a large mental health hospital in Rhode Island, USA. This study investigates reactions to intrusive thoughts and trait mindfulness in relation to self-harming

behaviour, as well as how intrusive thoughts and trait mindfulness might be interrelated in a sample of young people with mental health diagnoses and experience of self-harm.

The final study presented in this thesis investigates intrusive thoughts and ways of dealing with them (including thought suppression, dissociation and mindfulness) in a large university sample, examining differences between people with experience of self-harm and people without. This study also addresses functions of self-harm for those people engaging in these behaviours.

The final chapter in this thesis compares the findings of each study, pulling them together into a possible overall model, and offering suggestions for clinical implications that have arisen from the research. The final chapter also discusses limitations of the research presented within the thesis, and suggests a program of study to comprehensively test the model emerging from the findings presented here.

Self-harm is not an illness (Isacsson & Rich, 2001) nor a diagnosis but a behavioural phenomenon in its own right which occurs across a broad spectrum of mental health diagnoses, psychosocial problems, substance misuse and in groups of people without mental health diagnosis (Hawton, Zahl, & Weatherall, 2003; Klonsky, Oltmanns, & Turkheimer, 2003). However, the only mention of self-harm in the DSM-IV-TR is as a symptom of Borderline Personality Disorder (BPD; Klonsky *et al.*, 2003), as self-harm is not considered a diagnostic criterion for other diagnoses. This chapter reviews the definitions, prevalence, hypothesised functions, and correlates of self-harm, in order to provide context for the studies that follow, with a view to summarizing and adding to the existing knowledge base.

1.1. Definitions of self-harm

An important starting point for self-harm research is to determine a definition of what constitutes an act of self-harm. There are many different definitions of self-harm within the literature and Lundh, Karim and Quilisch (2007) point out that varying definitions can lead to divergent results in research, particularly with regards to rates reported in different studies. The issue of definition appears to be of particular importance in light of the confusion over the nature of non-suicidal self-harm and suicide attempts (Webb, 2002) and although suicide may seem like the ultimate form of self-harm, Lundh *et al.* (2007) suggest that there are pragmatic reasons for keeping distinct terms for the two phenomena due to the differences in intent. When considering forms of self-harm, intent can be of key importance since what may be self-harm to some people (e.g. dangerous driving, excessive drinking, promiscuous sex) may not be for others, and since intent is what separates self-harm from suicide attempts. Because definitions of self-harm can vary considerably between studies, it is important to adopt a working definition as a starting point for the research, which is available to researchers and participants alike. For the purposes of all studies described within this thesis, the following definition of self-harm will be used:

“The deliberate, direct destruction or alteration of body tissue, without conscious suicidal intent but resulting in injury severe enough for tissue damage to occur”. (Gratz, 2001, p253)

This is similar to Croyle & Waltz (2007)’s definition:

“Socially unacceptable, intentional alteration/ destruction of body tissue without conscious suicidal intent”. (Croyle & Waltz, 2007, p332),

Both definitions are clear and simplistic enough for use in research. However, the Gratz definition is preferable since it is slightly simpler, and includes the word ‘direct’,

which removes ambiguity over acts that may be time delayed or less obviously harmful, such as taking risks or activities which may be dangerous over a longer timeframe. This definition is wide enough to include all intentional self-harming activities, yet narrow enough to exclude those that are 'socially acceptable' and perhaps not consciously self-destructive. It also differentiates between self-harm and suicide attempts. However, research will be discussed that uses slightly different definitions since findings of these are still of interest to this body of work. In the empirical chapters that follow in this thesis, any behaviour encompassed by the above definition will be referred to as 'self-harm' in order to reduce confusion. When discussing other research, specific terms used by the original authors will be used, in line with the definitions outlined and discussed below.

There exist various other terms that appear to encompass self-harming behaviours. Klonsky *et al.* (2003) list some examples, including 'superficial-moderate self mutilation'; 'self injurious behaviour'; 'parasuicide' and 'self-wounding'. Gratz (2003) also includes 'episodic/repetitive superficial-moderate self mutilation' and Nock, Joiner, Gordon, Lloyd-Richardson and Prinstein (2006) include 'non-suicidal self injury'. Given the need to operationalise and clearly define self-harm as outlined above, a brief discussion of some of these terms will now follow, in order to elucidate the literature reviewed in this chapter.

Deliberate self-harm (DSH) has, in previous years been a fairly widely used term, but it is not without confusion, especially with regard to intention. Skegg (2005) argues that in the USA, researchers tend to use the term DSH to refer to bodily harm without suicide intent, whereas in the UK and Europe DSH tends to refer to any act of self-harm regardless of intent. Taylor (2003) points out that inclusion of the term 'deliberate' can have connotations of blame and can thereby increase stigma, as it is considered to be

judgemental and to imply premeditation and wilfulness, along with an uncomfortable sense of pathologising emotions. Therefore, the term 'self-harm' is considered more appropriate, and although we shall not use the term 'DSH' in this thesis, the studies that do include this term refer to the same form of self-harm (i.e. without suicide intent) as our definition encompasses.

O'Connor, Sheehy and O'Connor (2000) define the term 'parasuicide' to refer to any self-harming act irrespective of intent, although Repper (1999) defines parasuicide as intentionally non-fatal, and therefore similar to our definition of self-harm. Nock *et al.* (2006) use the term 'self injurious behaviours' (SIB), with similar meaning to parasuicide, referring to a broad class of behaviours in which individuals directly and deliberately cause harm to themselves. This includes 'non suicidal self injury' (NSSI) where an individual harms themselves in the absence of suicide intent, as well as suicide attempts where an individual makes direct efforts to intentionally end their own life. By these definitions, NSSI represents the category closest to the 'self-harm' described earlier. The fact that so many different terms are in use, and that there often exists disparity even within a term further emphasises the need to carefully operationalise self-harm and define exactly what is meant by the term in view of the research that is to be conducted.

Once a definition has been decided, it is then important to consider more specifically which behaviours would and would not constitute self-harm. Croyle & Waltz (2007) point out that there are a range of other behaviours including skin picking, hair pulling and interfering with wound healing that would technically meet many definitions of self-harm but are not generally included in the self-harm literature, and would be excluded from the Gratz definition. These types of behaviours will not be included in this thesis as self-harm, but will be included in some studies as related

behaviours that may represent risk factors for more dangerous forms of self-harm. Some other working definitions of self-harm can be far broader, such as that of Taylor (2003), which includes smoking, drinking, excessive exercise, body piercing, etc. Taylor (2003) points out that some of these may also be socially acceptable forms of self-harm, in particular for men, and Reece (1998) includes sports injuries, for example. Anderson, Woodward and Armstrong (2004) argue that there can be a continuum of social acceptability linking smoking, drinking, body piercing, excessive exercise and cosmetic surgery.

With regards to behaviours such as self-poisoning and deliberate recklessness, Lundh *et al.* (2007) conclude that opinions can differ and these behaviours are included in some definitions but not others. The careful wording in the Gratz definition excludes these, as well as the above 'socially acceptable' behaviours.

1.2. Rates of self-harm

However it is defined, self-harm is a serious public health issue in Europe, and the rest of the world. Self-harm is present in many demographic groups, with rates of 14%-38% of college students (Favazza, 1992; Gratz, 2001; Gratz, Conrad and Roemer, 2002; Croyle & Waltz, 2007); 4% of military recruits (Klonsky *et al.*, 2003) and around 21% of clinical groups (Briere & Gill, 1998) having some experience of self-harm.

Schmidtke *et al.* (1996) found rates in the UK to be among the highest in Europe. These rates appeared to be rising in a study involving all patients presenting at hospital in Oxford in the 1990s (Hawton, Fagg, Simkin, Bale & Bond, 1997), and although this overall increase was not found in a follow-up study using the same methods later in the decade (Hawton *et al.*, 2003), an increase still occurred for certain age and gender groups.

Self-harm is one of the main causes of acute hospital admission. Hawton *et al.* (2003) found in their hospital admissions study that self-harm was the most common reason for admission to medical wards for women, and the second most common for men. Owens, Horrocks and House (2002) estimates rates of hospital attendance due to self-harm at around 400 per 100,000, and NHS statistics quoted by Kinmond and Bent (2000) estimate approximately 150,000 visits to Accident and Emergency (A&E) departments for self-harm each year. However, due to the differences in definitions of self-harm discussed above, and pressure on busy accident and emergency departments, an accurate estimate may be difficult. This said, due to the nature of the health service in the UK, this might be a more accurate estimate than in other countries, where more disparate methods of assessment are used, and where statistics may not be compiled centrally.

Further to the above estimates, records from one crisis service quoted by Taylor (2003) suggest that at least one million people in the UK who self-harm may go unrecorded every year. Sidley and Renton (1996) suggested that the Registrar General is likely to significantly underestimate the problem of self-harm, and care should be taken when examining hospital admission rates only, since Romans, Martin, Anderson, Herbison and Mullen (1995) found that over 30% of self-harming participants interviewed had never seen a mental health professional. Samaritans' (2005) statistics, based on information provided by their callers, also suggest far higher rates of self-harm than those that come to the attention of hospital departments.

In a review of 59 original papers on suicidal behaviour, Fliege, Lee, Grimm and Klapp (2009) found that the rate of self-harm appears to be highest in young adults and adolescents. Jacobson and Gould (2007) also conducted a review of self-harm literature in young people, with a total of 25 papers included. This review found that self-harm in

young people was on the increase, with the age of onset for self-harm being typically 14-24 years. Sourander *et al.* (2006) conducted a longitudinal interview study with young people and their families and their data supports this, as researchers found a dramatic increase in the participants' reports of self-harm between the data collected when participants were aged 12 compared with aged 15. However, this increase was only present in girls, not boys and so care should be taken when generalising more widely, and it is possible that this difference may be a result of increased vulnerability for self-harm between these ages rather than an increase in the overall self-harm rate at this time. Self-harm rates from the literature also support the notion that rates are higher in young people than adults. That said, the reported rates of self-harm for young people in community samples show some disparity between studies. Some studies have found relatively low rates of self-harm in younger people, for example Hilt, Cha, and Nolen-Hoeksema (2008) found a rate of 7% of preadolescents completing questionnaires twice over an 11-month period, and Young, van Beinum, Sweeting and West (2007) also found that 7% of the young people in their Scottish community sample had some experience of self-harm. However, Lundh *et al.* (2007) found a total rate of 65.9% of a sample of 15-year old Scandinavian school children, engaging in self-harm at least once in their lifetime, with 7.3% of these reported having harmed themselves so severely that it had resulted in an injury requiring medical treatment, in many cases hospitalization. In this case, data was collected using questionnaires that provided a large range of possible self-harming behaviours, which may account for a higher rate of self-harm being found, and the large difference between the rate of those participants who had some self-harm experience and those who had been in hospital as a result, further support the notion that hospital statistics may seriously underestimate the true rates of self-harm.

In adolescent inpatients, Nock and Prinstein (2004) found rates of self-harm to be as high as 82% of participants having self-harmed in the past year. This result was found in a questionnaire study with 12-17 year olds. Both of the above studies, which found extremely high rates of self-harm in young people, used questionnaire methods, and there is some evidence to suggest that questionnaires may yield a higher rate of self-harm than other means of data collection. For example, Ross and Heath (2002) found that a questionnaire-based screening tool for self-harm found a higher rate than follow up interviews. This and other methodological concerns for researching self-harm will be discussed more fully later in this chapter.

Hospital rates of self-harm among UK teenagers are among the highest in Europe with hospital statistics quoted by Anderson *et al.* (2004) showing 19,000 admissions per year for young people who have engaged in self-harm. As with adults, the UK estimate may be a more accurate estimate of self-harm rates than in some other countries due to the fact that data can be collected uniformly and compiled centrally by the National Health Service (NHS). This particularly high rate further supports the notion that self-harm rates may be greater than estimated in the literature.

Given that self-harm is such a prolific and widespread problem, adding to the understanding of why people engage in such behaviours is of paramount importance, and should provide insight for healthcare professionals as well as informing intervention decisions. Further to this, in a study by Hawton and Fagg (1992) which involved monitoring referrals to general hospitals following acts of self-harm, the authors estimate that 20-30% of adolescents presenting at hospital have engaged in previous acts of self-harm which may not have come to the attention of health care agencies, and that 10-15% will carry out a further act within the following year. In a recent longitudinal school study, Ystgaard *et al.* (2009) found that nearly half of young people

in a multi-national sample had received no help following an episode of self-harm, with only 18.8% receiving what help they did from healthcare services, according to their self-report data. This suggests that many people who self-harm are not coming to the attention of healthcare services and that rates of self-harm may indeed be far higher than estimated from hospital attendance statistics. These findings also suggest that currently there are gaps in available support for young people in particular following acts of self-harm, and that an increased understanding of self-harm processes may help improve provision for these vulnerable people.

1.2.1. Methods of self-harm

The different definitions of self-harm lead to some mixed findings surrounding which methods of self-harm are most common. Several studies have found cutting to be the most common form of self-harm, for example Favazza and Conterio (1989) found this to be the case when they interviewed 240 women who habitually self-harmed and found 72% were using cutting as their method of self-harm. This pattern appears to be similar in adolescents. In their population based sample of 18-20 year olds, Young *et al.* (2007) found that cutting, scoring or scratching were the most common methods of self-harm followed by taking dangerous tablets, whilst other methods such as burning or punching oneself were relatively rare. Lundh *et al.* (2007) also found that in a sample of 15-year old Scandinavian school children, sticking sharp objects into the skin was reported as the most common method of self-harm (32.5% of participants; Lundh *et al.*, 2007).

However, in other studies, the most common form of self-harm is overdose, for example, Doshi, Boudreaux, Wang, Pelletier and Camargo (2005) ran a large-scale survey of Emergency Rooms in the North-East of America, and found that 68% of those

people presenting following self-harm had poisoned themselves. Public health statistics quoted by Flaherty (2002) and gathered between July and December 2000 in American hospitals painted a similar picture, with 65% of presentations for self-harm being overdoses or poisonings, compared with 25% of participants having self-harmed using a sharp instrument. Haw, Houston, Townsend and Hawton (2001) assessed a representative sample of people presenting at hospital following an act of self-harm by structured interview. They found a large majority of their participants had used self-poisoning as their method of self-harm, but this finding should be treated with care since they excluded repetitive self-harm, and therefore many people who had cut themselves.

It should, of course, be noted that many definitions of self-harm, including the one used in the present program of research include the term 'direct', which in fact excludes self-poisoning as a method of self-harm. It is possible that such methods may have featured more highly in some of these studies had the definitions been different, and indeed the reported rates of self-harm may then have been higher. This yet again emphasises the importance of carefully defining what is meant by self-harm at the outset of any piece of research, as well as highlighting a difficulty in considering previous literature.

1.2.2. Gender differences in self-harm

Klonsky *et al.* (2003) point out that findings regarding gender differences in self-harm are conflicting, despite the fact that self-harm has traditionally been considered to be far more common in females than males. It is worth considering the literature on this issue since as Taylor (2003) suggests, the gender difference may be a product of the fact that women are more likely to seek help for any mental health problem. This would

suggest that the gender difference might be a result of biased sampling, or other methodological weaknesses, such as definitions that exclude behaviours more common in men than women. For this reason, previous research findings in the area will now be reviewed briefly.

Some studies have found sex differences, and the differences do still tend towards higher rates for female participants. For example, Zlotnick, Mattia and Zimmerman (1999) found significantly more females self-harming than males in a large sample of psychiatric outpatients, and a very recent study by Cheng, Mallinckrodt, Soet and Sevig (2010) found a higher rate of self-harm in female than male college students. In the second study, a very large sample of undergraduate college students in the US were asked about their harming behaviours, amongst other mental health variables in an online survey. Despite limitations around generalizability identified by the authors, this study used a very large sample of students from a range of courses within a large university and may in fact be more robust in terms of generalizability than other similar studies that might focus on psychology courses, which tend to have a higher rate of female students. Therefore, this study goes some way to address the sampling issues described in the previous paragraph. A slight sex difference was also found with adolescents. Young *et al.* (2007) found slightly more young women self-harming than young men, but young women started self-harming significantly younger than young men, which could account for this difference.

Gender differences may be attributable to the different methods of self-harm used by males and females. Taylor (2003) suggests that men tend to engage in more violent forms of self-harm which are more likely to require medical attention to be sought. However, he also points out that these acts are also more likely to be misdiagnosed as accidental, which could result in them not being picked up by either hospital records or

screening tools as acts of self-harm, which in turn could potentially skew the comparison between the genders on self-harm rates. It is also possible that a sampling bias in clinical literature leads to higher reported rates of females self-harming than males. This might occur, for example, as Croyle & Waltz (2007) point out using certain inpatient populations, such as people diagnosed with BPD, or favouring female hospital wards, since the number of males with experience of self-harm would be too small to make meaningful comparisons. As outlined before, studies using college samples may also be subject to this bias, as some courses frequently have unbalanced numbers of male and female students, and psychology is one of these, often with a large proportion of students being female.

Some studies, however have found no differences in the rates of self-harm between males and females. This has been the case in hospital samples, for example in an examination of general hospital parasuicides (where suicide intent may or may not have been present), O'Connor *et al.* (2000) found that few sex differences emerged, and the psychological pain experienced by men and women prior to a parasuicide episode did not differ qualitatively, which is in contrast to gender differences observed among completed suicides. However, it is possible that this finding may be a product of definition, since men are more likely to complete suicide than women (e.g. Murphy, 1998) and therefore including suicide attempts within the definition may reduce the gender differences overall. It was also noted earlier that men tend to engage in more violent forms of self-harm, which may increase their likelihood of requiring medical intervention, again increasing their self-harm rate when sampled in this way. Marchetto (2006) found no gender differences in a sample of people who attended hospital following skin-cutting, who were selected for interview following assessment in the Accident and Emergency (A&E) department of the hospital, either by their own self-

report of by the assessing staff's judgement. This included at the point of assessment all attendees at A&E and so may go some way to overcoming the sampling biases described above.

Studies outside of hospitals have also found similar rates of self-harm between males and females. Klonsky *et al.* (2003) found rates of self-harm to be approximately equal in males and females in a large military sample, although this group, by virtue of being a sample of Air Force personnel was over representative of males (62% of the sample were male), which may have accounted for the similar rates of self-harm, since sampling more males would increase the chances of finding similar percentages of people with experience of self-harm. In a college student population, Croyle and Waltz (2007) found no significant difference between the number of males and females reporting mild or moderate self-harm. In this study an undergraduate psychology sample was used, but in this case the sample had very similar numbers of male and female participants (52% female, 48% male). However, the authors do suggest that this may be a product of their selection methods, which may have resulted in an unrepresentative population.

There have also been studies involving adolescents that have found similar overall rates of self-harm between males and females. In a sample of adolescent inpatients interviewed by Nock *et al.* (2006), no significant gender differences were found in frequency, duration or method of NSSI, nor in the amount of pain experienced during an act of NSSI. Lundh *et al.* (2007) also found this to be the case in an adolescent school sample where 15-year old Scandinavian female school children were more likely to engage in cutting than males, but there were no gender differences on overall rates of self-harm. The fact that the methods used differed between males and females in this study suggests the possibility that the difference between the genders may in fact be a

difference in the method of self-harm used, which again may emphasise the importance of a careful definition to avoid skewing the self-harm gender differences on the rate of self-harm.

Overall, then, it appears that differences in self-harm rates between males and females may in fact be an issue of methodological limitations of specific studies rather than an actual gender difference. It is important therefore to keep in mind issues of sampling bias, operational definition, gender specific methods of self-harm, and the fact that women are overall more likely to seek help for any health problem than men. Although these issues may be difficult to overcome at the point of recruitment, and in order to allow a representative and generalisable sample, they should at least be kept in mind when drawing conclusions from the research, as far as gender differences are concerned.

1.2.3. Self-harm and healthcare services

As people engaging in self-harm are extremely vulnerable individuals, increasing understanding of the behaviour could have a positive impact on these individuals' psychological wellbeing. This could also have a positive effect for the staff working with people who self-harm as Reece (1998) points out that the treatment of people who self-harm can result in a heavy emotional cost to practitioners and nursing staff alike. Klonsky *et al.* (2003) propose that a better understanding of self-harm could lead to better 'behaviour management', which would improve working conditions for many members of staff working with people who self-harm. It is also possible that this improvement in working conditions may have a positive effect for the service users themselves, as staff may be better equipped to deal with incidences of self-harm, and thereby avoid making the point of treatment a negative experience for those people

involved. Since research into self-harm can play a role in demystifying and improving understanding of the behaviour which can make people extremely isolated and stigmatised, a brief review of the literature surrounding staff attitudes to self-harm and the treatment of people who self-harm within health services will now be included. This will allow for an increased understanding later in this thesis when implications of the research are being considered.

Smith (2002) suggests that people who self-harm can be stigmatized and even further damaged by mental health services, if careful consideration is not given to their underlying difficulties, and if staff attitudes towards their self-harm is negative or shaming. However, Smith (2002) also points out that without accessing such services there is a lack of support available since the voluntary sector may be ill equipped to deal with the complex and pervasive nature of self-harm for many people. This is exacerbated by the fact that a large proportion of self-harm happens 'out of hours', making it difficult to access the support services available, as was found by Greenwood and Bradley (1997), when they examined hospital attendances in the Bradford area.

Barr, Leitner and Thomas (2005) make the point that in fact the Royal College of Psychiatrists identified over 15 years ago the need for self-harm patients attending A&E to receive specialist psychosocial assessments to identify their risk of repetition and suicide, and to assess what help is needed for high risk and vulnerable patients. Unfortunately, as Webb (2002) points out, the pressure on services due to high rates of people presenting at A&E with self-harm, results in a poorer response to self-harm patients, especially in psychosocial assessment. This is supported by the findings of Kinmond and Bent (2000) who found that as many as 64% of people presenting at one West Midlands hospital following self-harm failed to receive psychosocial assessment before discharge during their study period.

Poor levels of assessment can have catastrophic effects on the wellbeing of people who have self-harmed. Crawford and Wessely (1998) interviewed people who had presented at hospital following self-harm across several south London services, and found that incomplete assessment had a threefold increased risk of repetition of self-harm. Hickey, Hawton, Fagg and Weitzel (2001) found that further episodes of self-harm during the year following admission to A&E occurred in 37% of non-assessed clients compared with 18% of those who were assessed. Further to this, in a study with young people, participants were asked their reason for stopping self-harm. The most frequently reported reason was that they realised the negative consequences, and the least frequent was external help from professionals (Young *et al.*, 2007). This may be that the young people involved did not value the input of the professional, but it may also be the case that they never received adequate support from healthcare services.

Taken together, these findings highlight the importance of full assessment for people presenting with self-harm, which indicates that self-harm is a complex phenomenon, requiring carefully designed specialist services. This implies that furthering the understanding of triggers and functions of self-harm, in order to better inform health services is a vital research area for the provision of support for these vulnerable individuals with often very complex needs. It can also be understood, given the pressure on staff in hospital departments and the decreased level of care that individuals who self-harm may experience, why hospital reported rates of self-harm may be artificially low, and indeed why many people choose not to attend hospital following an act of self-harm.

1.3. Functions of self-harm

A basic understanding of the importance of conducting research with people who engage in self-harm has now been developed in terms of the extent to which this is a prolific public health problem which needs to be dealt with very carefully. This review will now turn to the functions of self-harm, or why people who engage in self-harming behaviours do so. This is one subject that the later research in this thesis will attempt to elucidate, and one of the areas that can be most beneficial in terms of clinical implications.

Self-harm is likely to serve different functions for different people at different times, and even multiple functions simultaneously (Gratz, 2003), making this a complex but potentially very enlightening area of research. It is important to continue to examine the functions of self-harm, particularly in groups of people that are not currently in hospital or treatment since it is likely that some self-harmers are not in treatment and do not meet the diagnostic criteria for any disorder (Klonsky, 2007).

1.3.1. Emotion regulation

Several large review papers (e.g Klonsky, 2007; Jacobson & Gould, 2007) make the case that the most commonly reported reason for self-harm centres around automatic (intrinsic, internal) negative reinforcement (ANR) including a motivation to stop depression, tension, anxiety, to reduce anger, and relieve feelings of loneliness and derealisation. In other words, these are functions of self-harm that reduce negative emotions, or otherwise make it easier for people to regulate their difficult emotional experience.

Taylor (2003) interviewed a sample of men who had experience of self-harm, and concluded that self-harm can represent a need to move the focus away from severe emotional pain; a need to relieve feelings of frustration, self-pity, or anger. Nock and Prinstein (2004) also reached this conclusion by collecting functional questionnaire data from a sample of 108 young people in hospital, 82% of which had self-harmed in the past year, in which emotion regulation functions were the most frequently endorsed. However, they do point out that their sample was relatively small and so investigation of the functions in a larger sample would be beneficial in order to investigate this finding. A subsequent study by Nock *et al.* (2006) again investigated functions of self-harm in a group of young people admitted to a psychiatric unit who reported engaging in self-harm in the previous 12 months. They also found emotion regulation functions to be frequently endorsed although this sample size approximated that of the previous study.

Several studies have linked the emotion regulation function of self-harm hypothesis with specific psychopathologies. Linehan (1993), following work with people with Borderline Personality Disorder also conceptualized self-harm as an emotion regulation strategy for intolerable painful emotions, referring to Klonsky's (2007) identification of a maladaptive affect regulation strategy developed during childhood in response to invalidating environments. Najmi, Wegner and Nock (2007) described self-injury as a self-distraction response to cope with aversive emotions following a study with young people with experience of self-harm who endorsed this as the reason for their engaging in self-harm.

Following work with people with complex trauma histories, Connors (1996) conceptualised self-harm as a way to regain homeostasis, emotionally and physiologically, when self-soothing or sense of control is impaired. This function is

well supported in the theoretical and clinical literature, for example in a review by Klonsky (2007), it was found that amongst studies with self-report methodologies, the most cited reason for self-harm was to alleviate negative affect, which is one aspect of emotion regulation. An example of one of these studies was an investigation with women with a diagnosis of Borderline Personality Disorder (Brown, Comtois, & Linehan, 2002) who were asked to give their reasons for engaging in both self-harm and suicide attempts. With regards to reported reasons for self-harm, 96% of participants endorsed emotion regulation reasons broadly relating to emotion relief, distraction or feeling generation, whereas participants tended to cite reasons relating to reducing burden on others for their suicide attempts. This study, however, was limited to those people with a diagnosis of BPD, all of whom were female, and so extra care should be taken when generalising the findings to other groups. Young *et al.*'s (2007) findings also provided evidence to support emotion regulation as the main reason for self-harm. They conducted a large population-based survey of young people aged 18-20 in Scotland, and found that relief of anger was the most commonly cited reason for self-harm. Gratz (2001) found that 76% of 150 undergraduate student participants described the function of their self-harm as to relieve unwanted feelings in a questionnaire-based study. Participants described it having this effect by either externalizing their inner emotional pain, or providing an escape by diverting attention away from these painful inner experiences.

Gratz (2003) proposed that one way of understanding emotion regulation as a function of self-harm would be in terms of experiential avoidance whereby an individual may attempt to alter their experience of something internal in order to reduce distress and the behaviour that might occur as a result of the distress. Jacobson and Gould (2007) review 25 papers on NSSI in adolescents and conclude that a common

function of self-harming behaviours is to allow the individual to reduce, block or otherwise distract themselves from negative emotions that are perceived both as being intolerable and unavoidable by any other means. Chapman, Gratz and Brown (2006) conceptualise a model of self-harm that describes these behaviours in terms of experiential avoidance. This model suggests that self-harm is a negatively reinforced strategy for reducing or terminating unwanted emotional arousal. In this case it is possible that self-harm is functional at some level (despite the obvious negative consequences) as it may be very successful at reducing or even stopping unwanted emotional states. There is, however, as Adams, Rodham and Gavin (2005) point out, a danger that self-harm may have negative long-term consequences following the immediate ones. In this way, and by Chapman *et al.*'s (2006) conceptualisation, self-harm is reinforced by these gains and becomes a vicious cycle whereby self-harm is the automatic escape response from difficult feelings. So, as Gratz and Gunderson (2006) intimate, self-harm regulates emotions by experiential avoidance, or attempts to avoid unwanted internal experiences.

Taken together, the studies and conceptual framework outlined above suggest self-harm may be a dysfunctional coping mechanism for overwhelming thoughts or feelings. However, another function that features frequently in the literature is that of communication or more general interpersonal functions of self-harm. The literature around these functions shall now be discussed.

1.3.2. Communication/ Interpersonal functions of self-harm

There are several ways in which self-harm can represent some form of communication, or can serve an interpersonal function. In a review by Gratz (2003), it was suggested that self-harm might serve as a way of affecting a person's interpersonal

environment, for example influencing other people's behaviour, a cry for help or eliciting affection from others. A further review by Connors (1996) described the elicitation of a caring response from others, or the intention to fulfil a need for comfort and containment as one of the most frequently cited functions of self-harm in the general literature, and representing one way in which people who self-harm may be doing so to communicate, in that they are attempting to demonstrate the extent to which they require another's help.

This category of self-harm function is one that is often cited by people who don't themselves self-harm and often, such behaviours can be mislabelled as 'attention seeking' or 'manipulative', particularly where the individual is attempting to elicit a caring response from other people. Taylor (2003) describes this as both unhelpful and misleading, and indeed raises the question of why someone might need help so desperately that they would resort to self-harm. However, there has been a shift away from the standpoint that this is 'attention seeking' or 'manipulative' in recent years since this is not the most frequently cited function of self-harm by those people who do themselves self-harm. Indeed, in a qualitative study by Gratz (2000, cited in Gratz, 2003) with undergraduate students using open-ended questions regarding why they self-harmed, three out of the 21 participants described self-harm as a means of pushing people away. In this way, Klonsky (2007) describes how self-harm can be a way to affirm the boundaries of the self, since marking the skin separates the individual from the environment and other people.

Linehan (1993) suggests that, although the elicitation of a caring response in others may not be the primary function of self-harm for some people, it may be a function that develops as a source of secondary gain, as the caring response becomes a reinforcing outcome of the behaviour, and in this case this is an outcome of the

behaviour rather than necessarily the intended function. Klonsky (2007) suggests that this may result in reinforcement of the self-harm behaviour for the individual concerned, although they may themselves be unaware of this. Regardless of the motivation behind the wish to elicit care from another person, this still represents a form of communication that results when people self-harm.

Self-harm may additionally provide a way of validating suffering by creating a physical manifestation of inner pain and converting unclear emotional pain into a more tangible expression of their pain. In their online qualitative investigation described earlier, Adams *et al.* (2005) found that this was one way that participants described the function of their self-harm, as well as to communicate to other people that they are legitimate, worthwhile people. In this way people who self-harm may be expressing to other people the level of distress that they are experiencing, when they are unable to do so with words. Gallop (2002) suggests that in this way, self-harm is often an attempt to communicate and relieve pain and maintains discourse, and can allow some people to convey what they are unable to verbalise.

Chapman *et al.* (2006) propose a model whereby self-harm may also reduce distress by reducing or averting interpersonal problems. In a study with adolescents admitted to hospital, Nock *et al.* (2006) found that a large proportion reported using self-harm as a way to regulate relationships with others alongside emotion regulation functions, and Hilt *et al.* (2008) found in a longitudinal study collecting self-report and parental report data that younger adolescents may also be likely to engage in NSSI to elicit social reinforcement. These studies suggest that younger people may engage more in intentional interpersonal functions, whilst adults may develop interpersonal reinforcement of their self-harm as a result of initially self-harming for other reasons. It

may be that these differences rise due to a lack of developed communication skills in younger people.

Although emotion regulation and interpersonal functions are the two most cited functions in the theoretical and empirical literature, there are other functions of self-harm that also feature, and will therefore be included in this review. The next category to be considered is self-punishment functions.

1.3.3. Self-punishment/ re-enactment of trauma

Self-harm may act as a way for people to punish themselves when they feel inadequate, or other overwhelming negative emotions. For example, men in particular often feel pressures from society and those can lead to self-harm. Those who feel like failures are more vulnerable to low self-esteem, depression and emotional difficulties. In a semi-structured interview study with five men with experience of self-harm, Taylor (2003) found that several described feeling like they were failures in modern society, although the small sample size in this study means that any generalisations should be extremely cautious ones. However, in a longitudinal study towards the end of the 20th century, Platt and Kreitman (1984) found that unemployed men were 11-12 times more likely to self-harm than those who were employed, although they did not detail self-reported reasons for these. However, self-harm does not only function as self-punishment for men. In a long-term qualitative interview study with nine women in a hospital ward, Weber (2002) identified self-punishment as a key reason for self-mutilation. The author describes this work as an 'initial step' towards providing a voice for these vulnerable women. Further, in a study with female inpatients with a diagnosis of Borderline Personality Disorder, Brown *et al.* (2002) found that 63% of participants cited self-punishment as their reason for self-harming, although as discussed earlier, the

percentage of participants endorsing emotion regulation was far higher. Adolescents also report self-punishment as a reason for self-harming. In their self-injury review, Jacobson and Gould (2007) report that in two studies of non-referred adolescents, around 30% of those reporting NSSI described self-punishment as the reason, although they typically reported many reasons and emotion regulation functions generally featured more highly. A similar result was found in the earlier of the two Nock & Prinstein (2004) studies in which 32% of participants endorsed self-punishment functions.

In Connor's (1996) framework, the author suggests that self-harm may function as a re-enactment of trauma for people who have experienced child abuse in particular. Women who have experience of trauma and self-harm often hate their bodies and consider their bodies to be representations of internal badness and ugliness. Gallop (2002) conceptualised cutting their external body as symbolically attacking the internal badness and ugliness and because of boundary confusion following their abuse, may represent an attack on their abuser. Klonsky (2007) built on this by pointing out that people who self-harm may have learned from their environments to punish or invalidate themselves, and so the self-harm becomes familiar and therefore self-soothing in the face of emotional distress.

Although self-punishment may provide a stand-alone function of self-harm for some people, it is possible that there may be some crossover between emotion regulation functions and self-punishment ones. Chapman *et al.* (2006) suggest that as punishing oneself may alleviate feelings of guilt and shame and so self-harm may be an indirect method of avoiding internal experience even when described by the individual as self punishment. In this way self-punishment could potentially be reconceptualised as a slightly less direct form of emotion regulation in some cases. In Borderline

Personality Disorder (BPD), self-harm is typical, and to an external observer may appear quite clearly impulsive and harmful behaviour, indeed the very opposite of 'harm avoidance'. However, to the person with BPD, self-harm is commonly described as providing some form of relief. Korner, Gerull, Stevenson and Meares (2007) suggest that this is because the patient is conscious of their internal pain and the self-destructive habits seem like the 'lesser of two evils'. In this case, self-harm may again represent a blend of the two functions of self-punishment and emotion regulation.

1.3.4. Protection against suicide

A final important function of self-harm might appear illogical to those people who do not have a background understanding of self-harm, since as Starr (2004) intimates, for many people, self-harm is not a suicide attempt, but in fact a desperate means to avoid suicide. In other words, self-harm may actually help people to avoid making more potentially serious attempts at hurting themselves by reducing their urge to commit suicide. For example, in a study using questionnaires and semi-structured interviews with women resident in hospital and meeting a diagnosis of Borderline Personality Disorder, Shearer (1994) found that suicide prevention did feature in those functions that were endorsed by participants. That said, this was the seventh most endorsed function with those discussed previously each ranking more highly.

If we unpick this function, it appears that the suicide prevention may operate indirectly by the other functions discussed here. For example, self-harm may help people to avoid suicide by allowing them to express non-verbally their feelings of suicidal ideation (Klonsky, 2007), which fits with the communication functions discussed earlier. Webb (2002) proposes that self-harm may also be protective against suicide by offering a coping strategy against negative feelings, which might fit with

emotion regulation functions discussed in the earlier section. In this way then, Kinmond and Bent (2000) point out that for some people, self-harm can in fact act as the opposite of destructiveness as people seek to preserve rather than destroy themselves, using the self-harm as a way of releasing their distress. Although some empirical research does mention suicide prevention as a function of self-harm (for example the study by Shearer mentioned earlier), it is never the most frequently cited reason and in each case appears further down a list than the other factors outlined above. It seems then that self-harm may be protective against suicide as it allows people to express how bad they are feeling (communication) or regulate their difficult emotions and therefore suicide prevention may be an overarching function secondary to the two main functions of self-harm discussed previously.

1.3.5. Other functions of self-harm

There are a number of other documented functions of self-harm (albeit less frequently) including, as found by Favazza and Conterio (1988) those related to calming oneself, such as to assist relaxation, and control racing thoughts. This may be another form of emotion regulation, since racing thoughts and feeling a need to calm oneself may be a result of overpowering negative emotions.

Some authors (e.g. Klonsky & Muehlenkamp, 2007) have described self-injury as a method to interrupt a dissociative episode by opening or awakening the individual to the environment, an effect that has been termed 'feeling generation'. In the study mentioned previously which involved women with a diagnosis of Borderline Personality Disorder currently in hospital (Brown *et al.*, 2002), 54% of participants endorsed anti-dissociation functions. However, it should be noted that dissociation is a diagnostic criterion of BPD, and therefore this function may appear more frequently in

this population, as they are likely to experience more dissociation than other people. Self-harm may function to distract an individual from unpleasant states of dissociation; the anti dissociation model characterises self-harm as a response to periods of dissociation or depersonalization. Klonsky (2007) suggests that it may be the case that self-harm serves to 'shock the system' by the physical sensation, interrupting the dissociative episode and regaining the sense of self. In a qualitative study by Adams *et al.* (2005) researchers used an interpretative phenomenological analysis to interpret data gathered by online focus groups and email interviews. The authors describe one function of self-harm as exerting control over a turbulent world, including threatening environments, racing thoughts and their sense of reality.

According to Miller (1994), some people who self-harm are craving arousal. The sensation-seeking model suggests that self-harm is a means of generating excitement or exhilaration in a similar manner to skydiving or bungee jumping. This function is not readily apparent in treatment populations, for example only 5% of the inpatient BPD sample studied by Shearer (1994) endorsed this function, but is worth bearing in mind for those studies involving research with the general population. It should also be noted that, as pointed out by Klonsky and Muehlenkamp (2007) this function may represent a form of self-harm that is qualitatively different to that associated with other functions, since it is the only function associated with self-harming with other people.

There are, as has been discussed, various reported functions for engaging in self-harm within the literature. It is important for future research to attempt to clarify which functions are more frequently endorsed, whilst bearing in mind the effect that different research designs may have on which functions may be reported with regards to issues of anonymity etc. Methodological considerations of research with people who self-harm will be considered in more depth later in this chapter.

1.4. Self-harm and Suicide

There is an important link between self-harm and subsequent suicide. For example, Cooper *et al.* (2005) followed up a large cohort of people who had presented at hospital for self-harm and found that people in the cohort were thirty times more likely to complete suicide than the national average. However, it should be noted that this study had a number of non-responses, which the authors suggest may be due to a range of reasons such as emigration, or death from other causes, which may affect the actual number of people who complete suicide, or would have. The National Service Framework for Mental Health (2005) describes a close association between self-harm and completed suicide, and Sampson *et al.* (2004) point out that self-harm is one of the most important factors associated with risk of suicide. For example, in a review of the literature on suicide prevention in A&E, Repper (1999) concluded that there was a strong link between self-harm and later suicide, particularly when the self-harm was repetitive.

Prinstein (2008) described suicide as having massive financial and people costs in the UK and in the US, and as the 11th leading cause of death across all ages. According to statistics presented by the Samaritans (2005), in 2000 more than two people a day aged 15-24 died by suicide in the UK and Ireland. In the United States, Miller (1999) found that suicide accounts for more adolescent deaths than all natural causes, and is the third leading cause of death amongst 15-19 year olds.

Hawton, Kingsbury, Steinhardt, James and Fagg (1999) conducted interviews with young people following admission to hospital as a result of self-poisoning, and found that repeated self-harm was associated with a considerable risk of completed suicide. McCann, Clark, McConnachie and Harvey (2006) examined statistics for

Western Australia in the late 20th century, and found that this is especially the case for men. Following a systematic review of the repetition of self-harm literature, Owens *et al.* (2002) found that around a quarter to two thirds of suicides are preceded by non-fatal self-harm, and self-harm ranks with recent discharge from inpatient psychiatric care as a major risk for suicide. Using semi-structured interviews and self-report questionnaires, O'Connor *et al.* (2000) ascertained that a history of parasuicide (self-harm regardless of intent to die) is the best predictor of completed suicide. Barr *et al.* (2005) also point out that since the link between self-harm and suicide is so well documented, decreased self-harm rates would lead to decreased suicide rates, and therefore it is crucial to reduce the chance of repetition and more lethal self-injury.

Although self-harm is an established risk factor for suicide, reported rates are variable. According to Repper's (1999) review of the self-harm literature with regards to nurses' attitudes to people who self-harm, patients who have recently carried out an act of self-harm, most commonly a drug overdose, are 100 times more likely to kill themselves over the next year compared with the general population, and in the subsequent ten years, 3-10% may do so. An examination by Hawton *et al.* (1997) of trends in self-harm related admissions to hospital led to the estimation that up to 10% of people who self-harm will commit suicide within 10 years, whereas Department of Health statistics quoted by McElroy and Sheppard (1999) suggest that 35-50% of people presenting at A&E will go on to commit suicide. Ryan, Clemmet and Perez-Avila (1996) cross-checked coroner's office and A&E department records and found that that people who self-harm are approximately 18 times more likely than the general population to eventually commit suicide. Repper's (1999) review found that 37-40% of suicides have a history of self-harm, and when following up people who had presented

at hospital following self-harm, Hawton and Fagg (1988) found that in the following year, 1% will complete suicide.

Some gender differences in suicide risk exist and it is possible that these may be a result of differences between the lethality of chosen methods of self-harm. For example, Young *et al.* (2007) surveyed 18-20 years olds in Central Scotland and suggested that males were more likely to engage in potentially lethal forms of self-harm, although it is unclear how they concluded this from their findings.

Although self-harm and suicide are clearly related, there are also several differences between the two phenomena. For example, according to Repper (1999), there are clear demographic differences between self-harm and suicide, such as age group and gender. Repper (1999) also points out that the methods used are different with overdosing being more frequent in self-harm (87%) than suicide (24%).

Although NSSI and suicide attempts are distinct behavioural phenomena, they often co-occur within individuals, yet it is unclear why this is so. One theory, proposed by Nock *et al.* (2006) is that a negative side effect of engaging in NSSI may be that individuals habituate to fear and physical pain associated with self-injury and therefore acquire the capability to perform lethal self-injury. It is possible, as suggested by Smith (2002) following interviews with people with experience of self-harm, that the self-injury may divert from more drastic forms of self-harm possibly including suicide, which can be problematic in particular when patients are kept on wards where they are not allowed to self-harm and relieve the pressure.

While suicide and self-harm differ in epidemiology, some authors (e.g. Stanley, Winchel, Molcho, Simeon and Stanley, 1992) suggest a shared continuum of self-harming behaviour, whereby, according to self-report data collected by Claes,

Muehlenkamp, Vandereycken and Hamelinck (2010) with 200 people admitted to psychiatric hospital in Belgium, those people engaging in self-harm exhibit a greater level of psychopathology, lower coping skills and an increased level of 'pathological' personality characteristics. Webb (2002) suggests that this may take the form of a suicidal pathway of increasing hopelessness, anger and suicidal ideation, and decreasing escape potential, which results in a serious suicidal act for those unable to escape. The continuum from self-harm thoughts to attempts and to completed suicide, however, may not be linear. Sourander *et al.* (2006) conducted a longitudinal study collecting data at various time points through the early life of a cohort of children born in the late 1980's. They found that factors associated with ideations differ from those associated with suicidal acts. However, the study did not explicitly differentiate between self-harm and suicide attempts, and so this continuum was not completely explored.

Self-criticism and shame have a key role in a number of mental health problems, in particular as Gilbert and Irons (2004) point out, suicide, and it is therefore important that clinicians not see self-harm as a less serious suicide attempt, or respond to self-harm with less concern. Gallop (2002) suggests that a person who self injures may then experience such self-loathing following negative responses from clinicians that the result may be a suicide attempt. This represents an action point for those people working with clients who self-harm, as well as offering further explanation for one way that self-harm and suicide may be related.

Studies with young people also highlight the role of self-harm as a predictor of future suicide. In a study with adolescents by Nock *et al.* (2006), 70% of participants engaging in recent NSSI reported a lifetime history of at least one suicide attempt. Further to these findings, in their large cohort follow-up study of people who had presented at the Accident and Emergency Departments across Greater Manchester,

Cooper *et al.* (2005) found that the risk of suicide is greatest within the first 6 months following the self-harm episode. However, differences between the two phenomena have also surfaced, as with adult populations. In a group of adolescent inpatients assessed in a longitudinal study by Sourander *et al.* (2006), the diagnostic profiles of attempters and ideators were somewhat different. In this study, the two types of suicidal behaviour were observed, characterized by either a wish to die and comorbid depression, or by impulse control difficulties and associated externalising problems.

As discussed above, given the strong link between suicide and self-harm, and the extent of suicide as a serious public health problem, understanding self-harm and therefore a reduction in self-harm rates should have a valuable knock-on effect of reducing suicide rates, or at the very least improve the understanding towards and treatment of those people driven to end their lives.

1.5. Psychological and Environmental Correlates of Self-harm

As self-harm represents a risk factor for suicide, and both phenomena indicate serious public health concerns, it is worth considering why people self-harm, and what might represent risk factors for the behaviour. There are various psychological factors that are associated with self-harming behaviours and this review will now consider these. The correlates include various mental health diagnoses as well as personality and environmental factors.

1.5.1. Mood disorders

Many studies with patients who self-harm have found high rates of diagnosable psychiatric disorder, and Chapman *et al.* (2006), who conceptualise self-harm as emotion regulation, describe a situation whereby individuals who self-harm report

increased levels of aversive internal states both before self-harm and in general, including depressive affect. The empirical literature supports this. For example, Suominen, Henriksson, Suokas, Isometsa, Ostamo and Lonnqvist (1996) interviewed people who had attended hospital following parasuicide, at a general hospital in Helsinki during a seven-month period in the early nineties. They found that 98% of the sample met the diagnostic criteria for one or more DSM-IV axis one disorder, which are clinical disorders not including personality disorder or learning disability. Within this, depressive symptoms were most common for women and alcohol disorders and depression the most common for men. Notably, 82% of participants were experiencing more than one mental health diagnosis, suggesting that comorbidity may also be important when assessing risk of suicidal behaviours. However, this study did not distinguish between those people who were attempting suicide and those who were not, and so diagnoses may differ between people who self-harm and those for whom self-harm represents an attempt to end their life. Haw *et al.* (2001) also interviewed people who had been admitted to hospital following self-harm regardless of intent and found that 92% of participants met ICD-10 criteria for psychiatric (not including personality) disorders, most frequently depression. Again, however, this study did not differentiate between self-harm and suicide attempts, and in fact discounted repeated self-harm which ruled out a lot of people who had engaged in cutting, which suggests a different sample from those which we will describe as 'self-harm' samples in the studies contained in this thesis. Since these two studies included participants who were suicidal, it is possible that depression may be more associated with suicidal feelings than an urge to self-harm.

The link between self-injurious behaviours and mood is supported in the literature. For example, Beautrais *et al.* (1996) conducted interviews with people who

had made suicide attempts and compared their responses with those from a comparable population of people who had not. They found that there was a strong link between depression and suicidal behaviours, concluding that the Population Attributable Ratio (PAR) for suicidal behaviours and depression is 80%. This means that if depression could be taken out of the picture, 80% of suicidal behaviour could be removed. However, it should again be noted that this study did not separate people by intent, and that there may be differences in such diagnoses between those meaning to kill themselves and those who were not. Patton *et al.* (1997) collected self-report data from a large sample of Australian school children, and found that depression, along with anxiety had the strongest association with self-harm, especially self-poisoning and self-laceration. Nock *et al.* (2006) also found depression to be important in self-harm when they interviewed young people who had been admitted to psychiatric hospital following self-harm. In this study, over 40% of adolescent self-harming participants met diagnostic criteria for major depressive disorder.

However, some studies have not found such clear associations between mood disorders and self-harm. For example, in a Turkish study, the most common diagnosis for people with suicidal intent was mood disorder, whilst the most common diagnosis for those with self-mutilation was personality disorder (Zor *et al.*, 2005). Jacobson and Gould (2007) systematically reviewed the literature on NSSI in children and adolescents. In their review of 25 papers in total, they concluded that depression, whilst an important predictor of suicide attempts, may not be an individual risk factor for self-harm. This suggests, as mentioned earlier, that depression may only predict self-harm in conjunction with one or more other factor.

Hawton *et al.* (1999) interviewed young people following admission to hospital, although in this case it was a general hospital following overdose or repeated self-harm.

They found that depression was overwhelmingly associated with self-harm and that when depression was controlled for, all other associations disappeared. It is possible, then that depression is particularly associated with repeated self-harm which increases an individual's risk of suicide, which itself is also associated with depression. However, Kingsbury, Hawton, Steinhardt and James (1999) also interviewed young people following overdose and compared their findings to interview data from two matched control samples from the community and from a psychiatric control sample. They, similarly to Hawton *et al.* (1999), found that depression was overwhelmingly associated with overdose and again that other associations disappeared when depression was controlled for. Taken together, these two studies suggest that a strong link might exist between overdosing and depression. As with repeated self-harm, it is possible that overdoses may be more likely to represent a suicide attempt as they are less directly destructive and are therefore not included in many definitions of self-harm, including that which will be used for the studies presented in this thesis.

Variability of mood should be considered when identifying those at risk of self-harm across diagnostic groups, since Sampson, Mukherjee, Ukoumunne, Mullan and Bullock (2004) conducted diagnostic interviews and administered measures of depression, and hostility (internally and externally directed) to 106 adults admitted to a large mental health hospital in London within a six-week period. The researchers found that those patients with a history of self-harm showed increased mood fluctuation even after controlling for BPD symptoms. It should be noted, however, that the study had a drop-out rate of approximately 50%, which somewhat limits the validity of the findings since there may be some differences between completers and non-completers, although the authors insist that no demographic differences exist between these groups. Mood therefore seems to be of particular importance to the occurrence of self-harm, as Snow

(2002) found when conducting in-depth interviews with prisoners who self-harm about their reasons for doing so, across several prisons across England. In this study, it was found that mood, or strong negative emotions characteristic of depression were common precipitants of non-suicidal self-harm in this sample. This was different from those participants who were attempting suicide, who cited specific stressful events as precipitants for their self-injurious behaviour. It is also possible that the individual's perception of their depression, or the support on offer to them is what is key, since O'Connor *et al.* (2000) found, when interviewing people after they were admitted to hospital following parasuicide, that someone who describes himself or herself as being particularly depressed, but does not have a diagnosis, may be at greater risk than someone diagnosed and on a treatment protocol. This further supports the point made in the earlier section about the importance of proper support for people who are vulnerable to, or engaging in self-harm.

It is possible that other factors may play a role in the self-harm/ mood disorder relationship, such as hopelessness and body image. O'Connor, Armitage and Gray (2006) interviewed people following visits to hospital for parasuicide and found that hopelessness and depression were both predictors, although again this was looking at parasuicide where suicide ideation is not taken into account. McMillan, Gilbody, Beresford and Neilly (2007) conducted a systematic review of the literature in order to determine the effect of the Beck Hopelessness Scale in predicting self-harm and suicide attempts. They found that hopelessness did differ between those people who self-harmed and those who did not, suggesting again that hopelessness may play an important role in predicting self-harm. Muehlenkamp (2005) interviewed female college students and found that negative body regard had an indirect effect on risk of self-harm via depressive symptoms in a female college population. In other words, when

emotional distress is present, negative body regard may increase the likelihood that self-harm will occur. This latter finding suggests that depressive mood plays a role, but it may be more complex than a direct, causal one.

Self-esteem may be another factor that is involved in the association between self-harm and depression. Self-esteem is frequently low in people diagnosed with mood disorders, and low self-esteem is significantly associated with self-harm. For example, Lundh *et al.* (2007) collected questionnaire data from young people in a school sample and found low self-esteem and self-harm to be strongly linked. Taylor (2003) found a similar result when conducting interviews with men who self-harm, finding low self-esteem to be an important factor. In a study by Hawton *et al.* (1999) with adolescents who had been admitted to hospital, those who self-harmed repeatedly had significantly lower self-esteem scores than those adolescents who only self-harmed on one occasion. However, this relationship was no longer significant when depression scores were controlled for.

Taken together, these findings suggest that mood and mood disorders may have an important role in self-injurious behaviours, although it is unclear whether these are associated with self-harm without suicide ideation as opposed to solely suicide attempts and more research is required to specifically test the role of depressive symptoms in self-harm as defined by definitions such as the one adopted in this thesis.

1.5.2. Personality Disorders

Haw *et al.*'s (2001) interviews with people following parasuicide found that 45.9% met diagnostic criteria for personality disorders. Self-harm is a key diagnostic criteria in Borderline Personality Disorder (BPD), and as Williams and Swales (2004)

point out, parasuicidal behaviours are present in 69-80% of individuals who meet criteria for BPD.

The literature suggests strong links between BPD symptoms and self-harm. For example, Andover, Pepper, Ryabchenko, Orrico and Gibb (2005) collected self-report data from undergraduate students and found that BPD symptoms were the most important factor associated with self-harm even when other diagnoses were present. In fact, depressive and anxious symptoms were no longer associated with self-harm when BPD was controlled for, even though no participants met the full criteria for a diagnosis of Borderline Personality Disorder. Emerging personality disorder symptoms are also an important factor in adolescent self-harm. In Nock *et al.*'s (2006) study involving interviews with young people following their admission to hospital for self-harm, approximately half of the female participants met DSM-IV criteria for BPD, whilst a third met criteria for avoidant personality disorder and a fifth for paranoid personality disorder. In a study involving a large sample of military recruits (Klonsky *et al.*, 2003), participants with a history of self-harm exhibited significantly more pathological personality symptoms both by self-report and peer report, compared with non self-harmers.

There is some psychobiological evidence to explain self-harming in people with BPD. New *et al.* (1997) examined serotonin function in people with a diagnosis of personality disorder and found that decreased serotonergic activity was associated with self-harm and not specifically that which involved suicide intent. Findings such as this have led to the Biological Reinforcement Theory, whereby the patterns of self-harm in clients with Borderline Personality Disorder may be attempts to self-soothe by activating the endogenous opiate system and that self-harming may produce endorphins that reduce dysphoria (Chapman *et al.*, 2006).

There may also be some crossover between mood disorders and personality disorder in people who self-harm, in particular in BPD. Shea *et al.* (2004) conducted a longitudinal study with people with a variety of DSM axis one disorders, testing them at four time points for personality disorder symptoms. Depression was associated with BPD at follow up, suggesting that the two diagnoses may share some common etiological mechanisms. However, in Andover *et al.*'s (2005) study, symptoms of depression were no longer associated with self-harm when BPD symptoms were controlled for.

In contrast to the previous findings by Suominen *et al.* (1996) and Haw *et al.* (2001) that large proportions of people who self-harm meet diagnostic criterion for at least one psychiatric disorder, other studies have found high proportions of people who self-harm without meeting such criteria. For example, Barr *et al.* (2005) interviewed a large sample of people who had attended a Welsh A&E department within a five-year time period. This study revealed a substantial proportion of people who self-harm (over a third) who have no indicator of mental illness (Barr *et al.*, 2005), suggesting that some personality characteristics might exist that are associated with self-harm aside from or alongside diagnostic characteristics. It should be noted that the differences in rates of mental health conditions between the different studies might be due to different methodologies. For example, the Barr study used self-report mental health histories, whilst the other two used structured diagnostic interviews, and the Barr study used a self-harm sample specifically, whilst the other two studies did not distinguish the different forms of self-harm within their 'parasuicide' sample. Regardless of the reasons for this difference in findings, we have already seen that many people who self-harm do not present at hospital afterwards, and therefore a lot of people within the study populations would have self-harmed but not been included in the sample. This suggests

the possibility of another subset of people who may or may not self-harm in the absence of a mental health condition, and the literature suggests some individual difference factors that stand alone outside of the diagnostic categories.

1.5.3. Impulsivity

Impulsivity has been identified as an important factor in self-harm, across a number of different populations, including adults and children, and those diagnosed with BPD as well as participants taken from a general population. Hawton, Fagg, Simkin, Bale and Bond (2000) conducted a cross-sectional survey of fifteen and sixteen year old school children across England and found that impulsivity was associated with self-harm, although the relationship did not exist independently in male participants. Yen *et al.* (2004) interviewed a sample of adults diagnosed with Borderline Personality Disorder and found that impulsivity significantly predicted suicidal behaviours in this sample. Croyle and Waltz (2007) collected self-report questionnaire data from college students and found that a history of subclinical self-harm was associated with other, in some cases impulsive maladaptive behaviours.

There are a number of other maladaptive behaviours that are associated with self-harm and could be considered impulsive. For example, Muehlenkamp (2005) interviewed a sample of female college students, and found that the most frequently reported risk taking behaviours associated with self-harm are risky sexual activities and drug/alcohol abuse. Substance misuse is another possibly impulsive behaviour that represents an important risk factor in self-harm, as was found by Hawton *et al.* (2003) when examining data collected during interviews with people presenting at hospital following self-harm. However, self-harm also frequently occurs in the absence of alcohol or drugs, and indeed, Nock and Prinstein (2005) found when collecting

questionnaire data from young people who had been admitted to hospital following self-harm, that the vast majority were not under the influence of any illicit substances when engaging in self-harm. Chapman *et al.* (2006) suggest that self-harm and other maladaptive coping strategies may be the quickest way of alleviating distress for highly impulsive individuals and that their heightened impulsivity requires them to use the coping strategies that are most immediately reinforcing.

There does seem to be some debate over whether impulsivity is associated with self-harm in general, or more specifically with repeated self-harm. For example, when collecting self-report data using their self-harm questionnaire, Nock and Prinstein (2005) found that their sample of young people who had been admitted to hospital following self-harm were more likely to plan and prepare for their first episode of self-harm, whilst later episodes became more impulsive and less premeditated. Kashden, Fremouw, Callahan and Franzen (1993) also collected data from young people who had been admitted to hospital following self-harm and found that they scored significantly higher on their measure of impulsivity than the community high school control group. However, Hawton *et al.* (1999) compared adolescents who had self-harmed once with those who had repeated their self-harm and found that the two groups did not differ on a standardized measure of impulsivity. Croyle & Waltz suggest that impulsivity may differ depending on how severe the self-harm act is, and conclude that subclinical self-harm is typically more habitual (rather than compulsive) and more injurious self-harm is typically more episodic (rather than impulsive) although both show impulsive and compulsive features.

Increased risk of self-harm is also associated with a number of other areas of psychological deficit, one of which is poor interpersonal problem solving. The role of problem solving deficits in self-harm is supported by physiological arousal data

collected by Nock and Mendes, (2008) who administered a standardised self-harm measure alongside skin conductance data during a problem solving task. The authors found that the participants, who were adolescents with a history of self-harm, showed higher skin conductivity, demonstrative of a higher physiological arousal during a distressing task, as well as a higher number of negative solutions to the task than a matched control sample of adolescents without a self-harm history. McLaughlin, Miller and Warwick (1996) also gathered interview data with young people following self-poisoning around how they felt that the act would help to solve their problems. The authors concluded that since many participants stated that they expected the overdose to solve their problems in some way, a deficit in the ability to generate solutions to problems was in existence. This method of testing problem solving, however, was not only subjective, but as the authors point out, created locally without a process of validation, and so care should be taking when drawing conclusions from the data. This study also used participants who had engaged in self-poisoning, and so is likely, as has been discussed before, to include individuals for whom the self-harm was an attempt to end their lives.

However, as Webb (2002) explains in her review of the self-harm literature in young people, it may be the interaction between impulsivity and problem solving which is important, whereby impulsivity interferes with problem solving. In this way, impulsivity may be a risk factor from the point of view that it impacts on problem solving skills and an adolescent's ability to generate possible solutions to problems, rather than simply selecting the coping strategy or solution that appears to be most immediately reinforcing.

Impulsive behaviours (including self-harm) are associated with high levels of anger, often internally directed anger. For example, Sampson *et al.* (2004) collected by

interview and standardised self-report measure data from patients who were admitted to an acute psychiatric unit in London during a six-week study period. Self-harm was found to correlate with disturbed aggression, irrespective of diagnostic context, so higher inward aggression may have resulted in a higher rate of self-harm. Low, Jones, Macleod, Power and Duggan (2000) also examined these constructs by administering a battery of standardised measures assessing traits relating to various aspects of personality and diagnosis to women detained at a maximum-security hospital. They found that participants engaging in self-harming behaviour had higher self-report scores on a number of the variables including irritability, which was both inwardly and outwardly directed. Milligan and Waller (2001) also found anger to be important in a sample from the general population, when they interviewed female undergraduates about their anger styles, and levels of impulsive behaviours. They found that those participants who were prone to engaging in impulsive behaviours such as self-harm might be more likely to have certain angry personality traits, to be affected by anger more easily, and to direct that anger inwardly. It follows, then that self-harm may represent internalised anger or shame. Milligan and Andrews (2005) interviewed a sample of women prisoners with a history of both self-harm and abuse in childhood about their experiences of shame and anger. Those women who reported suicidal behaviours also reported frequent anger and a tendency to feel ashamed of their character, behaviour and appearance.

1.5.4. Shame and anger

Since anger and shame appear to play a role in the development of self-destructive behaviour, those professionals working with people who self-harm should be aware of these issues. According to Gilbert (2002), helping an individual to feel comfortable with the idea of shame aids their disclosure of the shameful feelings or experience so that

they can be dealt with. Milligan and Andrews (2005) suggest that an assessment of bodily shame may aid psychologists in identifying a history of abuse, as well as an individual's more immediate risk of engaging in self-harming behaviour.

Shame is related to the concept of self-soothing, since people who experience high levels of shame can often find self-soothing difficult. Gallop (2002) describes the capacity to tolerate being alone and to self-soothe or comfort oneself in times of stress and distress as critical features of adult psychological wellbeing. A lack of this capacity renders a person at risk of many forms of tension-reducing behaviours, one of which can be self-harm.

Linehan (1993) proposed a model whereby a biological vulnerability surrounding the experience of extremely intense emotions combines with a high sensitivity to emotional experiences in the individual and results in emotional dysregulation. This can then lead to self-harm as a way of regulating the strong emotions that arise. The model also intimates that parenting styles in early childhood, can also affect this, since the high sensitivity is difficult to communicate for young children, and is easily misinterpreted or dismissed by caregivers. Klonsky *et al.* (2003) administered a battery of standardised measures assessing personality pathology, self-harm and anxiety and depressive symptoms to a large sample of American military recruits, collecting both self-report and peer-reported data. They concluded that participants who engaged in self-harm did not differ from those who did not self-harm in their ability to experience positive affect, despite their increased level of pathological personality traits and propensity for negative affect. As Chapman *et al.* (2006) point out, people with higher levels of emotional intensity must, by virtue of this, regulate more arousal and greater arousal is associated with greater difficulty regulating emotions; their emotions become overwhelming and they often try to avoid them, increasing their risk of self-harm. This

model is of particular relevance to the diagnosis of Borderline Personality Disorder, where self-harm is central to the diagnosis.

1.5.5. Trauma and Dissociation

According to the literature, there is a well-documented link between self-harm and childhood trauma, although, as Gallop (2002) points out, self-harm can seem idiosyncratic to the survivor in light of his or her abuse history. For example, Croyle and Waltz (2007) administered an established measures of self-harm and trauma to a sample of undergraduate students at a university in the US. They found that those participants with a history of self-harm were more likely to have had experience of childhood trauma, particularly with regards to emotional abuse.

Marchetto (2006) also investigated the association between trauma and self-harm, by interviewing an adult sample of people treated in hospital for repetitive self-laceration. Of this sample, 84% reported trauma at some point in their lives, with 56% experiencing childhood physical or sexual abuse.

Sexual abuse in particular appears to be linked with later self-harm. Zlotnick *et al.* (1996) interviewed women who were in hospital, comparing those with a lifetime history of self-harm and a self-harm episode within the three months prior to hospital, to those inpatients without a history of self-harm. They found that history of childhood sexual abuse was a significant predictor of self-harm, and that the number of self-harming behaviours that participants engaged in was related to childhood sexual abuse. Romans *et al.* (1995) investigated the relationship between childhood sexual abuse and later self-harm in a community sample of women and found this relationship appeared to be a causal one, with no self-harm occurring before the abuse took place, and self-

harming behaviour being associated with more intrusive and frequent childhood sexual abuse. Milligan and Andrews (2005) also found this relationship to exist in their sample of offender women when they interviewed using a semi-structured interview and collected self-report self-harm data by questionnaire. In this study, childhood sexual abuse was significantly associated with self-harm, and childhood physical abuse was also significantly associated with self-harm, although this association was less strong.

In the review by Gratz (2003), mixed evidence to support the link between childhood abuse and later self-harm was found, and indeed several studies have found no direct relationship between self-harm and a history of child abuse. For example, Romans *et al.* (1995) interviewed women with a history of childhood sexual abuse, and found that although childhood trauma was a risk factor for various future mental health diagnoses, self-harm was a rare outcome of childhood abuse, but this finding should be examined with caution since the sample size in the study was very small.

Klonsky and Moyer (2008) conducted a meta analysis of the literature around self-injury and childhood sexual abuse, and concluded that childhood sexual abuse appears to account for less than 5% of the variance in the development of self injurious behaviour, suggesting that it may be best conceptualised as a proxy risk factor for such behaviours. In other words, it is also possible that childhood sexual abuse may contribute to the initiation of self-injurious behaviours via mediating variables such as depression, anxiety or self-derogation.

If child abuse is a proxy variable for later self-harm, other variables must mediate the relationship. One possible mediating variable for this study is dissociation, as found by Jacobson and Gould (2007), when they reviewed the literature around self-harm in young adolescents. They found that of their 25 papers included in the review, two tested

specifically for the effects of dissociation, and the results of both suggested dissociation as a mediator of the self-harm/child abuse relationship. Low *et al.* (2000) administered self-report questionnaires to a sample of female residents at a high-secure hospital, and found that childhood sexual abuse was linked to self-harm both by dissociation and also by another weaker link, possibly by reduced self-esteem. Dissociation and self-harm may also be linked in young people. Sho *et al.*, (2009) administered self-report questionnaires to Japanese school children and found dissociative tendencies also represented a risk factor for self-harm, although trauma was not assessed and it is therefore difficult to say whether this is a direct association or not (Sho *et al.*, 2009).

It is possible that self-harm is an indirect response to sexual abuse, by way of a coping mechanism for the dissociative experiences resulting from the abuse. Noll, Horowitz, Bonanno, Trickett and Putnam (2003) suggest this may be the case following their longitudinal follow-up study of women who had been abused as children. They recruited participants through support services, and interviewed them initially within six months of the abuse occurring, and conducted follow-up interviews at one year, four to five years and on average seven years following the abuse. Results were compared to a sample of community controls that were similar to the abused sample in terms of a range of demographic variables. They concluded that participants with a history of abuse were more likely to show pathological levels of dissociation and to engage in self-harm, suggesting that the self-harm may be a response to the dissociation, and a way of coping with this. This is supported by a conceptualisation by Milligan and Andrews (2005) who point out that dissociation is one of the principle mechanisms by which people cope with overwhelming experiences such as child abuse. They suggest that the dissociation allows a protective detachment from overwhelming emotional states, but can also result in a subjective sense of deadness, disconnection from others

and internal disintegration alongside feelings of abandonment. The resulting dysphoric state is reported as a factor frequently associated to self-harm in traumatized populations. Indeed, it has been suggested that people who self-harm do not experience pain at the point of harming since they are experiencing dissociation at the time. However, as Reece (1998) points out, although pain tolerance may be increased at the point of injury, treatment can prove very painful, especially given the long wait often experienced by people receiving treatment in busy A&E departments.

Dench and Murray (2005) administered self-report measures to a sample of psychiatric inpatients with a range of diagnoses and found that impulsive behaviours (including self-injury) were associated with dissociation, although the authors suggest a prospective study to test the causality of these relationships. They also suggested that impulsive behaviours may serve as part of a defence process, by reducing awareness of stressful situations, and that this may be a mechanism that is shared with dissociation. In females within a general psychiatric population, dissociation mediated the relationship between core beliefs and self-harm. Low *et al.* (2000) intimate that this role of dissociation may also have an effect on the efficacy of modern approaches to self-harm reduction (e.g. DBT) which may rest upon the degree to which dissociation is reduced.

Other childhood experiences that take place in the context of the family can result in later self-harm. Gratz's (2003) review found that these could include: dysfunctional family background; childhood separation and loss; neglect (particularly emotional); insecure attachment (Gratz, 2003) and as Sansone, Gaither and Barclay (2002) found when interviewing hospital inpatients, quality of caretaking. Gratz (2003) explains that neglect may relate to later impulsivity and may involve a cycle of parenting that stems from impulsive tendencies in the parent and creates a genetic predisposition to impulsivity in the child, and since impulsive children are more likely to self-harm, this

increases their risk of the behaviour. Van der Kolk, Perry and Herman (1991) conducted a longitudinal study with women diagnosed with personality disorder or bipolar disorder. They found that women with childhood trauma or neglect before the age of fourteen developed significantly more problems with dissociation, moderating anger (affect regulation) and self-destructive and suicidal behaviour (impulse control). These findings are supported by intervention study data. For example, Harrington *et al.* (1998) found that in young people who had overdosed, but were not experiencing depressive symptoms, family interventions were able to reduce suicidal behaviours in young people, compared with routine outpatient care.

Some authors have discussed the importance of the effect of childhood trauma on an individual's sense of self and how this can lead to later self-harm. For example, Gallop (2002) describes a person who experiences childhood trauma as not developing a positive internal sense of self, and therefore being at risk of feeling alone, anxious and abandoned. They thus require approval of another person, which can be withdrawn both inconsistently and paradoxically. Adams *et al.* (2005) found evidence to support this theory when they conducted a qualitative investigation of sense of self in young people who self-harm, using online focus groups and email interviews. They found that validation of sense of self is of particular importance to people who self-harm, in particular with regards to an internal locus of control, and attempts to gain the approval of others. Tulloch, Blizzard and Pinkus (1997) compared young people who had been treated in hospital following self-harm to those receiving treatment for accidental injury, and suggested an internal locus of control resulting in the tendency to self-blame as a vulnerability marker for self-harm.

Shame arising in relation to childhood trauma may also increase a person's risk of self-harm. Following interviews with men with experience of self-harm, Taylor (2003)

concluded that the shame may further perpetuate the problem by further damaging self-esteem, particularly in men. As Gratz (2003) points out, shame resulting directly from the self-harm act may also increase social isolation by virtue of the negative emotional and physical consequences involved. In a sample of female prisoners, Milligan and Andrews (2005) found that bodily shame had a significant relationship with self-harm over and above the effect of child sexual abuse, demonstrating a 'partial' mediating effect of bodily shame. This suggests that the shame associated with the survivors' bodies may have arisen from the initial experience of abuse, but does not negate the fact that self-harm may serve to further exacerbate this shame.

In line with emotion regulation functional theories of self-harm discussed earlier, Gallop (2002) describes affect dysregulation as a central symptom for survivors of abuse. Low *et al.* (2000) develop this into a conceptual framework which cites self-harm as a coping mechanism for overwhelming affect and intrusive memories associated with a perceived re-enactment of previous trauma, whereby the individual attempts to control a previously unmanageable situation and provide a sense of relief. This theory combines some of the functions of self-harm discussed in the previous section and is worth bearing in mind for later interpretation of results.

The above findings suggest that individual factors including trauma history and mental health diagnosis are important correlates of self-harm. However, there are also external factors, for example those relating to an individual's environment and social status that increase the individual's risk of self-harm.

1.5.6. Environmental and demographic factors

There are various environmental, social and situational factors that can increase an individual's risk of self-harm. For example, Young, Sweeting and West (2006)

suggested that certain subcultures can increase risk of self-harm, such as Goth youth subculture, although it is possible that this is a more short term or transient form of self-harm, based on modelling, which represents a different behaviour to more injurious forms of self-harm.

Socio-economic characteristics of communities can have an effect on self-harm rates in different areas. For example, Hawton *et al.* (2001) examined self-harm and suicide rates from a hospital and the surrounding catchment areas. They found a strong association between socio-economic characteristics of communities and their incidence rates of self-harm, with deprived areas generally having the highest rates. In a Turkish study with people who were being treated in hospital for self-burning, Zor *et al.* (2005) found that 80% of their sample were unemployed or unskilled and therefore the most at risk at times of economic recession. However, this study used a very small sample and only included those people who had engaged in very serious burns which may in fact have been suicide attempts rather than self-harm as defined in this thesis.

Negative acute life events are a risk factor for non-suicidal self-injury in adolescents. For example, O'Connor, Rasmussen and Hawton (2010) collected questionnaire data from school children at baseline and follow up, and found acute life stress to be an important predictor of later self-harm. Unemployment is one such stressful life event which increases both the risk of self-harm and suicide. Young *et al.* (2007) interviewed 18-20 year olds in Scotland and found that unemployed young people are three times (lifetime rates) more likely and six times (current rates) more likely to self-harm than those in work or full time education.

Specifically, for adolescents, the literature suggests that family and social pressures seem to be predictive of self-harm. Morgan, Burns-Cox, Pocock, and Pottle

(1975) interviewed people who had attended A&E following self-harm, and found that interpersonal conflicts were the precipitating factor in at least 50% of self-harm incidents. McLaughlin *et al.* (1996) administered a battery of established questionnaires to young people and their parents following hospital treatment for self-harm. They found that self-harming adolescents overall measured significantly higher problems with family, peers and school (i.e. social factors) than controls. They also found that self-harming adolescents felt less well understood by their parents, but perceived no greater parental criticism. Rubenstein, Halton, Kasten, Rubin and Stechler (1998) surveyed American high school students, and found depression and stress to be risk factors for self-harm in adolescents, with major stresses being those relating to sexuality, personal loss, family suicidality and illness and feelings of past violation. They also found stressors surrounding achievement, family conflict and friend suicidality to be effective to a lesser extent. Hawton, Fagg and Simkin (1996) collected data from young people attending hospital following self-harm, and concluded that problems with family relationships, friends and schoolwork were predictors of self-harming behaviours, whilst drug and alcohol problems were uncommon. In a later follow-up study, Hawton *et al.* (1997) found that triggers differed significantly by gender, with females focussing on problems with family, and males being concerned with issues such as finances, employment/ studies, drugs/alcohol and concerns about sexual partners. Anderson *et al.* (2004) suggested that in young people self-harm may become a response to and means of coping with transitional and crucial periods in their life, and function as a response to social pressures and their own attempts to reconcile these with internal experience.

Social structure is also important in other ways, such as a lack of perceived social structure. For example, O'Connor *et al.* (2000) suggest that although social support is

important, having close friends to confide in does not buffer against parasuicide, and it is not a living arrangement per se which is the risk factor, but rather the subsequent impact on an individual's psychological wellbeing, in the form of their feeling alone. In other words, many people who have engaged in acts of parasuicide report feeling alone without living alone, and as Gratz (2003) points out, people at risk of self-harm often report feelings of social alienation and isolation, alongside overwhelmingly intense negative emotion and chronic emptiness.

Family dysfunction also plays an important role in the development of self-harm in adolescents. Tulloch *et al.* (1997) interviewed young people attending hospital self-harm, comparing their results to a similar control group. They found that the absence of a family confidant was strongly associated with adolescent self-harm, particularly in children with an internal locus of control. Martin, Rozanes, Pearce and Allison's (1995) questionnaire study with school children yielded similar findings. In this study, family structure was an important predictor of suicidality and depression, whilst other family features such as quality of boundaries and success of relating were important to the development of self-harming behaviours. Kerfoot, Dyer, Harrington, Woodham and Harrington (1996) compared adolescents who had overdosed with those who had no experience of self-harm, and found that overdosing adolescents were significantly different from non-overdosing clinical adolescent groups on family functioning. In a similar study, Sourander *et al.* (2006) found child psychopathology, parental wellbeing and living in a 'broken' family in preadolescence predicted acts of self-harm, when they interviewed the young people and their parents at ages 12 and 15, in addition to examining behavioural data at age three. Rubenstein *et al.* (1998) collected questionnaire data from young people in a school, and concluded that family intactness (and cohesion where the family was no longer intact) were protective factors for self-

harm. Pierce (1986) interviewed 100 people receiving hospital treatment following self-harm and a third of them perceived an unsympathetic attitude from their family.

1.6. Summary

As has been discussed in this chapter, a number of factors are associated with self-harm, including specific diagnoses such as depression and other mood disorders, and Borderline Personality Disorder. Some individual difference factors, such as impulsivity and problem solving have also been found to be associated with self-harm, as well as specific experiences such as childhood abuse, and relationship difficulties, in particular those occurring in the context of the family.

Given that there are so many possible factors associated with self-harm, and that self-harm can occur for different reasons in different people serving so many different functions, it is clearly a phenomenon that would benefit from further research. In particular, the role of intrusive thoughts in self-harm is very under-researched, and so an investigation of differences in frequency, content and reactions to intrusive thoughts in people with experienced self-harm compared with those who have not could be extremely valuable. Further research will also enable researchers to determine the common pathways by which the disparate risk factors lead individuals to engage in self-harm, and how others who have been subject to similar precursor events do not self-harm. Any significant findings will add to the understanding of the behaviour and therefore inform professionals working with clients who do self-harm. Testing intrusive thoughts and some methods of coping with these (in this case thought suppression and mindfulness) will also go a way to improving understanding of how self-harm may be related to intrusive thoughts, and provide the beginnings of a model of self-harm in which intrusive thoughts and the other risk factors might play a role. However, as has

been mentioned in several places in this chapter, a number of difficulties exist with regards to conducting research with this complex and vulnerable group of people. These difficulties will now be discussed, as these issues must be born in mind when interpreting the results of the studies in this thesis.

1.7. Methodological Issues in Self-Harm Research

Self-harm is a complex behavioural phenomenon with a number of possible correlates, functions and background factors associated with it. Given this complexity, a number of methodological issues relating to data collection and study design can arise when conducting research into self-harm and so this chapter will now briefly review the issues that need to be taken into account in empirical research in this area.

1.7.1. Definition

As discussed at the start of this chapter, definition is an important starting point for research into self-harm. As Gratz (2003) points out, this is of paramount importance as not only are many words and phrases relating to self-harm in use, but also different authors use some of these terms to mean different behaviours. Gratz (2006) goes on to suggest that specifying intent within a definition is of particular importance since suicide attempts and self-harm episodes represent different behaviours, with different functions and correlates, and as both Cheng *et al.* (2010) and Romans *et al.* (1995) discuss, if definitions are not specified, or when they vary, comparison of results between studies can be difficult, and it can be difficult to know, for example, what the true incidence of self-harm might be.

It may also be worthwhile separating those people who have only engaged in self-harm once from those who have repeatedly engaged in self-harm, as suggested by

Lundh *et al.* (2007), since there may be different forms of self-harm such as pathological self-harm versus a less frequent aspect of teenage culture. However, this may be difficult when time or other practical limits are in place since, as Klonsky and Moyer (2008) mention, when a study has a smaller sample size and therefore reduced power, a larger effect size is required to find a statistically significant effect, so it may not always be feasible or desirable to divide samples into smaller groups and risk sacrificing the chances of finding interesting relationships between test variables. In this way, in some cases, it can be more advantageous to consider the overall incidence of self-harming behaviours.

In order to take these issues into account, this thesis set out a very clear definition of self-harm at the start of this chapter, which explicitly excludes suicide attempts, and does not specify how many times participants may have engaged in each self-harm behaviour. This inclusive approach increases sample sizes, and subsequent questions in each study can ask for frequency estimates if appropriate.

1.7.2. Sampling

As Nock and Prinstein (2005) and Cheng *et al.* (2010) indicate, variations in sampling have led to inconsistencies in findings when different studies have investigated the self-harm phenomenon. Sourander *et al.* (2006) point out that due to the large proportion of people who self-harm but do not come to the attention of healthcare services, one major limitation for self-harm research with clinical samples is that those people remaining untreated in the community are not included. This means that those studies relying solely on hospital or treatment samples are missing a large proportion of people with experience of self-harm, and therefore may be missing some important information regarding the aetiology, epidemiology and functions of self-harm.

A related issue of sampling and generalizability, as pointed out by Gratz (2006) relates to convenience samples being used, particularly undergraduate psychology samples. Psychology students may differ from the general undergraduate population in some way, the obvious example being a far larger proportion of female students majoring in psychology than male students. However, Gratz (2006) then goes on to make the important point that this may be less of an issue when focussing on those students in the early stages of their academic career since introductory psychology courses can be a popular choice for students majoring in other areas, required to pick one or two extra modules early on in their degree. For this reason, an introductory psychology class may be less problematic with regards to this sampling bias.

Some forms of bias are necessary in order to meet ethical and governance issues when studying self-harm. For example, as Gratz (2006) points out, informed consent can actually lead to a further selection bias itself, since if a study is described as investigating self-harm, this may have an effect on whether both those with and those without experience of self-harm sign up to take part. Of course, in terms of ethical considerations, deceiving participants and risking their distress when being asked about self-harm is not an acceptable solution to this problem, and so researchers must simply bear in mind that their study may be subject to this bias.

The studies in this thesis will attempt to compensate for sampling issues by combining some different sampling methods throughout the thesis, particularly in terms of the populations from which participants will be recruited.

1.7.3. Experimental design

Several authors point out, when discussing the limitations of their research, that experimental design has important implications on what can be inferred from the results of a self-harm study. For example, the majority of self-harm research is correlational and cross-sectional in design, which as several authors (e.g. Gratz, 2006; Najmi *et al.*, 2007; Nock & Mendes, 2008; Nock & Prinstein, 2005) point out means that we cannot determine the precise nature of the relationships between variables, particularly with regards to causal effects. However, as these authors also suggest, such conclusions might be an option with a different design such as a prospective, longitudinal study where this might be possible.

Longitudinal study designs may also help to avoid other possible errors such as one described by Nock and Prinstein (2004). They suggested that using self-report methods at one time point runs a risk of shared method variance, which is where the association between variables can be a result of similarities between the way that the two variables are assessed. A longitudinal design across a number of time-points combined with multiple informants and performance-based assessments (e.g. those gathering psychophysiological data) is the design that these authors feel would best avoid such an error.

A large number of studies use self-report data, which Nock and Prinstein (2005) point out may be subject to a number of errors. Klonsky (2007) suggests that a person may be unsure of why they engage in self-harm, and Gratz (2006) also suggests self-report may be unreliable since it provides no way of substantiating the occurrence of the behaviour in question, and that a person's description of the self-harm may vary in quite different ways. For example, the participant may feel ashamed of their self-harming,

meaning that they may downplay their experiences, particularly if measures are not anonymous, making their self-harm appear less severe and less common than it may actually be, in order, as Nock and Prinstein (2005) point out, to meet internal social desirability demands. Further to this, Klonsky (2007) suggests that people may go as far as to make up responses to questions regarding the functions of their self-harm, if the true answers cause them too much shame or embarrassment. On the other hand, a retrospective recall bias may occur, whereby participants remember the self-harm differently to how it actually occurred, perhaps due to the highly emotional content of the memories concerned. Romans *et al.* (1995) also support this suggestion, as they intimate that retrospective designs limit the accurate dating and description of the self-harm episode. Gratz (2006) then goes on to suggest that behaviourally oriented questions could improve the various issues, as well as avoiding misunderstanding of the term 'self-harm', since participants can simply choose which of the behaviours they have engaged in, rather than attempting to work out whether their experiences fit in with a supplied definition. Lundh *et al.* (2007) suggest that collecting self-harm data by behavioural description regardless of suicidal intent is the most sensible way to go since reasons behind acts of self-harm can be so complex and the suicide intent may be ambivalent. However, as we saw earlier on this chapter, there are distinct differences between patterns of behaviour and their correlates for those people who are trying to kill themselves compared with those that are not, and so for this thesis we decided to specify that our version of self-harm occurred in the absence of suicide intent.

A further theoretical bias exists, as pointed out by Romans *et al.* (1995) in that there is no way to collect data from those people who have a history of self-harm but have gone on to die by suicide which given the links between self-harm and suicide discussed earlier, may be a substantive number of people. There is, of course, no way to

fully overcome this so such a bias does not affect comparisons between studies, only suggests the possibility of differences in variables between these people and those who do not die by suicide, that we are unable to investigate.

Gratz (2003) points out that laboratory studies such as those involving physiological arousal data, before and after imagining self-harming in an experimental situation may be more effective for investigating individuals' experience of self-harm since at the time of self-harming a person may not have full awareness, rendering self-report data weaker as it relies on memories that may not exist. However, there are clear ethical issues when considering such a methodology, and real care must be taken to support individuals in such a design, and since it might be impossible to avoiding causing distress to people who may already be extremely vulnerable, such a design may not be acceptable from an ethical point of view. Also, as Klonsky (2007) points out, proxies for self-harm may be lacking in external validity, since the process of actually self-harming may differ to the imagining of doing so, and studies employing such methodologies are better suited to supplementing findings using other methodologies. Physiological arousal may be better suited to investigating specific aspects of self-harm, such as in a study by Nock and Mendes (2008) where the relationship between self-harm and problem solving was investigated by way of skin conductance during a distressing problem solving task, although similar ethical concerns could be raised in this case to those in the previous design.

Given the sampling issues explained here relating to the different groups often used for self-harm research, Lundh *et al.* (2007) suggest that those authors engaging in such studies take particular care when generalizing their findings. This will be kept in mind when considering the implications of the studies individually and as an overall program of research. Due to the time and other practical constraints involved in carrying

out PhD research, the studies presented in this thesis do not meet the ideal design described here. However, there is some strength in the methodology since a mix of quantitative and qualitative data was gathered using several different samples and ways of asking about self-harm (albeit all within a self-report framework). These different angles allow for the collection of converging evidence, strengthening the robustness of the overall findings.

1.7.4. Measuring self-harm

A specific point on the design of self-harm studies relates to the way in which participants are asked about their experience of self-harm. The actual questions used when measuring self-harm can be particularly important, and as Lundh *et al.* (2007) point out, can lead to quite divergent results with regards to rates of self-harm. The authors went on to discuss how several studies use a single question to assess self-harm and how the wording of this can affect the sensitivity, and therefore the validity of the single item, since the wording may have an effect on the retrieval of the self-harm memory. However, Lundh *et al.* (2007) suggest that this issue of sensitivity can be overcome by the use of a measure with a list of predetermined self-harming methods, and by asking participants to choose from the list the behaviours in which they have engaged, which appears to lead to an overall higher-reported self-harm rate. Gratz (2003) suggests that the validity (or strength of conclusions) of results may be affected by whether people are asked an open-ended question regarding their experience of self-harm, or whether they are asked to pick from a list of self-harming behaviours. However, this would naturally depend on how the list of behaviours in a closed-ended question was chosen. This relates back to the issues of definition. For example, if a relatively narrow definition were used, as in this thesis, and the items on the list

somehow encompassed all possible behaviours within this definition, this would be a more valid question than a more limited list with a wider-reaching definition.

In terms of other biases relating to specific methods, Lundh *et al.* (2007) point out that the use of questionnaires yields a higher rate of self-harm in comparison with interview studies and that further research should be conducted whereby the two methods are used in conjunction and self-harm rates compared. One explanation of this finding that these authors do not mention, however, is that the shame associated with self-harm acts may reduce the extent to which people who self-harm are willing to admit it to another person in an interview situation, compared with writing it anonymously on a questionnaire. It is possible that the bias is actually the opposite of what these authors are describing, and in fact interview methodologies actually represent a reduced level of self-harm rather than questionnaires providing an inflated one.

One possible way of overcoming some of the issues here, by way of keeping self-harm research anonymous whilst allowing for more of an interview type design is by using the internet to collect data. Both Adams *et al.* (2005) and Whitlock, Eckenrode and Silverman (2006) used such a method whilst suggesting that it allows not only for anonymity and therefore an increased likelihood of truthfulness in responses, but also provides a supportive environment for people who engage in self-harm, by providing access to resources as well as the opportunity to relate to other people with similar experiences, since people who self-harm are often marginalised in society. However, these authors also point out the self-harm message boards and forums can also expose people to a potentially dangerous subculture, so researchers should proceed cautiously when using this type of design.

It should be said, that although this section has raised a number of potential issues and at times offered solutions to these issues, one must also bear in mind practicality of conducting research in a setting such as a PhD thesis. Since various constraints such as time, ethics and access do not allow an 'ideal' study to be conducted, these recommendations will be used as points for consideration when discussing the limitations of each study, and borne in mind when interpreting results.

Chapter 2. Intrusive Thoughts, Mindfulness and Self-Harm

As we saw in the previous chapter, there are many factors associated with the onset of a self-harm episode. Given the importance of trauma history and dissociation discussed above, alongside the frequency of depressive, anxious and borderline tendencies in those people who self-harm, intrusive thoughts should also play a role in self-harming behaviours. This is important because intrusive thoughts are symptomatic of depression and PTSD (Reynolds & Brewin, 1998) as well as BPD (Alexander, 1993) and some anxiety disorders (Trinder & Salkovskis, 1994). Mindfulness may offer one way of coping with intrusive thoughts as, according to Jon Kabat-Zinn (2003), one of the key figures in creating therapies based around mindfulness, it encourages the individual to stay present in the moment, seeing thoughts as just thoughts and letting them pass. If intrusive thoughts trigger or exacerbate desires to self-harm, then mindfulness should work as a successful way of coping with self-harm, either by offering a way of dealing with the thoughts, or by providing a protective factor against negative experiences associated with them. This chapter will expand on this argument by providing a background to the concepts of intrusive thoughts and mindfulness, and how each of these relate to self-harming behaviours.

2.1. Intrusive Thoughts

According to Rachman and Hodgson (1980), following their investigation of obsessive-compulsive type intrusive thoughts in the laboratory, intrusive cognitions are the type of mental events that are unexpected in nature, interrupt the flow of consciousness and are often repetitive. As Trinder and Salkovskis point out in their 1994 paper, most people experience intrusive thoughts of some kind, in fact, Rachman

and DeSilva (1978) interviewed a sample of participants from the general population, and found that approximately 80% of their sample experienced unwanted intrusive thoughts.

2.1.1. Intrusive thoughts and psychopathology

Intrusive thoughts have a clear and important role to play in various psychological diagnoses. For example, Rachman (1978) suggested that normal intrusive thoughts may play a central role in the development of obsessive cognitions. As pointed out by Clark (2005) in his seminal book on the subject, many different psychological disorders are characterized by intrusive thoughts, although as Becker, Rinck, Roth and Margraf (1998) argue, patterns of intrusions differ between different diagnoses. The nature of the intrusion may be of particular importance, for example, in a study with Generalised Anxiety Disorder (GAD) patients, participants experienced more intrusions of their own worries than of the neutral intrusions (white bear thoughts; Becker *et al.*, 1998).

Intrusive thoughts can include intrusive memories. As described by Brewin (1998), intrusive memories play an important role in Post Traumatic Stress Disorder (PTSD) and depression, as well as being a feature of normal functioning. These may be related to trauma, for example, in a sample of women with a diagnosis of major depression and a history of abuse, Kuyken and Brewin (1994) found intrusive memories to be common, and higher levels of intrusion and avoidance were associated with more severe abuse. Spencely and Jerrom (1997) also found significantly higher levels of intrusion and avoidance of childhood memories in depressed individuals than in a matched sample of non-depressed controls. However, intrusive thoughts and memories do not represent the same phenomenon. As Brewin, Christodoulides and Hutchinson (1996) point out, whilst intrusive thoughts and memories are highly correlated in

frequency, they are independent in nature; for example, intrusive thoughts are more likely to be characterised by fear, whilst memories are more commonly characterised by sadness and happiness. This again highlights the importance of the nature of the intrusive cognition as important when predicting the effect of that cognition on the individual.

2.1.2. Thought suppression

A common response to distressing or unwanted intrusive thoughts is thought suppression, as described by Wegner, Schneider, Carter and White (1987). However, the suppression of intrusive thoughts can actually have some negative effects. Wegner (1989) found that trying to suppress an unwanted thought might actually increase the frequency of that thought compared with if no suppression attempt had ever occurred. Wegner described this in terms of the 'ironic effects of suppression' hypothesis, whereby a participant's action of monitoring their thoughts to check whether they have thought about the target cognition requires them to think about it and thus they end up thinking about that thing more than if they hadn't been trying not to. Trinder and Salkovskis (1994) compared undergraduates asked to suppress a target thought with those using other strategies and found that thought suppression can also change how a person feels about their intrusions, in that participants who were asked to suppress their thoughts rated these thoughts as more frequent and more uncomfortable than those who were not asked to suppress. Marcks and Woods (2005) also conducted a study gathering questionnaire and laboratory data from undergraduate students and found that a tendency to suppress thoughts was associated with increased frequency of the thoughts, greater discomfort about and a greater urge to act on the thought (Marcks & Woods, 2005).

Trinder and Salkovkis (1994) also found an 'immediate enhancement' effect whereby in their thought suppression group participants were more likely to experience an increased frequency of the thought in question, both when attempting to suppress and afterwards. However, Wegner *et al.* (1987) tested undergraduate students in a laboratory setting and found that asking participants to suppress an arbitrary thought (white bears) lead to a 'rebound effect', whereby they reported fewer thoughts whilst suppressing, but an increased level of the thoughts when they stopped suppressing, compared with controls that had never attempted suppression. There may also be an individual difference factor that plays a role, since Merckelbach, Muris, van den Hout and de Jong (1991) found the frequency of intrusions to be linked to an increased level of rebound effects following a period of suppression.

Thought suppression has been argued to play a role in the development of a range of mental health diagnoses. Spinhoven and van der Does (1999) collected questionnaire data about the tendency to suppress thoughts in a sample of psychiatric outpatients, and found thought suppression and psychopathology to be significantly associated. In a review by Purdon (1999) around thought suppression and psychopathology, thought suppression was found to be implicated in a range of diagnoses including depressive disorders, generalized anxiety disorder, post-traumatic stress disorder (PTSD), phobias and obsessive-compulsive disorder. The empirical literature supports these findings. For example, Wegner and Zanakos (1994) collected data on the tendency to suppress thoughts alongside a range of different types of pathological thoughts. They found thought suppression to be associated with thoughts relating to obsessions, depression and anxiety. Also, in a cross-sectional study by Kuyken and Brewin (1994) with women diagnosed with major depression, the most severely depressed participants showed the highest levels of both intrusion and avoidance.

For people with a history of childhood trauma, thought suppression may be particularly harmful. Silver, Boon and Stones (1983) interviewed women who had experienced childhood trauma and concluded that for people with such a history, suppression may block a natural tendency to find meaning in traumatic events, which can hamper effective coping. Wenzlaff and Luxton (2003) suggest that stress may also play a role by undermining thought suppression, and ironically fuelling unwanted thoughts and dysphoria.

2.2. Intrusive Cognitions in Relation to Self-Harm

Najmi *et al.* (2007) collected self-report data from a cross-section of adolescents and conceptualised self-harm as functioning for some people as a 'focused distracter' from intrusive thoughts. They argued that many forms of psychopathology are characterised by the intrusive accessibility of unwanted thoughts, and since we know from the previous chapter that self-harm is present in several mental health diagnoses, it follows that intrusive thoughts may also play a role in its development and maintenance. This concept is also supported by work using intensive therapies such as cognitive therapy and Dialectical Behaviour Therapy (DBT; Linehan *et al.*, 2006), which is a cognitive-behavioural therapy designed to reduce suicidal and other destructive behaviours in individuals meeting the diagnostic criteria for BPD. Suicide attempts can be halved with DBT compared with non-behavioural therapy, as Linehan *et al.* (2006) found when conducting a one-year randomised control trial of DBT with ten women diagnosed with BPD compared with community treatment by experts. Low, Jones, Duggan, Power and MacLeod (2001) also found that self-harm rates can be reduced following DBT, when they conducted a study evaluating self-harm rates following a course of DBT in a forensic sample of women diagnosed with BPD. However, this

study can only be taken as giving preliminary evidence for the success of DBT as an intervention for self-harm, since the study population was very small ($n=10$) and there was no comparison group in the form of non self-harmers, or self-harmers not receiving DBT. DBT can also help to reduce other factors that are associated with self-harm. For example, in the study by Low *et al.* (2001), DBT was also found to reduce rates of dissociation in a sample of females in a high-security hospital, and Linehan *et al.* (2006) found DBT to be superior to community treatment by experts (CTBE) on reducing emergency department visits and inpatient psychiatric care for self injury, as well as depression, suicide ideation and increasing reasons for living.

Miller (1999) pointed out that the most vulnerable young people have the highest chance of treatment failure and risk of self-harm and suicide, thus making them suitable candidates for DBT. Miller, Wyman, Huppert, Glassman and Rathus (2000) tested BPD symptoms in a sample of adolescents before and after a 12-week DBT program, and found BPD symptoms to be reduced following the DBT compared with before.

One aspect of the BPD diagnosis, as pointed out by Linehan (1993) is that people with Borderline Personality Disorder are characteristically more sensitive to and more expressive of their emotions than many other people. A heightened experience of aversive thoughts and emotions may occur for people who are highly emotional, and suppression attempts may exacerbate this. Self-harm may serve to reduce emotional arousal by way of a distracter (Najmi *et al.*, 2007).

As described in the previous chapter, shame is associated with self-harm, and Gilbert and Irons (2004) explain that shame memories can also be intrusive. These authors conducted a diary study and found that shame-motivated self-criticism was automatic, powerful, intrusive, distressing and difficult for participants to distract

themselves from. Since shame has a role to play in the development of self-harming behaviours, this finding may further explain the relationship between intrusive cognitions and self-harm.

Since intrusive cognitions are particularly important to the development and maintenance of PTSD, as shown by Purdon (1999), it is worth considering the possible reformulation by some researchers (e.g. Heffernan and Cloitre, 2000) of BPD as a form of complex PTSD, given the intricate and all-encompassing trauma histories often common within this diagnosis and therefore the implied importance of intrusive thoughts in BPD where self-harming behaviour is paramount.

2.2.1. Thought suppression and self-harm

As we have seen, there is an argument for investigating intrusive thoughts in self-harm, on the basis of the importance of intrusive cognitions within various mental health diagnoses, in particular those where self-harm, and certain factors often associated with self-harm (e.g. trauma histories) are common. Since we have also seen that thought suppression is associated with mental health diagnoses, it is also worth expanding on the rationale for investigating the possible role of thought suppression in self-harm.

Najmi *et al.* (2007) suggest that thought suppression plays an important role in the development of psychopathology since when thoughts create unpleasant emotions people are likely to engage in chronic thought suppression. Wegner and Zanakos (1994) conducted a series of studies to assess the use of a measure of trait thought suppression (White Bear Suppression Inventory, or WBSI) and found that the level of

psychopathology in terms of obsessive, depressive and anxious thoughts was positively associated with thought suppression.

Najmi *et al.* (2007) found that thought suppression was associated with both the presence and frequency of self-harm, as well as suicide ideation and suicide attempts and may serve to reduce negative emotions rather than provide communication. Interestingly, the relationship between emotional reactivity and self-harm was mediated by propensity to suppress unwanted thoughts.

However, Chapman *et al.* (2006) suggested that the link between thought suppression and self-harm may be by way of depression, since thought suppression makes depression worse, and as we have seen in the previous chapter, depression is often a risk factor for self-harm. In depression in particular, intrusive thoughts may be activated by low mood. Teasdale's (1988) 'differential activation hypothesis' suggests that in people who are vulnerable to depression, sad mood can lead to the activation of negative memories and associated feelings. Rowa and Purdon (2003) suggest that how the intrusive thoughts are appraised is also important to how distressing they are perceived to be, and therefore how much attempted control should be exerted over them.

Following a study with people in the community, Rosenthal, Cheavens, leiguez and Lynch (2005) described frequent attempts to not experience unpleasant thoughts and feelings as a particularly prevalent emotion regulation strategy among individuals with BPD and those with high affect sensitivity. However, Najmi *et al.* (2007) found that individuals who endorsed a greater tendency to suppress unwanted thoughts reacted more strongly to an emotional thought. Clearly thought suppression is an unhelpful strategy for promoting psychological wellbeing, particularly in the context of self-harm.

2.3. Mindfulness and Acceptance as Ways of Coping with Intrusive Thoughts

Since intrusive thoughts appear to be central to a person's mental health, how they are dealt with can be extremely important. For example, Trinder and Salkovskis (1994) suggest that in therapy, clients should be discouraged from suppressing their intrusive thoughts, but not encouraged to dwell on them either. It may be that the best way of dealing with unwanted intrusive thoughts is to change one's relationship to the thought. One way to change this relationship, and avoid either suppressing or dwelling on the thoughts, could be by way of acceptance of the thoughts as just thoughts, for example by practicing mindfulness.

2.3.1. *The mindfulness approach*

Kabat-Zinn (2003) describes mindfulness as an approach that involves particular qualities of attention and awareness that can be cultivated and developed through meditation. Williams and Swales (2004) also illustrate how mindfulness is designed to help a person to stay in the present moment and from that perspective, deal with whatever is happening for them presently as effectively as possible. These authors also go on to describe how mindfulness aims to move away from a state of being on 'automatic pilot' where the mind is constantly focussed on the next task rather than remaining in the present moment. The danger of being in 'automatic pilot' mode is that old habits of thoughts, emotions and bodily sensations may be triggered, and escalate, without a person being aware of it until it has become difficult to deal with skilfully. Mindfulness, therefore is not designed to make a person feel better or more relaxed, but aims to raise an awareness in the individual of the tendency to make automatic interpretations about events and how, in unpleasant contexts, this can lead to increased distress.

Williams and Swales (2004) also talk about how the mindfulness approach emphasizes the importance of wholeness and wellbeing, rather than merely 'treatment' of the 'psychopathology', which can be of particular use with suicidal patients and other patients that are in remission from their symptoms since at the point of treatment they may no longer be in the acute phase of their illness. In this way, mindfulness-based therapies are able to teach skills which group members can use in their day to day lives to reduce the frequency of the 'automatic pilot' mode, and in particular at times of stress as a means of coping. Kabat-Zinn (2003) also notes that although mindfulness is originally of Buddhist origin, there is nothing necessarily Buddhist about it. He explains that regardless of spirituality, we are all mindful to some degree, from one moment to the next.

In contrast to thought suppression, mindfulness does not require participants to fight their negative thoughts, and allows them to learn that such thoughts do not define them as a 'bad', 'worthless', or 'insane' person. Indeed, as Williams and Swales (2004) point out, stopping suppression attempts may mean that thoughts can lose some power and become easier to cope with in various ways.

There is some evidence from studies with a range of populations to support the positive effects of mindfulness on wellbeing and other psychological variables. For example, Brown and Ryan (2003) found that increased mindfulness was associated with a decrease in both stress and mood disturbance in participants with breast and prostate cancer. Further empirical evidence will be presented briefly within the separate sections for the various mindfulness-based therapies that follow.

As Baer (2003) points out, mindfulness-based approaches have given rise to a variety of treatments encompassing some of the key components of mindfulness, and

such therapeutic approaches are growing in popularity. We shall now turn briefly to a summary of the main mindfulness-based therapies.

2.3.2. Mindfulness Based Stress Reduction

Mindfulness Based Stress Reduction (MBSR; Kabat-Zinn, 1990) is the most frequently cited of the mindfulness based therapies, and comprises 8-10 weeks of mindfulness practices and discussions surrounding stress and coping. Kabat-Zinn (1982) describes how participants on an MBSR course learn to notice their thoughts and feelings, whilst letting them pass them by without becoming involved in them. There is some empirical evidence to support the efficacy of MBSR in a number of different populations. Murphy (2006) found that MBSR was successful in a college sample, from the point of view of attrition, adherence to the program and subjective value as described by participants. Kabat-Zinn (1982) also found that chronic pain sufferers showed improvements on a range of both physical and psychological variables following an MBSR course. MBSR has also had some success with anxiety and depression, as Kabat-Zinn *et al.* (1992) found when they administered before and after measures to a small sample of participants diagnosed with panic disorder or generalised anxiety disorder. However, other studies have not found such conclusive results, and Toneatto and Nguyen (2007) conducted a review of the 15 controlled studies into MBSR with anxiety and depression at the time and concluded that it could not be said that MBSR was successful in reducing these symptoms. However, Sagula and Rice (2004) found that MBSR was successful in reducing state anxiety and with certain aspects of the grieving process, and Proulx (2008) found that MBSR-based therapy was successful with women diagnosed with bulimia nervosa, who reported better abilities to

cope with stress and reduced emotional distress in interviews after the course compared with before.

2.3.3. Mindfulness Based Cognitive Therapy

Mindfulness Based Cognitive Therapy (MBCT; Segal, Williams & Teasdale, 2002) is a second mindfulness-based therapy, which embeds cognitive techniques into the mindfulness approaches, with a focus on how being in 'automatic pilot' mode is a particularly vulnerable state for people with depressive or suicidal tendencies, and how this can lead to a 'landslide' effect triggering unhelpful, self-perpetuating patterns of thoughts and behaviour. MBCT therefore aims to offer an alternative, in the form of being more aware and able to make choices about how to think and act, rather than being driven down old established unhelpful habits by the automatic pilot. By this ticket, MBCT draws on the similar features of different forms of emotional disturbance including suicidal tendencies. Williams and Swales (2004) point out that what is problematic for the individual is the combination of non-awareness and a constant wish for things to be different (judgement) which lead to ruminative, repetitive attempts to problem solve (reduce, change, fix the pain) and resulting suicidal thoughts when such attempts fail. Following a review of the MBCT literature, Coelho, Canter and Ernst (2007) suggested that MBCT may help participants to alter their depressive cognitive styles as it facilitates a detached view of one's own thoughts, focusing on the concept of thoughts as just thoughts that, as Baer (2003) points out, do not define an individual, a phenomenon which several authors (e.g. Fennel, 2004) have referred to as 'metacognitive awareness'.

There is some empirical evidence to support the use of MBCT with people with depression. For example, Teasdale *et al.* (2000) randomly allocated a sample of people

with a history of depression but whose symptoms were currently in remission, either to an MBCT group or to continuation of their usual treatment. In this study, MBCT was found to reduce relapse rates in depression, but only when participants had experienced three or more previous depressive episodes, whilst the risk of relapse for those participants with less than three previous episodes of depression was not affected. In a further randomised trial with people diagnosed with depression and currently taking anti-depressant medication, Kuyken *et al.* (2008) compared MBCT (plus support to reduce or stop taking the medication) with ongoing anti-depressant treatment in a randomised control trial. They found that risk of relapse and residual depressive symptoms were both reduced in the MBCT condition compared with the condition where participants continued with their anti-depressant medication. Smith, Graham and Senthinathan (2007) interviewed older adults with a history of depression before and after an MBCT course, as well as at later follow up stages. Their thematic analysis suggested that the participants found the course helpful for dealing with their symptoms and experiences.

Watkins and Teasdale (2004) suggest that MBCT may help reduce depressive symptoms and risk of depressive relapse by preventing negative thoughts from escalating into ruminative patterns, by way of a non-judgemental, decentred view of one's own thoughts. However, the evidence base for the efficacy of MBCT with depressed individuals could use some development, since as Coelho *et al.* (2007) point out, little research is published, and that which is in existence appears to be lacking in comparisons with other non-pharmacological therapies. MBCT mindfulness groups may also be effective for people with other diagnoses, for example Chadwick, Taylor and Abba (2005) have had some success running MBCT groups for people with psychosis.

2.3.4. Dialectical Behaviour Therapy

Mindfulness is a central theme running throughout Dialectical Behaviour Therapy (DBT), both generally within individual therapy and across all group skills modules, and particularly in one specifically focused skills module. Williams and Swales (2004) describe DBT as being aimed at people who meet the diagnostic criteria for Borderline Personality Disorder (BPD) and who engage in a range of suicidal behaviours including being chronically suicidal. According to Korner *et al.* (2007), for people with BPD, a deficit in the capacity to reflect results in the person acting repetitively rather than being able to think through their experience and adapt accordingly. Williams and Swales (2004) go on to explain how DBT therapists work with clients to address a range of difficulties including: impulsive, self damaging behaviours; unstable and intense interpersonal relationships; inappropriate and intense anger; problems with their experience of self and identity; extremely unstable emotions; chronic feelings of emptiness or boredom and an intolerance of being alone. In relation to intrusive thoughts, and according to Miller *et al.* (2000), all the areas of skills teaching in DBT involve tolerating uncomfortable thoughts and feelings without actively trying to change them, a strategy which may prove more useful for dealing with intrusive thoughts than suppression.

As noted in Section 1.2, there is some empirical evidence to support the use of DBT. For example, Linehan, Armstrong, Suarez, Allmon and Heard (1991) reported a significant reduction in the frequency and medical risk of parasuicidal behaviour among patients who received DBT compared with that for a non-DBT control group. Miller *et al.* (2000) also found DBT to be effective in reducing overall self-reported BPD symptoms in adolescents, although this finding was not from a controlled clinical trial, as no comparison group was included.

2.3.5. Acceptance and Commitment Therapy

A further mindfulness-based therapy is Acceptance and Commitment Therapy (ACT). According to Chapman *et al.* (2006), ACT tackles emotional avoidance by targeting and reducing rule governed behaviour, increasing emotional willingness, teaching paradoxical consequences of attempts to control or avoid emotions and increasing valued action. Marcks and Woods (2005) explain how ACT may help people to deal with their difficult thoughts, since it involves becoming more accepting of one's thoughts, which can reduce levels of depression, obsessionality and anxiety. Baer (2003) expands on this by describing how acceptance is facilitated in this case by observing oneself experiencing emotions, thoughts and bodily sensations and as Hayes, Wilson, Gifford, Follette and Strosahl (1996) explain, by accepting these as they occur, without trying to change them. Marcks and Woods (2005) conducted a study with college students to compare an acceptance-based strategy with thought suppression as a means of dealing with personally relevant intrusive thoughts. They found that those instructed to use an acceptance strategy experienced a decrease in discomfort in comparison with those asked to suppress or monitor thoughts, despite experiencing these with the same frequency.

2.3.6. Self-Compassion

Self-compassion is one aspect of mindfulness that has led to compassion-based interventions such as Compassionate Mind Training (Gilbert and Irons, 2005). Neff, Rude and Kirkpatrick (2007) describe self-compassion as a concept that involves being compassionate towards oneself at times of hardship or in the face of feelings of inadequacy. Neff (2003) also explains how self-compassion can be a useful emotional

regulation strategy as it can reduce the over-identification with thoughts and emotions and has an especially important role in the mental health of women.

The use of self-compassion for improving psychological wellbeing has some support from the empirical literature. For example, Neff (2003) administered a measure of self-compassion to a large sample of undergraduate students, alongside a number of measures of other psychological variables. They found increased self-compassion to be significantly associated with increased self-esteem and adaptive psychological functioning. Leary, Tate, Adams, Allen and Hancock, (2007) gave the same measure of self-compassion to another group of undergraduate students as part of an experimental task where they also rated films of themselves and others in awkward situations. The authors found that self-compassion can also play a role at the time of negative experiences (real, remembered and imagined) by helping people to cope in the face of upsetting life events. These benefits would appear to be of particular use in combating self-harm, given the factors discussed in the previous chapter.

As has been discussed in this section, a number of interventions based on the mindfulness approach exist and all of these work with difficult thoughts in some way, and some are also known to have some success at reducing suicide and self-harm rates. We shall now briefly discuss in a little more detail how mindfulness may help people who self-harm.

2.3.7. Mindfulness and self-harm

There are a number of ways in which mindfulness training may be useful for people who self-harm. Earlier in this chapter it was discussed how thought suppression has such a negative effect on psychological wellness and how this may be particularly

relevant to self-harm. An approach such as mindfulness, which avoids thought suppression may therefore have a more positive effect. Linehan (1993) found that increased mindfulness, among other things, serves to reduce impulsiveness and improve emotional regulation both of which were important correlates of self-harm in the previous chapter. By this reasoning, and as explained by Lundh *et al.* (2007), increased self-harm should be associated with decreased mindfulness. The findings of Lundh *et al.*'s (2007) study would appear to support this, since in a sample of 15-year old Scandinavian school children, self-harm was found to be associated with lower trait mindfulness and increased self-esteem. Further, Bowen, Witkiewitz, Dilworth and Marlatt, (2007) conducted a study whereby participants in a mindfulness-based meditation course reported a decrease in attempts to avoid their unwanted thoughts. This was in the context of alcohol addiction and may therefore suggest similar potential effects to self-harmers and the effect of their intrusive thoughts.

Some authors, such as Gratz and Gunderson (2006) have said that the emphasis for treating self-harm should focus on the control of behaviour when the emotions present, rather than control of the emotions themselves. Mindfulness training allows for this, as it encourages participants to learn to not unconsciously react to and act on their intrusive thoughts, instead simply noticing the thoughts, and allowing them to pass by. However, when thoughts and experiences are difficult, people may tend to push them away rather than dealing with them. Mindfulness teaches participants to stay with these thoughts and experiences rather than avoiding them. Rosenthal *et al.* (2005) suggest that avoidance reduction may be a successful treatment approach for individuals presenting with BPD symptomatology, which, as we have seen, includes self-harm and other suicidal behaviours. It was also discussed in the previous chapter the role of experiential avoidance in self-harm directly, as a part of an emotional regulation strategy.

Mindfulness may therefore offer an alternative to self-harm, by reducing the need for emotional regulation per se, or arguably by offering an alternative method of regulating emotions.

Mindfulness may also be a useful tool for reducing some of the factors that are correlates of self-harm as described in the previous chapter. It has been suggested that recovered suicidal patients, like people suffering recurrent depression, experience cognitive reactivity, which is the process by which small changes in mood can reactivate cognitive patterns that were present during past episodes of depression but became hidden when the mood returned to normal. Williams, Duggan, Crane and Fennell (2006) suggest that for suicidal people it is the suicidal mode of mind that can be reactivated by relatively mild and normal deteriorations in mood in people. In this way the mind becomes swiftly dominated by suicidal thoughts. Mindfulness teaches participants to notice the thoughts associated with these cognitive patterns without reacting to them or becoming stuck in the patterns associated with them. Dissociation is a further psychological variable that, as we saw in the previous chapter, is associated with self-harm. According to Low *et al.* (2001), it is also one of the psychological variables reduced by DBT, which would be expected since the mindfulness element requires participants to focus on their current experience. Given the links discussed earlier between self-harm and dissociation, it would follow that a reduction in dissociation would result in a reduced level of self-harm.

2.4. The Thesis

The previous chapter described the prevalence, correlates and functions of self-harm, and set these in context in terms of the association between self-harm and suicide, and possible methodological issues when conducting research in this area. This chapter

has given some background to intrusive thoughts and possible ways of coping with these thoughts. This chapter has then gone on to lay out the importance of intrusive thoughts in the development of psychopathology, in particular those diagnoses where self-harm is common, as well as discussing how thought suppression and mindfulness as alternative ways of dealing with the thoughts, may have different effects on an individual. Given the links described in these chapters, there is a strong rationale for in-depth research into the role of intrusive thoughts in self-harm, how they differ in nature to those experienced by people who do not self-harm, and how mindfulness may function as a self-help strategy for unwanted intrusive thoughts. Intrusive thoughts, and reactions to these thoughts, may underpin the contributions of trauma and other childhood experiences, dissociation and other psychological elements to self-harm. Memories of trauma can often be intrusive and dissociation may be a coping strategy developed in the face of the trauma allowing an individual to escape the intrusions and their emotional effects such as internally directed shame or anger. In this case the role of mindfulness is addressed by examining how trait mindfulness is related to factors such as thought suppression and self-harm. The general aim of this thesis is to investigate these constructs in relation to one another, with the hope of pulling them together into a tentative model later in the final chapter.

The specific aims of the research contained in this thesis overall are as follows:

- (a) To investigate self-reported self-harm in university, college and hospital-based samples, to allow for convergence of findings which are accordingly more robust.
- (b) To investigate how intrusive thoughts and the other correlates of self-harm discussed in the literature review are related to self-harm in these samples.

- (c) To explore the relationship between self-harm and ways of coping with thoughts, in particular trait mindfulness and thought suppression.
- (d) To attempt to bring together the findings from the four studies, in order to build a preliminary model of intrusive thoughts in self-harm, alongside the other factors investigated in this thesis.
- (e) To suggest a programme of future research based upon this preliminary model, and in response to any methodological limitations arising within the thesis.

Chapter 3. Risk factors for self-harm in a university population

This chapter examines risk factors for self-harm in a university population, and investigates the nature of intrusive thoughts in people who self-harm, and how these differ from those of people who do not.

The majority of self-harm research investigates the causes after self-harm has led to clinical intervention. However, this can be problematic since as has been discussed, self-harm is associated with many mental health diagnoses (alongside its presence in those people without mental health diagnosis), and so, as Klonsky *et al.* (2003) point out, limiting samples to people in treatment risks overestimation of the association between self-harm and other psychopathologies. Therefore, it is essential to look at the precursors of self-harm in the general population, since this is likely to include those people who are at risk of presenting clinically but who have not yet done so. Also, given the long list of psychological factors associated with self-harm, particularly those that exist outside of diagnosis, a study with a sample who are not recruited through mental health services represents an important first point of investigation for risk factors for self-harm. Although this sample will naturally be likely to include some people who have some mental health diagnosis or at least experience of a mental health problem, using a study population such as this should provide a wider cross-section of individuals with experience of self-harm than would be provided by recruiting from a hospital or other treatment-based sample only.

In this chapter are reported the results of a questionnaire survey intended to explore correlates of self-harming activity, and to identify factors that distinguish those

who report episodes of self-harm from those who do not. This is done by examining risk factors in the form of behaviours and background characteristics identified in the literature as being associated with self-harm, and by investigating whether these are associated with self-harm episodes in a university population. These risk factors include: personal circumstances (including childhood experience and sense of self); dissociation and intrusive thoughts. This is the first known study to investigate all of these factors simultaneously.

3.1.1. Correlates of self harming behaviour

Two major reviews of self-harm risk factor literature (Starr, 2004; Gratz, 2003) were examined in order to identify psychological and psychosocial factors that were associated with self-harming behaviours. The Starr paper reviews antecedents and theories of self-harm with a view to improving levels of nursing care provided to patients engaging in such activities. The Gratz review looked specifically at the literature on the following risk factor categories: childhood sexual and physical abuse; neglect; childhood separation, loss and attachment and individual risk factors alongside their interactions. Both reviews identified childhood trauma and low self-worth (including self-blame, loss of sense of control and unstable sense of self) as significant causes of later self-harm, along with poor problem solving ability and impulsivity, factors that we here label as personal circumstances. A literature review by Webb (2002) found similar correlates of self-harm in studies with samples of adolescents who were patients of healthcare services. This review also identified various mental health diagnoses as associated with self-harm. For this reason we included a screening question on whether participants had ever been diagnosed with a mental health problem. Further data was not collected on this for two reasons, partly because the sample for this

study was taken from a general population, and partly because of a need to keep the overall questionnaire relatively short and straightforward to complete. These three reviews also highlighted many of the correlates that were identified as associated with self-harm in the first literature review chapter of this thesis. A broad selection of items based on these factors was therefore included in this study, in order to provide a wide range of possible risk factors that could be later narrowed down following comparisons between people with experience of self-harm and those without. The items listed below are not presented as an exhaustive set of potential correlates, but as a first step in examining the correlates of self-harm. Using multiple measures of each potential correlate with a large sample will allow a factor analysis to be conducted to see if correlations between the items do reveal an underlying structure separating childhood experience and self-worth items. This factor analysis will also tell us which items most economically represent the underlying constructs, with a view to using a smaller subset of items in subsequent research.

3.1.2. *Childhood trauma*

Childhood trauma has been found to be strongly associated with self-harming behaviour in a number of studies. For example, in women with a history of childhood sexual abuse (Romans *et al.*, 1995) and in a psychiatric inpatient population (with experience of childhood physical or sexual abuse) in situations where current stressors triggered a return to feelings associated with the trauma. In this case the self-harm is thought to facilitate feelings of relief, or to help patients feel in control of the previously unmanageable situation (van der Kolk *et al.*, 1991). In fact as was described in the literature review, this finding can extend from abuse to neglect (Sansone *et al.*, 2002); family cohesiveness, structure and other parenting factors (Webb, 2002) and even

perceived parental criticism (Yates, Tracy & Luthar, 2008). From the childhood trauma risks we derived the following eight items, by attempting to create items that best summarised these risks:

- CT1 I experienced a traumatic event/ series of events in my childhood
- CT2 I would describe my family background as dysfunctional in some way
- CT3 As a child I felt understood by my parents/ caregivers
- CT4 As a child I felt that my parents/ caregivers listened to me
- CT5 I have been abandoned by someone important to me at some time in my life
- CT6 Somebody in my family has a history of problematic alcohol or drug use
- CT7 I find it difficult to trust other people
- CT8 I experience flashbacks

3.1.3. Self worth

People who self-harm tend to have a less positive self concept (e.g. Hawton *et al.*, 1999), and Tulloch *et al.* (1997) found that vulnerability for self-harm in adolescents related to a tendency to self-blame as a result of an internal locus of control. Self-harm can also function as a way of regaining a sense of control over one's life and emotions (e.g. Briere and Gil, 1998). This section of questions also included items relating to positive sense of self and personal boundaries, as well as ability to tolerate being alone. These relate to Object Relations Theory (see Gallop, 2002), which suggests these factors as part of a model of self-harm linking childhood experience and self-harming behaviour. The low 'self-worth' risks discussed by Starr (2004) and Gratz (2001) provided ten items:

SW1 I have low self-esteem

SW2 When things go wrong in my life it is usually my own fault

SW3 I am in control of my life

SW4 I am a good person

SW5 I view myself in a positive light

SW6 I hate being on my own

SW7 I am a worthwhile person

SW8 I have a clear sense of who I am

SW9 I have a clear sense of my own personal boundaries

SW10 I am a competent person

3.1.4. Impulsivity and problem solving

Self-harm is often considered to be an impulsive behaviour and in a study of adolescents, was found to separate groups of self-harmers and non-harmers (Kashden *et al.*, 1993). In this study problem solving was not found to have an effect but Rotherham-Borus, Trautmas, Dopkins and Shrout (1990) found problem solving to be a good predictor of self-harm in female suicide attempters, and another study found a similar result in adolescents (Nock & Mendes, 2008). Further, Kingsbury *et al.* (1999) suggest an interaction between poor problem solving and impulsivity in adolescents with a tendency towards self-harm, with impulsivity acting as an interruption to problem solving. We included two items that related to impulsivity and problem solving, respectively:

IMP I often act impulsively, without first thinking through my actions

PS I often struggle to find solutions to problems

3.1.5. Dissociation

Dissociation is thought to have an important role in self-harming behaviour (Gratz *et al.*, 2002). It is strongly associated with childhood trauma (also common in self-harming individuals), and may be a response to overwhelming emotional pain, in the form of an initial adaptive response to trauma that individuals then generalise to all stressful life events (Low *et al.*, 2000). One purpose of self-harm may be to enable disruption of a dissociative state, by providing something physical for the individual to focus on and to help them return themselves to their current experience. This can allow them to feel something following the dissociative episodes of feeling nothing, which can be triggered by the absence of loved ones (Klonsky, 2007). Dissociation may indeed be the link between child abuse and self-harm (Chu & Dill, 1990).

Accordingly, this study included items from a version of the Dissociative Experiences Scale (DES – Bernstein and Putnam, 1986) that is designed for use with non-clinical groups, the DES-C (Wright & Loftus, 1999). This scale differs from the clinical version of the DES in that it uses a different scoring system for items. Instead of simply asking people to rate how often they experience a particular phenomenon, the DES-C asks participants to rate their experience compared to other people. This shift in scoring system was due to data being highly negatively skewed when the original version was used with the general population and gives a more normal distribution with these groups. The creators of the DES-C, Wright and Loftus (1999) compared three different scoring systems for the same DES questions, which were as follows: percentages e.g. 10%, 20% etc. with a low anchor of 'never' and high anchor of 'always' (original version); verbal quantifiers e.g. 'never', 'occasionally', etc.;

comparisons with others e.g. low anchor of ‘much less than others’ and high anchor of ‘much more than others’. In all three scoring systems, participants had to tick one of eleven boxes to best illustrate their response as outlined above. They found that both the percentages and the verbal quantifier versions resulted in a highly skewed distribution suggesting a floor effect, whilst the version using comparisons with others yielded a normally distributed set of scores. Wright and Loftus (1999) also describe the measure as psychometrically robust, since people who scored highly on the DES-C also did so on the original DES, and the validity of the measure is supported by a study which associated DES-C scores with imagining of events, as is consistent with the theoretical literature.

Both the DES and the DES-C are 28-item measures. Carlson *et al.*, (1991) found that the DES items formed three factors: amnesic dissociation, absorption, and depersonalization; Dubester and Braun (1995) reported that the subscales had high internal reliability. Wright and Loftus (1999) conclude that in non-clinical populations, however, all items correlate highly and a single factor solution emerges. Given these findings, and in the interests of keeping our overall survey brief, we decided use 10 of the 28 items, drawn from two of the original subscales. All six items from the ‘depersonalization/derealization’ subscale (D) were selected, because these seemed to best capture the aspects of dissociation most relevant to self-harm, and four items from the ‘absorption/distractibility’ subscale (A), as they represented experiences that appeared most ‘normal’ for a group of people from the general population. We felt that this combination represented a reasonable mix of those items that best reflected the type of dissociative experiences that people who self-harm report, alongside those that are most common amongst people in the general population.

The DES-C items used in this study were as follows:

- D1. Some people sometimes have the experience of feeling as though they are standing next to themselves or watching themselves do something and they actually see themselves as if they are looking at another person.
- D2. Some people have the experience of looking in a mirror and not recognising themselves.
- D3. Some people have the experience of feeling that other people, objects and the world around them are not real.
- D4. Some people have the experience of feeling that their body does not seem to belong to them.
- D5. Some people sometimes find that they hear voices inside their head that tell them to do things or comment on things that they are doing
- D6. Some people sometimes feel as if they are looking at the world through a fog so that people and objects appear far away or unclear.
- A1. Some people have the experience of not being sure whether things that they remember happening really did happen or whether they just dreamed them.
- A2. Some people find that sometimes they are listening to someone talk and they suddenly realise they did not hear part or all of what was said.
- A3. Some people find that when they are watching television or a movie they become so absorbed in the story that they are unaware of other events happening around them.
- A4. Some people find that they sometimes sit staring off into space, thinking of nothing, and are not aware of the passage of time.

It should be noted that by shortening the established version of the DES-C that the psychometric properties of the measure may be compromised. In order to check this is not the case, the factor structure of the version of the DES-C used here will be examined, to see if the ten items group into the two subscales of the original DES, or form a single factor as found by Wright and Loftus (1999). Internal consistency and construct validity of the measure will also be assessed.

3.1.6. Intrusive thoughts

Intrusive thoughts are those that seem to occur spontaneously, without effort or origin, and interrupt cognitive ability (Clark, 2005). They are common in the general population but also play an important role in many mental health diagnoses (Purdon, 1999). Intrusive thoughts have been implicated in the development and maintenance of depression and often take the form of intrusive memories (Reynolds & Brewin, 1999). Since self-harm is especially common in depression (Patel *et al.*, 2007), the role of intrusive thoughts may be similar, and therefore may represent a further self-harm risk factor. We wrote four items intended to measure the frequency, content, and consequences of intrusive thoughts. These items were designed to assess intrusive thoughts in a number of ways, and to differentiate potentially distressing thoughts (expected to be associated with self harm) from less distressing thoughts (which might reflect susceptibility to intrusions in general, while not being associated with self harm):

IT1. How often (on average) do you experience intrusive thoughts?

Never; less than once a day; once a day; several times a day; every time I try to concentrate on something.

IT2. Please specify what sorts of things you often have intrusive thoughts about:

Food or drink; Positive thoughts about myself; Negative thoughts about

myself; Activities (e.g. sport etc.); Harming myself; Happy memories;
Unhappy memories; Something else.

IT3. How much do these thoughts distract you from everyday tasks?

Not at all, they just occur and then disappear; Only momentarily; Somewhat
- it takes some effort to stay focused on the task; Quite a lot - it is hard to
get back to what I was doing; Very much - I have to act on the thought
before I can do anything else

IT4. Approximately how often are these thoughts distressing?

Never; Up to 30% of the time; 31-50% of the time; 51-80% of the time; 81-
99% of the time; all of the time

The next set of items was taken from the EBRIQ (Berry, May, Andrade and Kavanagh, 2010), which examines emotional and behavioural reactions to intrusive thoughts. This measure was originally designed in order to assess reactions to craving-related intrusive thoughts, but then the format of the items was generalised to assess reactions to intrusions in general. Berry *et al.* (2010) found that the seven items produced two correlated factors assessing behavioural reactions (a need to act upon the thought) and emotional reactions (distress associated with the thought), and that these two subscales showed good test-retest reliability and construct validity in terms of associations with measures of mindfulness, experiential avoidance, and thought suppression.

As used here, the instructions preceding the EBRIQ items briefly defined an intrusive thought, and asked people to rate their reactions to them on a five-point scale ranging from 0 (never) to 4 (every time):

R1. It makes me feel I am losing control of my thoughts

- R2. It makes me feel miserable
- R3. It distracts me from what I am doing
- R4. I act on the thought
- R5. It makes me anxious
- R6. It interferes with how well I carry out what I'm doing
- R7. It makes me irritable

3.1.7. Self-harming status

The final set of items was intended to discriminate between those with experience of self-harm behaviours and those without. The questions around self-harm were created for this study rather than using one of the existing measures of self-harm, such as the Functional Assessment of Self Mutilation (Lloyd, Kelley and Hope, 1997). This was due to the fact that we wished to ask a small number of specific questions, including picking from a list of behaviours in which only a small number were self-harm, in order to identify other behaviours which fall outside our definition but may be close to self-harm. Detection of these behaviours allows possible identification of behaviours that may put someone 'at risk' of future self-harm. The established measures did not allow us to do this, and included a number of other questions that we did not wish to include. Although using an established measure may have increased the strength of the findings in terms of the psychometric properties of the measure, the fact that we would have to shorten the measure might negate this, and so specific bespoke items were generated. This also allowed us to include our definition of self-harm within the question, to reduce confusion over terminology and definition of what constitutes a self-harm act, an issue that we have already raised as important in this field of study. Using

our own questions allowed the inclusion of both a question relating to current and past experiences of behaviour according to our definition, but also a list of behaviours for the participants to choose from, which has also been highlighted in a previous chapter as method of increasing sensitivity of data collection around self-harm.

The first question (SH1) listed coping strategies to stress and patterns of behaviour relating to self-harm. This question began ‘When you feel stressed, low or anxious, which of the following behaviours do you engage in:’ followed by a list of behaviours forming five categories: six severe self-harming (strictly defined according to Gratz’s definition), two less severe but still self-harmful compulsive behaviours (‘mildly harmful’), nine ‘potentially maladaptive’ activities (which might also be harmful, if not directly, or immediately), two avoidant, and six positive. The potentially maladaptive category of responses included a wide range of behaviours that might have some form of adverse effect. These included those where this was obvious (such as smoking and drug use) and those where the effects may be less instantly recognizable (such as exercise and nail biting). For example, someone may cope with their stress by exercising which may appear outwardly positive, but may lead to excessive exercise and risk of injury. It is expected that some of the items in this category will be associated with the more serious self-harming behaviour, whilst some will not, hence the title ‘potentially maladaptive’. The categories were intermixed and the codings were not included in the item text shown to respondents, who could check as many or as few as they wanted to.

Then came a series of items directly assessing self-harming behaviour (past and present) along with regularity, frequency, and time scale:

SH2. Have you ever harmed yourself in a way that is outside the bounds of social acceptability (such as by cutting, burning, pulling out body hair etc.?)

No; Yes.

SH3. If yes did you do so regularly over a period of time?

No; Yes; Not Applicable.

SH4. How frequently?

Not applicable; Less frequently than once a month; Once a month; Once every two weeks; Once a week; 2-3 times a week; 4-6 times a week; Once a day; More than once a day.

SH5. For how long?

Not applicable; Less than a month; 1-3 months; 3-6 months; 6 months to 1 year; 1-2 years; more than 2 years.

SH6. Do you currently harm yourself in such a way?

No; Yes.

SH7. If yes do you do so regularly?

No ; Yes ; Not Applicable.

SH8. How often?

Not applicable; Less frequently than once a month; Once a month; Once every two weeks; Once a week; 2-3 times a week; 4-6 times a week; Once a day; More than once a day.

SH9. How long have you harmed yourself in such a way for?

Not applicable; Less than a month; 1-3 months; 3-6 months; 6 months to 1 year; 1-2 years; more than 2 years.

The specific research questions for this study were as follows:

- (a) What is the nature and frequency of self-harm in a university sample combining staff and students (both undergraduate and postgraduate)?
- (b) How do people with experience of self-harm compare to those without on the following possible correlates: childhood trauma; self-worth; impulsivity; problem solving; dissociation and intrusive thoughts?
- (c) Which of the items that were included as a result of the literature reviews are most important, and how do they group together?
- (d) How do those people at risk of self-harm (as identified by their engaging in a number of 'risky' behaviours that are common in people with experience of self-harm) score on the above correlates as compared with those people with experience of self-harm?

3.2. Method

This study was cross-sectional in design, collecting data from each participant at one time-point only, and using a convenience sample of staff and students at a university. The study met BPS ethical guidelines and was approved by the departmental ethics committee. Participants were recruited through an advert on the university web portal (accessible to approximately 1300 academic staff, 4500 non-academic staff, 18000 undergraduate and 5600 postgraduate students), and were offered entry in a £50 prize draw as a reward for participation. The study was advertised as investigating how people 'deal with stress', and was made available for three weeks.

On responding to the advert, participants were asked to provide their university email address and basic demographic information. The survey questionnaire was converted into a set of web pages, and a link to this was then sent to their password protected university email account, to ensure that people could only reply once, and that all participants were who they claimed to be. On following the link, participants were asked to read a description of the study and to consent to take part, before being shown the first page of the survey.

The 50 items described above were presented over four sequential web pages. Page one contained the Childhood Trauma (CT), Self Worth (SW), Impulsivity and Problem Solving items, rated on a seven point scale, with zero labelled 'not at all true of myself' and six labelled 'very true of myself'; the midpoint (3) was labelled 'neither true nor untrue'. Page two contained the Depersonalization (D) and Absorption (A) items from the Dissociative Experiences Scale, rated 0-10 with the anchors 'much less than others' (0), 'about the same as others' (5), and 'much more than others' (10). Page three contained the Intrusive Thoughts (IT) items, with the scales as listed above, and the Reaction (R) items, rated 0-4 with the anchors: never; rarely; sometimes; often; every time. Page four contained the self-harm (SH) items, with scales as described above, together with two final questions asking if the respondents would like to be entered for a prize draw, and if we could contact them for a follow-up.

A number of ethical issues exist when conducting research with people with experience of self-harm, since these people may be vulnerable, and may be at risk of further episodes of self-harm if not treated with respect and empathy. Ethical considerations in this study were addressed in a number of ways. Firstly, informed consent was gathered from each participant at the start of the study, when they initially signed up, whereby the purpose and nature of the study was explained, in an initial

email, which they could choose to reply to if they wished to take part. Also, the opportunity was given for participants to ask any questions both before and after completing the survey, in order to allow them to be fully informed of the purposes of the study and how their data would be used. Secondly, confidentiality was ensured by storing participant response data in a separate database from all identifying information, and once analyses had been completed and there was no longer any potential need to contact participants, the database with the contact and identifying information was permanently destroyed. Finally, steps were taken to protect the welfare of participants, by providing information of supporting organisations on the final page and offering the opportunity for participants to email the researchers with any concerns or questions that they might have.

3.3. Results

Four hundred and thirty two members of the university (308 females; mean age of sample 25.1 years) completed the survey. Email addresses indicated that 270 respondents were undergraduate students (mean age 21.1 years; 187 females), the remaining 162 being postgraduates or staff (mean age 31.8 years; 121 females).

3.3.1. *Self-harm and coping behaviour*

On Item SH1 regarding how participants cope with stress, 61 participants (14.1%) endorsed one or more of the self-harm responses and 362 (86.8%) endorsed one or more of the risky activities (see Table 3.1). On item SH2 regarding whether participants had any experience of self-harm, 102 people (23.6%) answered yes. On item SH6 regarding whether participants currently self-harm 11 people (2.5%) answered yes.

Table 3.1: Number and percentage of self-harmers and non self-harmers reporting each response to stress (Item SH1). Self-harmers are defined as those reporting any of the six Self-harming activities, prior experience of or current self-harm. One-tailed Fisher's Exact Test reported where $p < .05$.

Item	Self-harmers (N = 131)		Non self-harmers (N = 302)		Fisher Exact p
	%		%		
<i>Self-Harming</i>					
Severe scratching	26	20%	--	--	--
Punching yourself	19	15%	--	--	--
Banging your head	11	8%	--	--	--
Cutting	10	8%	--	--	--
Sticking sharp objects into your skin	7	5%	--	--	--
Burning yourself	4	3%	--	--	--
<i>Mildly harmful</i>					
Skin picking	42	32%	52	17%	0.001
Hair pulling	21	16%	16	5%	< 0.001
<i>Risky</i>					
Excessive eating	68	52%	119	40%	0.011
Exercise	52	40%	109	36%	n.s.
Alcohol use	51	39%	102	34%	n.s.
Nail biting	47	36%	100	33%	n.s.
Under eating	37	28%	50	17%	0.005
Smoking	33	25%	45	15%	0.009
Risk taking behaviour	25	19%	14	5%	< 0.001
Drug use	7	5%	10	3%	n.s.
Gambling	2	2%	7	2%	n.s.
<i>Avoidant</i>					
Walking away from stressful situations	69	53%	162	54%	n.s.
Trying not to think about the source of stress	67	51%	148	49%	n.s.
<i>Positive</i>					
Watching tv, reading a book or playing a computer/board game	89	68%	202	67%	n.s.
Talking to a friend or family member	78	60%	193	64%	n.s.
Letting off steam in a way that causes no harm (shout, scream or hit a pillow)	58	44%	94	31%	0.007
Trying to spend time with people who are rewarding rather than critical and judgmental	57	44%	136	45%	n.s.
Relaxation techniques	33	25%	79	26%	n.s.
Art or some other creative activity	25	19%	51	17%	n.s.

Overall, 131 people (30.3%; 89 undergraduates, 98 females) reported some prior or current experience of self-harm from SH1, SH2 or SH6. In other words, this was the rate of self-harm when the results were collapsed for same participants endorsing more than one self-harming behaviour or response. This group were compared with the 302 people who did not endorse any of the self-harm items on SH1, and answered 'no' to items SH2 and SH6. Fisher Exact tests showed there to be a significantly higher proportion of the self-harm group reporting both of the mildly harmful activities (skin picking and hair pulling), and four of the nine potentially maladaptive activities (excessive eating, under eating, smoking and general risk-taking behaviour). Self-harmers were also significantly more likely to report letting off steam in a way that causes no harm (a positive activity). The same pattern of results was obtained when the analysis was repeated separately for each sex, except that male self-harmers were not more likely to report excessive eating than male non-self-harmers.

The non self-harmers were divided into three risk status groups according to the number of these seven activities that they reported. Those reporting none or one of them ($N = 182$, 60%) were defined as 'low risk', those reporting two ($N = 89$, 30%) were defined as 'medium risk', and those reporting three or more ($N = 30$, 10%) were defined as 'high risk' (amongst the self-harm group, the corresponding N s were 36, 28%; 50, 38% and 45, 34%).

There was no association between this risk group status and whether the non-self-harming respondents were undergraduates or staff/postgraduate (Chi-square = 1.78, $df = 2$, $p = .410$), but non self-harming males were more likely to be classed as low-risk (Chi square = 15.5, $df = 2$, $p < .001$), with 69 of them (76%) being low risk, compared to 113 (54%) of the non-self-harming females. Only 2 males (2%) were classed as high risk, compared to 28 females (13%), with 20 (22%) being medium risk, compared to 69

females (33%). Because so few males were identified as high-risk, analyses of this measure that follow cannot be broken down further by sex.

3.3.2. Personal Background

The eight Childhood Trauma items (with items CT3 and CT4 having been reverse scored) produced a Cronbach's alpha of .755, rising to .759 with the exclusion of item 'family drug use' (CT6). Two other items, 'difficult to trust people' (CT7), 'experience flashbacks' (CT8), had low item-total correlations (.34 and .38, respectively), and excluding these two items had a minimal effect upon Cronbach's alpha, leaving it at .756 for the remaining five items.

The ten Self Worth items (with items SW1, SW2 and SW6 being reverse scored) produced a Cronbach's alpha of .820, rising to .824 with the exclusion of 'I hate being on my own' (SW6) and then .862 with the exclusion of 'when things go wrong it is usually my own fault' (SW2). Notably, both of these items had been reverse scored.

The twenty Childhood Trauma, Self Worth, Impulsivity and Problem Solving items were entered into a Factor Analysis (Maximum Likelihood, Direct Oblimin). Although five factors had Eigenvalues above 1, the Scree test (Cattell, 1966) indicated a two or three factor solution. The three factor solution distinguished the Self Worth items from the Childhood Trauma items, which split into two factors (one containing the reverse-scored items 'my parents understood' and 'my parents listened', CT3 and CT4), and so the two-factor solution was preferred. The impulsivity and problem solving items did not load highly on either scale.

Five of the Childhood Trauma items and nine of the Self Worth items had unique correlations above .40 with their respective factors, and so two combined scores were

obtained by finding the mean score for each respondent (with items CT3, CT4, SW1 and SW2 being reverse-scored). The items that were excluded were ‘family drug use’ (CT6), ‘difficult to trust people’ (CT7), ‘experience flashbacks’ (CT8) and ‘I hate being on my own’ (SW6). All of these excluded items would also have been excluded from their respective sets on the basis of the reliability analyses.

Both combined scales differed between the groups of self-harmers and non self-harmers, with self-harmers reporting more childhood trauma (self-harmers $M = 2.59$ $SD = 1.59$, non self-harmers $M = 1.95$ $SD = 1.32$, $t(430) = 4.04$, $p < 0.001$) and lower self-worth (self-harmers $M = 3.52$ $SD = 1.06$, non self-harmers $M = 4.10$ $SD = 0.83$, $t(430) = 5.56$, $p < 0.001$).

Of the excluded items from these two scales, only the ‘family drug use’ item (CT6) differed between the self-harmers ($M = 1.68$ $SD = 2.38$) and non self-harmers ($M = 1.10$ $SD = 2.00$), $t(430) = 2.42$, $p = .016$). The impulsivity item did not differ between the groups ($t(430) = 0.48$, $p = .641$), but problem solving difficulty was higher in the self-harmers ($M = 2.79$ $SD = 1.52$) than non self-harmers ($M = 2.47$ $SD = 1.54$), $t(430) = 1.99$, $p = .049$).

Within the non self-harming group, one-way ANOVAs showed that self-worth and childhood trauma were related to risk-status (self-worth $F(2,298) = 5.28$, $p = .006$, Partial $\eta^2 = .03$; childhood trauma $F(2,298) = 6.47$, $p = .002$, Partial $\eta^2 = .04$), but that none of the other six items were. Post-hoc tests (Tukey’s HSD) showed that childhood trauma increased with increasing risk status, with the low and high-risk groups differing significantly ($p = .004$), but with no significant differences between the low and medium ($p = .068$) or medium and high ($p = .223$) risk groups. The pattern for self-worth was less clear, with the medium risk group scoring lower than the low risk group

($p = .005$), but also lower than the high-risk group, albeit not significantly so ($p = .778$). The low and high-risk groups also did not differ ($p = .363$). A one-tailed t test showed that the self-harmers had lower self-worth ($M = 3.52$ $SD = 1.06$) than the non-self-harmers ($M = 4.00$ $SD = 0.64$), $t(159) = 2.39$, $p = .009$, but there was no difference in childhood trauma (both $M = 2.59$, self-harm $SD = 1.59$, non self-harmers $SD = 1.48$), between the high risk and self-harm groups. The means for all four groups are shown in Figure 3.1.

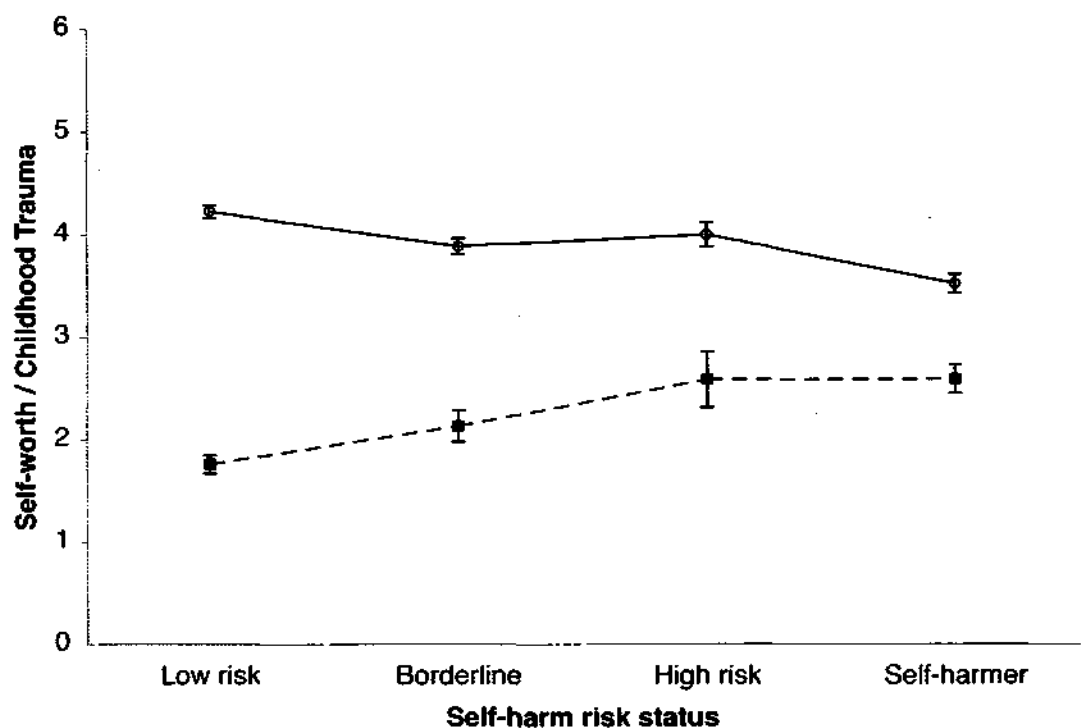


Figure 3.1: Scores on the childhood trauma (dashed line) scale rise with increasing number of risky or mild self-harming activities reported by the non self-harming group, until the high risk group are indistinguishable from those who do report previous or current self-harm or who engage in self-harming activities. The self-worth scale (solid line, empty circles) does not follow this pattern, with the high-risk

individuals having higher self-worth than those who self-harm. Bars indicate one standard error.

3.3.3. Depersonalization and absorption

Using the data from all respondents, a Factor Analysis of the ten DES-C items used in this study (maximum likelihood, oblimin rotation) produced the same two-factor structure as in the original DES. This suggests that shortening the measure did not affect its reliability, and that it continues to test absorption and depersonalization separately. A reliability analysis produced a Cronbach's alpha for the depersonalization items of .851, with all items having item-total correlations above .518, A similar analysis for the four absorption items produced a Cronbach's alpha of .700, with all item-total correlations above .428. None of the ten items met criteria for exclusion from their respective scales. The mean score from the six-depersonalization items and the mean score from the four absorption items were computed. Both means differed between the groups of self-harmers and non self-harmers (depersonalization: self-harm $M = 3.64$ $SD = 2.16$, non self-harmers $M = 2.45$ $SD = 1.87$, $t(430) = 4.41$, $p < 0.001$; Absorption self-harm $M = 5.67$ $SD = 1.70$, non self-harmers $M = 4.85$ $SD = 1.79$, $t(430) = 5.76$, $p < 0.001$). The fact that the two dissociation subscales were associated with self-harming experience also supports the validity of the shortened version of the DES-C.

Within the non self-harming group, one-way ANOVA showed that depersonalization and absorption were also related to risk status (depersonalization $F(2,298) = 8.25$, $p < .001$, Partial $\eta^2 = .05$; absorption $F(2,298) = 3.50$, $p = .031$, Partial $\eta^2 = .02$). Post-hoc tests (Tukey's HSD) showed that for absorption, none of the three groups differed significantly (minimum $p = .062$, for medium versus high-risk), but that for depersonalization, the low group scored significantly lower than the medium

($p = .024$) and high risk ($p = .001$) groups, which did not differ ($p = .192$). One tailed independent t tests showed that the high risk group did not differ to the self-harming group (depersonalization $t(159) = 0.47, p = .320$; absorption $t(159) = 0.67, p = .253$), but that the medium and low-risk groups scored significantly lower on both scales (depersonalization: medium $t(218) = 3.14, p = .001$, low-risk $t(311) = 6.66, p < .001$; absorption: medium $t(218) = 2.46, p = .008$, low-risk $t(311) = 5.10, p < .001$). The means for all four sub-groups are shown in Figure 3.2.

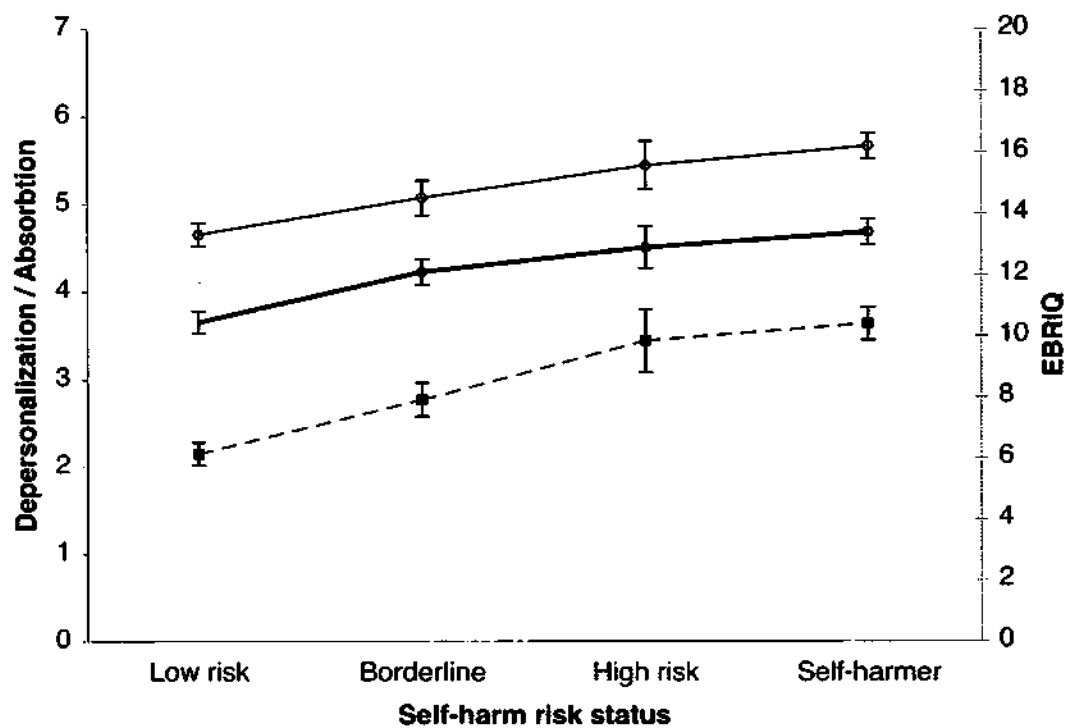


Figure 3.2: Scores on the DES-C depersonalization (dashed line) and absorption scales (solid line, empty circles) and on the EBRIQ (bold line, filled circles) rise with increasing number of risky or mild self-harming activities reported by the non self-harming group, until the high risk group are indistinguishable from those who do report previous or current self-harm or who engage in self-harming activities. Bars indicate one standard error.

3.3.4. Intrusive thoughts

Fifty-four percent of respondents reported experiencing intrusive thoughts 'several times a day', and only 1.6% 'never'. Eighty percent reported that their intrusive thoughts were either 'only momentarily' or 'somewhat' distracting, and 76% reported that they were distressing less than 30% of the time.

Intrusive thoughts in people with experience of self-harm in this sample were more frequent (two tailed Chi-square = 11.2, $df = 4$, $p = .024$), more distracting (two tailed Chi-square = 10.2 $df = 4$, $p = .037$) and more distressing (two tailed Chi-square = 25.4, $df = 4$, $p < .001$) than in people with no self-harming experience. Self-harmers also reported a greater frequency of negative thoughts about themselves, harming themselves, and unhappy memories (two tailed Fisher exact tests, all $p \leq .001$).

The high-risk group did not differ from the self-harm group in terms of overall IT frequency (Chi-square = 3.44, $p = .487$), but more of them did report positive thoughts (two tailed Fisher Exact $p = .01$), and none of the 30 reported thoughts about harming themselves, compared to 19 of the 131 self-harm group (two tailed Fisher exact $p = .025$). Compared to the low-risk and medium risk groups, the high risk group did not differ in terms of IT frequency, distraction or distress, but two tailed Fisher exact tests showed that more reported unhappy memories ($p = .002$) and there was a trend towards more negative thoughts about themselves ($p = .052$), but more also reported positive thoughts about themselves ($p = .003$) and there was a trend towards more happy memories ($p = .053$).

The mean score from the seven reactions items from the EBRIQ was associated with mean depersonalization ($r = .42$, $p < .001$) and mean absorption ($r = .37$, $p < .001$). People with experience of self-harm scored higher than those people with no

experience of self-harm (self-harmers $M = 1.91$, $SD = 0.68$; non-harmers $M = 1.59$, $SD = 0.66$; $t(430) = 4.59$, $p < .001$). Within the non-self-harm group, a one-way ANOVA showed an association between risk-status and EBRIQ score ($F(2,298) = 6.31$, $p = .002$, Partial $\eta^2 = .04$), and post hoc Tukey's HSD tests showed that the low-risk group scored significantly lower than the medium ($p = .015$) and the high-risk ($p = .018$) groups, but that these did not differ ($p = .674$). One-tailed independent t tests showed that the high risk group did not differ to the self-harming group ($t(159) = .56$, $p = .29$) but that the medium ($t(218) = 2.16$, $p = .016$) and low-risk ($t(311) = 5.37$, $p < .001$) did score significantly lower. The seven EBRIQ items produced a Cronbach's alpha of .839. None of the seven items met criteria for exclusion from the scale.

3.4. Discussion

Rates of reported self-harm were particularly high in this study (30.3%) compared to some of the previous literature, such as the 20% reported in a study with a similar sample (Croyle & Waltz, 2007). One reason for this may be the nature of the questionnaire itself, for not only was it confidential and non-intrusive (there was no face to face element), but it was also billed as a survey investigating 'reactions to stress'. It may be that a survey of this nature attracts people who are more willing to talk about how they deal with stress, compared with those that are not keen to discuss it, possibly encouraging higher ratios of people who are willing to report self-harming experience. It is unsurprising that self-harm rates are somewhat higher than those reported in an acute setting such as accident and emergency. Further to this point, it is worth noting that studies find higher rates of self-harm in university samples than other populations (e.g. Gratz *et al.*, 2002; Whitlock *et al.*, 2006).

One anomalous result is that participants who self-harm were found to be significantly more likely to report letting off steam in a way that causes no harm. It would therefore appear that those people who self-harm (in this study) also use other methods to deal with their difficult feelings, including those that allow them to externalize these to some extent. This unexpected result warrants further detailed investigation in the future.

Our data provides preliminary support for the use of self-harm as a way of reducing dissociation (Klonsky, 2007) in that our self-harming group scored higher on the DES-C depersonalization scale, but they also scored higher on the absorption scale, indicating that they are prone to get lost in their own thoughts. This is consistent with their also reporting a greater frequency of negative intrusive thoughts, which are more distressing and distracting, and which lead to greater emotional and behavioural reactions. This suggests that while self-harm may be an attempt to avoid depersonalization, depersonalization may itself be a response to negative intrusive thoughts. However, this relationship is not necessarily causal, and we cannot say from our data whether the self-harm occurs as a result of the dissociation, or whether the dissociation is brought on by the self-harm act. That said, a link between dissociation and experience of self-harm is clear in this study and so tentative support for this model is provided, although a longitudinal study collecting data from people at several points throughout their lives (preferably starting as children) is required to draw full causal conclusions on self-harm as having an anti-dissociation function. It should also be noted that other functions of self-harm were not explored in this study and a full measure of the functions of self-harm will be included in later studies, in order to better address the possible functions of self-harm for the people taking part in these studies. For these

reasons support for this model is very tentative, and may indeed be a result of simply not having tested a range of functions in this study.

From the point of view of early detection of those at risk of engaging in self-harm, the most important finding is that people who reported engaging in three or more of the mildly self-harming and (specific) potentially maladaptive activities or in overtly letting off steam, are indistinguishable from the self-harming group in terms of scores on the DES-C depersonalization and absorption scales, on their reactions to intrusive thoughts (EBRIQ), and in their experience of childhood trauma. This group are not currently self-harming, but may be the people who could do so in the future. The main way in which they currently differ from the self-harm group is that they have higher self-worth and their intrusive thoughts are more often positive. Compared to the low-risk and medium-risk groups more of them report positive, happy thoughts and negative, unhappy intrusive thoughts, but the groups do not differ in thoughts about food and drink, activities, or ‘something else’. The difference may be more self-related content in general, rather than negative content. It could be that the current normal self worth is protecting these high-risk individuals against self-harming activity; although it could be that self worth drops once people begin self-harming. It is worth stressing that no causal conclusions are being drawn here, the association is simply being noted.

Should the affective content of their intrusive thoughts change toward the negative, then the high-risk group would show the same profile as the self-harm group, and if negative intrusive thoughts played a causal role in self-harm, then these are the individuals who might go on to self-harm. On the other hand, these individuals might not be ‘high risk’ at all, but just be similar in terms of the behaviours associated with self-harm. The only way to answer this question would be to follow them up later to

look for differential outcomes between the risk-groups; an option that is beyond the scope of this study but perhaps one for future research.

Four of the potentially maladaptive activities (excessive eating, under eating, smoking and general risk-taking behaviour) also discriminated between self-harmers and non self-harmers. The other potentially maladaptive behaviours, although potentially still more ‘negative’ coping strategies, were not associated with self-harm in this study. This is an important finding since these other strategies could in fact be activities that identify those more likely to engage in self-harm at times of heightened psychological distress. These factors are in many cases more outwardly visible, and could function as ‘warning signs’ to mental health professionals and others that are close to the individual concerned.

It is notable that while we were able to identify male self-harmers, very few of the non-self-harming males in our sample were classified as high risk. It is unlikely that the seven indicator activities were not sensitive for males, because they did distinguish between male self-harmers and non-harmers. This is also an issue worth further study.

3.4.1. Clinical implications

Risk factors identified in non-clinical groups can be useful in early identification of people who may be liable to self-harm, particularly in health, educational and criminal justice settings. Identification of possible background factors can also be used to inform and tailor interventions and treatment programmes to better suit people who self-harm but do not necessarily fit into diagnostic criteria for DSM diagnoses. Clearly, problems can be better dealt with if their causes are more plainly understood.

One example of this would be to help find more successful ways of dealing with intrusive thoughts. For example being less judgemental of the thoughts and oneself, and let them pass by rather than ruminate on them, as in Mindfulness-based therapies (Kabat-Zinn, 1994). Mindfulness may help people to deal with their intrusive thoughts (McClaren & Crowe, 2003; Marcks & Woods, 2005), so this may be useful in reducing individuals' self-harming activity. Dialectical Behaviour Therapy (DBT; Linehan, 1993) uses mindfulness skills to reduce self-harming behaviour in people with Borderline Personality Disorder (BPD), and thus it is feasible that a less intense therapy could be developed to target self-harm in other populations including individuals without DSM axis I (clinical syndromes) or II (personality and mental retardation) diagnoses. In relation to the anti-dissociation model, mindfulness may also be useful as an alternative grounding technique to self-harm as it focuses heavily on current experience.

3.4.2. Methodological limitations and future research

There are a number of limitations to this study that centre around its design and methodology. Firstly, the design of the study was cross-sectional, collecting data at only one time-point, and did not take into account recency of self-harm episodes. Also, the fact that the study is cross-sectional makes it difficult to assess causality of effects, rather than just the correlational relationships between the constructs. A longitudinal study might better address some of the issues in the study, since that might mean participants could have more recent experience of self-harm, and be better able to rate their experiences during such an episode.

This study also relied solely on self-report data, which as described in the earlier chapter is problematic when conducting self-harm research, since memories of times

when an individual experiences particularly strong negative emotions can be more difficult to recall, and if a person was highly dissociated they may struggle to remember their experiences. This is appropriate for a large scale survey, where group differences are of interest, but if individual assessment was required an improved design would include some way of corroborating the experience, for example by asking a carer or peer of the participant as to what they could remember. The present study did use different types of questions, in that it asked people if they had engaged in self-harming behaviour; but also allowed them to pick from a list which specific behaviours they had engaged in. This may improve on these issues of recall of events.

This study collected data using purely quantitative methods. Some of the areas explored, in particular the experience of intrusive thoughts relating to self-harm may benefit from more in depth investigation, perhaps by way of less constrained methods such as semi-structured interviews, but these are not suitable for online studies with large samples.

The data collected on self-harm frequency could have been more comprehensive, in particular with regards to question SH1 exploring different coping behaviours in response to stress. Although the wording of the question ('when you feel stressed, low or anxious, which of the following behaviours do you engage in:') does imply these activities are participants' ways of coping rather than one off behaviours, there is no way of distinguishing people who have self-harmed in response to their stressors once, versus those who do so regularly. If such a measure was used again, changes to the wording could accommodate this to clarify results and allow comparisons of frequent and infrequent harmers. This is important given that repetitive self-harming behaviour highlights on-going psychological distress, indicates greater risk of eventual suicide, and increases pressure on mental health services (Hawton *et al.*, 1999).

It would be helpful to investigate how intrusive thoughts may play a role in other functional models of self-harm, apart from the anti-dissociation model. For example as a barrier to successful affect management (affect regulation model; Gratz, 2003), as suicidal intrusions in the anti-suicide model (Suyemoto, 1998) or as self-directed anger in the self-punishment model (Linehan, 1993).

Given the possibility of mindfulness as a coping method for unwanted intrusions, a future useful direction for research would be to examine trait mindfulness in people who self-harm compared with people who do not, to offer further support for the use of non-judgemental methods for coping with these. A measure of trait mindfulness is included in later studies in this thesis, in order to determine the differences between people who self-harm and people who do not, on their natural mindfulness. The relationship between intrusive thoughts and mindfulness will also be examined in these studies.

Understanding of the constructs described here could be further improved by extending the research to cover groups of individuals with existing diagnoses, now that the groundwork with a general sample has been conducted. Since self-harm is particularly common in Borderline Personality Disorder (BPD) and Depression, both groups may warrant further investigation, particularly in the more novel area of intrusive thoughts in BPD.

Chapter 4. A qualitative investigation into intrusive thoughts in self-harm

In the previous chapter, evidence of an association between negative intrusive thoughts and self-harming behaviours was presented. Some data was presented on the importance of frequency and content of intrusive thoughts, and how these can vary from those people who are currently self-harming, and those who show a similar profile in terms of 'potentially maladaptive' behaviours, dissociation, and childhood trauma.

The data presented thus far was all in the form of quantitative data collected through questionnaires, that did not allow for individuals to provide expanded detail on their own experiences of intrusive thoughts, and how these related to their own self-harm. In the previous chapter we found that self-harmers were different to non-self-harmers with regards to the frequency and content of their intrusive thoughts. In the interests of further investigating this, the present study was devised, allowing for qualitative data collection to complement the quantitative data collected in other studies. Further to this, the previous study also used a sample from the general population, of university staff and students, and so further investigation with a sample from a population that is known to support services is valuable, in order to gather evidence that such a sample will also report intrusive thoughts subjectively. The aim of the study, then, was to use these qualitative methods to further investigate the role of intrusive thoughts in self-harm.

As before, the study uses the following definition of self-harm: "the deliberate, direct destruction or alteration of body tissue, without conscious suicidal intent but resulting in injury severe enough for tissue damage to occur" (Gratz, 2003, p.253). Once

again this is a useful definition as it encompasses a wide range of behaviours, whilst ruling out those that are not directly or intentionally harmful, as well as suicidal acts.

The research questions for this study were as follows:

- (a) What is the nature of intrusive thoughts in a population currently undergoing counselling, with one of their on-going presenting problems being self-harm?
- (b) What, if anything, can be added by the use of open questions to what we have already discovered about intrusive thoughts in self-harm?
- (c) What internal and external events do participants describe as important precursors of self-harm, when their answers are not constricted by forced-choice questions?

4.1. Method

This study was conducted according to the ethical guidelines of the British Psychological Society and the American Psychological Association and received approval from the University of Sheffield Department of Psychology Ethics Committee and the University of Plymouth Faculty of Science Ethics Committee. All participants gave informed consent before taking part in the study.

4.1.1. Participants

Participants in this study were nine individuals with a history of self-harm who were recruited either through email at a large UK-based university (three), or via the counselling service at a local further education college (six). Age data is not available for most of the college participants due to the nature of data collection and most

identifying data being unavailable to the researcher, the only known ages were 51 and 18 years. University participants were all undergraduates and aged 19-20, and all participants from both phases except one (a 20 year old university student) were female.

4.1.2. Questions

Questions in this study were derived to provide information about the role of intrusive thoughts as triggers of self-harm, as well as to investigate what other factors may be involved in the process. The questions were as follows:

- 1a. You have been selected for inclusion in our study because you have a history of self-harming behaviour. Could you please start by telling me approximately when you last did this?
- 1b. And exactly what behaviour was this?
2. Can you remember what it was that triggered this episode?
- 3a. Intrusive thoughts are those that seem to pop into your head, seemingly without origin. Did you experience any of these prior to the episode in question? What were these about?
- 3b. Some people experience intrusive thoughts in the form of intrusive memories. Did you experience those before the episode in question? What were the memories about?
- 3c. Do you feel that these thoughts/memories acted as triggers for the self-harm episode?

4. Do you feel that you have used other strategies to deal with intrusive thoughts or memories that may have prevented you from self-harming?
5. What happened right before the last episode of self-harm?

Responses to the questions were either in the form of direct emailed responses (university participants), or notes taken by counsellors during interview (college participants). In this way the format of responses was slightly different depending on which phase the data was collected. However, since the same set of questions was used in both cases, analysis is still possible for the data set as a whole.

4.1.3. Data collection

Data collection for this study was conducted in two phases, in order to make full use of samples of willing participants with experience of self-harm. Initially, those individuals endorsing self-harming experience in the previous study, and also responding that they were willing to be contacted for follow up were contacted by email, with an invitation to take part in a more in depth investigation of triggers of their self-harm. In this phase, data was collected by way of a series of emails containing open-ended questions, in an on-going dialogue between the researcher and each participant. In the interests of straightforward analysis of the data, the same set of questions was provided to all participants. Upon completion, the response sets were consolidated and all identifying data removed. Unfortunately, the response rate for this phase of data collection was extremely low, in part due to a large proportion of participants having moved on in the intervening period between this study and the previous one, but also in part due to the sensitive nature of the questions, and several

participants' wish to not examine their thought processes further in this setting, when the study was initially explained to them. This phase yielded three full response sets.

The second phase involved approaching a local further education college's counselling service in order to access a new subset of people with experience of self-harm. In this case, participants were approached by the counselling service, asking whether they were willing to take part as part of their on-going counselling sessions, where the questions were completed in order to serve a dual purpose: to improve understanding between the counsellor and the client, as well as data collection for this research study. The same questions were included as in the previous phase of data collection, and all interviews were conducted by trained, experienced counsellors, who made notes for each question, describing the participants' responses.

Analysis was conducted using a constant comparative model (see Glasser, 1965) whereby all responses were compared to each other across questions and groups of questions, in order to identify differences and similarities between the experiences of the various participants, and hopefully find themes within the similarities. This is an inductive and data-driven process, which enabled the researcher to remain open to possibilities that arose, rather than attempting to prove or disprove existing hypotheses. In this way, common responses were grouped together in themes as they came up, rather than predetermined themes.

4.1.4. Ethical considerations

There were a number of ethical considerations in the execution of this study and they were addressed as follows. Firstly, informed consent was gathered from each participant at the start of the study. For the participants who were questioned by email,

an initial email was sent out to them, asking whether they were still willing to take part in the follow-up and explaining that this part of the study would ask more in-depth questions about their experience of self-harm, those that agreed to take part were then asked to provide informed consent by email. For the participants who were interviewed by their counsellors, the counsellor asked them during an earlier session whether they would be interested in taking part, and if they were happy to do so, the counsellor would explain further what was involved and obtain their informed consent to take part. Also, the opportunity was given for participants to ask any questions both before and after completing the study, and beforehand they were informed that they could ask any questions at any point during the data collection. Secondly, confidentiality was ensured in a number of ways. For those people participating by email, their answers were copied to a blank file identified only by a participant number and the original emails destroyed. For those participants being interviewed by the counsellors, identifying information was never available to the researcher, and counsellors kept this confidential as part of the counselling service. Finally, steps were taken to protect the welfare of participants, by providing information of supporting organisations following the email questions, and offering the opportunity for participants to email the researchers with any concerns or questions that they might have. The college participants completed the interviews during their regular counselling sessions and the counsellors worked the questions into each session in a supportive manner and in a way that benefited the counsellor's understanding of the participants' experiences, as well as ensuring that their welfare was protected at all times. The first phase of data collection was approved by the ethics committee for the department of psychology at the University of Sheffield. The second phase of data collection was approved by the ethics committee for the Faculty of Science at the University of Plymouth.

4.2. Results

4.2.1. Behaviours and timings

Initially, responses to questions 1a and 1b were examined to provide a background understanding of the behaviours in question for the sample. The self-harming behaviours for all participants but one fitted in with the definition of self-harm outlined above, which has remained constant throughout all studies in this thesis. These behaviours included severe scratching, cutting, head banging and biting the hands. The behaviour that did not fit in with the Gratz definition of self-harm was self-starving, and this participant did not endorse any behaviour that did fit with the definition. However, two participants who did endorse such behaviours also mentioned bingeing and cycles of bingeing and purging, suggesting that difficulties with food may be connected, and therefore also of interest. This fits with the findings for the previous study where both under and over eating were found to be risk factors for self-harm. This participant was therefore included in the further analyses to see what interesting contrasts might arise.

One participant reported very recent self-harm: “one day ago”, one reported “last week” and the self-starving participant also reported her behaviour to be current as “when I’m stressed. This is most days at present”. Three participants (all three of the university participants) reported not having self-harmed for over a year (up to four years), and three did not specify a time frame. Of these three, two simply described the triggering event and the other reported that the most recent episode was ‘a while ago’.

4.2.2. Triggers

Question two asked about what triggered the most recent episode of self-harm. Seven participants described precipitating events which included: bereavement and loss

(“It began after my grandma died...I think it was probably because of the frustration of not being able to talk to anyone”; “I lost my baby”; “My boyfriend dumped me and I did it...I got rejected and just couldn’t cope”); arguments with family members or carers (“I had a row with my parents about the baby”; “My little brother was calling me names, he always is, he’s my half brother, don’t like his Dad, either. They gang up on me all the time, it’s so not fair”; “People at the care home telling me what to do, I couldn’t go home to see my parents. People telling me I can’t go”). One participant simply reported, “needing to cope with recent events”. The participant who engaged in self-starving also reported the end of a relationship as a triggering factor, although acknowledging that this exacerbated rather than initiated the behaviour (“I am always like this. Since I finished with my boyfriend 2 weeks ago, I have been worse”).

Two participants described difficult thoughts that triggered their self-harm, one directly, “because of feeling disgusted with myself and worthlessness”, and one in conjunction with feelings of abandonment (“Being left alone for a long weekend at home with nothing to do and no one to talk to to distract me from certain types of thoughts”).

Question 5 was very similar and was also intended to identify triggers of self-harm by asking about the context of the last episode. Two participants (including the participant who engaged in self-starving) reported that they were unable to remember what happened prior to the last episode, and one reported that she did not wish to remember as it would “stay with me (her) all day”. Of the other participants, six were able to describe what had happened; in four cases participants again described difficult situations or conflict with others (“I had a big fight with my mum. I did really hurt her. I threw a chair at her”; “I had been criticised”; “I was sitting in GSCE physics class at school. A girl was talking to me, whom I liked but I could not force myself to say

anything to her so I became frustrated and angry with myself”; “I was told something that I didn’t want to hear. I just flew into a rage and went to my room. I sat on my bed and thought ‘I’ll show them’”) whilst one participant described again her loss “I got bad news about my baby from the hospital”, and one described how her strong negative feelings towards herself and food had led to her self-harm (“I was in my kitchen, had just had breakfast and just started thinking about how disgusting it was to have food inside me, I just kept thinking how gross I was and knew I had to do something about it”). One participant described more generally how her worries (which were intrusive) often lead to self-harm, (“most of my episodes of intensely scratching myself would be related to intrusive memories of bad bipolar episodes my mum had had and my fears of repeating her episodes to a worse extent by inheriting manic depression”).

4.2.3. Intrusive thoughts

Questions 3a, 3b and 3c all relate to intrusive thoughts and memories, and how these might act as triggers for self-harm. 3a specifically asked if people experienced self-harm. Six self-harming participants were clear that they experience intrusive thoughts (“Yes all the time, I think about my Dad and Mum”; “I always have had this problem”; “I have had intrusive thoughts for as long as I can remember. I see members of my family being brutalized, perhaps because my mind wants me to be upset, I don’t know. I can not be certain what intrusive thoughts I may have been having before I hurt myself as they are completely random and it was a long time ago, sometimes they are just innocent thoughts of nothing important or traumatic at all”; “I think so, although I suppose they might have some origin...general feelings of worthlessness might just enter my head”; “Yes all the time”; “self doubt, feeling judged, criticized, not feeling or being responsible, anger”) and the self-starving participants answered similarly (“I get a

deep thought in my head that something is going to happen in the future. I get lots of thoughts in my head, I get scared of these thoughts”). One participant was not certain that her thoughts were intrusive (“I don’t think any of my thoughts were intrusive...in a way the thoughts were intrusive as they were not really connected in any way and simply became obvious once I got into the upset mood”) whilst one described no thoughts at all, and perhaps a more dissociative state (“No I just went blank, I just did it”).

Question 3b asked about intrusive memories. Three of the self-harming participants described intrusive memories (“I have intrusive memories...I don’t think I get the memories that often though, and I can not be certain what (if at all) they might have been”; “I just hear what they said over and over again, just like a cd”; “most of my episodes of intensely scratching myself would be related to intrusive memories of bad bipolar episodes my mum had had and my fears of repeating her episodes to a worse extent by inheriting manic depression”). One participant described intrusive memories although she was unclear of whether these met the description (“No I don’t think so...although maybe I will remember times when I think I was acting stupid and this will add to the feelings of worthlessness. One thought leading to an unrelated thought and so on which just adds to the low feeling”). Three participants stated that they did not experience intrusive memories (“no, I don’t have flashbacks during the day, only at night”; “no, no memories”; “no, just anger for not being in control”) whilst one described other feelings in response to this question (“I had bad feelings saying ‘they don’t like or love me anymore, I have let them down’”). The self-starving participant described a situation that may have appeared as intrusive memories, although this is not clear from her response (“I broke up with my boyfriend, he tried to attack me as I left. I knew this would happen, I just felt scared”).

Question 3c asked about whether participants felt that the intrusive thoughts or memories acted as triggers for their self-harming behaviour. Four self-harming participants felt that their intrusions were triggers for their self-harm (“Yeah sometimes when I think of my Dad and Mum not together any more”; “probably”; “most of my episodes of intensely scratching myself would be related to intrusive memories of bad bipolar episodes my mum had had and my fears of repeating her episodes to a worse extent by inheriting manic depression”; “when I think about my baby, I get angry and cut my legs”), whilst three felt that they were not (“no”; “No, I do it because I can, I’ve always done it since I was little, I like it”; “No I think I hurt myself because I was stressed out and frustrated with myself because I wasn’t talking to anyone. I think it is stress which leads to horrible thoughts as well, two different products of stress, not one causing the other”). The two remaining participants were less clear. One seemed to feel that the intrusions played a more complex role (“No don’t think so...although maybe I will remember times when I think I was acting stupid and this will add to the feelings of worthlessness. One thought leading to an unrelated thought and so on which just adds to the low feeling”). The final participant, the person who had described starving herself answered as follows: “This had happened before with an ex. I can’t describe it; you just have to be in the moment. I feel that I freeze and as I do that I can handle it. It’s weird but it helps me”.

4.2.4. Other strategies for coping with thoughts

Question 4 asked what else people might do to cope with their intrusive thoughts when they arise, other than self-harming. Four self-harming participants described their different coping methods (“learning to accept things the way they are and not over-react. Sought counselling, taken anti-depressants”; “talking to people about them or just

generally distracting myself by talking to other people or being around friends.

Otherwise going for a long walk where I can think about things not feel so trapped or enclosed”; “I listen to music or talk fast”; “I put scarves around my wrists sometimes to stop me”). The participant who engaged in self-starving also described ways of dealing with her thoughts, “I stay away a lot and see if anyone comes to look for me. I draw my feelings in my artwork at college but no one can understand it, I exercise at home late at night to get hot and tired”. Two participants simply reported that “no”, they did not use different strategies. Three participants (including one that had listed coping strategies) reported how other coping strategies did not help, either offering only temporary relief, or having no effect at all (“I have no way of dealing with intrusive thoughts, they come into my mind, and I am forced to watch, I just wait it out and try to be sensible about things”; “tried other strategies (various) but these don’t help, just hibernates it. It just continues to build pressure”, “tried various self-help books always suggest to take your mind off things, but these usually only delay the inevitable for a while”). It should be noted that in some cases participants may have misunderstood the question and described methods of avoiding self-harm rather than coping with intrusive thoughts *per se*.

4.3. Discussion

Above is a summary of the responses given by nine participants with experience of self-harm in one form or another, on a series of questions about their experiences and patterns of intrusive thoughts.

One interesting finding relates to the themes that emerged from the reports of general triggers of the harmful behaviours. The main two most common triggers of self-harm were those surrounding bereavement or loss and interpersonal conflict. Both of

these categories are encompassed by interpersonal instability, suggesting that this type of difficulty with relationships is common amongst those who engage in self-harm. The other theme that arose was that self-harm was a way of dealing with difficult thoughts, which fits with our previous findings about the role of intrusive thought content in self-harming behaviour. In this case, the content related to worries and negative thoughts about themselves.

A large proportion of participants reported experiencing intrusive thoughts and a smaller proportion reported experiencing intrusive memories. These findings are interesting as they suggest that intrusive thoughts are common in the sample, and therefore possibly in people who self-harm and therefore may play a role in these behaviours. The content of the intrusive thoughts is also interesting, as in our previous study we found that people who engaged in self-harm were more inclined to have negative thoughts about themselves, a theme that again arose in this study.

It is interesting to compare the responses of the participant who used starving to self-harm, compared with those who used more familiar forms of self-harm, that fit with our definition. What is notable in this comparison is that the responses of this participant were similar to that of the other participants on triggers (although in the context of existing behaviour) and experience with intrusive thoughts. The similarity of these responses suggest that there is some mechanism in common between self-harm and self-starving, perhaps with eating disorders in general.

Interestingly, one participant reported 'learning to accept things' as a way of coping with her intrusive thoughts that helped her to avoid self-harming. Acceptance is a key aspect of mindfulness; this offers some preliminary support for mindfulness as a way of coping with intrusive thoughts and possibly as a protective factor against self-

harm. However, only one participant mentioned this so this conclusion can only be considered tentative.

All three of the university students reported not having self-harmed in over a year and this was different to the reported recency of self-harm by college students. It is worth considering that the slight difference in data collection may have had an effect here. Perhaps since this data was collected by email rather than in counselling sessions participant felt less free to be honest and admit to recent self-harming episodes.

Taken together, the responses in this study suggest that intrusive thoughts and how they are dealt with can have an effect on whether people will tend to self-harm. Results suggest that upset mood may lead to increased intrusive thoughts, an increasing spiral of intrusive thoughts and emotional distress and eventual self-harm. However, it is also possible that upset mood may lead to a sense of blankness – a dissociated state perhaps – in which intrusive thoughts may not appear to be present.

There are several ways in which the findings of this study add to those already described in this thesis. Firstly, further support is provided for the importance of intrusive thoughts in several people's experiences of self-harm, particularly when the content of these is negative. Most importantly, several participants described how their self-harm follows on from their intrusive thoughts, suggesting a causality that could not be assumed from the previous study. Secondly, this study also implicated upset mood as an important precursor for self-harm, something that we have not previously assessed. Although there may be little scope for integrating a measure of mood per se into the design of later studies in this thesis, it is worth considering for future studies, and indeed for the functional data gathered later on, as it may tie in with participants' reasons for engaging in self-harm. Similar to this is the finding that interpersonal instability was an

important trigger of self-harming behaviour, since again this may fit in with the functional data, which we will examine in the later studies. A third way in which the findings from this study add to this thesis are in relation to the similarities between responses from the people with experience of self-harm, and the individual with experience of an eating disorder. This fits in with the previous study where disordered eating was associated with self-harm and suggests possible shared mechanisms between the behaviours.

The findings of this study will inform the later studies in this thesis in a number of ways. Firstly, by suggesting the importance of including measures of ways of coping with difficult thoughts. The literature review chapters highlighted the importance of mindfulness and thought suppression as possible ways of coping with thoughts, and the findings of this study offer further support for this. The future studies in this thesis will therefore include measures of both trait mindfulness and thought suppression, in order to ascertain whether naturally using these ways of coping is associated with higher or lower risk of self-harm. A second way in which the findings of this study are important for future studies are in relation to the functions of self-harm. Two possible functions of self-harm that were not related to intrusive thoughts arose in this study: interpersonal instability and to deal with low mood. Since functions of self-harm may therefore be relevant to this body of research over and above simply dealing with difficult thoughts, the two further studies in this thesis will include a functional measure of self-harm, that collects data on participants' reasons for engaging in an act of self-harm.

4.3.1. Methodological limitations

There are several limitations of this study. Firstly, the two-phase nature of data collection in this study yielded somewhat confusing results which did not necessarily

entirely fit with the questions, were perhaps more difficult to analyse and which, in the case of the college counsellors' transcriptions, did not necessarily directly represent the voices of the participants. However, the setup of this second phase of data collection has several advantages over the first, email phase. Participants were able to describe their experiences in a safe environment with a counsellor with whom they were familiar and comfortable, and could go on to address any issue that would arise for them as a result. Also, the fact that this type of qualitative study design can be iterative in itself justifies such a change in data collection methods, since data collection had to be altered to allow the study to continue.

This study was conducted by a researcher with very little experience of qualitative data collection and analysis, and as a result, various other limitations arose. For example, the researcher was unaware that it is considered good practice to keep an audit trail to detail the process of analyzing the data, in order to remain transparent and evaluate the process at each step. Also, had the researcher been more experienced, the questions would have been better worded to allow fuller, more expansive responses. This limitation was more clear in the data collected via the university samples, since participants were able to give one-word answers, for example, 'no'. Were a similar study to be conducted in the future, questions would be more carefully worded in an attempt to avoid this. A further limitation as a result of the researcher's lack of experience pertained to the confusing nature of results as explained above, for example the confusing nature of questions about coping methods. The researcher was unaware of this potential issue and in future similar studies would endeavour to conduct interviews in person, in order to record and transcribe responses in the true 'voice' of participants. However, in the researcher's current position this would have been extremely difficult

given ethical and governance considerations, and in this case, data collection by way of the counselling service provided an acceptable alternative.

A further limitation as a result of the researcher's lack of experience relates to the method of data analysis in this study. A fairly loose method of constant comparison was used, and analysis would possibly have benefited from a tighter method of analysis, possibly following some specific training. The lack of a second independent researcher to also identify themes affects the reliability of the study, since no measure of inter-rater reliability is available, which is exacerbated by the lack of experience on the part of the researcher. If a similar study was conducted in the future, the researcher would be certain to ensure that a second independent researcher were available to extract themes, in order to triangulate the data and confirm those themes that were inferred in the study.

The sampling strategy used in this study also represented a limitation, since at the outset it was intended to use a purposive sampling method (Hansen, 2006) by criterion sampling, or selecting those people who met the criterion of having some experience of self-harm from within our sample from the first study (and therefore their experience of self-harm was that which fit with our previous definition). However, this did not in the event remain practical, since at the point of follow up a large proportion of participants were no longer available due to having left university and therefore changing their email addresses. The effect of this alongside a certain decrease in the number of available participants left us in a position where it was no longer possible to select from the available pool of participants since only three people provided complete answer sets and so we were unable to employ a method of critical case sampling which would have allowed us to select cases where their experiences were best suited to our research questions, and provided to most meaningful information for us in terms of intrusive thoughts in self-harm. Since our sampling yielded only three participants in the first

phase of data collection, the second phase was employed whereby the counsellors selected people for inclusion on the basis of their self-harming behaviour and whether it met our working definition of self-harm. Therefore, due to overall sampling constraints that we did not anticipate at the outset, the sampling strategy of this study left a lot to be desired and the robustness of the results can be brought into question. Were a similar study conducted in the future, the researchers would endeavour to address this limitation by employing a more carefully selected sample for inclusion, and giving greater consideration to the sampling strategy, in terms of what was available from the study sample. Although the number of participants in this study was determined by the number of participants available to take part, in a lot of cases similar answers were produced and this degree of replication of responses implies that data saturation may have been approached, and that increasing the number of participants were more available, might not have added anything to the findings. That said it would have been helpful to interview a few further participants, in order to discover whether, in fact, this was the case.

One issue in conducting a study of this type is a question of the ‘validity’ of qualitative research. Hansen (2006) described how this is best understood in terms of credibility, dependability, confirmability and transferability. Credibility is the term that best corresponds to internal validity in quantitative research. This is assessed by examining and interpreting whether the findings of the study represent something approximating the ‘truth’. In this study this is somewhat brought into question by the fact that in the second phase the data is in the form of the counsellor’s notes rather than the participants’ true ‘voices’. However, these responses were also collected in a very ‘safe’ environment, whereby participants were working with counsellors with whom they had previously been working for a sustained period of time, and therefore may be

able to trust and be more open with than with a usual researcher. It could be argued that this could result in an experimenter bias whereby participants may have responded in a specific way in order to have a specific effect on their care. However, the counsellors assured me that they included the questions as a part of their session in a natural way, and since the participants had been fully briefed as to the study before they agreed to take part in the interests of informed consent, it was felt that this would not be problematic.

Dependability is assured by providing a clear and transparent account of the process of conducting a study and ensuring that the methodology is suitably designed in order to meet the aims of the research. Whilst the design of this study did serve to meet the aims to an extent, the limitations discussed thus far, in particular those relating to the inexperience of the researcher may have impacted on this to a certain degree. The existence of an audit trail would provide a degree of transparency and therefore dependability in this study. The difficulties with recruitment and the resulting change in the approach to sampling may also have affected the dependability of this study, and so in future studies extra care would be taken to design the methodology in order to meet this criterion.

Confirmability requires that the findings of a study are, to some extent neutral, in terms of the researcher's attempts to avoid distorting the data to support their predetermined hypotheses. Indeed this cannot be entirely avoided in any study, but awareness of such issues can go a way to reducing the extent to which this may occur. The final indicator of 'validity' in qualitative research is the degree to which a study can be considered to be transferable. This is the extent to which a study can be interpreted and evaluated by the reader, by ensuring that the process is clearly described so the reader can understand and decide how the results may be applicable to other situations.

In the write up of this study, care has been taken to meet this criterion, and ensure that the reader can fully evaluate the transferability of the study's findings.

Although there are undeniably a number of serious limitations with this study, some interesting findings do still remain, and on the whole it still provides some tentative support for the associations between our study variables and suggestions for additional measures.

Chapter 5. Triggers and functions of self-harm in an adolescent inpatient sample

5.1. Introduction

Previous chapters in this thesis have examined intrusive thoughts and other triggers of self-harm in the general population using bespoke and established quantitative measures, and in a sample of people in treatment, using semi-structured open-ended interview questions. From a methodological perspective, it would be valuable to conduct a quantitative investigation into intrusive thoughts in self-harm using a treatment sample, and to investigate how trait mindfulness (as a method of coping with intrusive thoughts) may also affect participants' self-injurious behaviours. This chapter will include a measure of mindfulness in order to determine whether trait mindfulness may act as a protective factor against self-harm. The previous chapters suggest that intrusive thoughts are more frequent and qualitatively different for people who self-harm than for people who do not, including an increased reactivity to the thoughts. Since the extent to which people react to their thoughts is elevated for people who self-harm, people who do not self-harm may have some other method of coping with their thoughts. A natural tendency to be mindful is one possible way of coping, as it allows people to recognise thoughts as 'just thoughts' (Kabat-Zinn, 1990) rather than ruminating or forming a negative association with them that might increase their urge to self-harm. Other coping strategies may also exist, but given the success of some clinicians in treating suicidal thoughts and behaviour with mindfulness (Williams & Swales, 2004), and practical constraints that limited the number of questionnaires that

could be included in this study, trait mindfulness appeared to be a sensible measure to consider.

The study presented in this chapter therefore explores the relationships between self-harming behaviours, intrusive thoughts and trait mindfulness in young people admitted to an acute psychiatric unit.

5.2. Self Harm

As Nock and Prinstein (2004) point out, when they compared the various rates, self-harm was particularly frequent in young people, especially those that are inpatients in mental health facilities. As Klonsky (2007) indicates in his review, rates of self-harm in this group can range from 40% to as high as 80%, and so a measure of self-harm rates is valuable to include, to determine how the rate in this study compares to that in the literature. The first questionnaire used in this study assesses type, frequency and functions of self-harm, and is called the Functional Assessment of Self-Mutilation (FASM; Lloyd, Kelley, & Hope, 1997; Lloyd-Richardson, Perrine, Dierker & Kelley, 2007). The FASM is a measure which encompasses aspects of classification, frequency, context, severity and functionality of self-harm. It was designed for use with young people who are known to self-harm and has been successfully used in research with adolescents (e.g. Nock & Prinstein, 2005). The scale comprises several questions assessing the nature and frequency of self-harm acts and whether medical treatment was sought, followed by 23 questions investigating the functions of the behaviour. These latter items load onto four subscales: automatic negative reinforcement; automatic positive reinforcement; social negative reinforcement and social positive reinforcement (Nock & Prinstein, 2005). The items for the FASM were originally designed by in-depth literature reviews and focus groups with young people with experience of self-

harm in order to create an extensive list of items to include in the measure. Nock and Prinstein (2004) provide evidence to support the measure's internal consistency and concurrent validity from previous studies, and their own evidence of the structural validity and reliability of the above four-factor model from an evaluative study with a sample of young people who were in inpatient psychiatric treatment and had experience of self-harm.

This measure was included because it provides a comprehensive list of possible functions of self-harm, and so allows us to investigate a full range of these in our sample. However, it is also an established, standardised and more rigorous method of assessing self-harm than used in our previous quantitative study, with existing evidence to support its reliability and validity. This should provide more robust findings with regards to the nature of self-harm in this sample, particularly since this measure was designed for use in samples of young people in hospital populations.

For the purposes of this study, a modified version of the FASM was used to keep the assessment slightly briefer. This involved shortening and combining some questions, such as those relating to premeditation and intent and reducing the list of self-harming behaviours to cutting, burning, or other. This did not affect the functional items, and was not felt to risk the validity of the measure. Items were as follows:

F1. Have you engaged in the following behaviors **ON PURPOSE** within the past year (circle all that apply):

1. Cut or carved on your skin (no/yes)
2. Burned your skin (i.e., with a cigarette, match, or other hot object)
(no/yes)
3. Other: (no/yes)

- F2. Approximately how many times?
- F3. Have you gotten medical treatment? (no/yes)
- F4. While doing any of the above acts, were you trying to kill yourself?
(no/yes/NA)
- F5. How long did you think about doing the above act(s) before actually doing it?

(I did not think about it; A few seconds; A few minutes; Less than 1 hour; Less than 1 day; 1-2 days; Longer than 2 days; N/A)
- F6. Did you perform any of the above behaviors while you were taking drugs or alcohol? (Yes/no/N/A)
- F7. Did you experience any pain during this self-harm?

(No pain/ Little pain / Moderate pain / Severe pain/ N/A)
- F8. How old were you when you first harmed yourself in this way?
- F9. If not in the past year, have you **EVER** done any of the above acts? (Yes/ No/ N/A)

The remainder of the questionnaire included the following question and list of items rated on a scale of 1-4 (never/rarely/sometimes/often).

Did you harm yourself for any of the reasons listed below?

(Circle all that apply)

- F10. to avoid school, work, or other activities
- F11. to relieve feeling “numb” or empty
- F12. to get attention

- F13. to feel something, even if it was pain
- F14. to avoid having to do something unpleasant you don't want to do
- F15. to get control of a situation
- F16. to try to get a reaction from someone, even if it's a negative reaction
- F17. to receive more attention from your parents or friends
- F18. to avoid being with people
- F19. to punish yourself
- F20. to get other people to act differently or change
- F21. to be like someone you respect
- F22. to avoid punishment or paying the consequences
- F23. to stop bad feelings
- F24. to let others know how desperate you were
- F25. to feel more a part of a group
- F26. to get your parents to understand or notice you
- F27. to give yourself something to do when alone
- F28. to give yourself something to do when with others
- F29. to get help
- F30. to make others angry
- F31. to feel relaxed
- F32. other:

5.3. Intrusive Thoughts

The study reported in chapter three showed that intrusive thoughts play a role in self-harm and people who self-harm differ from those who do not on the frequency, content and reactions to intrusive thoughts (Batey, May & Andrade, 2010). In order to consider these factors alongside mindfulness, and in a different sample, the second measure used in this study was the EBRIQ: Emotional and Behavioural Reactions to Intrusions Questionnaire (Berry, May, Andrade, & Kavanagh, 2010) as described in chapter three. The other four intrusive thoughts questions (separate from the EBRIQ) used in chapter three were also included:

IT1. How often (on average) do you experience intrusive thoughts?

Never; less than once a day; once a day; several times a day; every time I try to concentrate on something.

IT2. Please specify what sorts of things you often have intrusive thoughts about:

Food or drink; Positive thoughts about myself; Negative thoughts about myself; Activities (e.g. sport etc.); Harming myself; Happy memories; Unhappy memories; Something else.

IT3. How much do these thoughts distract you from everyday tasks?

Not at all, they just occur and then disappear; Only momentarily; Somewhat - it takes some effort to stay focused on the task; Quite a lot - it is hard to get back to what I was doing; Very much - I have to act on the thought before I can do anything else

IT4. Approximately how often are these thoughts distressing?

Never; Up to 30% of the time; 31-50% of the time; 51-80% of the time; 81-99% of the time; All of the time

5.4. Mindfulness

In their study with young people in schools, Lundh *et al.* (2007) found trait mindfulness to be negatively associated with self-harm in young people. Given this finding, alongside the success of mindfulness as an intervention for a range of mental health diagnoses and the intrusive thought findings from our previous studies, we chose to include a measure of mindfulness, to investigate how mindfulness, intrusive thoughts and self-harm may be related in this sample. Accordingly, the Brief Mindfulness Measure (BMM; Berry *et al.*, 2010) was included in the battery. The BMM was developed to allow trait mindfulness to be assessed by a short measure that could be included in a battery alongside other measures. It is a ten-item subset of the 46 items from the Inventory of Mindfulness Skills (KIMS; Baer, Smith & Allen, 2004) and the Five Factor Test of Mindfulness (FFMQ; Baer, Smith & Allen, 2004) and contains two items from each of the FFMQs five aspects of mindfulness. Berry *et al.* (2010) selected the ten BMM items by conducting a factor analysis and then taking the two items from each factor that explained the largest proportion of the total scale variance. They reported that the shorter measure showed good internal consistency by split-half reliability testing, and good test-retest reliability when included in a follow-up study. Validity of the scale was supported by expected correlations with associated measures. Although Lundh *et al.* (2007) conducted a similar study using the Mindful Attention and Awareness Scale (MAAS; Brown & Ryan, 2003), we chose to use the BMM rather than this scale since it had been created by combining two other well-established measures, and was slightly shorter, which was helpful in this study where there was a risk of overloading participants due to the number of other measures that were already included in the battery.

The ten items are rated on a 1-5 scale of how true they are, from ‘never or very rarely true’ to ‘very often or always true’, and half the items were reverse coded, with a high total score indicating high trait mindfulness. Questions are as follows, with reverse coded items indicated by an asterisk:

- B1 Even when I’m feeling terribly upset, I can find a way to put it into words
- B2* It’s hard for me to find the words to describe what I’m thinking
- B3* I tell myself I shouldn’t be thinking the way I am thinking
- B4* I think some of my emotions are bad or inappropriate and I shouldn’t feel them
- B5 When I have distressing thoughts or images, I am able just to notice them without reacting
- B6 When I have distressing thoughts or images, I just notice them and let them go
- B7* When I do things, my mind wanders off and I’m easily distracted
- B8* When I’m working on something, part of my mind is occupied with other topics, such as what I’ll be doing later, or things I’d rather be doing
- B9 I pay attention to sounds, such as clocks ticking, birds chirping, or cars passing
- B10 I intentionally stay aware of my feelings

The specific research questions for this study are as follows:

- (a) Do associations between self-harm and intrusive thoughts found in the previous study (study one) hold true for a sample of young people who are currently in treatment for mental health diagnoses?
- (b) Does mindfulness serve to protect against self-harm or other reactions to intrusive thoughts?
- (c) Do participants' reported reasons for engaging in self-harm support any particular model of self-harm functions?

5.5. Method

This study was a cross-sectional, quasi-experimental observational design, with comparisons being conducted between groups of young people with and without experience of self-harm. In this study, data was collected from each participant on one occasion only, and was collected as part of a larger study looking at predictors of suicidal behaviour in adolescents. Not all participants of the larger study were assessed as part of this study, and participants were reimbursed for their time as part of the larger study.

5.5.1. Participants

Participants in the study were 39 young people aged between 13 and 18 (mean = 15.37, SD = 1.53) of whom 25 (65.8%) were female, 7 (18.9 %) were Hispanic or Latino and 30 (78.9%) were white. All participants were local residents attending an adolescent psychiatric inpatient unit at a large psychiatric hospital in the US. The unit offers a therapeutic and assessment setting, and patients generally stay an average of 2-4 weeks before discharge, or referral elsewhere. All participants were admitted on the

basis of some suicidal behaviour (attempt, ideation, or threat) and were referred from a healthcare professional or other institution, or by self/family referral. Diagnoses were wide ranging and comorbidity was frequently observed. The most common diagnoses in the sample included depressive disorders (87%) and disruptive disorders (61%). Grade Point Average in the sample ranged from one to five, with a mean of 2.7 (SD = 1.12) and global assessment scores (scored out of 100, summarising how well they were functioning in all areas) ranged from 31-57 with a mean of 44.2 (SD = 8.06).

5.5.2. Procedure/ instruments

Participants were asked to complete a battery of the three questionnaires (BMM, EBRIQ and modified FASM) alongside an interview as part of the larger longitudinal study, which ran over a period of a year for each participant. For some participants (62%) this study was conducted at their baseline time-point in the longitudinal study, whilst for the remainder this study was conducted at their six-month follow-up. The time-point at which participants completed the measures was entirely dependent on where they were in terms of the larger study when we collected the questionnaire data, since we were only able to collect data for this study for ten months of the thirty-six months that the larger study ran for. Data collected at both time-points was included, in order to maximise the sample size for our study. Demographic data was also gathered as part of the larger study, and that data will be included here.

5.5.3. Ethical considerations

There were a number of ethical considerations in the execution of this study and they were addressed as follows. Firstly, informed consent was gathered from each participant at the start of the study by way of a signed consent form following a full

description of the study. Since the participants in this study were under the age of 18, consent forms were also gathered from the young person's parent or guardian. Also, the opportunity was given for participants to ask any questions both before and after completing the study, and beforehand they were informed that they could ask any questions at any point during the data collection.

Secondly, confidentiality was ensured in a number of ways. Raw data was stored in a locked filing cabinet in a locked office, and the databases containing participant responses were stored separately from any identifying information. Finally, steps were taken to protect the welfare of participants, by providing the questionnaires through the unit where they were resident, and ensuring that support from unit staff was available to participants if required as a result of the study.

This study was approved by the ethics committee for the department of psychology at the University of Sheffield. Approval was also granted by the Institutional Research Boards of Butler Hospital and Brown University for both the larger study generally and the additions required for this study.

5.6. Results

5.6.1. Self-harm

An inclusion criterion for the larger study was that participants must have expressed suicidal ideation or made a suicide attempt or gesture. On the strength of this we would expect high rates of self-harm within the sample, and this was the case. Twenty-two (58%) participants claimed to have cut themselves within the past year, 9 (24%) had burned themselves within the past year and 10 (26%) had engaged in some other form of self-harm within the past year, giving an overall self-harm rate for the past

year of 23 (60%). Twenty-one (55%) participants reported having self-harmed before the past year.

Where participants endorsed one or more of the items on the FASM relating to having cut, burned or otherwise self-harmed in the last year, or the items regarding self-harming before the last year, they were coded as 'self-harmer'. Those endorsing none of these items were coded as 'non self-harmer'. This gave an overall self-harm rate for the sample of 71% ($N = 27$). Self-harmers and non self-harmers did not differ in terms of sex ($\chi^2(1) = 1.15, p = .283$), race (white or non-white $\chi^2(1) = 1.52, p = .217$), or ethnicity (Hispanic or non-Hispanic $\chi^2(1) = 0.27, p = .601$), nor on age ($t(35) = 0.652, p = .518$), GPA ($t(18) = 0.19, p = .851$), or Global Assessment Scores ($t(35) = 0.67, p = .507$).

5.6.2. Self Harm and intrusive thoughts

The relationship between frequency of intrusive thoughts and ever having self-harmed was significant (Wilcoxon $Z = 2.23, p = .026$) with self-harmers experiencing a higher frequency of intrusive thoughts than non self-harmers. Significant associations existed between whether participants had experience of self-harm and how distracting their intrusive thoughts were (Wilcoxon $Z = 2.27, p = .023$), as well as how distressing they found them (Wilcoxon $Z = 2.83, p = .005$), both of which were higher for those participants with experience of self-harm than for those without. Table 5.1 reports the numbers and percentages and chi square statistics for different types of intrusive thought content by self-harmers and non self-harmers.

Food and drink thoughts and positive thoughts about the self were of lower frequency for self-harmers, whilst self-harming thoughts and negative thoughts about the self were higher in frequency.

Table 5.1: Number and percentage of self-harmers and non self-harmers reporting each category of intrusive thought, sorted by frequency in self-harmers.

Thought Content	Self Harmers (29)	Non Self Harmers (10)	χ^2	2 tailed P
Unhappy Memories	20 (74%)	6 (60%)	0.19	.667
Self - Negative	18 (67%)	3 (30%)	5.40	.020
Self-Harming	12 (44%)	1 (10%)	3.25	.071
Happy Memories	9 (33%)	5 (50%)	1.40	.336
Food and Drink	7 (26%)	7 (70%)	7.64	.006
Activities	7 (26%)	4 (40%)	1.09	.316
Self - Positive	2 (7%)	3 (30%)	3.79	.051

Scores on the EBRIQ were significantly higher for self harmers ($M = 20.2$, $SD = 6.0$) than non self-harmers ($M = 15.0$, $SD = 4.6$; $t(35) = 2.45$, $p = .019$).

5.6.3. Self harm and other measures

Scores on the BMM were not significantly different for self-harming participants and non-self-harmers ($t(36) = 0.822$, $p = .417$) No significant association existed between previous self-harm experience and history of abuse ($\chi^2 (1) = .163$, $p = .686$).

On the diagnostic data, no significant associations existed between previous experience of self-harm and diagnostic criteria for: eating disorders ($\chi^2 (1) = .012$, $p = .913$); depressive disorders ($\chi^2 (1) = 1.19$, $p = .276$); bipolar disorders ($\chi^2 (1) = .798$,

$p = .372$); GAD ($\chi^2 (1) = 0$); disruptive disorders ($\chi^2 (1) = .688, p = .407$); substance disorder ($\chi^2 (1) = .481, p = .488$) or BPD symptoms ($\chi^2 (1) = 1.50, p = .221$). However, a look at the frequencies for the two groups on depression and BPD (the two most common self-harm diagnoses) show that 22 self-harmers (92%) were diagnosed with a depressive disorder, and six (38%) with emerging Borderline Personality Disorder (although in the case of BPD diagnosis, data was only available for 59% ($n = 16$) of self-harmers, and 60% ($n = 6$) of non self-harmers. Eight non self-harmers (73%) had a diagnosis of a depressive disorder.

5.6.4. Other aspects of self harm

For cutting, the number of times that participants had self-harmed varied drastically from once to over 400 times ($M = 57.8, SD = 103.8, \text{Median} = 12$), with twice and 200 times being the most frequently endorsed (three participants each). For burning there was less of a range, from one to 75 ($M = 16.3, SD = 25.8, \text{Median} = 4.5$), and for other forms of self-harm, two to 100 ($M = 27.5, SD = 35.9, \text{Median} = 6.5$). Medical treatment was sought fairly infrequently, with nine (39%) cutters ever having sought medical help, two (16.7%) burners, and three (25%) of those engaging in other forms of self-harm. Ten (30%) of the self-harming participants reported that they were trying to kill themselves at the time of self-harming, and only one participant (2.9%) reported being under the influence of drugs or alcohol at the time.

With regards to premeditation, the two most frequently endorsed responses were that participants had thought about self-harming for a few seconds (eight participants; 24%) or a few minutes (five participants; 15%). Together with the three participants (9%) that did not think about self-harming at all beforehand, a total of 16 (47%) of the 29 self-harming participants thought about self-harming a few minutes or less before

doing so. When asked how much they experienced pain during self-harming, the most frequently endorsed answer was little pain (10 participants; 45%) compared with no pain or moderate pain (both five participants, or 22%) and severe pain (three participants; 13%). The age that participants first self-harmed at ranged from two years to 17 years, although 13 years old was by far the most frequently endorsed answer (seven participants; 63%) and the mean starting age was also just under 13 years ($M = 12.9$, $SD = 2.99$).

5.6.5. Functions of self-harm

Of the 22 possible functions of self-harm (excluding 'other'), the function that participants identified with the most was 'to feel something, even if it was pain' which had a mean (on a scale of 1-4) of 3.03, followed by 'to stop bad feelings' ($M = 2.86$) and 'to relieve feeling numb or empty' ($M = 2.83$). The function that participants identified with the least was 'to give yourself something to do with others, which had a mean score of one since all participants selected one, or 'never'. Other items that participants did not particularly identify with were: 'to feel more part of a group' ($M = 1.03$) and 'to be like part of a group' ($M = 1.07$). Twenty-one of the FASM functional items produced a Cronbach's alpha of .829, with item FASM19 (to give yourself something to do when with others) removed from the analysis by SPSS since no one endorsed it, resulting in a variance of zero for that item. Four items had item-total correlations below .2: 'to avoid school, work or other activities' (FASM1, $r = .152$); 'to relieve feeling numb or empty' (FASM 2, $r = .123$); 'to be like someone you respect' (FASM12, $r = .175$) and 'to feel more part of a group' (FASM16, $r = .110$). Removal of these items had a small effect on Cronbach's alpha, leaving it at .845. However, these

items were not removed for further analysis, as we were interested in all the functions that participants responded to, and which of these were frequently endorsed.

Nock and Prinstein (2004) suggest a model of the functions of self-harm featuring two dimensions that described self-harm as being directed towards either positive and negative results, and either to the individual (automatic) or to interpersonal (social) functions. These two dimensions produce four factors, each assessed in the FASM by several items:

ANR (automatic-negative reinforcement):

to stop bad feelings; to relieve feeling numb or empty

APR (automatic-positive reinforcement):

to punish yourself; to feel relaxed; to feel something even if it was pain

SNR (social-negative reinforcement):

to avoid doing something unpleasant you don't want to; to avoid school, work or other activities; to avoid punishment or paying the consequences; to avoid being with people

SPR (social-positive reinforcement):

to get control of a situation; to get other people to act differently or change; to try to get a reaction from someone, even if it's negative; to get your parents to understand or notice you; to make others angry; to be like someone you respect; to give yourself something to do when alone; to receive more attention from your parents or friends; to feel more part of a group; to let others know how desperate you were; to get attention; to get help; to give yourself something to do when with others.

Table 5.2 Correlations between items within the factors of Automatic-Positive Reinforcement (APR) and Social-Negative Reinforcement (SNR) in the FASM

Factor APR	APR2	APR3	
APR1: to punish yourself	.478 (.005)	.574 (.001)	
APR2: to feel relaxed	--	.427 (.012)	
APR3: to feel something even if it was pain)			
Factor SNR	SNR2	SNR3	SNR4
SNR1: to avoid doing something unpleasant you don't want to	.456 (.007)	.256 (.094)	.103 (.302)
SNR2: to avoid school, work or other activities	--	.465 (.006)	.702 (< .001)
SNR3: to avoid punishment or paying the consequences	--	--	.197 (.158)
SNR4: to avoid being with people	--	--	--

Due to the small sample size in the present study ($n = 29$) a full factor analysis was not possible, so an examination of the correlations between items on the factors was conducted. The two items in Factor ANR (Automatic-Negative) were not significantly positively correlated ($r = .28, p = .07$), but the three in Factor APR (Automatic-Positive) were, as shown in Table 5.2. Of the six correlations between items in Factor SNR (Social-Negative), three were significant, as were 25 of the 61 in Factor SPR (Social-Positive) with a further three approaching significance.

Table 5.3 Correlations above $r = .30$ between items in the Social-Negative reinforcement factor of the FASM (all significant at $p < .05$ unless italicised, in which case $.10 < p < .05$)

		SPR2	SPR3	SPR4	SPR5	SPR6	SPR7	SPR8	SPR9	SPR10	SPR11	SPR12
SPR1	to get attention	.66	.50			.38				.71	.63	.53
SPR2	to receive more attention from your parents or friends		.83	.32	.53			.31			.81	.51
SPR3	to get your parents to understand or notice you			.34	.57		.36	.53		.31	.74	
SPR4	to be like someone you respect				.69							
SPR5	to feel more part of a group											
SPR6	to give yourself something to do when alone									.50		
SPR7	to let others know how desperate you were							.58	.34		.45	
SPR8	to get help								.37		.51	
SPR9	to get control of a situation										.35	
SPR10	to make others angry										.58	
SPR11	to try to get a reaction from someone, even if it's a negative reaction											.55
SPR12	To get other people to act differently or change											

Factor scores were computed for the FASM by finding the mean of the items comprising each factor. Automatic-Positive correlated with Automatic-Negative ($r = .52, p = .002$), Social-Positive ($r = .58, p = .001$), and non-significantly with Social-Negative ($r = .28, p = .076$), but no other correlations approached significance. As can be seen in table 5.3, several factors had reasonably strong correlations with each other despite the small sample size.

5.6.6. Intrusive thoughts

The mean score on the EBRIQ was 19.1 (SD = 6.035) and scores were not associated with age ($r(32) = .054, p = .771$), race ($t(30) = 0.798, p = .431$; white $M = 18.5, SD = 5.63$; non-white $M = 16.0, SD = 6.98$), ethnicity ($t(30) = 1.525, p = .106$; Hispanic $M = 15.0, SD = 4.52$; non-Hispanic $M = 18.9, SD = 5.82$), or sex ($t(30) = 1.502, p = .112$; male $M = 16.1, SD = 4.571$, female $M = 19.2, SD = 6.09$). EBRIQ scores were approaching significance with Grade Point Average (GPA) ($r(20) = .321, p = .065$), and were negatively associated with Global Functioning (GAS) scores ($r(38) = -.365, p = .024$). The seven EBRIQ items produced a Cronbach's alpha of .865 with all item-total correlations above .587. None of the seven items met criteria for exclusion from the scale.

To see if the EBRIQ scores were related to the responses to the three continuously scaled intrusive thought items, separate univariate analyses of variance were conducted for each item, with the response levels of each item as the levels of the independent variable and EBRIQ score as dependent variable. These ANOVAs showed significant effects (figure 5.1) in each case: frequency of intrusive thoughts ($F(4, 32) = 6.806, p < .001$); how distracting the intrusive thoughts were ($F(4, 32) = 7.26, p < .001$); and how distressing ($F(5, 31) = 10.04, p < .001$). Polynomial contrasts for these three analyses showed significant linear and quadratic effects (frequency: linear $p = .001$, quadratic $p = .048$; distracting: linear $p < .001$, quadratic $p = .040$; distress: linear $p < .001$, quadratic = .013).

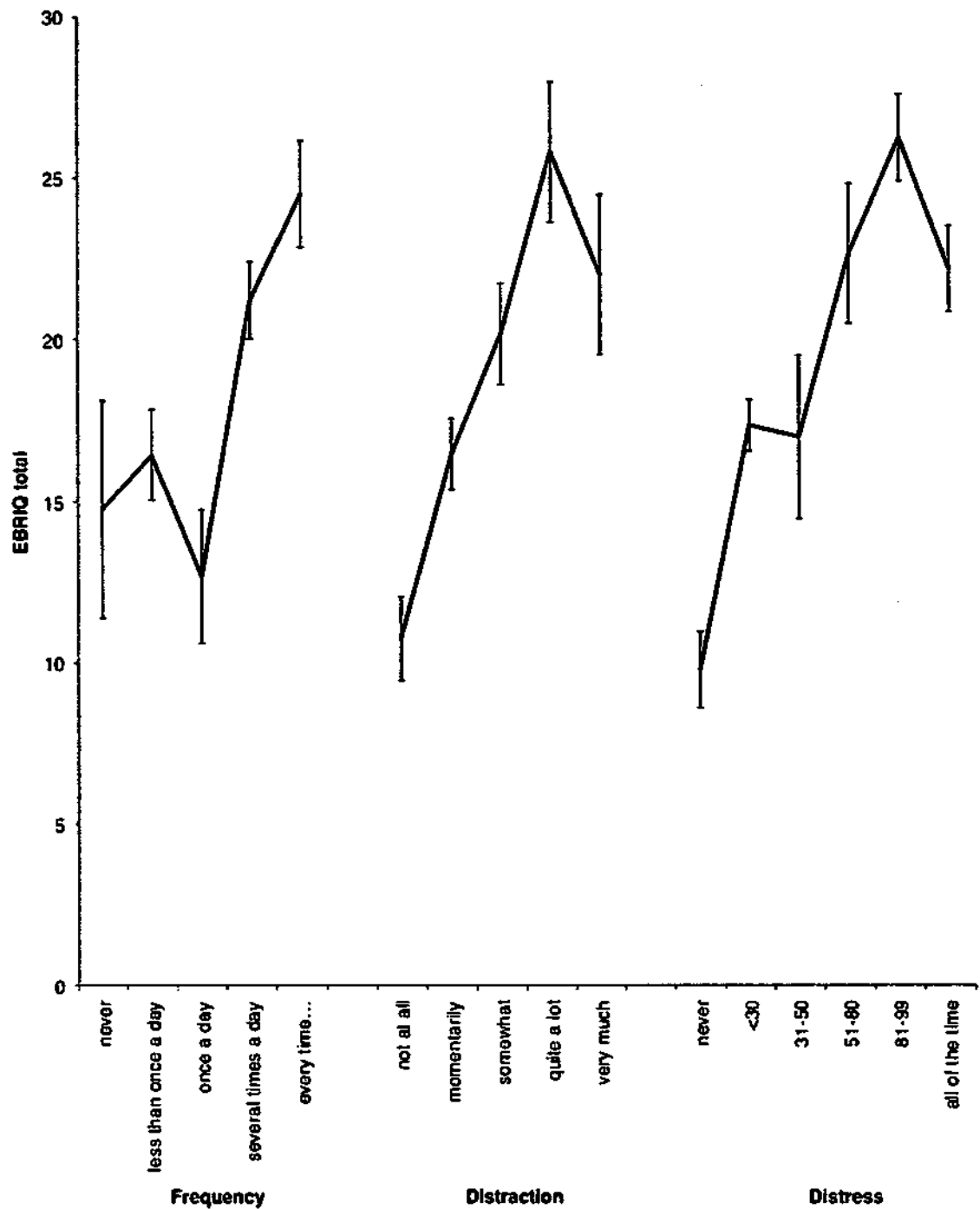


Figure 5.1: EBRIQ total scores increased with increasing frequency, distraction and distress of intrusive thoughts.

From the content of intrusive thoughts item, EBRIQ scores were significantly higher for those participants that did experience thoughts about a negative self ($t(36) = 3.379, p = .002$; yes $M = 21.5, SD = 5.55$; No $M = 15.9, SD = 5.15$) and

harming myself ($t(36) = 2.776, p = .009$; yes $M = 22.5$, $SD = 5.36$; no $M = 17.0$, $SD = 5.55$), compared to those that did not. None of the other content categories were associated with EBRIQ scores: food and drink ($t(36) = 0.721, p = .475$); positive thoughts about the self ($t(36) = 0.105, p = .917$); activities ($t(36) = 0.774, p = .444$); happy memories ($t(36) = 0.884, p = .382$); unhappy memories ($t(36) = 1.22, p = .23$).

EBRIQ scores were higher in those classified as showing Borderline Personality features ($t(35) = 2.217, p = .033$, yes $M = 21.8$, $SD = 4.89$; no $M = 17.3$, $SD = 6.24$). None of the other diagnoses were associated with EBRIQ scores: eating disorder ($t(37) = 0.662, p = .512$); depression ($t(37) = 1.471, p = .150$); bipolar ($t(37) = 0.12, p = .99$); GAD ($t(37) = 0.282, p = .78$); disruptive disorders ($t(37) = 0.772, p = .445$); substance disorders ($t(37) = 1.136, p = .263$) and neither was history of abuse ($t(27) = 1.554, p = .132$).

The EBRIQ correlated significantly with the FASM Automatic-Positive ($r = .65, p < .001$) and Social-Positive ($r = .35, p = .035$) factors, but not with the two negative factors.

5.6.7. Mindfulness

The mean Brief Mindfulness Measure (BMM) score was 29.1 ($SD = 4.82$). BMM scores were not correlated with age ($r(37) = .27, p = .876$), GPA ($r(20) = .23, p = .337$), or GAS scores ($r(37) = .14, p = .427$). BMM scores tended to be higher for males than females, but not at a statistically significant level ($t(35) = 1.723, p = .094$; male $M = 31.0$, $SD = 4.41$; female $M = 28.1$, $SD = 4.91$). Neither race ($t(36) = 0.023, p = .982$) nor ethnicity ($t(34) = 1.174, p = .248$) were associated with BMM scores. The Ten BMM items (with items B2, B3, B4, B7 and B8 having been reverse scored)

produced a Cronbach's alpha of .368, rising to .429 with the exclusion of item 'mind occupied with other topics (B1). While this is not a particularly high value for a purely unifactorial measure, it should be remembered that the BMM comprises two items from each of five separate factors, and this low internal consistency is thus not unexpected. Berry *et al.* (2010) report alphas of .54 and .58 for two samples, which is consistent with the value reported here.

Scores on the BMM were negatively correlated with EBRIQ scores ($r(38) = -.51$, $p = .001$). BMM scores were not associated with frequency of intrusive thoughts ($F(4, 33) = 0.49$, $p = .737$) or how distracting those thoughts were ($F(4, 33) = 1.691$, $p = .176$). How distressing participants found their intrusive thoughts was associated with scores on the BMM ($F(5, 32) = 3.29$, $p = .016$), as shown in Figure 5.2. Polynomial contrasts showed significant linear but not quadratic effects (linear $p = .001$, quadratic $p = .209$).

BMM scores were significantly higher for participants reporting happy memories ($t(35) = 2.428$, $p = .020$; yes $M = 31.4$, $SD = 4.26$; no $M = 27.7$, $SD = 4.77$) and lower for those reporting negative thoughts about oneself ($t(35) = 2.88$, $p = .007$; yes $M = 27.2$, $SD = 4.99$; no $M = 31.5$, $SD = 3.62$). None of the other categories of intrusive thought were associated with BMM scores: food and drink ($t(35) = 0.471$, $p = .304$); Positive thoughts about the self ($t(35) = 0.742$, $p = .463$); activities ($t(35) = 0.861$, $p = .395$); self-harming ($t(35) = 1.586$, $p = .122$); unhappy memories ($t(35) = 1.395$, $p = .172$).

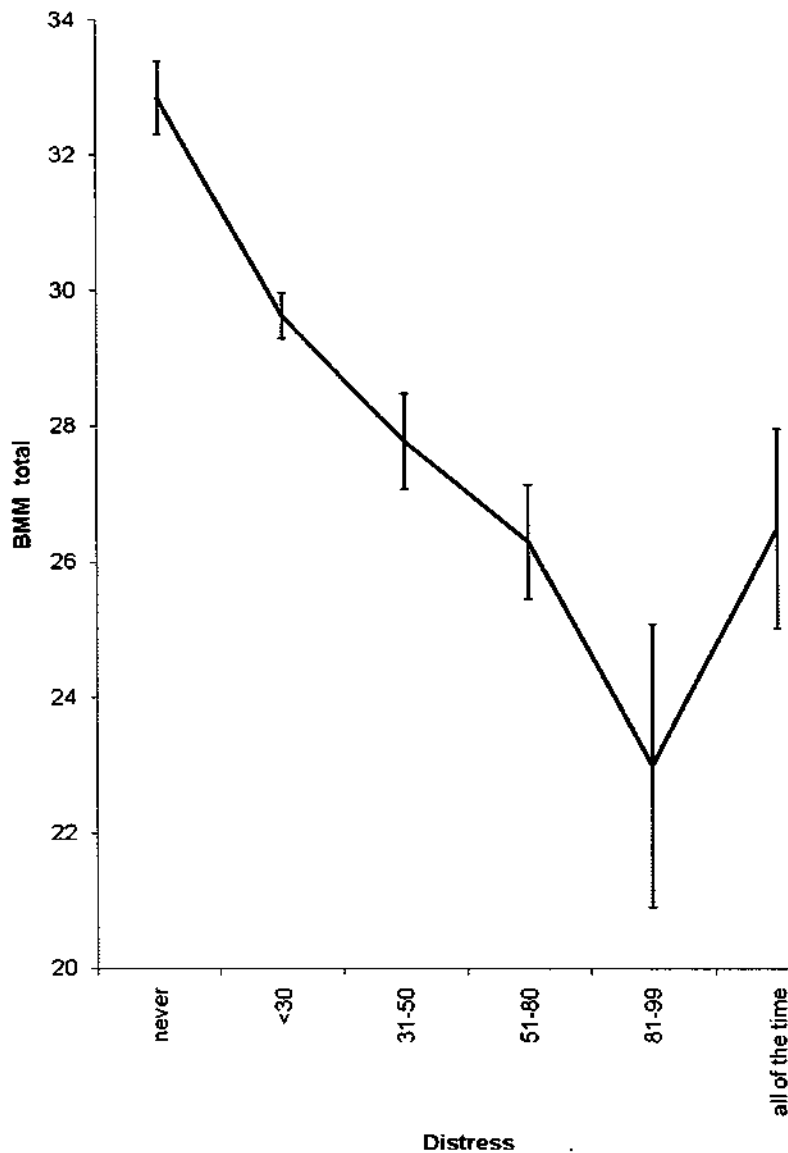


Figure 5.2 : level of distress and mean scores on the BMM

Participants with a history of abuse scored significantly lower on the BMM than those without ($t(27) = 2.603, p = .015$; yes $M = 25.8, SD = 5.47$; no $M = 30.8, SD = 4.37$). Higher BMM scores were found for participants classified as presenting with disruptive disorder ($t(36) = 2.018, p = .051$; yes $M = 30.3, SD = 4.45$; no $M = 27.2, SD = 4.89$) and substance disorder ($t(36) = 1.804, p = .080$; yes $M = 32.6, SD = 3.21$; no $M = 28.6, SD = 0.84$). Those with BPD symptomology had lower BMM scores ($t(18.4) = 2.19, p = .042$; yes $M = 26.7, SD = 5.69$; no $M = 30.6, SD = 3.87$). The other diagnostic groups were not associated with BMM scores: eating disorders

($t(36) = 1.732, p = .092$); depression ($t(36) = 0.039, p = .969$); bipolar ($t(36) = 1.508, p = 0.140$); GAD ($t(36) = 1.046, p = .302$).

5.7. Discussion

5.7.1. Intrusive thoughts

A positive relationship was found between ever having self-harmed and negative intrusive thoughts about the self, as well as with thoughts about harming. These findings support those from previous chapters whereby the intrusive thoughts of people who self-harm are different in emotional content from those of people who have never self-harmed. The important difference, once more, is the negative content of the thoughts, suggesting that negative intrusive thoughts are more associated with an urge to react than others. These two categories were also the only ones in this study that were associated with EBRIQ scores, further supporting the idea that people who self-harm are more driven to react to their intrusive thoughts by their negative tone, perhaps by self-harming. These findings are also supported by the fact that participants in this study with experience of self-harm also rated their intrusive thoughts to be both more frequent, more distracting and more distressing than the non self-harmers did, and all these measures of intrusive thoughts were inter-correlated across the sample.

5.7.2. Self-harm

Unlike the previous questionnaire study, this study used an established measure of self-harm with demonstrated reliability and validity as evidenced in the literature. For this reason, results could be considered to be more robust than those in the previous study. In the present study, cutting was found to be the more common form of self-harm, which is in line with some of the literature (e.g. Gallop, 2002). In this sample, the

mean age of self-harm onset was 13.0 years, a finding that is slightly younger than the age of onset reported in the literature (Klonsky, 2007).

Some unexpected results were found in relation to self-harm, intrusive thoughts and trait mindfulness. BMM scores were not different between groups with or without experience of self-harm, and this was not a result of floor or ceiling effects on the measure, since the means for both groups were closer to the mid-point than either end of the possible range of scores. This finding suggests that dissociation may not be the only mechanism resulting in self-harm in this group. However, EBRIQ scores were significantly different for the two groups, as also seen in study one. This suggests that people who self-harm react more to their intrusive thoughts than those who do not. We might hypothesise that participants in this study may have been self-harming as a result of their intrusive thoughts via one of two pathways. Either their thoughts could have been associated with a state of high emotional arousal whereby they may have felt an urge to self-harm to bring themselves back down, or conversely, with a state whereby participants felt so 'numb' that their urge to self-harm could have served more of an anti-dissociation function. Since these functions appear to be opposed to one another, it follows that they are unlikely to co-exist for one person at any given time. However, it is possible that the two functions would represent different reasons for self-harming within one individual at different times in their life, or in different situations, for example depending on the content of the intrusion. Both of the pathways described here are emotion regulation functions, since one is designed to reduce emotion whilst the other is intended to increase emotion.

Also quite logically, global assessment scale scores were significantly lower for people with experience of self-harm than for people without. Again this follows since

people who self-harm are likely to be generally functioning less well than people without.

This study did not ask directly about impulsivity, but did ask how long participants thought about harming beforehand. Almost half of the participants responded that they thought about harming themselves for a few minutes or less, suggesting an element of impulsiveness to the actions that may not otherwise be obvious.

Finally, there are two somewhat incongruous findings from the self-harm results. Firstly, the self-harm and non self-harm groups were not different on any of the diagnoses, notably on neither depression nor BPD, two diagnoses where self-harm is most common. However, it should be noted that a high proportion of participants with experience of self-harm also met criteria for a depressive diagnosis: it is just that this proportion was only marginally different from the non-self-harm group. Given that the sample was recruited by their experience of suicidal behaviours or thoughts, it is not surprising that there would be such a high incidence of depressive disorders. Even given this, the rate for the self-harm group was remarkably high, and the difference between groups was approaching significance. With regards to the low rate of BPD diagnosis, 30% is still much higher than the rate in the general population (1-2%, Swartz, Blazer & George, 1990), and so this finding is perhaps not so surprising.

Secondly, self-harm and non-self-harm groups were not different on history of trauma, a finding which would appear to go against trauma hypotheses of self-harm. This is not explained by a particularly high rate of trauma history in the sample, since at a rate of 20% of participants with a history of trauma, the rate is not as high as might be expected.

5.7.3. Functions of self-harm

Since the number of participants in this study with experience of self-harm was small ($n = 29$), it was not appropriate to conduct a factor analysis on the data. However, an examination of the correlations between items did offer some support for the four-factor structure described in the literature (Nock & Prinstein, 2004). However, this finding would need to be expanded upon using a far larger sample in order to investigate its robustness. Examination of the inter-correlations between items did yield one interesting finding: both the set of items relating to positive social functions and the one for positive automatic functions were associated with increased EBRIQ scores. This is important because it suggests that the more an individual reacts to their intrusive thoughts, the more inclined they are to self-harm for goal-directed (Nock & Prinstein's, 2004, 'positive') responses, be those socially related ones or those that relate to internal emotional states.

It is also noteworthy that three of the items in this group ('to relieve feeling numb or empty'; 'to feel something even if it was pain'; 'to stop bad feelings') were the three most strongly endorsed functions in this sample. The fact that these three highly endorsed items describe emotion regulation functions of self-harm and are associated with reactions to intrusive thoughts is interesting. This suggests that self-harmers who are inclined to react to their intrusive thoughts are also likely to use their self-harm to attempt to regulate strong emotions, in both cases conveying a sense of feeling out of control.

5.7.4. Mindfulness

Scores on the Brief Mindfulness Measure were negatively associated with EBRIQ scores. This suggests that those people who are more mindful are less reactive to their intrusions. This is also supported by the finding that the extent to which thoughts were perceived as distressing was also significantly associated with BMM scores. These findings together suggest that for those young people without mindfulness skills at their disposal, intrusive thoughts caused more distress and were more difficult to deal with (e.g. accept as just thoughts), resulting in a stronger urge to react to them. The relationships between categories of intrusive thoughts and BMM scores are interesting. Happy memories were associated with higher BMM scores; people who endorsed experiencing intrusive happy memories tended to be more naturally mindful than those who did not, possibly because of a generally higher sense of emotional wellbeing. However, negative thoughts about one's self were associated with lower BMM scores, so those people who experienced negative thoughts about themselves tended to be less naturally mindful than those who did not. It does not seem likely that variability in natural mindfulness should affect the content of intrusive thoughts, but it is plausible that the emotional content of intrusive thoughts would affect an individual's ability to be naturally mindful. The findings from the EBRIQ suggest that negative intrusive thoughts lead people to experience greater emotional and behavioural reactions and also to show more mental or cognitive reaction. Training in mindfulness should therefore be particularly beneficial for people whose intrusive thoughts tend to have negative content.

Two other related findings from the BMM that were notable were that people with a history of childhood abuse and people with BPD symptoms were less naturally mindful than those without. This is of interest with regards to the literature pertaining to

people with Borderline Personality Disorder and treatment of their symptoms using Dialectical Behaviour Therapy, since trauma histories are very common in people with BPD and DBT teaches features of mindfulness not only as a key topic, but also as an overarching theme for the therapy as a whole. These findings, however, are not necessarily surprising since the BMM represents natural, untrained mindfulness, and so this finding merely suggests that people who experience happy thoughts find them easier to deal with in a mindful way (e.g. treating their thoughts as just thoughts, letting them pass by rather than becoming caught up in them, being compassionate towards themselves, etc.) than those people who tend to experience unpleasant thoughts. This again supports the previous notion that the content of intrusive thoughts is important with regards to resulting, potentially harmful, ways of coping.

5.7.5. Methodological restrictions

Due to the nature of the sample and the timeframe involved, the sample was smaller than would have been ideal, and also featured some missing data. However, the sample was sufficient to allow for more than ten participants per measure so results are still valid. This said, the sample size may go a way to explaining why some relationships that were expected on the basis of our previous, larger study were not present in this study, especially when comparing those with experience of self-harm to those without. The sample was also slightly unusual in that not everyone self-harmed, but everyone had expressed some suicidal ideation or gesture, meaning that this was not a self-harm sample, but also not a straightforward adolescent or hospital sample. This means that the findings are unique, but care should be taken when generalising to other similar or non-similar groups.

This study used a cross-sectional, retrospective design, and therefore only collected data on participants' memories of their self-harm experience and did not allow comparisons between the measures at different time-points. There was also a very small comparison group, and even those participants without experience of self-harm had made some suicidal gesture or expressed some suicidal intent, which may have affected their scores on some of the measures. In view of these methodological flaws, there are a number of ways in which an ideal future study would be conducted. Firstly, a longitudinal design that allowed for gathering of questionnaire data at a number of time points would be beneficial, along with a record of how many times participants had engaged in self-harming behaviour between these time-points. Also, retrospective errors could be avoided by including some way of confirming frequency and nature of self-harm episodes. This could be done by including data collection from a guardian, carer or peer, who may be able to substantiate the participants' memories of self-harm. An alternative way of achieving this may be to include a diary-sheet to allow participants to record their experiences as they occur, although this may be impractical over as long a time period as such a study may require. Finally, an ideal study would include a larger and more diverse comparison group, although one from the same unit as the group with experience of self-harm would be appropriate, in order to reduce the effect of external variables.

5.7.6. Implications of the research

This study represents the first time that the EBRIQ and BMM have been used in either adolescent or treatment samples, and therefore a unique investigation into how these groups react to their intrusive thoughts both behaviourally and emotionally. Therefore, this study provides a unique insight into the roles of intrusions and

mindfulness in adolescents in hospital, in particular those with a history of self-harm and suicidality, since in this sample, those participants who were more naturally mindful reacted less to their intrusive thoughts. In terms of clinical implications, this offers preliminary support for the use of mindfulness techniques with this population, perhaps to help them deal with difficult intrusive thoughts by encouraging different ways of dealing with them. There are two specific findings from this study relating to self-harm in young people that have direct clinical applications. Firstly, it should be noted that young people in this study were very disinclined to seek medical help following an episode of self-harm. This highlights the gap in support for young people who self-harm and demonstrates a need to increase ways of accessing help following an act of self-harm. The second finding is that 30% of self-harming participants were trying to kill themselves. Whilst this is in part a product of the sample used, it also reveals the extent to which young people in a sample such as this are at risk of suicide. This shows that, the majority of young people engaging in self-harm do not intend to die, but there exists also a large proportion that do, and that therefore require a different kind of support.

An increased understanding of the role of intrusive thoughts in self-harm will improve understanding of a range of diagnoses in which such behaviour is present, as well as in non-clinical groups. Further, since self-harm is considered in some cases to be a barrier to treatment, the understanding of these behaviours can both inform and facilitate interventions for the people who may not otherwise benefit. Finally, given the link between self-harm and suicide, increasing the knowledge of triggers and functions of self-harm could potentially have a tangible effect on what is a very serious public health problem.

Chapter 6. Triggers and functions of self-harm.

6.1. Introduction

This chapter presents the findings of a second online survey, designed to test hypotheses and findings from previous studies in this thesis, including expanding on those in the previous chapter around mindfulness, where the sample was quite small. This study will also introduce thought suppression as a possible way of coping with thoughts in order to investigate whether it is also associated with self-harm. The studies outlined in earlier chapters have found an association between self-harm and dissociation, as well as with the frequency of and reaction to negative self-related intrusive thoughts. The main aim of this study is to focus on coping strategies for these difficult thoughts, and how these might differ for those people with experience of self-harm, and those without. One such strategy might be considered functional (mindfulness) and one may be dysfunctional (thought suppression). Thought suppression has been associated with psychopathology (Spinhoven *et al.*, 1999) and more specifically, self-harm (Najmi *et al.*, 2007) and given the role of intrusive thoughts and mindfulness as a way of coping with them suggested in the previous studies, it follows that thought suppression would also be of interest as an alternative natural coping mechanism for difficult thoughts.

The previous study yielded some conflicting results, specifically around the association between intrusive thoughts and trait mindfulness, since intrusive thoughts were different in the two groups of people with and without experience of self-harm, and yet the two groups did not differ on their trait mindfulness. This study will again

test these associations, in the hope of elucidating the relationships between these variables.

Following the initial work carried out in chapter five around functions of self-harm, a further aim of this study is to collect self-harm functional data in order to conduct a factor analysis and further examine the reasons why a person may be driven to self-harm. As with the previous online study, the present study involved a general population, and an investigation into how the above concepts differed between people engaging in self-harm and those who do not.

The specific research questions for this study are as follows:

- (a) Do people with experience of self-harm differ from those without in terms of their use of thought suppression and mindfulness skills?
- (b) Do the different risk groups for self-harm differ in mindfulness and thought suppression?
- (c) How are trait mindfulness and thought suppression associated with dissociation and negative self-related intrusions, the other constructs associated with self-harm in the previous studies?
- (d) Which functions of self-harm (as measured by the FASM) are most frequently endorsed and how do the different functions group by way of a factor analysis; how does this compare to the factor structure described in the literature?

6.2. Method

An online survey was completed by undergraduate psychology students in return for course credit. The survey was hosted on an external website designed for survey hosting and included six pages collecting basic demographic data and some of the measures used in the previous studies, reported in chapters three and five. These scales were:

EBRIQ: the seven item version of the EBRIQ (Berry, *et al.*, 2010), listed as R1 to R7 in Chapter three, plus the four further questions relating to content, frequency and nature of the intrusions (listed as IT1-4)

DES-C: the ten depersonalization and absorption items from the DES-C (Wright & Loftus, 1999) labelled D1 to D6 and A1 to A4.

FASM: the 23 Functional items labelled F10 to F32 in Chapter five, although in this study these items only appeared if a participant endorsed one of the self-harming or potentially maladaptive coping strategies in the 'ways of coping' question outlined below.

BMM: We asked participants to complete the ten-item Brief Mindfulness Measure (Berry *et al.*, 2010) reported as B1 to B10 in Chapter 5.

White Bear Suppression Inventory (WBSI; Wegner & Zanakos, 1994): We included the well-established WBSI to assess how much participants engaged in thought suppression. The WBSI is a 15-item questionnaire with a possible score range of 15-75, with stronger tendency to suppress associated with higher scores on the measure. On initial investigation, the psychometric properties of the WBSI appeared to be sound, with Wegner and Zanakos (1994) finding acceptable internal consistency and temporal

stability, and Spinhoven *et al.*, (1999) finding that the WBSI shows a stable one-factor structure. However, more recently the scale has come under some criticism in that its construct validity may be in question, as it may not purely be measuring thought suppression, and may in fact also be measuring other factors, such as the experience of intrusive thoughts. Rassin (2003) found that a factor analysis of responses from a large non-clinical group yielded a two-factor structure, which showed satisfactory internal consistency. Rassin went on to suggest that the second factor represented the experience of intrusive thoughts, which risked inflated correlations between the WBSI and measures of psychopathology where intrusive thoughts played a role. For this reason, this author recommends taking care to bear in mind overlap when evaluating such relationships, as well as considering the possibility that the WBSI may only provide a meaningful measure of failed suppression attempts, and therefore has a negative bias. In order to attempt to account for these possible issues, some post-hoc analyses will be conducted with the WBSI data, by way of a factor analysis to determine whether a one or two (or more) factor structure best accounts for the data. If the factor structure does reflect two different constructs, the items identified by Rassin as relating to intrusive thoughts will be considered; in terms of our factor structure, and to see whether an intrusive thoughts items score is differently related to the other measures compared with the overall WBSI score.

Items on the WBSI were as follows:

W1 There are things I prefer not to think about.

W2 Sometimes I wonder why I have the thoughts I do.

W3 I have thoughts that I cannot stop

W4 There are images that come to mind that I cannot erase.

- W5 My thoughts frequently return to one idea
- W6 I wish I could stop thinking of certain things
- W7 Sometimes my mind races so fast I wish I could stop it
- W8 I always try to put problems out of mind
- W9 There are thoughts that keep jumping into my head
- W10 There are things that I try not to think about
- W11 Sometimes I really wish I could stop thinking
- W12 I often do things to distract myself from my thoughts
- W13 I have thoughts that I try to avoid
- W14 There are many thoughts that I have that I don't tell anyone
- W15 Sometimes I stay busy just to keep thoughts from intruding on my mind

Ways of coping questions: An additional question was included to assess self-harm, as well as other potentially maladaptive coping strategies that were identified in study one. This question listed coping strategies to stress and patterns of behaviour relating to self-harm. This question began 'When you feel stressed, low or anxious, which of the following behaviours do you engage in:' followed by a list of behaviours forming three categories: six self-harming (strictly defined according to Gratz's definition, and matching those in the first study), two less severe but still self-harmful compulsive behaviours ('mildly harmful'), and the four 'potentially maladaptive' activities (which might also be harmful, if not directly, or immediately) that were identified as risk factors for self-harm in the previous online study (smoking, risk taking behaviour, excessive eating and under eating), plus the item 'letting off steam in a way that causes no harm' bringing the total number of coping strategies in this category to

five. The categories were intermixed and the codings were not included in the item text shown to respondents, who could check as many or as few as they wanted to. Note that, unlike the previous online study, no 'positive' coping behaviours were included, since we were now concerned only with those behaviours identified in the first study.

6.2.1. Structure

The 70 items described above were combined into a six-page online survey, with an initial page collecting demographic data and a final page offered space for participants to ask questions and provide feedback. Page one contained the ten BMM items, rated on a five-point scale, with zero labelled 'rarely or very rarely true' and five labelled 'very often or always true'; the midpoint (3) was labelled 'sometimes true'. Page two contained the four intrusive thoughts questions with the various response scales described above and the seven items from the EBRIQ, rated 0-5 with the anchors 'never' (0), 'sometimes' (3), and 'every time' (5). Page three contained the 15 WBSI items, rated 0-5 with the anchors: strongly disagree (0) to agree (5). Page four contained the 10 DES-C items, with a 0-11 scale, with a lower anchor set as 'much less than others', the centre as 'about the same as others' and the upper anchor as 'much more than others'. Page five contained the question with the list of self-harming activities and maladaptive or risky coping mechanisms, and if any of these were endorsed, then a sixth page was shown including the 23 functional questions from the FASM, with the rating scale 0-4 with 'never', 'rarely', 'sometimes' and 'often'. After page five or six participants saw the final 'debrief' page in which there was a text box for comments and the experimenter's email address.

6.2.2. Design and procedure

As with the previous studies, this study was a cross-sectional, quasi-experimental observational design, since there was no control group per se, but comparisons were made between different groups as identified by risk or previous experience of self-harm.

Participants were recruited through the School of Psychology participation system (accessible to approximately 800 undergraduate students), and were offered a 'participation point' in return for starting the survey (students can subsequently use these points to reward participants in their own research). The study met BPS ethical guidelines and was approved by the University of Plymouth Faculty of Science Ethics Committee. The study was advertised as investigating 'reactions to intrusive thoughts'.

The questionnaire was hosted on an external survey website and advertised through the School of Psychology Undergraduate Participation web site. The survey was made available until the permitted quota of 300 participants had responded. Participants were allowed to quit the survey once it had begun without losing their reward point.

6.2.3. Ethics

As has been discussed previously, a number of ethical issues exist when conducting research with people with experience of self-harm, since these people may be very vulnerable, and may be at risk of stigmatization or triggering of further episodes of self-harm if not treated with compassion and respect. Ethical considerations in this study were addressed in a number of ways. Firstly, informed consent was gathered from each participant at the start of the study, when they initially signed up, whereby the purpose and nature of the study was explained, on the first page of the questionnaire,

before any items were displayed, and participants asked to consent. Participants were also told that they could withdraw at any time if they so wished to, and the opportunity was given for participants to ask any questions both before and after completing the survey, in order to allow them to be fully informed of the purposes of the study and how their data would be used. The researcher's email was also provided at the end of the survey in order for participants to make contact if they had any concerns. Secondly, as with the first study, confidentiality was ensured by storing participant response data in a separate database from all identifying information, and once analyses had been completed and there was no longer any potential need to contact participants, the database with the contact and identifying information was permanently and securely destroyed. Finally, steps were taken to protect the welfare of participants in this study by providing them with the contact information of supporting organisations on the final page and offering the opportunity for participants to email the researchers with any concerns or questions that they might have.

6.3. Results

The survey was closed after 300 undergraduate psychology students had begun the survey, of whom 297 provided complete data sets. Two hundred and fifty one (85%) of participants were female, which is representative of the population since 78% of the undergraduate psychology cohort was female. The majority of participants were either first year undergraduates (148; 50%) or second year (146; 49%); with three final year undergraduates (1%).

6.3.1. Self-harm and risky behaviours

Table 6.1 shows that a large proportion of participants engaged in the potentially maladaptive (mildly harmful or risky) coping strategies, and in many cases, more than one of these. In line with the first online study, non-self harming participants were grouped according to the number of above strategies they used, with zero or one maladaptive coping strategy representing 'low risk', two strategies representing 'medium risk', and three or more representing 'high risk'. Of the non self-harm group, 97 (42%) were classed as low risk, 75 (32%) as medium risk, and 61 (26%) as high risk.

Table 6.1: Number and percentage of respondents endorsing zero, one, 2 or more than two of the potential maladaptive behaviours (there were only two 'mildly harmful' behaviours listed).

	N (%) endorsing none	N (%) endorsing one	N (%) endorsing two	N (%) endorsing more than two
Self-harm activity	233 (78)	41 (14)	15 (5)	8 (3)
Mildly harmful coping strategies	255 (75)	64 (22)	8 (3)	n/a
Risky coping strategies	38 (13)	87 (29)	103 (35)	69 (23)

6.3.2. Intrusive thoughts

Overall, the most commonly endorsed frequency of intrusive thoughts in this sample was 'several times a day' with 157 (53%) of participants selecting it. Participants with experience of self-harm endorsed a higher frequency ($\chi^2 (4) = 15.3, p = .004$) of intrusive thoughts which were more distressing ($\chi^2 (5) = 34.4, p < .001$), and more distracting ($\chi^2 (4) = 17.9, p = .001$) than those experienced by participants with no

experience of self-harm. Table 6.2 details which categories of intrusive thought content were associated with self-harm.

Table 6.2: Number and percentage of self-harmers and non self-harmers reporting each category of intrusive thought.

Thought Content	Self Harmers (64)	Non Self Harmers (233)	χ^2 ; p
Self - Negative	48 (75%)	135 (58%)	6.2; .013
Food and Drink	47 (73%)	168 (72%)	0.1; .832
Unhappy Memories	43 (67.2%)	121 (52%)	4.7; .030
Happy Memories	42 (66%)	148 (64%)	0.1; .756
Activities	28 (44%)	93 (40%)	0.3; .580
Self-Harming	15 (23%)	4 (2%)	39.6; < .001
Self - Positive	11 (17.2%)	50 (22%)	0.6; .454

Table 6.2 shows that, compared to non self-harmers, more self-harmers experienced intrusive thoughts about self-harming, unhappy memories and negative thoughts about themselves. Within the non self-harmers (Table 6.3), intrusive thoughts about food and drink and negative self-related thoughts increased with risk group, but unhappy memories and thoughts about self-harm did not.

Table 6.3: Number and percentage of participants in each risk status category reporting each type of intrusive thought.

Thought Content	Low risk (97)	Medium risk (75)	High risk (61)	χ^2 ; p
Food and Drink	62 (64%)	55 (73%)	51 (84%)	7.3; .026
Happy Memories	58 (60%)	52 (70%)	38 (62%)	1.7; .424
Unhappy Memories	48 (50%)	42 (56%)	31 (51%)	0.8; .684
Self - Negative	43 (44%)	45 (60%)	47 (77%)	16.6; < .001
Activities	43 (44%)	31 (41%)	19 (31%)	2.8; .246
Self - Positive	20 (21%)	18 (24%)	12 (20%)	0.4; .801
Self-Harming	1 (1%)	2 (3%)	1 (2%)	0.7; .714

The mean EBRIQ score for the group overall was 19.4 (SD = 4.71). An ANOVA showed no difference between year groups ($F(3, 293) = 0.722, p = .54$), but scores were significantly higher for females than males ($t(295) = 2.298, p = .022$; male $M = 17.8$, $SD = 4.26$; female $M = 17.9$, $SD = 4.74$). The seven EBRIQ items produced a Cronbach's alpha of .906, with no items showing item-scale correlations low enough to be excluded from the scale.

EBRIQ scores were significantly higher for those people engaging in self-harm ($t(295) = 6.057, p < .001$; self-harm $M = 22.3$, $SD = 4.56$; non self-harm $M = 18.5$, $SD = 4.41$), and were associated with risk group ($F(2, 230) = 13.598, p < .001$) with means as displayed in Figure 6.1.

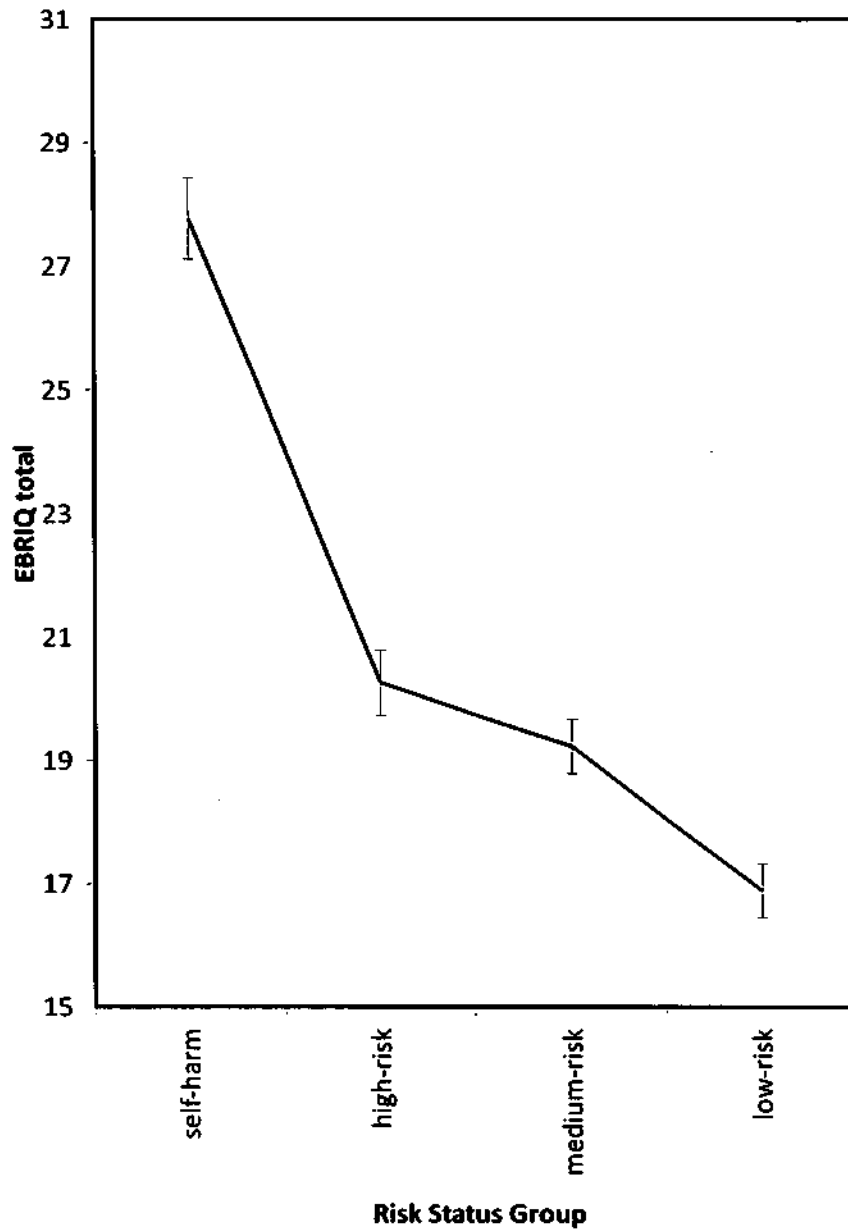


Figure 6.1: Means on EBRIQ for each risk status group and self-harm group.

Figure 6.1 shows a clear decrease in EBRIQ scores from the self-harm group to the low-risk group. The self-harm groups scored higher on EBRIQ than the high risk non self-harm group ($t(123) = 2.626, p = .010$; high risk $M = 20.3$, $SD = 4.22$, self-harm $M = 22.3$, $SD = 4.56$).

EBRIQ scores were higher for participants who reported negative thoughts about the self ($t(295) = 6.11, p < .001$; yes $M = 20.6$, $SD = 4.48$; no $M = 17.4$, $SD = 4.37$);

self-harming thoughts ($t(295) = 5.11, p < .001$; yes $M = 24.5$, $SD = 3.56$; no $M = 18.9$, $SD = 4.57$) and unhappy memories ($t(295) = 3.57, p < .001$; yes $M = 20.2$, $SD = 4.56$; no $M = 18.3$, $SD = 4.68$). EBRIQ scores were lower for participants reporting thoughts about other activities ($t(295) = 3.11, p = .002$; yes $M = 18.3$, $SD = 4.16$; no $M = 20.0$, $SD = 4.94$). The three other categories were not associated with EBRIQ scores: food and drink ($t(295) = 0.57, p = .572$); happy memories ($t(295) = 0.13, p = .900$) and positive thoughts about the self ($t(295) = 1.11, p = .271$).

6.3.3. Thought suppression

The mean WBSI score for the sample overall was 51.8 ($SD = 11.12$). The fifteen WBSI items produced a Cronbach's alpha of .906. WBSI scores were higher for self-harmers ($t(116) = 5.11, p < .001$ self harm $M = 57.3$, $SD = 9.39$; non $M = 50.3$, $SD = 11.1$) and rose with increasing risk factor group ($F(2, 230) = 12.35, p < .001$). Figure 6.2 shows mean WBSI scores for the self-harm group and each risk status group.

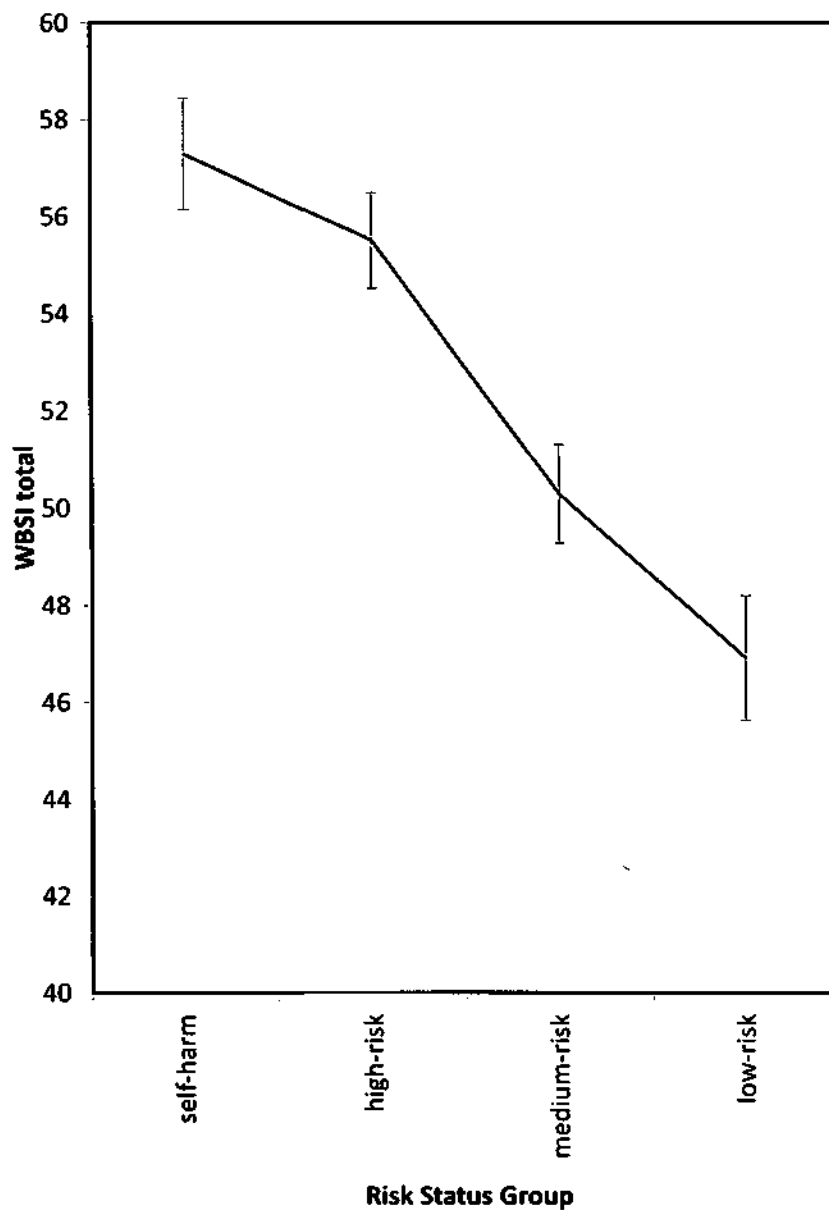


Figure 6.2: Means on WBSI for each risk status group and self-harm group

Figure 6.2 shows a clear increase in WBSI scores from the low-risk group right up to the self-harm group. High risk and self-harm groups did not differ on WBSI scores ($t(123) = 1.153, p = .251$).

WBSI scores were significantly correlated with EBRIQ scores ($r(297) = .696, p < .001$). WBSI scores were higher for participants reporting negative thoughts about the self ($t(295) = 5.92, p < .001$; yes $M = 54.6, SD = 10.23$; no $M = 47.2, SD = 11.0$);

self-harming thoughts ($t(295) = 4.687, p < .001$; yes $M = 62.9$, $SD = 5.55$; no $M = 51.0$, $SD = 11.00$) and unhappy memories ($t(295) = 5.14, p < .001$; yes $M = 54.6$, $SD = 10.19$; no $M = 48.2$, $SD = 11.23$). The four other categories were not associated with WBSI scores: food and drink ($t(295) = 0.66, p = .507$); happy memories ($t(295) = 0.48, p = .632$); activities ($t(295) = 1.435, p = .152$); and positive thoughts about the self ($t(295) = 0.398, p = .691$).

In order to address the difficulties raised earlier in this study with the internal consistency of the WBSI, a factor analysis was conducted with the data from this study. A maximum likelihood analysis did in fact produce a one-factor structure, accounting for 40.58% of the variance, and with an eigenvalue of 6.09. One item loading was somewhat lower than the others, but not low enough to be excluded ('I always try to put problems out of mind', $r = .394$). Our data did not support the findings of Rassin (2003) who found a two-factor structure to the WBSI, and therefore no individual item scores will be computed or compared to overall scale scores on the various constructs tested in this study. It should also be noted that the alpha value of the WBSI reported in this chapter is very high, suggesting that the internal consistency does not come into question in this case.

6.3.4. Mindfulness

The mean BMM score for the sample overall was 29.6 ($SD = 4.84$). The ten BMM items (with items B2, B3, B4, B7 and B8 having been reverse scored) produced a Cronbach's alpha of .600, rising to .691 with the exclusion of four items with low item-scale correlations. These four items were: 'distressing thoughts and images' (B5, $r = .226$); 'mind occupied' (B8, $r = .241$); 'pay attention' (B9, $r = .118$) and 'stay aware of feelings' (B10, $r = .023$). However, as noted in chapter five, the BMM is not intended to

be a unifactorial measure and so all items were retained in the following analyses.

BMM scores were lower for those with experience of self-harm than for those without ($t(288) = 3.36, p = .001$, self-harm $M = 27.8$, $SD = 5.38$; non $M = 30.1$, $SD = 4.58$), and differed across risk status groups ($F(2, 230) = 7.761, p = .001$). Means for each group can be seen in figure 6.3.

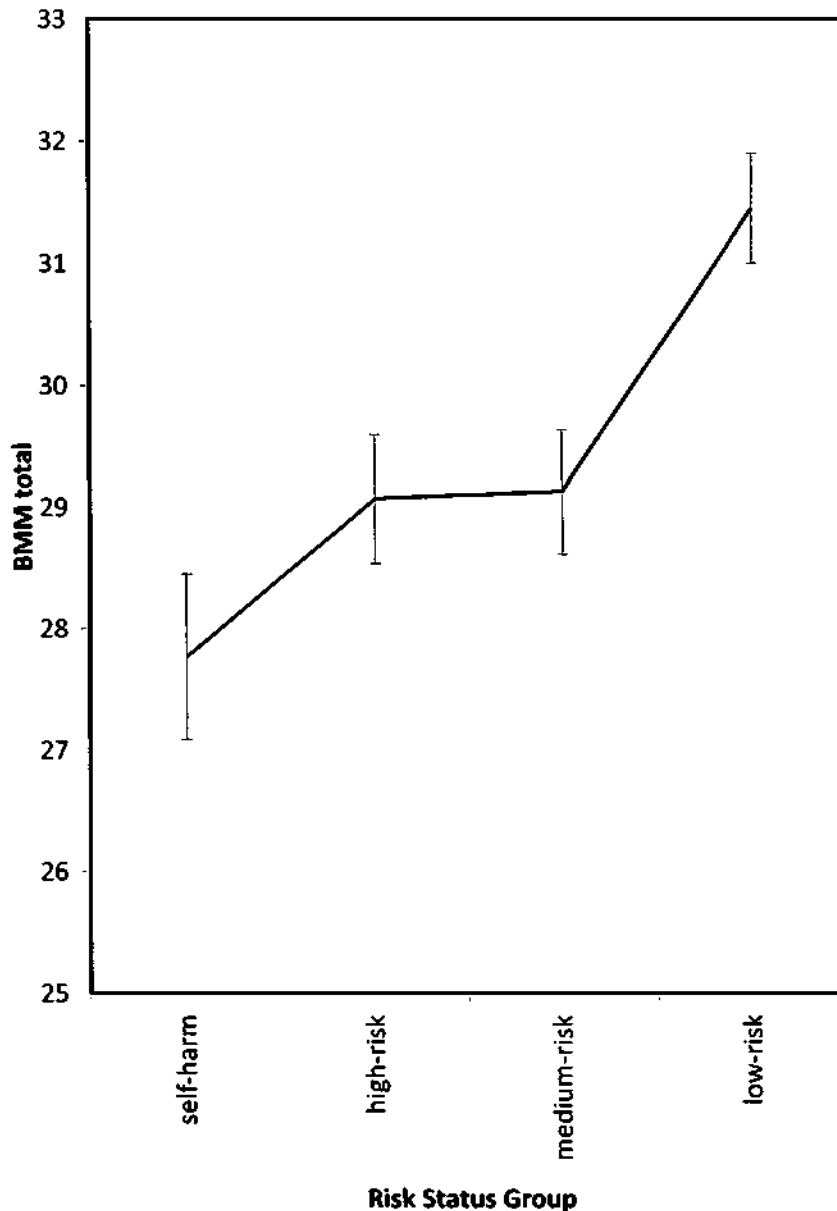


Figure 6.3: Means on BMM for risk status groups and self-harm group

Figure 6.3 shows a decrease in BMM scores from the low-risk group to the self-harm group. High risk and self-harm groups did not differ on BMM scores ($t(117) = 1.467, p = .145$).

BMM scores were significantly correlated with EBRIQ scores ($r(29) = .54, p < .001$) and WBSI scores ($r(297) = .394, p < .001$). BMM scores were lower for participants reporting negative thoughts about the self ($t(288) = 3.09, p = .002$; yes $M = 28.9, SD = 4.80$; no $M = 30.7, SD = 4.70$); self-harming thoughts ($t(288) = 2.95, p = .003$; yes $M = 26.3, SD = 4.48$; no $M = 29.8, SD = 4.79$) and unhappy memories ($t(288) = 2.81, p = .005$; yes $M = 28.9, SD = 5.06$; no $M = 30.47, SD = 4.42$). The four other categories were not associated with BMM scores: activities ($t(288) = 0.646, p = .519$; yes $M = 29.82, SD = 4.71$; no $M = 29.45, SD = 4.93$); happy memories ($t(288) = 0.12, p = .904$; yes $M = 29.63, SD = 4.54$; no $M = 29.56, SD = 5.35$) and positive thoughts about the self ($t(288) = 1.318, p = .189$; yes $M = 30.33, SD = 4.66$; no $M = 29.41, SD = 4.88$), although food or drink was approaching significance ($t(288) = 1.92, p = .055$; yes $M = 29.27, SD = 4.57$; no $M = 30.50, SD = 5.43$).

6.3.5. Dissociation

The mean DES-C score for the sample overall was 47.6 ($SD = 15.7$). Analysis produced a Cronbach's alpha for the ten DES-C items of .821, rising to .827 with the exclusion of item D1 ('Some people find that sometimes they are listening to someone talk and they suddenly realise they did not hear part or all of what was said'), which has a low item-scale correlation ($r = .245$). DES-C scores were higher for those engaging in self-harm ($t(94.6) = 4.9, p < .001$, self-harm $M = 56.2, SD = 15.9$, non $M = 45.2, SD = 14.75$), and differed between risk status groups ($F(2, 230) = 8.754, p < .001$). The High risk group scored lower than the self-harm group on DES-C ($t(123) = 2.608$,

$p = .010$; High risk $M = 48.9$, $SD = 15.53$, self-harm = 56.2, $SD = 15.94$). The means for each group are displayed in figure 6.4.

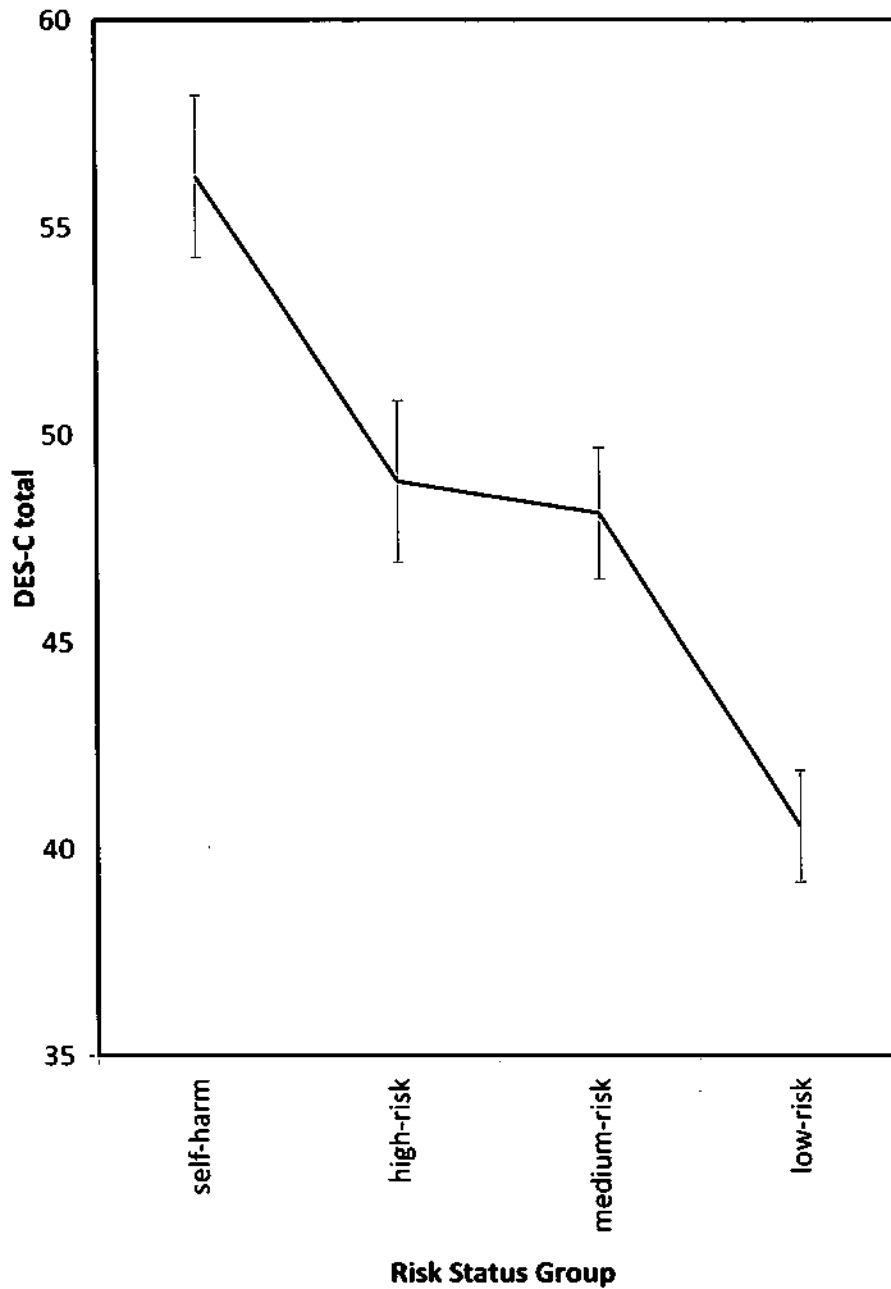


Figure 6.4: Means on DES-C for risk status groups and self-harm group

DES-C scores were significantly correlated with EBRIQ scores ($r(297) = .45$, $p < .001$), BMM scores ($r(290) = -.34$, $p < .001$) and WBSI scores ($r(297) = .39$, $p < .001$).

DES-C scores were higher for participants reporting negative thoughts about the self ($t(295) = 4.55, p < .001$; yes $M = 50.7, SD = 15.06$; no $M = 42.5, SD = 15.34$); self-harming thoughts ($t(295) = 5.26, p < .001$; yes $M = 65.1, SD = 13.3$; no $M = 46.4, SD = 13.31$), but lower for those reporting thoughts about other activities ($t(295) = 2.42, p = .016$; yes $M = 44.9, SD = 14.36$; no $M = 49.4, SD = 16.27$). The other four categories were not associated with DES-C scores: unhappy memories ($t(295) = 0.934, p = .351$); happy memories ($t(295) = 0.223, p = .824$); positive thoughts about the self ($t(295) = 0.562, p = .575$) and food or drink ($t(295) = 0.068, p = .945$).

6.3.6. Functions of self-harm

As with the previous chapter, functional data was collected for participants engaging in self-harming coping strategies although in this case those people engaging in potentially maladaptive coping strategies also provided responses to the functional items on the FASM, since these questions were made available only to people endorsing one of these seven coping strategies. The 21 FASM functional items produced a Cronbach's alpha of .883.

Table 6.5 details the most commonly cited FASM functions in the case of both the self-harm group and the maladaptive coping strategies group, along with t-test statistics for comparing how strongly participants endorsed each function.

Table 6.5 shows that self-harming participants endorsed their most frequent items more strongly in general than the maladaptive group and that they endorsed some items more strongly individually. These items were 'to stop bad feelings'; 'to relieve feeling numb or empty' and 'to punish yourself'. These items generally represent emotion regulation items, and three of these (to relieve feeling numb or empty, to feel something

even if it was pain, and to stop bad feelings) were also the three most endorsed items in the previous chapter.

Table 6.5: means, standard deviations and t-test statistics for self-harm and maladaptive coping groups on the most frequently cited FASM functional items.

Item	Self-harm	Maladaptive	t value (p)
	group mean (SD) (n = 64)	coping strategies group mean (SD) (n = 233)	
To stop bad feelings	2.9 (1.04)	2.3 (1.04)	3.61 (< .001)
To relieve feeling numb or empty	2.7 (1.12)	2.1 (1.03)	4.13 (< .001)
To punish yourself	2.7 (1.09)	1.6 (0.83)	8.44 (< .001)
To get control of a situation	2.6 (1.11)	2.4 (1.03)	1.53 (.128)
To feel relaxed	2.6 (1.04)	2.6 (1.03)	0.076 (.939)

As with the previous chapter, correlations between items were examined as an initial investigation of how the factor structure was similar to that in the literature (Nock & Prinstein, 2004). In order to allow comparisons with the previous chapter and the literature, only responses from self-harming participants were included. However, in this case a large number of the items were inter-correlated and so a factor analysis was conducted (maximum likelihood, oblimin rotation). Initially, a five-factor structure was extracted. However, an examination of the scree plot indicated that there was no clear 'elbow' at five factors, and indeed the fifth factor had an eigenvalue only slightly over one (1.052). With this in mind and with consideration of the previous literature, a four-factor structure was extracted. The factor correlation matrix in Table 6.6 indicated small correlations between the four factors, with Factor 1 showing some overlap with the others. The items loaded on the four factors as shown in Table 6.7.

Table 6.6: Factor correlation matrix

Factor	1	2	3
2	0.296		
3	-0.323	-0.107	
4	0.247	0.244	-0.005

Table 6.7 factor loadings for FASM functional items (self-harm group only)

FASM Item	Factor			
	1	2	3	4
to receive more attention from your parents or friends (SPR 2)	0.572			
to get attention (SPR 1)	0.990			
to get family members or close friends to understand or notice you (SPR 3)	0.643			
to feel more a part of a group (SPR 5)		0.724		
to let others know how desperate you were (SPR 7)	0.563			
to get help (SPR 8)				0.608
to avoid having to do something unpleasant you don't want to (SNR 1)		0.455		0.467
to punish yourself (APR 1)				0.538
to feel something, even if it was pain (APR 3)				0.666
to relieve feeling 'numb' or empty (ANR 2)				0.653
to get control of a situation (SPR 9)				0.583
to stop bad feelings (ANR 1)				0.611
to avoid being with people (SNR 4)				0.584
to give yourself something to do when with others (SPR 13)		0.881		
to give yourself something to do when alone (SPR 6)		0.739		
to feel relaxed (APR 2)		0.617		
to avoid punishment or paying the consequences (SNR 3)		0.598		
to avoid school, work or other activities (SNR 2)		0.402		0.387
to be like someone you respect (SPR 4)		0.454		
to get other people to act differently or change (SPR 12)			-0.883	
to try to get a reaction from someone even if it's a negative reaction (SPR 11)			-0.725	
to make others angry (SPR 10)			-0.639	

Although all items map onto the factors in this case, these are quite different from those described in the literature. That said, the first three factors do seem to relate in the main part to social functions of self-harm, while the majority of items in the fourth

factor relate to automatic ones. However, these are still quite different to those in Nock and Prinstein's (2004) structure, where four factors appeared on the two dimensions of interpersonal vs. social functions and positive versus negative functions.

Since this structure did not approximate that which was expected from previous research, correlations between the items relating to emotion regulation were examined, in line with the previous study. Correlations (with p values in brackets) are shown in Table 6.8.

Table 6.8: Correlations between emotion regulation items on the FASM (self-harm group only)

	To relieve feeling 'numb or empty	To feel something even if it was pain	To get control of a situation	To stop bad feelings
To feel something even if it was pain	.547 (<.001)			
To get control of a situation	.341 (.006)	.339 (.006)		
To stop bad feelings	.505 (<.001)	.506 (.001)	.230 (.067)	
To feel relaxed	.218 (.084)	.145 (.252)	.156 (.218)	.153 (.227)

In this study, 'to feel relaxed' did not appear to fit with the other items and was not correlated with them. However, the other items were mainly correlated, suggesting that they may be part of a shared process, perhaps one of emotion regulation.

6.4. Discussion

6.4.1. Self-harm and potentially harmful behaviours

This study found an overall self-harm rate of 21.5%, meaning that there was some variation in self-harm rates between the different studies, since study one found a rate of 30% and study three found a rate of 71%. Studies two and three cannot sensibly be compared since both involved samples that were selected for experience of either self-harm or suicide and therefore comparisons are not meaningful. However, the two online studies should be comparable and therefore the disparity in rates of self-harm between the two is somewhat puzzling. The online study from chapter three reported an overall self-harm rate of 30.3%. The discrepancy cannot be a result of the sample used per se, since both involved university samples, but may be a result of slight differences. For example, the first study included staff and postgraduate students resulting in a slightly higher mean age in that sample and was titled 'ways of coping with stress', which may have resulted in a self-selection bias, compared with the title of this study: 'reactions to intrusive thoughts', which recruited undergraduates in return for participation points rather than a cash prize draw. The disparity may also have been down to methodological differences, since the first study used three different questions to assess experience of self-harm (current and past, as well as the 'ways of coping' question), compared with only 'ways of coping' in the present study. That said, the question in the present study was a fairly wide-reaching one and allowed people to select from six possible self-harming behaviours (amongst others) as well as providing a space to fill in 'other' ways of coping. The questions in the previous study allowed for the inclusion of those people who had previously engaged in self-harm but no longer do, whilst the wording of the question in the present study suggests current self-harming only. However, despite the divergent results of the two studies, both the self-harm rates were in line with the rates

of 14-35% reported in the literature (Gratz, 2001; Klonsky, 2007), and are understandably far higher than reported A&E rates since as we saw in the first chapter, so much self-harm goes unreported (Samaritans, 2005).

It is also possible that self-harm rates reported in these studies were affected by the data collection methods (Cheng *et al.*, 2010), since higher rates have been found using questionnaires than interviews (e.g. Ross & Heath, 2002). This may be a product of overestimation by questionnaire (Lundh *et al.*, 2007), but conversely may be a result of shame or demand effects in interviews. However, the validity of self-report methods may be questionable since memories of self-harm may be inaccurate and a lack of insight on the part of the participant may result in the fabrication of more socially acceptable reasons for self-harming behaviours (Klonsky, 2007). This said, using questionnaires in an online survey affords the participant anonymity, which may result in more freedom to be honest about their experiences, and therefore this still represents an effective data collection method for this type of research. Further, our findings from the qualitative study go a way to supporting our online studies and these used face-to-face qualitative interviews.

As with our previous study, the link between self-harm, mildly harmful and potentially maladaptive behaviours was evidenced by gradually decreasing scores on the various measures as self-harm or risk status decreased. This again lends support for the consideration of the less harmful forms of self-harm and potentially harmful behaviours as risk factors for more injurious behaviours. This, as before is an important finding as it allows healthcare professionals to be aware of an individual's increasing risk of self-harm on the basis of both their other behaviours and a number of psychological factors.

6.4.2. Intrusive thoughts

People who engaged in self-harm reported that their intrusive thoughts were more common, more distressing, and more distracting than those people not engaging in self-harm. They were also most likely to experience thoughts about self-harming, unhappy memories, or negative thoughts about themselves. These findings fit with the notion that intrusive thoughts play a role in self-harm, and in line with the previous study, that these are more likely to be distracting, distressing and negative in context than the thoughts of other people. This is supported by the difference in EBRIQ scores for those people who self-harm compared with those people who do not. Self-harmers feel more compelled to react to their thoughts in some way, either behaviourally or emotionally, possibly by self-harming directly, or by beginning a cycle of negative emotion that leads to dissociation or high emotional arousal and eventual self-harm. The fact that EBRIQ scores also decreased with risk status supports the hypothesis that people who engage in both mildly harmful and potentially maladaptive behaviours share some characteristics with those who self-harm, and therefore that they may represent people who are at risk of future serious self-harm. As with the previous study, the content of the intrusive thoughts differed between groups engaging in the three types of behaviour. This offers support for our model proposed in chapter one whereby the content of the intrusions is the key to how seriously an individual self-harms. However, the gradual decline in EBRIQ scores also indicates that the extent to which an individual is inclined to react to their intrusive thoughts may also play a role.

6.4.3. Thought suppression, mindfulness and dissociation

In fitting with the intrusive thought findings, thought suppression was highest for self-harmers, decreasing as risk status also decreased. This means that people who

engage in self-harm suppress their thoughts more and react to their thoughts more than those people who do not self-harm; propensity to suppress thoughts decreases alongside risk of engaging in self-harm. Thus a model is developing whereby the more that a person reacts to their intrusive thoughts (including by suppression), the more likely they are to engage in some harmful or maladaptive behaviours in order to cope with the resulting affect. The patterns of intrusive thought content also fit here, with the thoughts about unhappy memories, self-harming and negative thoughts about the self being associated with higher scores on the WBSI. Mindfulness scores followed a similar pattern, although in the inverse direction, as would be expected. In other words, as risk status increased, scores on the BMM decreased. As WBSI and EBRIQ scores increase, BMM scores decrease. Overall, then, people who react more to intrusive thoughts, potentially by suppression, are less naturally mindful, and more at risk of harmful behaviours to some extent. The final concept to consider in terms of this emerging model is dissociation. As in chapter three, increased risk from low risk to actual experience of self-harm was associated with higher scores on the DES-C, a continuum of dissociation alongside increasing risk of self-harm. In this study, self-harmers scored higher than those participants in the 'high-risk' group on their dissociation, and their reactions to intrusive thoughts. This is a different finding to the previous study (chapter three) where the two groups were not found to differ.

6.4.4. Functions of self-harm

Previous research findings have suggested that functions of self-harm fall into four main categories: automatic negative functions, automatic positive functions, interpersonal negative functions and interpersonal positive functions. However, a factor analysis of the functional data (FASM) from this study did not yield a structure to

support this. This is a similar finding to that of our last study and with those results we suggested that it may have been a result of the small clinical group skewing the results. However, the present study used a large group of participants from the general population, and still resulted in a factor structure that did not fit with that described above. The data does fit into a four-factor structure, but these are not as clearly defined, with some items falling into the same factors and some not. The data from the present study supported that from the previous study around the importance of emotion regulation functions of self-harm, since several items pertaining to this function were inter-correlated, and were endorsed the most strongly of all the functions as reasons for self-harming.

6.4.5. Risk categories and questionnaire scores

As in the previous online study, those participants not engaging in self-harm were divided into 'risk categories' on the basis of how many of the mildly harmful and potentially maladaptive coping strategies they were engaging in, whereby the more of these they were engaging in the higher their 'risk group'. Questionnaire data for all the measures was significantly associated with risk group. EBRIQ, WBSI and DES-C scores all increased with risk whilst BMM scores decreased. Contrary to previous findings, high-risk participants scored lower than self-harmers on the EBRIQ and DES-C, although not on the WBSI or BMM. This suggests that the similarities between the two groups may not be quite as we thought previously. However, it should be noted that the proportions of the different risk groups in this study were somewhat different to the previous study, which may explain some of the differences in scores on some of the measures. Also, scores do increase (or in the case of mindfulness, decrease) in a linear manner with increasing risk group. As people became more at risk of self-harm, their

tendency to react to thoughts, emotionally, behaviourally or by suppressing them increased, along with their dissociation, whilst their mindfulness decreased.

As intrusive thoughts increase in frequency and become more negative in content, it is possible that a cycle begins where people attempt to suppress them, but the 'ironic effects' (Wegner *et al.* 1987) of thought suppression cause a rebound effect whereby the frequency of thoughts actually increases. It is possible that future research may benefit from trying to address this possibility, and investigating what factors may lead to increased frequency and negativity in the intrusions.

6.4.6. Clinical implications

Given that self-harm is a serious public health problem, any understanding of risk factors for self-harm has potentially very wide-reaching implications. An understanding of the processes involved allows healthcare professionals to tailor effective interventions and provide the utmost support to both those who are currently self-harming and those who have the potential to do so. In this way, the detection of 'at risk' groups provides an opportunity for early intervention that not only would stand to reduce self-harm rates, but by association could reduce suicide rates also. Given the support for mindfulness as a possible protective factor against self-harming behaviours, the results presented in the present study offer initial support for mindfulness-based interventions for people who self-harm, or are prone to negative intrusive thoughts and thought suppression. Mindfulness Based Cognitive Therapy (Williams *et al.*, 2006) would provide one possibility for such a treatment option.

6.4.7. Methodological restrictions and future research

As with the previous studies presented in this chapter, and as a result of practical constraints, the methods of collecting self-harm data in this study were limited with regards to frequency of repetition of harmful behaviours. Future research in the area would benefit from an investigation into how the role of intrusive thoughts in self-harm differs between people who have harmed themselves once, or occasionally in response to stress, compared with those who do so frequently as a more ingrained coping mechanism. It may be that for those people who have harmed over a long period of time, the initial role of intrusions as triggers for self-harm has been superseded by a direct use of self-injurious coping strategies in response to stress, rather than the repetitive cycle suggested above.

Similarly, and again in common with previous studies in this thesis, a number of limitations exist that are centred on this study's design and methodology. Firstly, the design of the study was cross-sectional, collecting data at only one time-point, and did not take into account the timeframe of how recently self-harm episodes occurred. Also, the fact that the study is cross-sectional makes it difficult to assess causality of effects, rather than just the correlational relationships between the constructs. A study based on a longitudinal design, although outside the practical possibilities of this thesis, might better address some of the issues in the study, since that might mean participants could have more recent experience of self-harm, and be better able to rate their experiences during such an episode, or at least that the timeframe of the self-harm experiences might be better accounted for.

As before, this study also relied solely on self-report data, which as described earlier in this thesis, can cause difficulty when conducting self-harm research, since memories of

times when an individual experiences particularly strong negative emotions can be harder to recall, and if a person was highly dissociated at the time of self-harming, they may struggle to remember their experiences. An improved design might include some way of corroborating and clarifying the details of the experience, for example by asking a carer or peer of the participant as to their version of the events. However, once again this study did use different types of questions, in that we asked participants if they had engaged in self-harming behaviour, but also allowed them to pick from a list which specific behaviours they had engaged in. This may improve on the issues of recall of events, and in fact did yield different rates of self-harm when taken separately, suggesting that this might be the case.

Chapter 7. Overall Discussion and Conclusions

This thesis presents the findings of an investigation into triggers and functions of self-harm, particularly those surrounding intrusive thoughts and memories. The investigation has comprised four studies, which have explored the role of intrusive thoughts in self-harm, alongside dissociation, mindfulness, thought suppression, and a range of risk factors and functions of self-harm. The overall findings shall now be discussed.

7.1. Risk Status Groups

One of the key applications of research with participants from the general population is to identify those people most at risk of engaging in future self-harm, allowing professionals to apply early intervention and protective measures before an individual enters into crisis. In chapter three, participants were divided into risk status groups by virtue of how many coping strategies associated with self-harm but not directly harmful that they engaged in. Those people who were classified as part of the 'high risk' group (i.e. engaging in three or more of the mildly harmful or certain potentially maladaptive activities) were indistinguishable from the self-harming group in terms of dissociation, reactions to intrusive thoughts and experience of trauma, and were therefore considered to be at risk of becoming self-harmers in the future. The people in this group differed from those in the self-harm group in that their self-worth was higher, and their intrusive thoughts were more often positive in content than those of the self-harming group. It follows, then, that self-worth may be protective against self-harm, but that this may drop in the face of negative intrusive thoughts, or the self-

harm act itself, or perhaps following a failed suppression attempt. The results of the final study also supported those from the first study. In the final study, people with self-harm experience endorsed more of the negative intrusive thought content categories than those without self-harm but one of these (negative thoughts about the self) was lowest for those people at low risk of self-harm and increased incrementally up the risk group categories to the self-harm group where levels of this category of thought were highest. In the final study, scores on all four of the questionnaire measures were also associated with risk group, with thought suppression, dissociation and reactions to intrusive thoughts increasing up the categories from low risk to self-harmers and mindfulness decreasing in the same pattern. In this study, self-harmers and high-risk participants were no longer indistinguishable as they had been in the previous study. However, the scores changed in a linear fashion between the groups, suggesting that we can still use the groups as a predictor as self-harm, as risk increases as the number of maladaptive strategies used increases. Taken together, these results offer strong evidence for a continuum of increased negative content of intrusive thoughts, reactions to suppression of and dissociation as a result of these thoughts that increases with risk of self-harm and an increased number of potentially maladaptive behaviours. Mindfulness is also part of this continuum although it decreases whilst the other variables increase.

7.2. Intrusive Thoughts, Dissociation and Mindfulness

In chapter three, participants with experience of self-harm experienced more intrusive thoughts than those people who had never self-harmed. In line with this, most of the participants in the qualitative study (all of whom had experience of self-harming) endorsed experiencing intrusive thoughts, and some also endorsed experiencing intrusive memories. The content of their intrusive thoughts was also similar to the self-

harming participants in study one, since there was a strong theme of intrusive thoughts pertaining to negative appraisals of themselves or their behaviour. In the final online study described in chapter six, self-harming participants also experienced more intrusive thoughts, which again had a focus on negative content. It is this difference in content, where people with a history of self-harm experience more negative intrusive thoughts that appears to make the difference between self-harming and not self-harming coping strategies. Further to this, in the final study and in line with the literature (Marcks & Woods, 2005), thought suppression was associated with a higher frequency of intrusive thoughts, negative content, level of distress and compulsion to act.

The results in chapter three and six both appeared to support the anti-dissociation or emotional regulation functions of self-harm proposed by, for example, Klonsky (2007; 2009), Nock and Prinstein (2004), Jacobson and Gould (2007), Connors (1996) and Chapman *et al.*, (2006). These accounts argue that self-harmers experience higher levels of dissociation, as well as more frequent, distressing and distracting intrusive thoughts, resulting in a stronger compulsion to act on their thoughts, perhaps by self-harming. Therefore self-harm for these people may be an attempt to avoid depersonalization, which may in itself be a response to negative intrusive thoughts. The alternative to dissociation is a state of high arousal, which may also require self-harm as an emotion regulation strategy, and both of these could be triggered by intrusive thoughts, and could feasibly occur for the same person at different times and in different circumstances. Both strategies then, are also possibly exacerbated by thought suppression, which participants – particularly those who self-harm (Najmi *et al.*, 2007) may use in an attempt to regulate their emotional arousal levels, and due to a rebound effect might actually increase intrusive thoughts.

The qualitative study in chapter four also offered some support for the use of self-harm as a way of regulating emotion or anti-dissociation, since two possible routes to self-harm emerged, one involving a spiral of intrusive thoughts and upset mood (perhaps involving low self-worth and self-judgement) leading to eventual self-harm, and the other involving a dissociative state, perhaps to escape from intrusive thoughts and memories, in which participants might self-harm to return from the sense of blankness.

The studies outlined in chapters three and six also offered further support for such functions of self-harm, from a consideration of the patterns of scores of the people in each risk group. EBRIQ scores increased in a linear fashion from low risk to medium risk to high risk and on to the self-harming group. In other words, the extent to which people reacted to their intrusive thoughts increased with risk of self-harm. This supports the notion that there is a continuum of self-harm (Croyle & Waltz, 2007), and risk for self-harm whereby frequency of and urge to react to intrusive thoughts increases with self-harm risk status. This pattern continues in the final study with thought suppression, which increased with risk, and mindfulness, which decreased with risk. Dissociation scores also increased with risk overall, although the increase in this case wasn't quite as linear as the other constructs.

The self-harm findings from the hospital study of chapter five did not fit as well into this model. Mindfulness scores did not differ for groups of self-harmers and non self-harmers and neither did the frequency or content of intrusive thoughts. However, self-harmers in this sample did experience a stronger urge to act on their thoughts, suggesting that possibly they are reacting directly by self-harming, or perhaps that they are using the self-harm as an emotional regulation strategy, either for too high arousal (or upset mood), or too low arousal (such as a dissociative state). It is of course possible

that the lack of relationship between trait mindfulness and self-harm may have been a result of low statistical power given the small sample size and particularly small non-self harm group. This relationship within a large clinical sample would provide an interesting avenue of investigation for future research projects. The small group sizes may also explain why no differences were found between self-harm and non self-harm groups on depression or BPD diagnosis, or on childhood trauma (although this was specific to traumatic events and did not include perceived poor parenting, neglect or family dysfunction so cannot meaningfully be compared to out previous childhood trauma findings).

An indirect association between mindfulness and self-harm in chapter five's hospital study, then, may be through how inclined participants were to act on their thoughts, since EBRIQ scores were negatively associated with mindfulness, and how distressing participants found their thoughts. In other words, for those young people without natural mindfulness skills, the intrusions caused greater distress and were (by virtue of this deficit in protective mindfulness skills), perhaps harder to accept as 'just thoughts' resulting in a stronger urge to react, perhaps by engaging in self-harm. The finding that only thoughts about harming the self and negative thoughts about the self were associated with how inclined participants were to act on their thoughts supports this. This suggests that for this sample, these two types of thought were associated with the strongest urge to act, perhaps in order to relieve the negative feeling engendered by them, possibly by engaging in self-harm. Other related findings that are interesting here come from other correlates of mindfulness, since childhood trauma and Borderline Personality Disorder diagnosis were also negatively associated with trait mindfulness.

An interesting finding from the hospital study was that the emotional content of intrusions was differently associated with mindfulness, whereby those people who

experienced happy intrusive memories were more naturally mindful than those who did not, and those with experience of negative intrusive thoughts about themselves were less naturally mindful than those who did not. This highlights the importance of mindfulness as a protective factor for positive emotional health, as well as a way of coping with difficult thoughts and experiences. Encouragingly, when asked for alternative ways that participants in the qualitative study found to deal with intrusive thoughts and other triggers of their self-harm, one participant described 'learning to accept things' was helping her to reduce her self-harming behaviour which offers tentative support to the role of mindfulness as an alternative to self-harm.

It is worth noting that in the qualitative study, the participant whose behaviour was different from those outlined in our definition (self-starving rather than direct self-harming) reported very similar experiences in the areas of intrusions and triggers as those participants engaging in more traditional forms of self-harm which fit with our adopted definition. This suggests that there are some mechanisms in common between self-harm and other similar, but less immediate ways of causing one's self harm, and indeed ties in with the finding from the first online study, that under-eating was a factor associated with self-harm, and shares several similarities with regards to psychological and situational correlates. It is also possible that the physical experience of self-starving may be sufficiently uncomfortable to feel like self-harm to the individual concerned, even if the damage that occurs takes longer to take effect. A recent study with young people also found some support for the relationship between self-harm and dysfunctional eating behaviours, and suggest that both self-harm and eating pathologies may be a result of body based disorders that develop during adolescent years (Ross, Heath & Toste, 2009).

7.3. Precursors, Triggers and Correlates of Self-Harm

The study described in chapter three suggested that low self-worth and childhood trauma (including traumatic events, perceived abandonment and dysfunctional family background) were the two main factors associated with self-harm. This fits with the literature regarding low self-concept (Hawton *et al.*, 1999) and the childhood experience (Webb, 2002) literature, as well as providing an interesting notion of where the intrusive thoughts may originate. For example, the content of intrusions that were common in the self-harming participants across the range of studies were those involving negative thoughts about the self and unhappy memories. These map well onto the childhood trauma and self-worth factors, providing evidence to support the role of intrusive thoughts in self-harm. This is supported to an extent by the findings of the qualitative study, whereby one theme that emerged as a reason for engaging in self-harm was to cope with difficult thoughts, in particular those pertaining to worries or negative thoughts about themselves.

The other key theme emerging as a trigger in the qualitative study was around interpersonal instability, which also fits in with the findings described above, since people without a foundation in good parenting may struggle to form meaningful relationships, as may those people who do not have a very positive self-concept. It may be that for many people who self-harm, childhood experiences may shape a number of possible deficits that make life difficult and result in their self-injury as a way of coping with this.

In chapter three, those who self-harmed also reported 'letting off steam in a way that causes no harm' and so appeared to be externalising their anger to some extent. In this case it is possible that this was a strategy that they used some of the time (for

example when less dissociated) in place of the self-harm behaviours, although this is a tentative conclusion that would need to be further investigated in future research.

The study reported in chapter three did not find impulsivity to be related to self-harm on the discrete impulsivity question ('I often act impulsively, without first thinking through my actions') which was contrary to expectation given the existing literature (Starr, 2004), and at first glance it seems possible that this might support the supposition that impulsivity may be more to do with the likelihood of repetition of self-harm than the initial act (Nock & Prinstein, 2005). However, on closer inspection, this finding does not appear to be as straightforward as it first seems. The four 'potentially maladaptive' activities that were associated with self-harm do have a certain flavour of impulsivity to them, quite obviously in some cases: 'Risk taking behaviour (e.g. unprotected sex, walking alone in dangerous places etc.)'; 'excessive eating', and less obviously in others: 'smoking'; 'under eating'. It appears, then, that impulsivity may indeed be important to self-harm in our sample, and that perhaps asking directly about impulsivity may not be a good indicator of the existence of such impulsivity, perhaps due to shame surrounding the notion of being an impulsive person, which may be a cultural difference since studies finding impulsivity questions to be associated with self-harm tend to be US-based (e.g. Nock & Prinstein, 2005; Croyle & Waltz, 2007) whereas in UK studies, the relationship appears more complex in terms of different frequencies of self-harm acts (e.g. Hawton, 1999).

7.4. Functions of Self-Harm

The examinations of the functional data from the hospital study and final online study provide some support for emotion regulation functions of self-harm. In both cases, the function 'to stop bad feelings' featured highly along with two anti-

dissociation items ‘to relieve feeling numb or empty’ and ‘to feel something even if it was pain’, which is in line with recent literature (Klonsky, 2007; Klonsky, 2009). Although the factor analysis was not clear either on this grouping or the structure outlined in the literature (Nock & Prinstein, 2004), these items were those that participants tended to score most highly and they were inter-correlated on both the study based in the hospital and the one in the general population. This offers further support for the findings outlined previously in this chapter, since the function of self-harm we are suggesting as the most supported by our findings is an emotion regulation one, either by anti-dissociation, or to escape from overwhelming levels of affect, perhaps generated by the intrusive thoughts cycle.

7.5. Overall Conclusions

Taken together, then, the findings of this thesis can suggest a tentative model. It should be noted, however, that this is an initial model that attempts to pull together the findings of this thesis, on the basis of the research conducted here. The findings are essentially correlational in nature, however and therefore the model will need to be subjected to series of future studies to determine causality.

The potential model is as follows: certain childhood experiences may result in certain negative themes to intrusive cognitions in later life. These intrusive thoughts might result in negative judgements leading to an increase in the frequency of the negative intrusions. As intrusive thoughts increase in frequency and become more negative in content, a cycle may begin where participants attempt to suppress the thoughts but in fact cause a rebound effect. As this cycle begins they may start to use an increasing number of mildly harmful or potentially maladaptive, impulsive ways of coping in order to distract from their thoughts, and their self-worth may drop,

perpetuating the cycle further. As a result of the rebound effect, the frequency of intrusive thoughts may then increase as the content becomes more negative and this cycle may then lead to either a state of high arousal or high dissociation, in which the individual then uses self-harm as an emotional regulation strategy. In some circumstances they may use letting of steam in a way that causes no harm either at the point of the impulsive behaviours, or as an alternative to self-harm, for example this might be at times when they are able to externalise their feelings, but don't want to damage what may already be difficult social relationships. Mindfulness appears possibly to be protective against this cycle, either by an overarching sense of psychological wellbeing and raised self-worth, or by providing an alternative to the increasing cycle of thought suppression and distraction by more harmful methods. Indeed, there is some support from the literature on this, since mindfulness has been found to be a successful emotion regulation strategy (Arch & Craske, 2006), which may offer an alternative to self-harm.

7.6. Methodological Limitations

There are a number of methodological difficulties common to the various studies of this thesis that are worth considering in light of the various issues outlined in the first chapter of the thesis. These shall now be addressed and a program of future research will follow, which is designed to overcome the challenges presented by these limitations, as well as to test the emerging model described earlier in this chapter.

7.6.1. Sampling

Several of the studies in this thesis used convenience sampling, which risks biases inherent in selecting only a certain subset of the population, in terms of who will and

will not be included. For example, using undergraduate psychology classes results in a mean age in the early twenties, presupposes a certain level of intellectual and societal functioning, and results in a highly disproportionate number of females in the sample. However, this thesis did tackle this to some extent, since the undergraduate sample used was an introductory psychology class including many non-psychology students, which is likely to be more representative, at least on gender, than a pure psychology class group. The other university group was a mix of staff, undergraduate and postgraduate students, which goes some way to addressing the gender and age issues at least.

In the third study, there were some further issues around sampling, since somewhat unexpectedly, a large proportion of the participants had experience of self-harm, and all had either experience of suicide attempts or suicide ideation, and so it was a more homogenous sample than originally expected. Future studies that use hospital samples should pay extra care to how representative of the overall population the sample is, since this seriously limits the generalizability of the findings.

7.6.2. Experimental design

The three quantitative studies in this thesis were all cross-sectional in nature, collecting data at only one time-point. This means that it is difficult to assess the causality of the effects, rather than just the associations between the constructs. This type of design also made it difficult to take into account how recently participants had engaged in self-harming behaviours, which may have been a confounding variable in the analyses. These issues would be best addressed by a longitudinal study, as it would increase the likelihood of participants having recent experience of self-harm. In addition to the other benefits of a longitudinal study, this type of design can also help to reduce

the risk of shared method variance, where associations between variables can arise as a result of similarities between how variables are assessed.

All of the studies in this thesis involved self-report data. Whilst this can be a useful approach since it values an individual's story, there are also issues of recall that can emerge, particularly when remembering times that are associated with extreme emotions, or periods of dissociation. Again, longitudinal designs may provide more opportunity for recall of more recent self-harm episodes. Corroborating the data with the report of someone else who knows the participant well, such as a friend, or close relative, may also help correct for some of the bias created by the recall problems. Finally, how questions are worded can also aid with recognition. For example, in the first online study in this thesis, the rate of self-harm increased with the inclusion of a list of behaviours for participants to endorse, suggesting that this can aid with recall of such events.

Self-report data also has other potential biases, including a person being themselves unsure of why they have engaged in self-harm, and different forms of demand characteristics, for example downplaying their self-harming due to shame, or conversely, inflating the rate of self-harm due to poor recall of timings. These sorts of issues might be addressed by the use of behaviourally oriented questions, or performance-related tasks, although these can result in a number of ethical issues that need to be carefully addressed.

7.6.3. Measurement of self-harm

The studies described in this thesis, while encompassing many aspects of self-harm, did little to assess the effect of repetitive self-harm as a separate phenomenon to

less frequent episodes of self-harm. The nature of our studies lead to general 'overall' self-harm rates whereby people were included in self-harm groups if they had some experience of self-harm regardless of whether it had been occasional or more pervasive forms of self-harm. It would be interesting, therefore to examine our model of intrusive thoughts, dissociation and mindfulness in samples where the repeat self-harmers were separated from infrequent self-harmers into different groups for comparison. This would provide an interesting angle, as it would examine whether the mechanisms were different for these different types of self-harm.

There has also been some discussion in this thesis around the use of bespoke versus established measures. In terms of reliability and validity of the research, it may be beneficial to use established and well-used measures, rather than those created for the purposes of the study, in order to increase the robustness and generalizability of the findings.

7.6.4. Other issues

The studies in this thesis did not explore differences between self-harming and non-self-harming participants in hospital or other treatment samples. The small number of participants in the hospital study, in particular once the sample was divided into those with and without experience of self-harm made such comparisons rather difficult and less meaningful than had the groups been larger. Also, divergent methods, demographics and again sample sizes made the comparisons between studies within the thesis difficult with regards to the experiences of hospital versus general population groups. Although very successful comparisons were made within the samples from the general population, similar work with treatment groups would expand on how generalizable these findings are, as well as tailoring interventions for those people who

are already experiencing difficulties. With this in mind it would be an extremely beneficial direction for future research to investigate our emerging model of intrusive thoughts, mindfulness and dissociation in a large hospital or other treatment sample, comparing scores on the measures used here between participants who currently self-harm, and those who do not. This would also allow for a full investigation of functional data from a large sample of people with diagnoses that may be relevant to self-harm, in order to further examine the factor structure of the various functions.

7.7. Future Research

On the basis of these methodological limitations, a program of future research can be designed which will address these issues and better test our emerging model of intrusive thoughts in self-harm. In light of the issues discussed, the best method of testing the model would be through a longitudinal, prospective study, whereby self-harm and the related constructs could be tested at a number of time points, using several different questions including those relating closely to a predetermined definition, and those that allow participants to choose from a list of behaviours that include all behaviours encompassed by the definition. Ideally, for studies involving general population samples, participants would be recruited from the full general population, perhaps on the basis of random sampling through the census or electoral roll information. For diagnosis groups or studies using samples of people with specific diagnoses, participants should be recruited through hospital units or mental health teams, depending on the groups being tested for individual studies. Using such samples would allow the clarification of how different diagnoses, and their associated patterns of thoughts and potential self-harm may differ and indeed the elements that may be common cross-diagnostically.

The testing would also ideally involve standardised measures where possible, and include corroboration of the participant's experiences, as well as performance-based assessments. Ideally, it would also be beneficial to examine the emerging model in a larger sample of people who are currently known to have a mental health diagnosis, to determine whether such a group would provide results that might add to those found in the samples from the general population. For example, such a group may be more likely to experience negative intrusive thoughts or self-harm, and testing such a sample would allow us to investigate how certain disorders and their associated thinking patterns may fit in to the model, or if the model may hold transdiagnostically.

Further, a more successfully and expertly conducted qualitative element to the research may have something to add, in particular in the early stages of the research, in order to allow flexibility in determining which behaviours to ask participants about, as well as to gather information on the content of intrusive thoughts to ask participants about in the longitudinal study.

Finally, it is worthwhile considering how a treatment study may add to the findings of this thesis. Although it was intended to include such a study in the present program of study, practical constraints around recruitment to the treatment (private mindfulness groups) made this not feasible. Ideally, studies that was able to address how an intervention such as an eight-week mindfulness group (e.g. MBSR) was able to reduce rates of self-harm, as well as affecting frequency and content of intrusive thoughts by assessing these factors before and after, would have a lot to add to the findings presented here. Specifically, one such study might test whether MBSR reduces intrusive thoughts (or urge to react to these) in a broad sample, whilst another tests whether reducing intrusive thoughts through MBSR is an effective intervention for a population of people who engage in self-harm.

The MRC Complex Interventions Framework document (2000) sets out the ideal standards for researching health interventions. By this document, an intervention study should follow a clear program of creating a randomised control trial through a process of theoretical development, pilot testing, trials and dissemination. The role that the work reported in this thesis plays in this process is in the first component: theoretical development, whereby the literature is identified and the theory developed. Future studies testing mindfulness interventions for self-harm should follow the guidelines set out in this document. For example, the next stage of the theory development could constitute the longitudinal study described above, followed by the test of the impact of mindfulness on intrusive thoughts in the general population, leading to a pilot and eventual treatment trials of a mindfulness-based intervention for self-harm.

7.8. Clinical Implications

Aside from the methodological shortfalls described above, there can still be drawn some clinical implications from the findings of the studies described in this thesis. Since this thesis provides some evidence for self-harm as an emotion regulation strategy, one implication for clinicians is that offering alternative methods of emotion regulation may be a successful way of reducing self-harm. One alternative may be by increasing emotional intelligence (Mikolajczak, Petrides & Hurry, 2009) and awareness and understanding of emotions is one area that mindfulness can help develop (Kabat-Zinn, 1993).

Taken together, the findings suggest that trait mindfulness may be a protective factor against the urge to act on intrusive thoughts, specifically self-harming. This appears to be the case based on the findings of the studies reported in chapters five and six, suggesting that it may be the case for samples of people both with and without

mental health diagnoses. Given the success of Dialectical Behaviour Therapy for the reduction of self-harm in Borderline Personality Disorder, and of Mindfulness-Based Cognitive Therapy for Depression, it follows that a mindfulness-based therapy may also be successful in reducing self-harm in non-clinical groups. Mindfulness may offer a successful alternative to thought suppression by allowing the recognition and acceptance rather than the attempted inhibition of thoughts, and changing the relationship to the intrusive thought (Trinder & Salkovskis, 1994).

This thesis suggested a number of factors that may be used to identify those people most at risk of future self-harm, as well as a small number of other coping strategies that may also cause mental health professionals cause for concern with regards to future self-harm. From the point of early intervention these findings are particularly important, allowing clinicians to be aware of factors that may cumulate to increase an individual's risk of self-harm. These could be helpful in many instances including hospitals, prisons and first points of contact such as GP's surgeries, pharmacies, schools and colleges, as well as improving the understanding of these vulnerable patients when they do attend hospitals.

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Appendices

RESEARCH ETHICS APPROVAL FORM STAFF/POSTGRADUATE RESEARCH	
<p>All staff (including research staff) and postgraduate students conducting research in the Department of Psychology must complete this form before commencing their research. Empirical work must not begin until the Department Ethics Sub-Committee has approved the research.</p>	
Postgraduate Name	<u>Helen Batey</u>
Research Staff Name	<u></u>
Staff Name	<u></u>
Date Ethics Form submitted	<u></u>
Proposed starting date of research	<u>01.03.07</u>
<p>Brief title of investigation (state if this application is for a single study or for a series of studies using the same methodology):</p> <p>Analogue web survey to investigate self harming behaviour and cognitions in undergraduate students. (single study)</p>	
<p>Aims/value of research:</p> <p>To investigate on a large scale constructs relating to self harm in a non clinical population, in order to determine questions to ask in semi-structured interviews with clinical groups.</p>	
<p>Proposed participants' in research (if there are none, e.g. as in computer modelling, state no and go to signature):</p> <p>Undergraduate students</p>	
<p>Brief description of procedure (give reference to established method where appropriate):</p> <p>Online survey using a combination of established measures and new questions, either multiple choice or likert scales.</p>	
<p>Has it been established that the proposed methodology will produce data from which meaningful conclusions can be drawn?</p> <p>yes</p>	
<p>How will participants give informed consent to participate in the study? (Give details, including details of procedures involving parental or guardian consent):</p> <p>Participants will consent to taking part in the study before they do so, and they will be asked to specify whether they are happy to be contacted again in the future. They will be advised as to how the data will be</p>	

kept confidential.	
Does the study involve any of the following ethical issues?(circle all that apply)	
Questionnaires touching on sensitive issues	<i>Yes / No</i>
Deception	<i>Yes / No</i>
A procedure that might cause distress - even inadvertently	<i>Yes / No</i>
Designs involving stressful situations	<i>Yes / No</i>
Possible breach of confidentiality	<i>Yes / No</i>
Invasion of privacy	<i>Yes / No</i>
Working with children	<i>Yes / No</i>
Working with disabled people	<i>Yes / No</i>
<p>What procedures will be used to address these issues (e.g. debriefing, providing information/help, ensuring confidentiality is preserved). The committee may ask to see copies of relevant documents.</p> <p>A debrief will be provided to participants along with information about where to seek help if required. Confidentiality will be preserved by keeping all data password protected and contact details separate from questionnaire answers, which will be numeric ratings and therefore meaningless without knowing the mapping between coded variables and questionnaire items.</p>	

Research Involving Animals

Under whose personal licence will the work be conducted?	n/a
Under which project licence will the work be conducted?	n/a
If the work is not covered by a licence (e.g. because it involves insects) please give justification n/a	
I have read the BPS ethical guidelines for research and I am satisfied that all ethical issues have been identified and that satisfactory procedures are in place to deal with those issues in this research.	
Signed	<div>Student: _____ Date: _____</div> <div>Staff: _____ Date: _____</div>

Forward the completed form to Paschal Sheeran, Chair of DESC or Linda Belk, Postgraduate Secretary



The
University
Of
Sheffield.

Department
Of
Psychology.

Participant Consent Sheet

Please fill in the shaded boxes:

Name(s)

Sex

Date of birth

If you are a University of Sheffield student, please provide:

email address @sheffield.ac.uk

Registration No.

UCard No.

I consent to taking part in this experiment. I understand that I can withdraw my consent at any time, even once the experiment has started. I understand that my data will be retained in computerised anonymous format by the research team.

Signature:

Turn off Mobile Phones before starting the experiment!

The administrator will fill in the rest of this information

Date Start End Dur

Name of task

Condition

Task ID No.

Notes

Honorarium £ p

Stickers

Received by:

Date

**UNIVERSITY OF PLYMOUTH
FACULTY OF SCIENCE**

Human Ethics Committee

**APPLICATION FOR ETHICAL APPROVAL OF RESEARCH INVOLVING
HUMAN PARTICIPANTS**

All applicants should read the guidelines at the end of this application

This is a WORD document. Please complete in WORD and extend space where necessary.

*All applications must be word processed. Handwritten applications will be returned.
One signed hard-copy must be sent to Christine Brown. You may also send an unsigned electronic
copy of your application to paula.simson@plymouth.ac.uk as this will speed up the review process*

1. TYPE OF PROJECT

1.1 What is the type of project? (Tick 1 only)

STAFF should tick one of the three options below:

Specific project

☐

Tick this box if you are seeking approval for a specific study, or set of studies, with methods that are explained fully in the following sections. This form of approval is appropriate for funded projects with a clear plan of work and limited duration.

Thematic programme of research

☐

Tick this box if you are seeking approval for a programme of work using a single paradigm. This form Of approval is appropriate for pilot work, or routine work that is ethically straightforward. Note, the maximum period of approval for thematic ethical clearance is 3 years.

Practical / Laboratory Class

☐

Tick this box if you are seeking approval for a teaching activity which involves student involvement in the role of an experimental participant.

1.2 Tick 1 only

POSTGRADUATE STUDENTS should tick one of the options below:

Taught Masters Project

☐

M.Phil / PhD by research

☒

UNDERGRADUATE STUDENTS should tick one of the two options below:

Student research project

☐

Practical / Laboratory class where you are acting as the experimenter

☐

2. APPLICATION

2.1 TITLE of Research project
Investigating the experience of intrusive thoughts in self-harming behaviour.
2.2 General summary of the proposed research for which ethical clearance is sought, briefly outlining the aims and objectives and providing details of interventions/procedures involving participants (no jargon)
<p>This is a second wave of data collection following an earlier wave at the principal investigator's previous institution. The study involves a short list of open questions delivered by way of a paper questionnaire, alongside 6 closed-answer questions which will ensure that data matches that previously collected. Participants will be current student clients of Cornwall College counselling service, and will be approached through this service to take part in the study.</p> <p>Participants will be asked for consent and issued forms by their counsellor, and will return their forms in the same way. The anonymous data will then be passed on to the principal investigator for analysis.</p> <p>The first wave of data collection was slightly different procedurally to this wave. For this reason, despite ethical clearance being granted for the first stage, we are not requesting Chairman's action for this stage.</p>
2.3 Physical site(s) where research will be carried out
<p>Portland Square Cornwall College</p>
2.4 External Institutions involved in the research (e.g. other university, hospital, prison etc.)
<p>Cornwall College</p>
2.5 Name, telephone number, e-mail address and position of lead person for this project (plus full details of Project Supervisor if applicable)
<p>Helen Batey 84844 helen.batey@plymouth.ac.uk B211 PSQ PhD student, School of Psychology</p> <p>Professor Jon May 38456 jon.may@plymouth.ac.uk B203 PSQ Professor, School of Psychology</p>

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2.8 Start and end date for research for which ethical clearance is sought (NB maximum period is 3 years)	
Start date: 01.04.2008	End date: 31.12.2010
2.9 Name(s) of funding source(s) if any	
ESRC studentship.	
2.10 Has funding already been received?	
No <input type="checkbox"/>	In-part <input type="checkbox"/> Yes <input checked="" type="checkbox"/>
2.11 Has this same project received ethical approval from another Ethics Committee?	
No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>
2.12 If yes, do you want Chairman's action?	
No <input type="checkbox"/>	Yes <input type="checkbox"/>
If yes, please include other application and approval letter and STOP HERE. If no, please continue	

3. PROCEDURE

<p>3.1 Describe procedures that participants will engage in. Please do not use jargon</p> <p>Participants will complete a short questionnaire on a double sided sheet of A4 paper. The questions assess: current and past self-harming behaviour (quantitative); participants' experience of intrusive thoughts, in particular in relation to these behaviours.</p> <p>Questionnaires will be distributed and collected via the counselling service at Cornwall College in Cambourne.</p>
<p>3.2 How long will the procedures take? Give details</p> <p>The complete session will take approximately 20 minutes (including briefing and debrief).</p>
<p>3.3 Does your research involve deception?</p> <p>No <input checked="" type="checkbox"/> Yes <input type="checkbox"/></p>
<p>3.4 If yes, please explain why the following conditions apply to your research:</p> <p>a) Deception is completely unavoidable if the purpose of the research is to be met</p>
<p>b) The research objective has strong scientific merit</p>
<p>c) Any potential harm arising from the proposed deception can be effectively neutralised or reversed by the proposed debriefing procedures (see section below)</p>
<p>3.5 Describe how you will debrief your participants</p> <p>A printed A4 handout will be given to participants on completion of their session, offering information about the study and sources of help if they were affected by the issues raised.</p>
<p>3.6 Are there any ethical issues (e.g. sensitive material)?</p> <p>No <input type="checkbox"/> Yes <input checked="" type="checkbox"/></p>
<p>3.7 If yes, please explain. You may be asked to provide ethically sensitive material. See also section 11</p> <p>It is possible that completion of the questionnaire may be mildly distressing for some participants due to their experience of self-harm. All participants will have full access (as will be explained to them) to the free counselling service both at the time of and following participation in this study. All participants will also be provided with a debrief sheet with phone numbers and web addresses for sources of support.</p>

4. BREAKDOWN OF PARTICIPANTS

4.1 Summary of participants

Type of participant	Number of participants
Non-vulnerable Adults	
Minors (< 16 years)	
Minors (16-18 years)	5
Vulnerable Participants (other than by virtue of being a minor)	
Other (please specify)	5
TOTAL	10

4.2 How were the sample sizes determined?
On the basis of clients available and appropriate numbers for qualitative research given the data already collected.
4.3 How will subjects be recruited?
They will be asked to participate by their counsellor at the college counselling service.
4.4 Will subjects be financially rewarded? If yes, please give details.
n/a

5. NON-VULNERABLE ADULTS

5.1 Are some or all of the participants non-vulnerable adults?
<p>No <input type="checkbox"/> Yes <input checked="" type="checkbox"/></p>
5.2 How will participants be recruited? Name any other institution(s) involved
<p><i>Appropriate participants will be asked to take part by counsellors at the student counselling service at Cornwall College.</i></p>
5.3 Inclusion / exclusion criteria
<p><i>Clients with a history of self-harm whom the director of the service feels will be willing and able (emotionally, physically and intellectually) to take part in the study.</i></p>
5.4 How will participants give informed consent?
<p><i>The study will be explained to the by the counsellor and they will be asked to sign a consent form.</i></p>
5.5 Consent form(s) attached
<p>No <input type="checkbox"/> Yes <input checked="" type="checkbox"/></p>
If no, why not?
<p></p>
5.6 Information sheet(s) attached
<p>No <input type="checkbox"/> Yes <input checked="" type="checkbox"/></p>
If no, why not?
<p></p>
5.7 How will participants be made aware of their right to withdraw at any time?
<p><i>This will be explained to them by the counsellor, and included in the information sheet.</i></p>

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5.8 How will confidentiality be maintained, including archiving / destruction of primary data where appropriate, and how will the security of the data be maintained?

The head of counselling service will remove any identifying information from the data before it is returned to researchers.

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6. MINORS <16 YEARS

6.1 Are some or all of the participants under the age of 16?	
No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>
<i>If yes, please consult special guidelines for working with minors. If no, please continue.</i>	
6.2 Age range(s) of minors	
6.3 How will minors be recruited? (See guidelines). Name any other institution(s) involved	
6.4 Inclusion / exclusion criteria	
6.5 How will minors give informed consent? Please tick appropriate box and explain (See guidelines)	
Opt-in <input type="checkbox"/>	Opt-out <input type="checkbox"/>
6.6 Consent form(s) for minor attached	
No <input type="checkbox"/>	Yes <input type="checkbox"/>
<i>If no, why not?</i>	
6.7 Information sheet(s) for minor attached	
No <input type="checkbox"/>	Yes <input type="checkbox"/>
<i>If no, why not?</i>	

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6.8 Consent form(s) for parent / legal guardian attached
No <input type="checkbox"/> Yes <input type="checkbox"/>
If no, why not?
6.9 Information sheet(s) for parent / legal guardian attached
No <input type="checkbox"/> Yes <input type="checkbox"/>
If no, why not?
6.10 How will minors be made aware of their right to withdraw at any time?
6.11 How will confidentiality be maintained, including archiving / destruction of primary data where appropriate, and how will the security of the data be maintained?

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<i>If no, why not?</i>
<i>7.8 Information sheet(s) for parent / legal guardian attached</i>
<p style="text-align: center;">No <input type="checkbox"/> Yes <input type="checkbox"/></p>
<i>If no, why not?</i>
<i>7.9 How will minors be made aware of their right to withdraw at any time?</i>
<p>In the information/ consent sheet and the verbal briefing.</p>
<i>7.10 How will confidentiality be maintained, including archiving / destruction of primary data where appropriate, and how will the security of the data be maintained?</i>
<p>The head of counselling service will remove any identifying information from the data before it is returned to researchers.</p>

8. VULNERABLE GROUPS

8.1 Are some or all of the participants vulnerable? (See guidelines)
<p>No <input type="checkbox"/> Yes <input type="checkbox"/></p>
If yes, please consult special guidelines for working with vulnerable groups. If no, please continue.
8.2 Describe vulnerability (apart from possibly being a minor)
8.3 How will vulnerable participants be recruited? Name any other institution(s) involved
8.4 Inclusion / exclusion criteria
8.5 How will participants give informed consent?
8.6 Consent form(s) for vulnerable person attached
<p>No <input type="checkbox"/> Yes <input type="checkbox"/></p>
If no, why not?
8.7 Information sheet(s) for vulnerable person attached
<p>No <input type="checkbox"/> Yes <input type="checkbox"/></p>
If no, why not?
8.8 Consent form(s) for parent / legal guardian attached
<p>No <input type="checkbox"/> Yes <input type="checkbox"/></p>

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<i>If no, why not?</i>
<i>8.9 Information sheet(s) for parent / legal guardian attached</i>
No <input type="checkbox"/> Yes <input type="checkbox"/>
<i>If no, why not?</i>
<i>8.10 How will participants be made aware of their right to withdraw at any time?</i>
<i>8.11 How will confidentiality be maintained, including archiving / destruction of primary data where appropriate, and how will the security of the data be maintained?</i>

9. EXTERNAL CLEARANCES

Investigators working with children and vulnerable adults legally require clearance from the Criminal Records Bureau (CRB)

9.1 Do ALL experimenters in contact with children and vulnerable adults have <u>current</u> CRB clearance? Please include photocopies.		
No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>
9.2 If no, explain		
9.3 If your research involves external institutions (school, social service, prison, hospital etc) please provide cover letter(s) from institutional heads permitting you to carry out research on their clients, and where applicable, on their site(s). Are these included?		
No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>
If not, why not?		

10. PHYSICAL RISK ASSESSMENT

10.1 Will participants be at risk of physical harm (e.g. from electrodes, other equipment)? (See guidelines)	
No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>
10.2 If yes, please describe	
10.3 What measures have been taken to minimise risk? Include risk assessment proformas.	
10.4 How will you handle participants who appear to have been harmed?	

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11. PSYCHOLOGICAL RISK ASSESSMENT

11.1 Will participants be at risk of psychological harm (e.g. viewing explicit or emotionally sensitive material, being stressed, recounting traumatic events)? (See guidelines)	
No <input type="checkbox"/>	Yes <input checked="" type="checkbox"/>
11.2 If yes, please describe	
Participant will be asked to recount their experience of self-harm which may be traumatic for them.	
11.3 What measures have been taken to minimise risk?	
The data will be collected through the counselling service at Cornwall College where all participants will be able to discuss any issues arising with their counsellors. Participants will also be carefully chosen to avoid recruiting clients who may find the procedure too distressing.	
11.4 How will you handle participants who appear to have been harmed?	
The data will be collected through the counselling service at Cornwall College where all participants will be able to discuss any issues arising with their counsellors.	

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12. RESEARCH OVER THE INTERNET

12.1 Will research be carried out over the internet?	
No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>
12.2 If yes, please explain protocol in detail, explaining how informed consent will be given, right to withdraw maintained, and confidentiality maintained. Give details of how you will guard against abuse by participants or others (see guidelines)	

13. CONFLICTS OF INTEREST & THIRD PARTY INTERESTS

13.1 Do any of the experimenters have a conflict of interest? (See guidelines)	
No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>
13.2 If yes, please describe	
13.3 Are there any third parties involved? (See guidelines)	
No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>
13.4 If yes, please describe	
13.5 Do any of the third parties have a conflict of interest?	
No <input type="checkbox"/>	Yes <input type="checkbox"/>
13.6 If yes, please describe	

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14. ADDITIONAL INFORMATION

<p>14.1 [Optional] Give details of any professional bodies whose ethical policies apply to this research</p> <p>British Psychological Society American Psychological Association BACP</p>
<p>14.2 [Optional] Please give any additional information that you wish to be considered in this application</p>

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15. ETHICAL PROTOCOL & DECLARATION

To the best of our knowledge and belief, this research conforms to the ethical principles laid down by the University of Plymouth and by any professional body specified in section 14 above.

This research conforms to the University's Ethical Principles for Research Involving Human Participants with regard to openness and honesty, protection from harm, right to withdraw, debriefing, confidentiality, and informed consent

Sign below where appropriate:

STAFF / RESEARCH POSTGRADUATES

	Signature	Date
Principal Investigator:		21/04/2008
Other researchers:	_____	_____
	_____	_____
	_____	_____

Staff and Research Postgraduates should send the completed and signed copy of this form to Paula Simson, Secretary to the Science Human Research Ethics Committee, A106 Portland Square.

UG / TAUGHT POSTGRADUATES

	Signature	Date
Student:	_____	_____
Supervisor / Advisor:	_____	_____
	_____	_____
	_____	_____

Undergraduate and Taught Postgraduate students should pass on the completed and signed copy of this form to their School Representative on the Science Human Ethics Committee.

	Signature	Date
School Representative on Science Faculty Human Ethics Committee	_____	_____

Faculty of Science Ethical Application Form omh/2007 Final

SAMPLE SELF-CONSENT FORM

UNIVERSITY OF PLYMOUTH

FACULTY OF SCIENCE

Human Ethics Committee Sample Consent Form

CONSENT TO PARTICIPATE IN RESEARCH PROJECT / PRACTICAL STUDY

Name of Principal Investigator

Helen Batey

Title of Research

Intrusive thoughts in self-harm

Brief statement of purpose of work

We are interested in the thought processes of people who engage in self-harm. By completing this questionnaire, we will gain an insight into how certain thought patterns influence people with these behaviours. It is hoped that this insight will help to inform how healthcare professionals work with people in these circumstances.

The objectives of this research have been explained to me.

I understand that I am free to withdraw from the research at any stage, and ask for my data to be destroyed if I wish.

I understand that my anonymity is guaranteed, unless I expressly state otherwise.

I understand that the Principal Investigator of this work will have attempted, as far as possible, to avoid any risks, and that safety and health risks will have been separately assessed by appropriate authorities (e.g. under COSHH regulations)

Under these circumstances, I agree to participate in the research.

Name:

Signature:

Date:

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SAMPLE INFORMATION SHEET FOR ADULT / CHILD

**UNIVERSITY OF PLYMOUTH
FACULTY OF SCIENCE**

RESEARCH INFORMATION SHEET

Name of Principal Investigator

Helen Batey

Title of Research

Intrusive Thoughts in Self Harm

Aim of research

To improve understanding of the role of intrusive thoughts in self-harm.

Description of procedure

Participants will complete a short series of open-ended questions and a small number of closed answer questions.

Description of risks

It may be emotionally difficult for participants to recount their experiences. The counselling service will be available to support participants in the event of any distress.

Benefits of proposed research

Understanding of thought processes in self-harm which will help to inform healthcare professionals and associated interventions.

Right to withdraw

Participants may withdraw at any stage of the process.

If you are dissatisfied with the way the research is conducted, please contact the principal investigator in the first instance: telephone number [01752 584844]. If you feel the

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problem has not been resolved please contact the secretary to the Faculty of Science
Human Ethics Committee: Mrs Paula Simson 01752 232984.

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Faculty of Science Human Research Ethics Committee List of School Representatives

Centre for Theoretical and Computational Neuroscience	Professor Chris Harris (Chair)
School of Psychology	Professor Simon Handley Dr Paul Broks Dr Matt Roser
School of Earth, Ocean and Environmental Sciences	Mr Matthew Barlow
School of Biological Sciences	Dr David J. Price
External Representative	Dr Oonagh Corrigan Social Science and Business
Lay Member	Rev. David Evans

Committee Secretary: Mrs Paula Simson

email: paula.simson@plymouth.ac.uk

tel: 01752 232984

MEMORANDUM

TO: Susan Toppin, Senior IRB Manager

FROM: Shirley Yen, Ph.D., Principal Investigator

DATE: January 2, 2006

RE: Request for Modification #4 to Protocol "Dispositional Affect, Family Environment, and Adolescent Suicidality"

The above referenced protocol received full IRB approval on April 21, 2005, and the grant that will fund this study was administered on September 12, 2005. No participants have been enrolled yet. The study involves six months of follow-up assessments on adolescents who were admitted to an inpatient psychiatric unit for suicidal thoughts or behaviors. Interviews and self-report forms will be administered interviews and self-report questionnaires. I am requesting IRB approval for the use of additional assessment instruments, and removal of one previously approved interview. I would like to add the following self-report measures:

- 1) **Aggression Questionnaire (AQ; Buss & Perry, 1992).** The Aggression Questionnaire is a full revision of the Buss-Durkee Hostility Inventory, a widely-used measure assessing hostility and aggression. Its 34 items are scored on the following five scales: Physical Aggression, Verbal Aggression, Anger, Hostility, and Indirect Aggression. A total score is also provided, along with an Inconsistent Responding Index (a form of a lie scale). Standardization is based on a sample of 2,138 individuals, aged 9 to 88, and norms are presented in three age sets: 9 to 18, 19 to 39, and 40 to 88. Based on the 9-18 year old set where $n=1,062$, reliability and validity are both acceptable. This measure is necessary because the constructs examined are potential predictors of suicidal behavior, and also represent a core component of borderline personality disorder.
- 2) **Functional Assessment of Self-Mutilation (FASM; unpublished).** The FASM is a self-report instrument that assesses whether an individual has engaged in intentional self-harm (cutting or burning of skin) in the past year. If so, respondents are asked to identify the function of their behavior by rating a list of reasons for self injury. The FASM has been successfully administered to adolescent samples. The inclusion of a self-injury assessment is necessary to our study aims as many suicidal adolescents also engage in self-injurious behaviors that may or may not have suicidal intent. Engaging in self-injurious behaviors may be a significant predictor of suicide attempts.

- 3) **Beck Scale for Suicide Ideation (BSS; Beck & Steer, 1991).** The BSS is a 21 item self-report instrument designed to detect and measure severity of suicidal ideation experienced over the last week in adults and adolescents. Participants respond to items using a 3-point Likert scale. Excellent internal consistency and content/construct/concurrent validity for the BSS has been reported in adult inpatient and outpatient samples (Beck & Steer, 1991) and high internal consistency in adolescent inpatient samples (Kumar & Steer, 1995; Steer et al., 1993). This measure assesses one of our key outcome variables, suicide ideation over the past week. This short time duration, in contrast to the Suicide Ideation Questionnaire, which assesses suicide ideation over the past month is necessary to examine because suicide ideation tends to fluctuate widely. Therefore, both time intervals are critical to capture.

I plan to remove the Beck Suicide Intent Scale interview from the assessment battery. Questions elsewhere in the assessment battery can be used to assess the level of suicidal intent. This interview is estimated to take approximately 15 minutes. The proposed self-reports are estimated to take approximately 5 minutes each, a total of 15 minutes. Therefore, the overall estimated time for completion of the baseline battery remains 4-5 hours for the adolescent and 3-4 hours for the parent. The six-month follow-up study is estimated to take 3-4 hours for the adolescent and 2-3 hours for the parent.

I have enclosed the items that correspond to the Aggression Questionnaire, Functional Assessment of Self-Mutilation, and the Beck Suicide Scale, in addition to a table that summarizes all proposed assessment measures.

Please feel free to contact me with any further questions.

Shirley Yen
Ph: 444-1915
Fax: 444-1948
Email: Shirley_Yen_PhD@Brown.edu

MEMORANDUM

TO: Susan Toppin, Senior IRB Manager

FROM: Shirley Yen, Ph.D., Principal Investigator

DATE: January 23, 2008

RE: Request for Modification #15 to Protocol "Dispositional Affect, Family Environment, and Adolescent Suicidality"

The above referenced protocol received initial full IRB approval on April 21, 2005, and the most recent progress report was approved on March 16, 2007. The study involves six months of follow-up assessments on adolescents who were admitted to an inpatient psychiatric unit for suicidal thoughts or behaviors. Interviews and self-report forms are administered at baseline and at the 6-month follow-up.

This request for modification entails adding two brief measures to our adolescent baseline self-report battery. In total, there would be 11 multiple choice questions added which should take approximately 5 minutes to complete. We do not believe that this warrants a change to our consent form because the current estimated time as stated on the consent form exceeds the average time it takes to complete the interview. The content of the questions we seek to add pertain to frequency of intrusive thoughts and how participants deal with intrusive thoughts when they have them. In our consent form, under description of procedures, we inform potential participants that they will be asked about thoughts and behaviors, which subsumes the area of intrusive thoughts.

Please feel free to contact me with any further questions.

Shirley Yen
 Ph: 444-1915
 Fax: 444-1948
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Negative Intrusive Thoughts and Dissociation as Risk Factors for Self-Harm

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Relationships between self-harm and vulnerability factors were studied in a general population of 432 participants, of whom 30% reported some experience of self-harm. This group scored higher on dissociation and childhood trauma, had lower self-worth, and reported more negative intrusive thoughts. Among the non-harming group, 10% scored similarly to the self-harmers on the dissociation and self-worth scales, and engaged in potentially maladaptive behaviors that are not defined as indicating clinical self-harm, but experienced fewer negative intrusive thoughts. This group may be at risk of future self-harm if they begin to experience negative intrusive thoughts. If negative intrusive thoughts are playing a causal role, then therapeutic approaches tackling them may help those who are currently self-harming.

We examined risk factors for self-harm in a nonclinical population, and investigated the nature of intrusive thoughts in people who self-harm and how these differ from those of people who do not.

The majority of self-harm research has investigated potential causes of self-harm after the behavior has led to clinical intervention. This can be problematic since self-harm is associated with many mental health diagnoses (alongside its presence in nonclinical groups), and so limiting samples to people in treatment risks overestimation of the association between self-harm and other psychopathologies (Klonsky, Oltmanns, & Turkheimer,

2003). Therefore, it is essential to look at the precursors of self-harm in people who are at risk of presenting clinically but who have not yet done so.

Gratz (2003) defined *self-harm* as "the deliberate, direct destruction or alteration of body tissue, without conscious suicidal intent but resulting in injury severe enough for tissue damage to occur" (p. 253). This definition is particularly useful with nonclinical groups, as it allows for the study of less severe forms of self-harm, such as skin picking and hair pulling (referred to hereafter as *mildly harmful*). The term *direct* avoids the inclusion of risky behaviors such as extreme sports and body art, avoiding spurious overestimation. Recorded episodes of self-harm in the United Kingdom are around 400 per 100,000 population (Horrocks et al., 2003), but the true incidence is thought to be far higher because a large proportion of people who engage in self-harm will never seek help (Samaritans, 2005). A survey conducted by the Department of Health in 2000 (Meltzer et al., 2002) suggested that around one half of those engaging in self-harm and nonfatal suicide attempts seek professional help, although this

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too is a conservative estimate. Indeed, U.S. studies have found rates of 4% in the general population, 4% among military recruits, and 14% or more in a university undergraduate population (Klonsky, 2007). Also, a recent study with 18- to 20-year-olds found that 14% of the participants had self-harmed at some point in their lives and 7% were currently self-harming (Young, Van Beinum, Sweeting, & West, 2007). Since self-harm represents the highest risk factor for later completed suicide (Prinstein, 2008), the implications for understanding self-harm are wide reaching.

Here we report the results of a questionnaire survey intended to identify those at risk before they engage in self-harming activity. This is done by examining risk factors in the form of behaviors and background characteristics identified in the literature as being associated with self-harm, and by investigating whether these factors are associated with self-harm episodes in a nonclinical population. These risk factors include personal circumstances (including childhood experience and sense of self), dissociation, and intrusive thoughts.

PERSONAL CIRCUMSTANCES

Two major reviews of self-harm risk factor literature (Gratz, 2003; Starr, 2004) were examined in order to identify psychological and psychosocial factors that were associated with self-harming behaviors. The Starr paper reviews antecedents and theories of self-harm with a view to improving levels of nursing care provided to patients engaging in such activities. The Gratz review looked specifically at the literature on the following risk factor categories: childhood sexual and physical abuse; neglect; childhood separation, loss, and attachment; and individual risk factors, alongside their interactions. The reviews identified childhood trauma and low self-worth (including self-blame, loss of sense of control, and unstable sense of self) as significant causes of later self-harm, along with poor problem-solving ability and impulsivity,

factors that we here label as *personal circumstances*. A further literature review by Webb (2002) found similar correlates of self-harm in studies with adolescent clinical samples. Webb also identified various mental health diagnoses as associated with self-harm. For this reason we included a screening question on whether participants had ever been diagnosed with a mental health problem. Further data was not collected on this for two reasons, partly because the sample for this study was taken from a general population, and partly because of a need to keep the overall questionnaire relatively short and straightforward to complete.

Childhood trauma has been found to be strongly associated with self-harming behavior in a number of studies; for example, in women with a history of childhood sexual abuse (Romans et al., 1995) and in a psychiatric inpatient population (with experience of childhood physical or sexual abuse) in situations where current stressors triggered a return to feelings associated with the trauma. In this case the self-harm is thought to facilitate feelings of relief, or to help patients feel in control of the previously unmanageable situation (Van der Kolk, Perry, & Herman, 1991). In fact, this finding can extend from abuse to neglect (Sansone, Gaither, & Barclay, 2002); family cohesiveness, structure, and other parenting factors (Webb, 2002); and even perceived parental criticism (Yates, Tracy, & Luthar, 2008). From the childhood trauma (CT) risks we derived the following eight items for our survey:

- CT1. I experienced a traumatic event/series of events in my childhood.
- CT2. I would describe my family background as dysfunctional in some way.
- CT3. As a child I felt understood by my parents/caregivers.
- CT4. As a child I felt that my parents/caregivers listened to me.
- CT5. I have been abandoned by someone important to me at some time in my life.
- CT6. Somebody in my family has a

history of problematic alcohol or drug use.

CT7. I find it difficult to trust other people.

CT8. I experience flashbacks.

People who self-harm tend to have a less positive self-concept (e.g., Hawton, Kingsbury, Steinhardt, James, & Fagg, 1999), and Tulloch, Blizzard, and Pinkus (1997) found that vulnerability for self-harm in adolescents related to a tendency to self-blame as a result of an internal locus of control. Self-harm can also function as a way of regaining a sense of control over one's life and emotions (e.g., Briere and Gil, 1998). The following section of questions also included items relating to positive sense of self and personal boundaries, as well as ability to tolerate being alone. These relate to Object Relations Theory (see Gallop, 2002), which suggests these factors as part of a model of self-harm linking childhood experience and self-harming behavior. The low self-worth (SW) risks discussed by Starr (2004) and Gratz (2001) provided the following ten items for our survey:

SW1. I have low self-esteem.

SW2. When things go wrong in my life it is usually my own fault.

SW3. I am in control of my life.

SW4. I am a good person.

SW5. I view myself in a positive light.

SW6. I hate being on my own.

SW7. I am a worthwhile person.

SW8. I have a clear sense of who I am.

SW9. I have a clear sense of my own personal boundaries.

SW10. I am a competent person.

Self-harm is often considered to be an impulsive behavior. In a study of adolescents, impulsive behavior was found to separate groups of self-harmers and nonharmers (Kashden et al., 1993). Kashden et al. did not find problem solving to have an effect but Rotherham-Borus et al. (1990) found problem solving to be a good predictor of self-harm in female suicide attempters, and another study found a similar result in adolescents

(Nock & Mendes, 2008). Further, Kingsbury, Hawton, Steinhardt, and James (1999) suggested an interaction between poor problem solving and impulsivity in adolescents with a tendency toward self-harm, with impulsivity acting as an interruption to problem solving. We included two items on our survey that related to impulsivity (IMP) and problem solving (PS), respectively:

IMP. I often act impulsively, without first thinking through my actions.

PS. I often struggle to find solutions to problems.

DISSOCIATION

Dissociation is thought to have an important role in self-harming behavior (Gratz, Conrad, & Roemer, 2002). It is strongly associated with childhood trauma (also common in self-harming individuals), and may be a response to overwhelming emotional pain in the form of an initial adaptive response to a trauma that individuals then generalize to all stressful life events (Low, Jones, Macleod, Power, & Duggan, 2000). One purpose of self-harm may be to enable disruption of a dissociative state by providing something physical for the individual to focus on and to help them return themselves to their current experience. Self-harm can allow them to feel something following the dissociative episodes of feeling nothing, which can be triggered by the absence of loved ones (Klonsky, 2007). Dissociation may indeed be the link between child abuse and self-harm (Chu & Dill, 1990).

Accordingly, we included items from a adapted version (DES-C; Wright & Loftus, 1999) of the Dissociative Experiences Scale (DES; Bernstein & Putnam, 1986), which was designed for use with nonclinical groups. The DES-C differs from the DES in that it uses a different scoring system for items. Instead of simply asking people to rate how often they experience a particular phenomenon, the DES-C asks participants to rate their experience compared to other people. This shift in scoring system was due to data

being highly skewed when the original version was used with the general population and Wright and Loftus report that it produces a more normal distribution. Both the DES and the DES-C are 28-item measures. For this study, we selected six items from the Depersonalization/Derealization subscale (D), because these seemed to best capture the aspects of dissociation most relevant to self-harm, and four items from the Absorption/Distractibility subscale (A), as they represented experiences that appeared most 'normal' for a nonclinical group. We expected the depersonalization items to be associated with self-harm, but not the absorption items.

- D1. Some people sometimes have the experience of feeling as though they are standing next to themselves or watching themselves do something and they actually see themselves as if they are looking at another person.
- D2. Some people have the experience of looking in a mirror and not recognizing themselves.
- D3. Some people have the experience of feeling that other people, objects, and the world around them are not real.
- D4. Some people have the experience of feeling that their body does not seem to belong to them.
- D5. Some people sometimes find that they hear voices inside their head that tell them to do things or comment on things that they are doing.
- D6. Some people sometimes feel as if they are looking at the world through a fog so that people and objects appear far away or unclear.
- A1. Some people have the experience of not being sure whether things that they remember happening really did happen or whether they just dreamed them.
- A2. Some people find that sometimes they are listening to someone talk and they suddenly realize that they

did not hear part or all of what was said.

- A3. Some people find that when they are watching television or a movie they become so absorbed in the story that they are unaware of other events happening around them.
- A4. Some people find that they sometimes sit staring off into space, thinking of nothing, and are not aware of the passage of time.

INTRUSIVE THOUGHTS

Intrusive thoughts are those that seem to occur spontaneously, without effort or origin, and interrupt cognitive ability (Clark, 2005). They are common in the general population but also play an important role in many mental health diagnoses (Purdon, 1999). Intrusive thoughts have been implicated in the development and maintenance of depression and often take the form of intrusive memories (Reynolds & Brewin, 1999). Since self-harm is especially common in depression (Patel et al., 2007), the role of intrusive thoughts may be similar and therefore may represent a further self-harm risk factor. In our study, we included a set of items intended to measure the frequency, content, and consequences of intrusive thoughts (IT):

- IT1. How often (on average) do you experience intrusive thoughts?
Never; Less than once a day;
Once a day; Several times a day;
Every time I try to concentrate on something.
- IT2. Please specify what sorts of things you often have intrusive thoughts about:
Food or drink; Positive thoughts about myself; Negative thoughts about myself; Activities (e.g., sport etc.); Harming myself; Happy memories; Unhappy memories; Something else.

IT3. How much do these thoughts distract you from everyday tasks?

Not at all, they just occur and then disappear; Only momentarily; Somewhat—it takes some effort to stay focused on the task; Quite a lot—it is hard to get back to what I was doing; Very much—I have to act on the thought before I can do anything else

IT4. Approximately how often are these thoughts distressing?

Never; Up to 30% of the time; 31–50% of the time; 51–80% of the time; 81–99% of the time; All of the time

The next set of items was taken from the Emotional and Behavioural Reactions to Intrusive Thoughts (EBRIQ; Berry, May, Andrade, & Kavanaugh, in press). Our questionnaire instructions defined an intrusive thought, then asked people to rate their reactions (R) to them.

R1. It makes me feel I am losing control of my thoughts.

R2. It makes me feel miserable.

R3. It distracts me from what I am doing.

R4. I act on the thought.

R5. It makes me anxious.

R6. It interferes with how well I carry out what I'm doing.

R7. It makes me irritable.

SELF-HARMING STATUS

The final set of items was intended to discriminate between those with experience of self-harm (SH) behaviors and those without. The first question (SH1) listed coping strategies to stress and patterns of behavior relating to self-harm. This question began, "When you feel stressed, low or anxious, which of the following behaviors do you engage in;" and was followed by a list of 25 behaviors forming 5 categories: severe self-harm-

ing (strictly defined according to Gratz's definition), mildly harmful compulsive behaviors, potentially maladaptive activities (which might also be harmful, if not directly, or immediately), avoidant behavior, and positive behavior (see Table 1). The potentially maladaptive category of responses included a wide range of behaviors that might have some form of adverse effect. These included those where this was obvious (such as smoking and drug use) and those where the effects may be less instantly recognizable (such as exercise and nail biting). For example, someone may cope with their stress by exercising which may appear outwardly positive, but may lead to excessive exercise and risk of injury. It was expected that some of the items in this category might be associated with more serious self-harming behavior, while some would not, hence the title "potentially maladaptive." The behaviors were intermixed and their coding was not included in the item text shown to respondents, who could check as many or as few as they wanted to.

Eight additional items directly assessed self-harming behavior (past and present) along with regularity, frequency, and time scale:

SH2. Have you ever harmed yourself in a way that is outside the bounds of social acceptability (such as by cutting, burning, pulling out body hair, etc.)?

No; Yes

SH3. If yes, did you do so regularly over a period of time?

No; Yes; Not Applicable

SH4. How frequently?

Not applicable; Less frequently than once a month; Once a month; Once every 2 weeks; Once a week; 2–3 times a week; 4–6 times a week; Once a day; More than once a day

SH5. For how long?

Not applicable; Less than a month; 1–3 months; 3–6 months;

TABLE 1

Number and Percentage of Self-Harmers and Nonharmers Reporting Each Response to Stress (Item SH1)

Item	Self-harmers (N = 131)	%	Nonharmers (N = 301)	%	Fisher Exact p
Self-Harming					
Severe scratching	26	20%	—	—	
Punching yourself	19	15%	—	—	
Banging your head	11	8%	—	—	
Cutting	10	8%	—	—	
Sticking pins, needles, or staples (or other sharp objects) into your skin	7	5%	—	—	
Burning yourself	4	3%	—	—	
Mildly harmful					
Skin picking	42	32%	52	17%	0.001
Hair pulling	21	16%	16	5%	<0.001
Potentially maladaptive					
Excessive eating	68	52%	119	40%	0.011
Exercise	52	40%	109	36%	
Alcohol use	51	39%	102	34%	
Nail biting	47	36%	100	33%	
Under eating	37	28%	50	17%	0.005
Smoking	33	25%	45	15%	0.009
Risk taking behavior (e.g., unprotected sex, walking alone in dangerous places, etc.)	25	19%	14	5%	<0.001
Drug use	7	5%	10	3%	
Gambling	2	2%	7	2%	
Avoidant					
Walking away from stressful situations	69	53%	162	54%	
Trying not to think about the source of stress	67	51%	148	49%	
Positive					
Watching TV, reading a book, or playing a computer/board game	89	68%	202	67%	
Talking to a friend or family member	78	60%	193	64%	
Letting off steam in a way that causes no harm (shout, scream, or hit a pillow)	58	44%	94	31%	0.007
Trying to spend time with people who are rewarding rather than critical and judgmental	57	44%	136	45%	
Relaxation techniques	33	25%	79	26%	
Art or some other creative activity	25	19%	51	17%	

Note. Self-harmers are defined as those reporting any of the six self-harming activities, prior experience of, or current self-harm. One-tailed Fisher's Exact Test reported where $p < .05$.

6 months to 1 year; 1–2 years;
more than 2 years

SH6. Do you currently harm yourself
in such a way?

No; Yes

SH7. If yes, do you do so regularly?

No; Yes; Not Applicable

SH8. How often?

Not applicable; Less frequently
than once a month; Once a
month; Once every 2 weeks; Once
a week; 2–3 times a week; 4–6
times a week; Once a day; More
than once a day

SH9. How long have you harmed yourself in such a way?

Not applicable; Less than a month; 1–3 months; 3–6 months; 6 months to 1 year; 1–2 years; more than 2 years

METHOD

The 50 items described above were combined into a four page online survey. Page one contained the childhood trauma, self worth, impulsivity, and problem solving items, rated on a 7-point scale, from 0 *not at all true of myself* to 6 *very true of myself*, the midpoint (3) was *neither true nor untrue*. Page two contained the depersonalization and absorption items from the Dissociative Experiences Scale, rated from 0 (*much less than others*) through 5 (*about the same as others*), to 10 (*much more than others*). Page three contained the intrusive thoughts items, with the scales as listed above, and the reaction items, rated 0 to 4 with the anchors *never, rarely, sometimes, often, every time*. Page four contained the self-harm items, with scales as described above, together with two final questions asking if the respondents would like to be entered for a prize draw and if we could contact them for a follow-up.

Participants were recruited through an advert on the university Web portal (accessible to approximately 1,300 academic staff, 4,500 nonacademic staff, 18,000 undergraduate and 5,600 postgraduate students), and were offered entry in a £50 prize draw as a reward for participation. The study met British Psychological Society (BPS) ethical guidelines and was approved by the departmental ethics committee. The study was advertised as investigating how people "deal with stress."

The questionnaire was hosted on the researcher's Web space on the university Web pages. Initially, participants were asked to fill in their university user name and basic demographic information. A link to the questionnaire proper was then sent to their password-protected university E-mail account, to ensure that people could only reply once, and

that all participants were who they claimed to be. The survey was made available for 3 weeks.

RESULTS

Four hundred thirty-two members of the university (308 females; mean age of sample 25.1 years) completed the survey. E-mail addresses indicated that 270 respondents were undergraduate students (mean age 21.1 years; 187 females), the remaining 162 being postgraduates or staff (mean age 31.8 years; 121 females). The entire group was divided into two age groups: 208 respondents were aged 18 to 21 (144 females), and 224 were aged over 21 (164 females).

Self-Harm and Coping Behavior

On item SH1 regarding how participants cope with stress, 61 participants (14.1%) endorsed one or more of Gratz's six severe self-harming responses (47 reporting one behavior, 12 reporting two behaviors, and 2 reporting three behaviors). The number of items endorsed was not contingent upon age group or sex. On item SH2, 102 people (23.6%) answered that they had previous experience of self-harm, and this was more commonly reported by younger (ages 18–21) respondents ($n = 61$, 29%) than by the older (over 21) respondents ($n = 41$, 18%), Fisher Exact 2-tailed $p = .009$, but was not contingent upon sex (males $n = 24$, 19%; females $n = 78$, 25%; Fisher Exact 2-tailed $p = .211$). On item SH6, 11 people (2.5%; 5 younger and 6 older respondents; 10 females and 1 male) answered that they currently self-harmed. The low number of individuals endorsing this item make statistical inferences unsafe, but Fisher Exact 2-tailed tests do not suggest any contingency with age group ($p = 1$) or sex ($p = .190$). Overall, 131 people (30.3%; 75 aged 21 or under, 98 females) reported some prior or current experience of self-harm from at least one of these three items, and 36 of those (19 younger, 28 female) responded to two or more of the

three items. These 131 were compared with the 301 people who did not endorse any of the severe self-harm items on SH1, and answered "no" to both items SH2 and SH6.

Overall, 362 (86.8%) people endorsed one or more of the mildly harmful or potentially maladaptive activities listed in item SH1 (see Table 1). Fisher Exact tests showed there to be a significantly higher proportion of the self-harm group reporting each of the mildly harmful activities (skin picking and hair pulling), and four of the nine potentially maladaptive activities (excessive eating, under eating, smoking, and general risk-taking behavior). Unexpectedly, self-harmers were also significantly more likely to report letting off steam in a way that causes no harm, which had been included as a positive activity.

The same pattern of results was obtained when the analysis was repeated separately for each sex, except that among males there were stronger associations between self-harm and smoking ($p = .003$), and weaker associations with excessive eating ($p = .233$) than among females ($p = .170$ and $p = .032$, respectively). Repeating the analysis separately for the two age groups showed that excessive eating was also more likely to be associated with self-harm in the 18 to 21 age group ($p = .017$) than the over 21 group ($p = .20$), where there was a stronger association with smoking (18 to 21, $p = .090$; over 21, $p = .042$). The contingency between self-harming and not talking to a friend or family member was also higher among the younger respondents ($p = .014$) than the older group ($p = .241$).

The seven activities listed above that distinguished self-harmers from nonharmers were used to divide the nonharmers into three risk status groups. Those reporting none or one of them ($n = 182$, 60%) were defined as low risk, those reporting two ($n = 89$, 30%) were defined as medium risk, and those reporting three or more ($n = 30$, 10%) were defined as high risk (among the self-harm group, the corresponding n s were 36, 28%; 50, 38%; and 45, 34%). There was no association between risk group status and whether the respondents were aged 18 to 21 (Chi-square = 1.68, $df = 2$, $p = .432$), but males

were more likely to be classed as low risk (Chi square = 15.5, $df = 2$, $p < .001$), with 69 (76%) of the nonharming males being low risk, compared to 113 (54%) of the nonharming females. Only 2 (2%) males were classed as high risk, compared to 28 females (13%), with 20 (22%) being medium risk, compared to 69 (33%) females. Because so few males were identified as high risk, the analyses that follow of this group are not broken down further by sex.

Personal Background

The 20 childhood trauma, self-worth, impulsivity, and problem-solving items were entered into a factor analysis (Maximum Likelihood, Direct Oblimin). Although five factors had Eigen values above 1, the Scree test (Cattell, 1966) indicated a two- or three-factor solution. The three-factor solution distinguished the self-worth items from the childhood trauma items, which split into two factors (one containing the reverse-scored items "my parents understood" and "my parents listened," CT3 and CT4), and so the two-factor solution was preferred, with the childhood trauma and self-worth items on different factors. The impulsivity and problem solving items did not load highly on either factor. Five of the childhood trauma items and nine of the self-worth items had unique correlations above .40 with their respective factors, so two scores were obtained by finding the means of these two sets of items for each respondent (with items CT3, CT4, SW1, and SW2 being reverse-scored). The items that were excluded were "family drug use" (CT6), "difficult to trust people" (CT7), "experience flashbacks" (CT8), and "I hate being on my own" (SW6).

Both combined scales differed between the groups of self-harmers and nonharmers, with self-harmers reporting more childhood trauma (on a scale from 0 to 7, self-harmers $M = 2.59$, $SD = 1.59$, nonharmers $M = 1.95$, $SD = 1.32$), $t(430) = 4.35$, $p < 0.001$, and lower self-worth (self-harmers $M = 3.52$, $SD = 1.06$; nonharmers $M = 4.10$, $SD = 0.83$), $t(430) = 6.11$, $p < 0.001$. The older respondents also

scored higher than the younger respondents on self-worth (over 21 $M = 4.05$, $SD = 0.93$; 18 to 21 $M = 3.79$, $SD = 0.95$), $t(430) = 2.93$, $p = .004$, and on childhood trauma (over 21 $M = 2.30$, $SD = 1.48$; 18 to 21 $M = 1.98$, $SD = 1.375$), $t(430) = 2.35$, $p = .019$. Males and females did not differ on either scale.

Of the excluded items from these two scales, only the "family drug use" item (CT6) differed between the self-harmers ($M = 1.68$, $SD = 2.38$) and nonharmers ($M = 1.10$, $SD = 2.00$), $t(430) = 2.42$, $p = .016$. The impulsivity item did not differ between the groups, $t(430) = 0.48$, $p = .641$, but problem solving difficulty was higher in the self-harmers ($M = 2.79$, $SD = 1.52$) than nonharmers ($M = 2.47$, $SD = 1.54$), $t(430) = 1.99$, $p = .049$.

Within the nonharming group, one-way ANOVAs showed that self-worth and childhood trauma were related to risk status [self-worth $F(2,298) = 5.28$, $p = .006$, $\eta^2 = .03$; childhood trauma $F(2,298) = 6.47$, $p = .002$, $\eta^2 = .04$], but that none of the other six items were. Post-hoc tests (Tukey's HSD) showed that childhood trauma increased with increasing risk status, with the low and high risk groups differing significantly ($p = .004$), but with no significant differences between the low and medium ($p = .068$) or medium and high ($p = .223$) risk groups. The pattern for self-worth was less clear, with the medium risk group scoring lower than the low risk group ($p = .005$), but also lower than the high risk group, albeit not significantly so ($p = .778$). The low and high risk groups also did not differ ($p = .363$). A one-tailed t test showed that self-harmers had lower self-worth ($M = 3.52$, $SD = 1.06$) than the nonharmers ($M = 4.00$, $SD = 0.64$), $t(159) = 2.39$, $p = .009$, but there was no difference in childhood trauma (both $M = 2.59$, self-harm $SD = 1.59$, nonharmers $SD = 1.48$). The means for all four groups are shown in Figure 1.

Depersonalization and Absorption

These ten D and A items asked respondents to rate the frequency with which they experienced aspects of dissociative states, compared to their judgment of how often

other people experienced them. This response format had been intended to avoid the strong skew resulting from just asking people how often they experienced such states. For the four absorption items, the central option (5 on the 0-10 scale) was indeed the modal response, but for the six depersonalization items there was a strong tendency for people to use zero—on all of these items zero was the modal response (30%–35% of responses to each item), followed by the midpoint (14% to 19% of responses). Overall, 46 people (11%) answered zero to all six depersonalization items.

Despite this, a factor analysis of all ten DES-C items used in this study (maximum likelihood, oblimin rotation) produced the same two-factor structure as in the original DES. The mean score from the six depersonalization items and the mean score from the four absorption items was computed. Excluding the 46 who only used zeroes on the depersonalization items, both means differed between the groups of self-harmers and nonharmers [on scales from 0 to 10, depersonalization: self-harm $M = 3.87$, $SD = 2.00$, nonharmers $M = 2.81$, $SD = 1.73$, $t(384) = 5.34$, $p < 0.001$; absorption self-harm $M = 5.76$, $SD = 1.68$, nonharmers $M = 5.12$, $SD = 1.61$, $t(384) = 3.61$, $p < 0.001$]. Males and females did not differ on either measure, and age did not affect depersonalization, but the younger group reported higher absorption scores ($M = 5.56$, $SD = 1.62$) than the older age group ($M = 5.11$, $SD = 1.67$), $t(384) = 2.67$, $p = .008$.

Within the nonharming group, one-way ANOVA showed that depersonalization and absorption were also related to risk status (depersonalization $F(2,260) = 5.78$, $p < .004$, $\eta^2 = .04$; absorption $F(2,260) = 3.06$, $p = .049$, $\eta^2 = .02$). Post-hoc tests (Tukey's HSD) showed that for absorption, none of the three groups differed significantly (minimum $p = .191$, for low versus high risk), but that for depersonalization, the low group scored marginally lower than the medium ($p = .056$) group, and significantly lower than the high risk ($p = .009$) group, which did not differ ($p = .398$). One tailed independent t tests showed that the high risk group did not differ from the

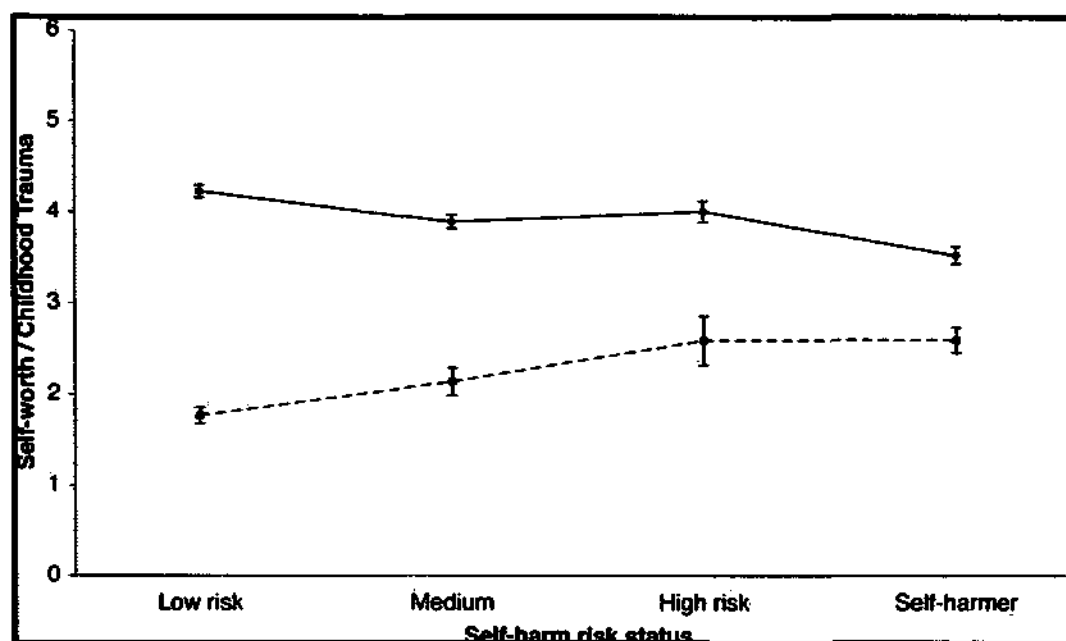


Figure 1. Scores on the childhood trauma (dashed line) scale rise with increasing number of risky or mild self-harming activities reported by the non-harming group, until the high-risk group are indistinguishable from those who do report previous or current self-harm or who engage in self-harming activities. The self-worth scale (solid line, empty circles) does not follow this pattern, with the high-risk individuals having higher self-worth than those who self-harm. Bars indicate one standard error.

self-harming group [depersonalization $t(150) = 0.78, p = .437$; absorption $t(150) = 0.71, p = .483$], but that the medium and low risk groups scored significantly lower on both scales [depersonalization: medium $t(201) = 2.97, p = .001$, low risk $t(275) = 6.04, p < .001$; absorption: medium $t(201) = 1.71, p = .045$, low risk $t(275) = 4.24, p < .001$]. The means for all four subgroups are shown in Figure 2. Parallel analyses including all respondents produced the same pattern of results.

Intrusive Thoughts

Fifty-four percent of respondents ($n = 233$) reported experiencing intrusive thoughts "several times a day" and 10% ($n = 45$) reported "every time I try to concentrate on something." Only seven (1.6%) respondents reported never experiencing intrusive thoughts. Eighty-seven percent reported that their intrusive thoughts were either "not at all," "only momentarily," or "somewhat" distracting, and 76% reported that they were dis-

trressing less than 30% of the time. Neither frequency, distraction, or distress were contingent upon sex or age, within the whole sample or within the self-harm group.

Intrusive thoughts in people with experience of self-harm were more frequent (two-tailed Chi-square = 11.2, $df = 4, p = .024$), more distracting (two-tailed Chi-square = 10.2 $df = 4, p = .037$), and more distressing (two-tailed Chi-square = 25.4, $df = 4, p < .001$) than in people with no self-harming experience. Self-harmers also reported a greater frequency of negative thoughts about themselves (68% v. 46%), harming themselves (15% v. 1%), and unhappy memories (60% v. 43%) (two-tailed Fisher Exact tests, all $p \leq .001$). Over the whole sample, two-tailed Fisher Exact test showed that women were more likely to report intrusive thoughts about food or drink (79%) than were men (52%, $p < .001$); men were more likely to report positive intrusive thoughts (28%) than were women (18%, $p = .018$), and thoughts about activities such as sports (52% v. 41%,

$p = .042$). Within the self-harm group, differences between women and men in thoughts about food or drink (85% v. 52%, $p < .001$) and positive thoughts (15% v. 33%, $p = .041$) were also found. In the whole sample, the 18 to 21 year olds were more likely than the older group to report intrusive thoughts about food or drink (78% v. 65%, $p = .004$), activities such as sport (53% v. 35%, $p < .001$), happy thoughts (54% v. 42%, $p = .016$), or "something else" (55% v. 43%, $p = .016$), but none of these age differences were found in the self-harm group.

The high risk group did not differ from the self-harm group in terms of overall IT frequency (Chi-square = 3.44, $p = .487$), but two-tailed Fisher Exact tests showed that more of them did report positive thoughts (43% v. 20%, $p = .010$), and none of the 30 high-risk nonharmers reported thoughts about harming themselves, compared to 19 of the 131 self-harm group (15%, $p = .025$). Compared to the low risk and medium risk groups, the high risk group did not differ in

terms of IT frequency, distraction, or distress, but more reported unhappy memories (70% v. 40%, $p = .002$) and there was a trend toward more negative thoughts about themselves (63% v. 44%, $p = .051$). More of the high-risk nonharmers also reported positive thoughts about themselves (43% v. 19%, $p = .003$) and there was a trend towards more happy memories (67% v. 47%, $p = .053$).

The mean score from the seven reactions items from the EBRIQ was associated with mean depersonalization ($r = .38$, $p < .001$) and mean absorption ($r = .33$, $p < .001$) (excluding the 46 respondents who had only used zeroes for the depersonalization items; including them did not change this pattern of results). People with experience of self-harm scored higher than nonharmers [on a scale from 0 to 4, self-harmers $M = 1.91$, $SD = 0.68$; nonharmers $M = 1.59$, $SD = 0.66$; $t(430) = 4.59$, $p < .001$]. Within the nonharming group, a one-way ANOVA showed an association between risk status and EBRIQ score, $F(2,298) = 6.31$, $p = .002$, $\eta^2 = .04$, and post-hoc Tukey's

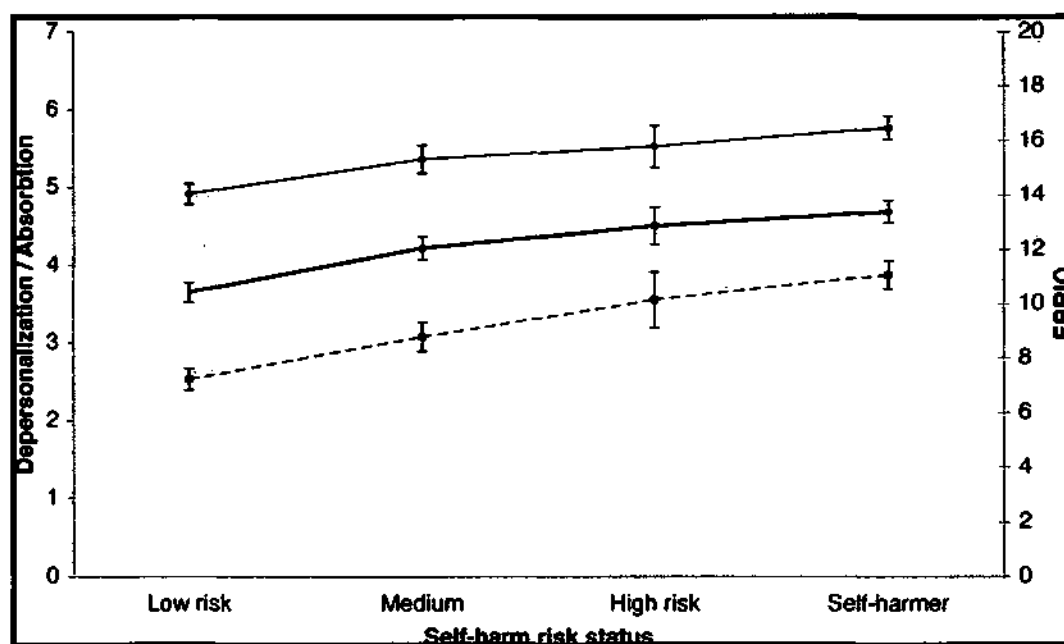


Figure 2. Scores on the DES-C depersonalization (dashed line) and absorption scales (solid line, empty circles) and on the EBRIQ (bold line, filled circles) rise with increasing number of risky or mild self-harming activities reported by the non-harming group, until the high-risk group are indistinguishable from those who do report previous or current self-harm or who engage in self-harming activities. Bars indicate one standard error.

HSD tests showed that the low risk group scored significantly lower than the medium ($p = .015$) and the high risk ($p = .018$) groups, but that these did not differ ($p = .674$). One-tailed independent t tests showed that the high risk group did not differ from the self-harming group, $t(159) = .56$, $p = .29$ but that the medium, $t(218) = 2.16$, $p = .016$, and low risk, $t(311) = 5.37$, $p < .001$ groups did score significantly lower. EBRIQ scores did not differ between the sexes or the two age groups.

DISCUSSION

Rates of reported self-harm were particularly high in this study compared to the previous literature. One reason for this may be the nature of the questionnaire, for not only was it confidential and nonintrusive (there was no face-to-face element), but it was also billed as a survey investigating reactions to stress. It may be that a survey of this nature attracts people who are more willing to talk about how they deal with stress compared with those who are not keen to discuss it, possibly encouraging higher ratios of people who are willing to report self-harming experience. It is unsurprising that self-harm rates are somewhat higher than those reported in an acute setting such as an emergency room. Further to this point, it is worth noting that generally studies find higher rates of self-harm in university samples than other populations (e.g., Gratz et al., 2002; Whitlock, Eckenrode, & Silverman, 2006). Our question about ways of coping with stress (SH1), which was used as one criterion in categorizing people as self-harmers, did not explicitly ask people to report behaviors that they frequently engaged in, and so our self-harm group might include people who have only self-harmed once or twice as well as those with a more persistent history of self-harm. Evidence against this possibility is that nearly twice as many respondents reported current or previous experience of self-harm on items SH2 and SH6 compared to those identified by item SH1.

One anomalous result is that participants who self-harm were found to be significantly more likely to report letting off steam

in a way that causes no harm. The examples of such behavior given in the questionnaire were shouting, screaming, or hitting a pillow. It would therefore appear that those who self-harm (in this study) also externalize their negative feelings to some extent. While none of these examples directly cause harm, they are all energetic and physical ways of expressing negative affect which result in strong bodily sensations. This unexpected result warrants further investigation, because acting out negative feelings in this way might be a precursor to engaging in more self-harmful acts, or it might be that it is more common in the self-harming group because they use it in place of a more harmful act.

Our data supports the antidissociation model of self-harm (Klonsky, 2007) in that our self-harming group scored higher on the DES-C depersonalization scale, but they also scored higher on the absorption scale, indicating that they are prone to get lost in their own thoughts. This is consistent with their also reporting a greater frequency of negative intrusive thoughts, which are more distressing and distracting, and which lead to greater emotional and behavioral reactions. This suggests that while self-harm may be an attempt to avoid depersonalization, depersonalization may itself be a response to negative intrusive thoughts.

From the point of view of early detection of those at risk of engaging in self-harm, our most important finding is that people who reported engaging in three or more of the mildly self-harming and (specific) potentially maladaptive activities or in overtly letting off steam, are indistinguishable from the self-harming group in terms of scores on the DES-C depersonalization and absorption scales, on their reactions to intrusive thoughts (EBRIQ), and in their experience of childhood trauma. This group are not currently self-harming, but may be the people who could do so in the future. This group is differentiated from the self-harm group because they have higher self-worth and their intrusive thoughts are more often positive. Compared to the low risk and medium risk groups, more of them report positive, happy thoughts and negative, unhappy intrusive thoughts, re-

spectively, but the groups do not differ in thoughts about food and drink, activities, or "something else." The difference between intrusive content for the risk group may be more self-related content in general, rather than negative content. Should the affective content of the nonharmer's intrusive thoughts change toward the negative, then they would show the same profile as the self-harm group. It could be that their current normal level of self-worth is protecting them against self-harming activity, or it could be that self-worth drops once people begin self-harming.

It is also worth noting that four of the potentially maladaptive activities (excessive eating, under eating, smoking, and general risk-taking behavior) were predictors of self-harm, alongside the mildly harmful compulsive behaviors. The other potentially maladaptive behaviors (exercise, alcohol use, nail biting, drug use, and gambling), although potentially negative coping strategies, were not associated with self-harm in this study. This is an important finding since these could in fact be activities that identify those more likely to engage in self-harm at times of heightened psychological distress. In addition, these factors are in many cases more outwardly visible and could function as warning signs to mental health professionals and others that are close to the individual concerned.

It is notable that while we were able to identify male self-harmers, very few of the nonharming males in our sample were classified as high risk. It is unlikely that the seven indicator activities were not sensitive for males, because they did distinguish between male self-harmers and nonharmers.

Clinical Implications

Risk factors identified in nonclinical groups can be useful for the early identification of people who may be liable to self-harm, particularly in health, educational, and criminal justice settings. Identification of possible background factors can also be used to inform and tailor interventions and treatment programs to better suit people who self-harm but do not necessarily fit into diagnostic criteria for DSM diagnoses. Clearly,

problems can be better dealt with if their causes are more plainly understood.

One example of this would be to help find more successful ways of dealing with intrusive thoughts, such as being less judgmental of the thoughts and oneself, and letting them pass by rather than ruminate on them, as in mindfulness-based therapies (Kabat-Zinn, 1994). Mindfulness may help people to deal with their intrusive thoughts (McClaren & Crowe, 2003; Marcks & Woods, 2005), which in turn may be useful in reducing individuals' self-harming activity. Dialectical Behavior Therapy (DBT; Linehan, 1993) uses mindfulness skills to reduce self-harming behavior in people with borderline personality disorder (BPD), and thus it is feasible that a less intensive therapy could be developed to target self-harm in other populations including individuals without DSM axis I (clinical syndromes) or axis II (personality and mental retardation) diagnoses. In relation to the antidissociation model, mindfulness may also be useful as an alternative grounding technique to self-harm as it focuses heavily on current experience.

Methodological Limitations and Future Research

In this study we collected data using purely quantitative, self-report methods. Some of the areas explored, in particular the experience of intrusive thoughts relating to self-harm, may benefit from more in-depth investigation, perhaps by way of less constrained methods such as semistructured interviews.

The data collected on self-harm frequency could have been more comprehensive, in particular with regards to item SH1 exploring different coping behaviors in response to stress. Although the wording of the question does imply these activities are participants' typical ways of coping rather than one-off behaviors, there is no way of distinguishing people who have self-harmed in response to their stressors once versus those who do so regularly. Now that we have shown a relationship between these behaviors and self-harm, future research could address fre-

quency. This is important given that repetitive self harming behavior highlights ongoing psychological distress, indicates greater risk of eventual suicide, and increases pressure on mental health services (Hawton et al., 1999).

We used the DES-C rather than the clinical version of the DES because we expected that the revised scales, which asked people to rate their own experiences of dissociation against others' experiences, would produce a more normal distribution, centered on the midpoint. While this was the case for the four absorption items, which are more socially acceptable, the six depersonalization items showed a response pattern that appeared to contain two types of response: a majority of people who did respond around the midpoint, but a large minority who strongly denied these experiences, using zero or one (indicating that they believed themselves to experience them much less often than most other people). These people could be not attending to the scale (which is unlikely given their use of the midpoint for the absorption items), or they could be reacting against the items, in an analogous way to the repressors who deny their feelings of anxiety as a way of coping. This is worth further investigation.

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It would be helpful to investigate how intrusive thoughts may play a role in other functional models of self-harm, apart from the antidissociation model, for example, as a barrier to successful affect management (affect regulation model; Gratz, 2003), as suicidal intrusions in the anti-suicide model (Suyemoto, 1998), or as self-directed anger in the self-punishment model (Linehan, 1993).

Given the possibility of mindfulness as a coping method for unwanted intrusions, a future useful direction for research would be to examine trait mindfulness in people who self-harm compared with people who do not in order to offer further support for the use of nonjudgmental methods for coping with intrusive thoughts.

Now that the groundwork with a non-clinical sample has been conducted, understanding of the constructs described here could be further improved by extending the research to cover clinical groups. Since self-harm is particularly common in BPD and depression, both groups may warrant further investigation, particularly in the more novel area of intrusive thoughts in BPD.

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