The role of shame, self-criticism and fear of compassion on the psychosocial adjustment of individuals who have scars as a result of previous self-injury.

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Disclaimer

Additional material has been included in the resubmitted thesis for examination purposes. Some of this material will be edited or removed from the paper prior to submission to the journals for publication to ensure adherence to journal author guidelines.

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INTRODUCTION: Thesis Overview

Self-injury, also known in the literature as non-suicidal self-injury (NSSI), self-mutilation, parasuicide and deliberate self-harm, occurs when an individual causes intentional harm to self without the intent to end their life, most commonly by cutting (Hawton Rodham, Evans & Weatherall, 2002). The United Kingdom (UK) has had the highest rate of self-injury in Europe, with an estimate of 400 in 100,000 people engaging in self-harm (Horrocks, House & Owens, 2002). Self-injury is an ongoing concern and remains prevalent, particularly amongst young people.

There are many reasons why someone may self-injure, and for those who repeatedly use self-injury the reasons (and methods) may be different each time (Horrocks, Price, House & Owens, 2003). Adverse life events are considered to play a key role in self-injury. For example, past trauma (e.g. sexual abuse) may be an important reason why someone starts to self-injure and adverse life events (e.g. relationship breakdowns) may precipitate further acts of self-injury (Haw & Hawton, 2008). De Leo and colleagues (1999) also found a relationship between physical illness and increased self-injury. Other risk factors include disadvantaged socioeconomic status, mental health diagnoses, substance use, sexual orientation, ethnicity and gender such as Asian females, poor problem solving skills and learning disabilities (NICE, 2012).

Chapter one presents a systematic review of the quantitative literature available from searching databases using key terms relating to self-injury and attachment. A key aim of chapter one is to establish whether there is a relationship between insecure attachment and non-suicidal self-injury (NSSI) in adults. Synthesising the relevant research in this way aims to provide additional insight and value to existing literature, as the findings of this review indicate there may be a relationship between experiences of insecure attachment and self-injury. Additionally, research has identified that early trauma, abuse and emotional neglect are risk factors for self-harm, shame, self-criticism and fear of compassion (Gilbert, 1992, 2005, 2007; Andrews, 1998), concepts which are examined in Chapter 2.

Attachment can be defined as the biological bond between a child and caregiver, which is fundamental to survival and development. Attachment theory highlights the importance of the quality of the relationship a baby and/or young child has with their primary care giver and the long lasting effects that these relationships can have upon the individual's future mental health and adult relationships. Severe disruptions in the attachment relationship have been considered as a form of 'trauma' (Allen, 2013). Attachment trauma is defined as the disruption in the important bonding process between child and caregiver; for example following abuse, neglect, lack of affection and absence of care (BrightQuest, 2019). These early relationship experiences can be distressing for a young child and are found to play an important role in the underdevelopment of skills relating to emotion regulation, problem solving and mentalizing (Fonagy & Bateman, 2007; Fonagy, Gergely, Jurist & Target, 2002). These are areas that individuals who self-injure often experience difficulties with (Bateman & Fonagy, 2004; Walker, Hirsch, Chang & Jeglic, 2017).

Research has however found that people who self-injure tend to use this coping method for a limited period of time, with the majority spontaneously stopping by early adulthood (Moran et al., 2012). The act of self-injury may be time limited, however the physical scars associated with self-injury are often permanent and may have a significant ongoing impact on an individual's life. The majority of research and clinical guidelines in this area focus on current self-injury and risk, rather than potential resulting longer term difficulties. Research on the impact of self-injury scarring is somewhat limited. For example, the National Institute for Heath and Care Excellence (NICE) guidelines for the short-term management of self-harm in over 8 years does mention the importance of minimising scaring (p. 25; NICE, 2004). However scar minimisation is not mentioned at all in the long term management of self-harm, with the focus on monitoring and treatment to reduce or stop self-injury (NICE, 2011).

Chapter two therefore aims to provide insight and additional research into the longer-term impact of self-injury, by exploring the psychological and social factors in individuals who have physical scars as a result of previous self-injury. Previous studies by Gilbert and colleagues (Gilbert et al., 2010 and Gilbert, McEwan, Matos & Rivis, 2011) identified that individuals who self-injure report high levels of

shame, self-criticism and a fear of engagement in compassionate behaviours, often as a result of early childhood experiences. It has also been suggested that when scars result in feelings of anxiety and shame the NSSI recovery process can be hindered (Lewis, 2016).

Shame has been defined as the painful feelings of humiliation or distress, often caused by the consciousness of wrong or foolish behaviour (Oxford, 2019). Shame can be experienced both *externally* when an individual believes or experiences a negative view of themselves in the minds of others and *internally* when an individual has negative self-evaluations (Gilbert et al., 2010). When facing adversity, individuals can become either self-critical or self-reassuring (Gilbert, Clarke, Hempel, Miles & Irons, 2004). Individuals who are self-critical can believe that they are inadequate and inferior, and/or they can feel self-disgust and self-hatred. This can be for two reasons, to be either self-corrective or self-punishing (Gilbert et al., 2004). The Cambridge Dictionary (2019) defines compassion as a strong feeling of sympathy and sadness for the suffering or bad luck of others and a wish to help them. It captures attributes of kindness, care, empathy and non-judgement, which can be directed towards (or from) others and for ourselves in times of difficulty (Gilbert et al., 2011). However, some individuals have difficulty in developing or expressing compassion due to avoidance or fear reactions (Gilbert, 2010).

In the current study, a series of measures were used to determine which factors relating to shame, self-criticism and fear of compassion contributed to psychosocial adjustment scores in individuals who no longer self-harm but still have scarring. Findings indicated that a number of significant predictors helped to explain or contribute to psychosocial adjustment in these individuals. For example: a) depression, b) the age an individual stops self-injuring, c) the individual's overall opinion of the scars in comparison to normal skin (severity), d) the individuals current age and e) the fear of expressing compassion to others scores explained 42% of the social factors (such as employment, leisure activities and close relationships) relating to adjustment. From a psychological perspective: a) level of depression, b) anxiety, c) the number of years an individual has self-injured, d) current age, e) whether an individual feels ashamed about specific personal characteristics not related to body or behaviour (characterological

shame), f) whether an individual can be self-reassuring (by having the ability to focus on positives and reassure themselves when things do not go right), and g) whether someone is able to express kindness and compassion to themselves explained 75.2% of the psychological factors (such as thoughts and feelings about life). It is hoped that the results of the study will inform clinical practice by identifying which key predictor variables contribute to psychosocial adjustment in individuals who have scars as a result of previous self-injury.

This dissertation was completed to fulfil the research component of the Doctorate in Clinical Psychology.

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Chapter 1: Systematic Review

The relationship between insecure attachment and non-suicidal self-injury (NSSI) in adults: A systematic review[1]

[1] Article prepared for submission to *'Psychology and Psychotherapy: Theory, Research and Practice'* journal - please see Appendix 1 for the journal's guidelines.

PRACTITIONER POINTS

- Non-suicidal self-injury remains prevalent and can continue into adulthood. Attachment theory also indicates that attachment systems continue throughout an individual's lifespan and therefore ongoing difficulties in adults may be present.
- This review explores the available literature to determine whether insecure attachment is related to self-injury in adults. The findings suggest there may be a relationship, although further research in this area would be beneficial and is recommended.
- Overall, this review indicates attachment needs in individuals who self-injure. This has important implications for clinical practice, suggesting the potential need to thoroughly assess and address attachment needs within therapy.

ABSTRACT

Purpose: Non-suicidal self-injury (NSSI) has continued high prevalence in both clinical and general populations. Although NSSI more commonly occurs in adolescents, this phenomenon can continue into adulthood. Adverse early life experiences have been linked to NSSI, as a way of managing associated difficult feelings and emotions. Attachment anxiety has been found to be highest in young adults (Chopik, Edelstein & Fraley (2013). This review therefore aims to effectively search, analyse and synthesise the research in this area to determine whether there is a link between insecure attachment and NSSI in adults. *Method:* PsychoINFO, Medline and Web of Science databases were searched using predetermined inclusion/exclusion criteria. Papers eligible for the study (n=7) were quality assessed using the Quality Assessment Tool for Studies with Diverse Design (QATSDD; Sirriyeh *et al*, 2011). *Results:* Results were narratively synthesised to determine the relationship between insecure attachment and NSSI. Findings were mixed: One study found no significant differences in attachment between deliberate self-harm and non-deliberate self-harm groups. One study found a relationship between insecure attachment and NSSI when mediated by affect regulation. Five studies found that insecure attachment predicted self-harm (including a range of suicide related behaviours).

Conclusions: Due to the range of definitions of insecure attachment and NSSI, comparisons between the reviewed studies was compromised. There does appear to be a potential relationship between insecure attachment and NSSI, however the current number of papers in this area is limited. Further research would be of benefit, particularly in relation to gender differences and NSSI frequency / severity.

Keywords: *Non-suicidal self-injury, NSSI, Self-harm, Insecure Attachment, Systematic Review*

1. INTRODUCTION

The term 'self-harm' is used to describe a broad range of behaviours, whereby an individual intentionally harms their own body, with or without suicidal intent (National Health Service, 2018). Various terms have been used to describe self-harm in the literature including deliberate self-harm, parasuicide, self-injury, self-mutilation and cutting. Nock (2006) specifically defines non-suicidal self-injury (NSSI) as the self-inflicted destruction of bodily tissue without suicidal intent. Examples include cutting, hitting, burning and excoriation of wounds (Walsh, 2007). NSSI has a high prevalence in the general population, with studies estimating 17.2% among adolescents, 13.4% among young adults, and 5.5% among adults (Swannell, Martin, Page, Hasking & St John, 2014). However, it is recognised that prevalence figures may vary widely due to the differing definitions (e.g. self-harm, deliberate self-harm, self-injury and NSSI)[2] and methods used (Xavier, Gouveia & Cunha, 2016). Figures may also underestimate the occurrence of NSSI due to nondisclosure. There are a range of reasons as to why an individual self-injures. Self-injurious behaviour is often considered a coping mechanism relating to the management and regulation of distressing and overwhelming emotions. For example, NSSI can provide a distraction from internal painful feelings and memories (Gilbert, 2010) and a calming response through the release of endorphins, opiates & oxytocin (Haines, Williams, Brain & Wilson, 1995; Wang, Lundeberg & Yu, 2003).

Gilbert (1992, 2007) highlighted the impact of early life experiences upon an individual's mental health and found that experiences of self-harm are often linked to neglectful or abusive rearing environments involving threats from dominant others and enforced subordination. This is supported by Jose (2013) who found that a history of insecure attachment can exacerbate the presence of negative emotions and self-injury is one of the ways that some individuals manage painful emotions. Attachment theory was pioneered by John Bowlby (1907-1990) who observed the short and long-term impact that prolonged separations from primary caregivers had on an individual. Bowlby's research highlighted the importance of the quality of the relationship between a child and his/her primary caregivers, and the

[2] Different terminology will be used interchangeably throughout this paper, due to quoting other research, however it is the behaviour captured by the NSSI definition that is specifically being discussed here.

long lasting effects that these relationships can have upon the individual into adulthood. Mary Ainsworth (1913-1999) further contributed to attachment theory through her research using the 'Strange Situation' paradigm. Ainsworth identified three different attachment styles based on observations of young children during separations from their primary caregiver: (i) secure, (ii) insecure avoidant and (iii) insecure ambivalent/resistant (Ainsworth, 1970). See Table 1 for further information on the different attachment styles.

Table 1: Brief description of attachment styles

Attachment Style	Caregiver behaviour	Infant behaviour	Adult behaviour
Secure	Sensitive responsiveness, warmth, affection, sensitivity and accurate interpretation given to infant's signals, actively engaged and involved in infant's interests/ activity/mood.	Cry less, confident in attachment, less distress when briefly separated, less anxious, enjoy body contact, more cooperative.	*Relationships:* trust & commitment, self-disclosure, express emotions, communication. *Internal working models:* others as trustworthy *Emotion regulation:* emotional confidence & competence. *Internal secure base:* self-compassion, empathy, care.
Insecure - avoidant	Avoids physical contact, unemotional, less responsive to infant crying, lack of interest.	Does not want to be held, ignores caregiver, detached when reunited with caregiver.	*Relationships:* low intimacy, closeness, commitment, self-sufficient, loner. *Internal working models:* other's as hostile, defensive, self-protecting. *Emotion regulation:* deactivation of attachment needs, downplay emotional distress, distress as weakness.
Insecure – ambivalent / resistant	Unresponsive or inconsistently responsive, under-involved.	Cry more, show more separation anxiety, little confidence in caregiver's accessibility and responsiveness, less exploration.	*Relationships:* fall in love quickly, high anxiety, reassurance seeking. *Internal working models:* predicted disappointment from other's, self-critical, feel unloved & unlovable. *Emotion regulation:* high distress, driven by persistently activated attachment need.

Note. Information summarised from 'Mentalizing in the development and treatment of attachment trauma' (Allen, 2013).

Main & Solomon (1990) later identified a fourth attachment style that they termed 'disorganised'. This attachment style is characterised by no clear structure of caregiver-child interaction, as well as bizarre infant behaviours (e.g. rocking, head banging, dissociative states). The disorganised attachment style is less common in the general population (Holmes, 2010). Despite much of the research into self-injury

having focused on adolescents, John Bowlby's (1969/1982) famous quote *"from the cradle to the grave"* (p. 208), captures the idea that the attachment systems developed in early childhood continue with an individual throughout their life and into their adult relationships. Chopik, Edelstein & Fraley (2013) studied this concept and found that attachment anxiety and avoidance was evident in adulthood. They reported that attachment anxiety was highest in younger adults (18-22 years), as well as women and individuals who were not in a relationship. Attachment avoidance was highest in middle-aged adults (40-49 years).

Various age-appropriate measures have been developed to capture attachment styles in children, adolescents and adults. The Adult Attachment Interview (AAI; Main, Goldwyn & Hesse, 2003) is widely used and categorises the adult's description of childhood experiences (e.g. trauma, loss, relationship with caregivers). Other examples include the Adult Attachment Projective Picture System (AAP: George & West, 1999) and the Child Attachment Interview (CAI: Target, Fonagy & Schmueli-Goetz, 2003).

In relation to NSSI, Hallab & Covic (2010) specifically found that deliberate self-harm (DSH) was associated with poor attachment to parents, not peers, and that the attachment to father was found to be more influential than the attachment to mother. They also found the impact that the quality of attachment had on DSH was mediated by stress and therefore concluded that DSH may indeed be a maladaptive coping strategy. Similarly, Glazebrook, Townsend and Sayal (2015) reported that individuals with insecure maternal attachment were more likely to engage in repeated self-harm due to a lower appraisal of problem-solving skills. Interestingly, in contrast, a higher quality of attachment was associated with greater reliance on more adaptive ways of coping and a decreased risk of self-harm. It was concluded that individuals with insecure attachment may be more vulnerable to self-harm because they lack other helpful ways of coping with stress (Glazebrook, Townsend and Sayal, 2016). Jose (2013) further concluded that attachment style may help to identify those at risk of self-harm.

This review aims to examine whether insecure attachment is related to the incidence of self-injury in adults by systematically searching the existing research in this area. More specifically this review aims to examine the literature between attachment and self-injury and presents data from an adult population. Adolescent studies were excluded, as attachment anxiety has been found to be highest in young adults (Chopik et al., 2013). There is also is a plethora of research into self-injury in adolescent populations, even though it is recognised and understood that self-injury and attachments styles can, and indeed do, continue into adulthood. The current review therefore aims to add to an area of research that is less acknowledged and examined, specifically the relationship between insecure attachment and self-injury in adults.

2. METHOD

A protocol (Appendix 2) was developed to guide data collection. The review was carried out following PRISMA guidance (www.prisma-statement.org).

2.1 Study eligibility

Inclusion Criteria

Eligible studies were required to meet the following criteria: (i) an adult sample (at least 18 years old), (ii) participants who have self-injured, (iii) a quantitative measure of attachment (e.g. self-report or interview), (iv) data analysis of the relationship between self-injury and attachment, (v) a cross-sectional, longitudinal or intervention design, and (iv) publication in the English language.

Exclusion Criteria

Studies were specifically excluded if they contained the following: (i) a single case study, (ii) a literature review, (iii) a book chapter, (iv) an editorial and/or (v) any unpublished 'grey' material (e.g. dissertations) due to potential problems with diversity, quality and accessibility.

Qualitative papers were also excluded, because this review specifically aims to examine the relationship between insecure attachment and self-injury. It was considered that qualitative papers would not

specifically answer the research question and would be more likely to capture experiences and themes. It was also considered that comparing the research between qualitative and quantitative papers would cause difficulties with interpreting the data.

2.2 Search strategy

An electronic search was carried out on the PsychINFO, Medline and Web of Science databases. The search included results from the earliest available records until 1st May 2018. There were no further date restrictions implemented. The search strategy was predefined and used the following combined Boolean operators: attach* AND ("self injur*" or "self harm" or "NSSI" or "DSH" or "self-cut" or "self-burn"). The reference lists of the finalised papers were also searched to ensure relevant papers weren't missed. No additional papers were found.

2.3 Screening

Once the search was completed, the results were initially screened for duplicates and these were removed. The titles and abstracts of all remaining papers were then screened using the screening tool (see Appendix 3) to determine whether the inclusion criteria were met. A second reviewer independently screened 10% (*n=33*) of the papers for inter-rater reliability. No disagreements were found. A PRISMA flowchart summarising the screening process is reported in Figure 1.

2.4 Quality Assessment Tool

The final papers included in the study were assessed for quality using the Quality Assessment Tool for Studies with Diverse Design (QATSDD; Sirriyeh, Lawton, Gardner & Armitage 2011). The QATSDD was specifically selected as it is a reliable and valid tool for use with mixed design studies (Appendix 4). A second reviewer independently quality assessed 25% (*n=2*) of the final papers for inter-rater reliability. Any disagreements were discussed until a consensus was established. The total scores were calculated and the papers were ranked in order of highest to lowest score. However, because the final papers included a variety of tools / terminology to measure and define attachment and NSSI, caution

should be taken with attempting to establish quality based on simple calculations and the full range of scores should be considered.

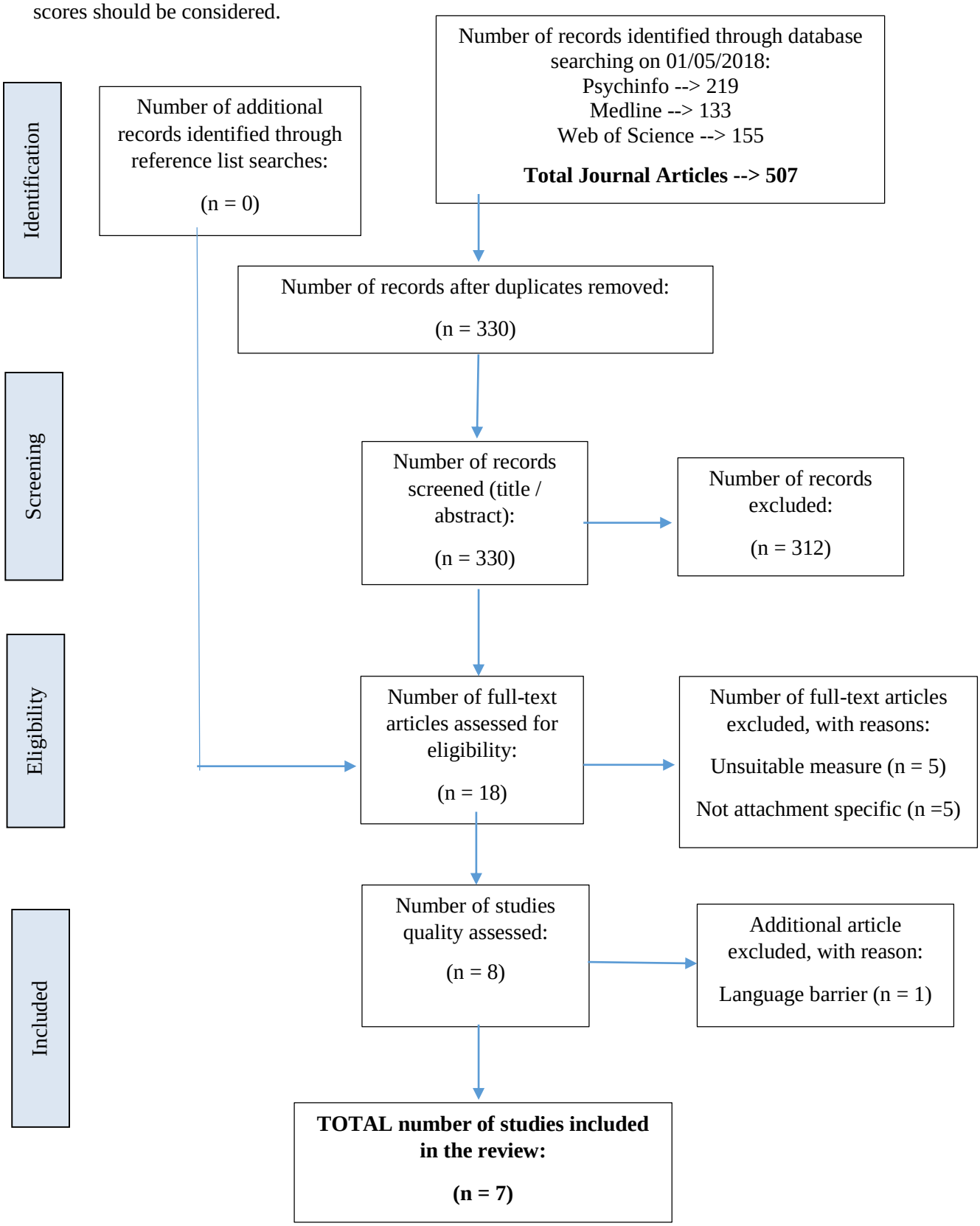

Figure 1. PRISMA Flowchart to summarise study selection

3. RESULTS

Once duplications were removed, 330 articles were screened, 18 articles were reviewed and 8 were finalised for inclusion in the review. During the data extraction and quality assessment process, it became clear that a further paper (Braga & Goncalves, 2014) needed to be excluded. Although the Adult Attachment Scale (AAS; Collins & Read, 1990) was cited to have been used, attachment styles were not included in the results or discussion. There also appeared to be some changes in the names of the subscales when the measure was translated from the English language to Portuguese, suggesting this paper was looking at different factors than initially anticipated. Therefore, the final number of studies included in the review is seven. The extracted data is summarised in Table 2.

3.1 Study characteristics

Of the seven final studies, only one paper was published in the United Kingdom. The majority of the final studies were from the United States of America (*n=3*) and the remainder from Canada, Japan and Australia. Studies were published between 2002 and 2018. The study sample sizes ranged between 62 participants (Gilbert, McEwan, Bellow, Mills & Gale, 2009) and 406 (Stepp et al., 2008). The mean ages of participants ranged from 20 years (Kimball & Diddams, 2007) to 44.32 years (Gilbert et al., 2009). Two studies recruited female only participants (Bedi & Muller, 2014; Noma, Uwatoko, Ono, Miyagi & Murai, 201) and the remaining five studies recruited higher numbers of female participants. All seven studies utilised a cross-sectional design, whereby participants were required to complete a series of questionnaires and/or quantifiable interviews. As reported in Table 2, a broad range of questionnaires were used across the included studies to capture self-harm, attachment, parental bonding and relationships. Consequently, the results were narratively synthesised for the purpose of this review.

Table 2: Summary of included studies

Author, year & country	Aim	Design / Method	Sample (e.g. size/source/characteristics)	Relevant measures (NSSI / attachment)	Summary findings	Quality score / (rank)
1. Bedi et al. (2014), Canada	To identify internal risk factors associated with DSH	cross-sectional	N = 167 women (67 hx DSH; 100 no DSH); Recruited from a treatment programme for abuse; mean age 39.95 years (range 19 to 72)	Suicide & self-harm interview; Adult Attachment Projective Picture System (AAPPS)	No significant difference in attachment styles found between DSH & non-DSH groups.	33 (2)
2. Gilbert et al. (2009), UK	To explore the relationship between depression, anxiety, stress & self-harm with feelings of inferiority, shame & attachment style	cross-sectional	N=62 participants (male n=26, female n=36), inpatients n=17, outpatients n=45, diagnosed with depression; mean age 44.32 years (range 20 to 66)	Self-harm inventory (SHI); Experiences in Close Relationships Scale	Anxious attachment and insecure striving were significantly associated with SH	22 (8)
3. Gratz et al. (2002), USA	To examine risk factors for deliberate self-harm	cross-sectional	N=133 students (67 % female), undergraduate psychology students; mean age 22.73 (range 18 to 49); 38% reported history of DSH, 18% reported self-harm >10 times and 10% reported self-harm >100 times.	Deliberate self-harm inventory (DSHI); Disruptions in Attachment Survey developed specifically for study; Parental Bonding Index (PBI); Parental Attachment Questionnaire (PAQ)	After dissociation, the most significant predictor of SH in women is insecure paternal attachment; for men, disruptions in attachment (physical separation) with father is the most important predictor of SH, followed by dissociation and insecure paternal attachment	26 (4)
4. Kimball et al. (2007), USA	To test the mediational role of affect regulation on attachment & deliberate self-harm	cross-sectional	N=216 Undergraduate psychology university students, men n=68, women n=168, mean age 20 (range 18 to 57); 9% (n=20) had self-harmed	Deliberate self-harm inventory (DSHI); Attachment style questionnaire (ASQ)	A relationship was found between attachment and SH, when mediated by affect regulation	27 (5)
5. Noma et al. (2015), Japan	To investigate the psychological mechanisms underlying NSSI & suicidal behaviour	cross-sectional	N=85 females being treated for eating disorders; mean age 30.6 years (range 16 to 56); 32.9% (n=25) reported NSSI in past 3 months & 46.1% (n=35) reported NSSI prior.	Self-harm questionnaire developed specifically for study; The Japanese version of the Relationship Questionnaire (J-RQ)	Insecure (preoccupied) attachment is most significantly related to recent SB (within past 3 months), but not NSSI.	25 (7)

6. Stepp et al. (2008), USA	To examine the role of attachment style & interpersonal problems in suicide related behaviours	cross-sectional	N=406 participants, 66.5% (n=270) females, mean age 37.2 years, 84% (n=342) recruited from inpatient & outpatient psychiatric treatment programmes, excluding psychosis, organic & major medical illness	Consensus Ratings of Suicide related behaviours & attachment styles - interview (cluster analyses)	Anxious attachment increased the risk for all three groups: (i) SH, (ii) SA & (iii) SH+SA; avoidant attachment only increased risk for SA.	32 (3)
7. Tatnell et al. (2018), Australia	To examine which aspects of relationship functioning are more likely to predict NSSI	cross-sectional	N=237 participants (212 female), mean age 20.77 (range 18 to 25 years), university students, 38.4% (n=91) had engaged in self-injury.	Inventory of Statements about Self-Injury (ISAS); Relationship Questionnaire (RQ); Parental Bonding Instrument (PBI); Experiences in Close Relationships Questionnaire (ECR-RS)	Anxious attachment to mother & avoidant attachment to father predicted NSSI.	35 (1)

Note. Studies identified by first author & date. DSH = deliberate self-harm, SH = self-harm, SB = suicidal behaviour, NSSI = non-suicidal self-injury, SA = suicide attempt. AAPPS (George & West, 1999), SHI (Sansone, Wiederman & Sansone, 1998), Experiences in Close Relationship Scale (Brennan, Clark & Shaver, 1998), DSHI (Gratz, 2001), PBI (Parking, Tupling & Brown, 1979), PAQ (Kenny, 1985), ASQ (Feeney, Noller & Hanrahan, 1994), J-RQ (Kato, 1991), ISAS (Klonsky & Glenn, 2009), RQ (Bartholomew & Horowitz, 1991), ECR-RS (Fraley, Heffernan, Vicay & Brumbaugh, 2011). Max quality score = 42. Ranked from highest quality score to lowest.

3.2 Quality Assessment

The quality assessment process indicates common areas of strengths and weaknesses of the final studies included in the review. The most notable consistent low score indicates the lack of service user involvement in study designs. This was not reported in any of the studies included in the review. Other common low score areas were the lack of evidence given for sample sizes in relation to data analysis (e.g. clear justification or power calculations) and the absence of a clear rationale for the measures used. All studies were generally considered to be poor at reporting recruitment procedures and recruitment data clearly (e.g. number approached, number recruited, attrition data, etc.). Areas of strength related to studies providing clear theoretical backgrounds, the statement of aims, objectives and hypotheses, as well as clear links between the research question, method of data collection and data analysis. In general, the discussion sections were fair, balancing the discussion on strengths and weaknesses of the studies. The overall results of the quality assessment are presented in Table 3.

3.3 Bias

The QATSDD does not directly rate bias, so the included papers were examined for bias separately. Both researcher and participant bias were examined. All seven studies included in the review utilised a cross-sectional design. Five studies solely used standardised self-reported measures (Gilbert, McEwan, Bellew, Mills & Gale, 2009; Gratz, Conrad & Roemer, 2002; Kimball & Diddams, 2007; Noma, Uwatoko, Ono, Miyagi & Murai, 2015; Tatnell, Hasking & Newman, 2018). Of these five studies, only one specifically stated that responses were to be kept anonymous (Tatnell et al., 2018). Two studies utilised both standardised self-report measures and interviews (Bedi & Muller, 2014; Stepp et al., 2008) to obtain data for the purpose of dividing participant data into subgroups. Bedi & Muller (2014) sought interrater reliability for 30.1% (n=51) of interview data, which were selected at random and achieved an agreement of $\kappa=0.90$ ($p<0.001$). Stepp et al., 2008 randomly selected a subset of cases (n=20 of 406 participants) and achieved an overall agreement of $\kappa=.86$). Cohen (1960) suggests that scores between 0.81–1.00 indicate almost perfect agreement. Overall, the use of standardised measures and interrater reliability indicate that some consideration was made to reduce potential researcher and data bias. However there were no additional details included about the order in which questionnaires were given

or the length of time it took participants to complete them. There was some variation as to whether participants received incentives for their participation. The quality of participant responses to the measures completed was also less clear.

Table 3: Quality Assessment

QATSDD Criteria *(Sirriyeh et al, 2011)*	**1. Bedi et al. 2014**	**2. Gilbert et al. 2009**	**3. Gratz et al. 2002**	**4. Kimball et al. 2007**	**5. Noma et al. 2015**	**6. Stepp et al. 2008**	**7. Tatnell et al. 2018**
Explicit theoretical framework	3	3	3	3	3	3	3
Statement of aims/objectives in main body of report	3	3	3	2	3	3	3
Clear description of research setting	3	1	2	2	3	3	3
Evidence of sample size considered in terms of analysis	0	0	0	0	0	0	0
Representative sample of target group of a reasonable size	2	2	2	1	2	3	2
Description of procedure for data collection	2	1	2	2	1	2	3
Rationale for choice of data collection tool(s)	2	1	1	2	1	2	3
Detailed recruitment data	3	1	1	1	2	1	3
Statistical assessment of reliability and validity of measurement tool(s) (Quantitative only)	3	1	1	3	0	3	3
Fit between stated research question and method of data collection (Quantitative only)	3	3	3	3	3	3	3
Fit between research question and method of analysis	3	3	3	3	3	3	3
Good justification for analytic method selected	3	1	3	3	3	3	3
Evidence of user involvement in design	0	0	0	0	0	0	0
Strengths and limitations critically discussed	3	2	2	2	1	3	3
Total score:	**33**	**22**	**26**	**27**	**25**	**32**	**35**

Note. Score values: 0 = Not at all, 1 = Very slightly, 2 = Moderately, 3 = Complete. Max total score = 42.

3.4 Attachment and incidence of self-injury

Although all studies included in this review examine attachment and self-injury in some way, there were variations in the studies' aims. Three studies aimed to explore, amongst other factors, the relationship between attachment and self-injury (Stepp et al., 2008; Tatnell et al., 2018; Gilbert et al., 2009). Two studies aimed to identify risk factors associated with self-injury (Bedi et al., 2014; Gratz et al., 2002). Noma et al., 2015 aimed to investigate psychological mechanisms underlying NSSI and Kimball et al., 2007 specifically studied the mediational role of affect regulation on attachment and self-injury.

In total, five studies reported some significant relationship between self-injury and insecure attachment. Of the two studies that did not report a significant relationship specifically between self-injury and insecure attachment, namely Bedi et al. (2014) and Noma et al. (2015), other relationships were found. For example, Noma, et al. (2015) explored the difference between NSSI and suicidal behaviour (SB) in patients with eating disorders. They reported that insecure attachment, specifically preoccupied, was related to recent SB (in the past 3 months), but not for NSSI which was found to be associated with dissociation and Body Mass Index (BMI) instead. Attachment styles were not related to either NSSI or SB that had occurred in the past (prior to the last 3 months). The study by Bedi et al. (2014) also indicates a high prevalence of insecure attachment in participants. The study examined a number of risk factors, which included adult attachment, associated with deliberate self-harm in women with a history of childhood sexual abuse (CSA). Results showed that 73.7% (n=123) of all participants were found to have unresolved attachment, 17.4% (n=29) had dismissing attachment scores and 6.6% (n=11) were reported as having a preoccupied attachment. Only 3 participants (1.7%) were scored as having a secure attachment. However, when they compared participants (who had used deliberate self-harm with participants who had no history of deliberate self-harm), results indicated no significant differences between the two groups when looking at attachment alone. The study therefore concluded that the risk of engaging in NSSI could not be explained by a single risk factor, such as insecure attachment, but could be understood as an accumulation of the risk factors explored (e.g. dissociation, emotion disregulation, alexithymia and poor self-soothing skills).

Although these two papers generally scored high on the quality assessment, researchers have acknowledged that it is uncertain as to how generalisable these studies are. Interestingly, in comparison to the other studies included in this review, these two studies have the most specific sample groups. For example, these two studies were the only studies to recruit female only participants, as all other studies had mixed gender populations. Bedi et al. (2014) specifically recruited female participant's engaging in a treatment programme for experiences of child sexual abuse (CSA) and Noma et al. (2015) specifically recruited female participants engaging in treatment for an eating disorder. When these findings are compared with the other studies who have recruited from student populations or from a number of different clinical settings (e.g. inpatient and outpatient), generalisability is questionable and it is queried whether these are sample specific findings.

Three of the studies (which did report a significant relationship between self-injury and insecure attachment) recruited from student populations. Gratz, Conrad & Roemer (2002) carried out a study on a non-clinical population and found significant correlations between self-harm and insecure attachment amongst college students. Findings for the female participants indicated that the most significant predictor of self-harm after dissociation was insecure paternal attachment; whereas the most important predictor for self-harm for male participants was a disruption in attachment, specifically when they were physically separated from their fathers. This was followed closely by dissociation, paternal emotional neglect and insecure paternal attachment. This study specifically highlighted the potential importance of the quality of the relationship with the father in those who engage in NSSI. Kimball & Diddams' (2007) study, which also recruited from a student population, found there to be a relationship between insecure attachment and the variability / frequency of deliberate self-harm; however unlike Gratz et al., (2002), they found this relationship occurred only when indirectly mediated through negative affect-regulation strategies. The study can however be criticised for lower quality assessment scores and poor sampling methods. The sample size was very small, only 9% (n=20) had engaged in self-harm, and the sample was drawn from a specific group of students, i.e. psychology undergraduates, so again there may be limited generalisability of the findings.

Tatnell, Hasking & Newman's (2018) study scored the highest in quality assessment scores and recruited from university students. They studied aspects of attachment, emotional regulation and NSSI. They found that participants who reported NSSI had greater anxiety related to attachment relationships, scoring higher on fearful attachment scales, particularly where mothers were perceived to be less caring. Further analysis found that an anxious attachment to mother and avoidant attachment to father predicted NSSI. Although this study does not look at gender differences, it appears that these are similar to the findings of Gratz et al., (2002) who noted the potential influence of the paternal relationship, including when they were absent, on individuals who self-injure. Another consideration when examining these research papers needs to be made in relation to the age of the participants. The three studies that recruited from universities had a lower participant mean age (ranging from 20 to 22.73 years), which are more likely to represent a 'young adult' population in which attachment anxiety has been found to be highest (Chopik et al., 2013).

Gilbert et al., (2009) and Stepp et al., (2008) recruited from mixed clinical populations and also reported a significant relationship between self-injury and insecure attachment. Gilbert et al., (2009) examined how competitive behaviour and striving to avoid inferiority are linked to a range of psychopathology, including self-harm. Adult attachment was measured and included in this study following previous research by Gilbert (1989, 2005a, 2005b) which suggested that individuals who feel insecure and unsafe in their relationships feel the need to strive to avoid inferiority. The study found that anxious attachment and insecure striving (when people believe they must strive to avoid inferiority and avoid making mistakes to compete for their social place) were associated with self-harm. In addition, self-harm was specifically found to be associated with the fear of active rejection, but not the fear of missing out or being overlooked. However, this study scored lower on the quality assessment tool as it lacked detailed recruitment data and there were no clear descriptions as to how many participants had self-harmed or the nature of their self-harm. This potentially reduced the weight of the findings.

For example, Stepp et al., (2008) carried out research with individuals who were either accessing inpatient or outpatient psychiatric care, excluding individuals with psychosis, organic or medical

illnesses. They explored the role of attachment styles and suicide-related behaviours, in three groups: 1) self-harm (SH), 2) suicide attempts (SA) and 3) SH + SA. Results indicated that anxious attachment increased the risk for all 3 groups and avoidant attachment also increased the risk for SA. However, this study used interviews to determine which group participants would be allocated to and some caution needs to be considered in relation to potential bias as inter-rater reliability was only sought for approximately 5% of the data. The research also did not examine the frequency or severity of the suicide related behaviours or how attachment styles may influence this.

4. DISCUSSION

This study aimed to search the current literature on attachment and non-suicidal self-injury in adults, in order to determine whether there is a relationships between the two concepts. Seven relevant research studies were found through the systematic search of three online databases. The seven studies were quality assessed and the findings synthesised to meet the study aims. After reviewing all the evidence presented in the included studies it would appear that attachment is related to NSSI, although this relationship is broad due to the variation in terminology used for attachment and self-harm. Only one study found no significant difference in attachment styles between DSH and non-DSH groups (Bedi et al., 2014). Although this was scored/ranked a good quality study, generalisability is questionable due to the limited sample recruited. Noma et al., (2015) found that insecure attachment was only related to suicidal behaviour, not NSSI, although generalisability was also questionable as this study only specifically recruited individuals with an eating disorder. The remaining five studies did find significant relationships between insecure attachment in adults and a range of self-harming behaviours (including NSSI/DSH, suicidal behaviour and suicidal attempts). For example, Stepp et al. (2008) did in fact find that anxious attachment increased the risk of both self-harm and suicide attempts, contrary to Noma et al., (2015). Gratz et al., (2002) found the paternal relationship to be a significant predictor of self-harm; for women an insecure paternal attachment was the second most significant predictor of self-harm; for men a disruption in paternal attachment (e.g. separation) significantly predicted self-harm. This was supported by Tatnell et al., (2018) who found that anxious attachment to others and an avoidant

attachment to father predicted NSSI. Kimball & Diddams (2007) found that negative affect regulation strategies mediated the relationship between attachments and self-harm and Gilbert et al., (2009) reported that anxious attachment and insecure striving are also associated with self-harm. In summary, these findings suggest that insecure attachment does play a role in explaining self-injury, with a number of studies indicating the importance of the paternal relationship.

4.1 Limitations of included studies

The first limitation to be considered arises from conducting the quality analysis exercise. All the studies failed to address a number of key areas. For example, none of the studies utilised service user involvement in the development of their studies, so it is uncertain as to how accessible or relevant the measures/interviews were for study participants. Also, there was no evidence of sample size calculations in relation to the analyses conducted. It is therefore difficult to ascertain whether samples sizes were large enough to determine generalisable conclusions. Areas of strength were evident in high scores on theoretical backgrounds, clear aims/objectives and appropriate methods of analysis. Overall, the quality of studies was fair but varied, with total quality scores ranging from 22 – 35 (max score = 42).

Due to the quality assessment tool used, study bias had to be examined separately. Many of the studies didn't explicitly confirm anonymity of data and the studies that used interviews to obtain data only sought inter-rater reliability for a small percentage of data (5-30.1%). These considerations cause difficulties in the interpretation of results. This is further complicated by the range of definitions used for a number of the key concepts being explored. For example, insecure attachment was referred to as anxious attachment, avoidant attachment and preoccupied attachment across the studies. There were also varying ways to describe the methods that individuals harm themselves, for example SH, NSSI, DSH, SB and SA. There are also a range of variables in relation to self-harm that weren't necessarily captured. For example, the length of time, frequency and severity of self-injury may all have an influence on the findings in each study. It is also important to note the large variation in the measures used for each of the studies and the impact this too has on understanding the collective results.

Further limitations relate to the generalisability of the studies included. Four of the seven studies recruited from clinical settings, including both inpatient and outpatient psychiatric care. Two of these recruited female only participants from specific treatment services for CSA and eating disorders (ED). Participants may therefore have had one or more psychiatric diagnosis, which may mean that findings are less relevant to the general population. When non-clinical samples were obtained through recruitment from Universities (n=3) the percentage of participants that were identified as having self-harmed varied from as little as 9% (n=20; Kimball & Diddams, 2007) to 38% (n=51; Gratz et al., 2002) and 38.4% (n=91; Tatnell et al., 2018) respectively. These differences and limitations make interpretation of results complicated, as it is difficult to draw definitive conclusions, and they reduce the ability to generalise findings to other populations or settings.

4.2 Limitations of the review

The overall aims for this review was to provide a high quality, systematic and replicable summary of available research literature on attachment and NSSI, however it is not without its limitations. First, the search strategy and strict inclusion/exclusion criteria meant that only seven studies were included in the review. Only published quantitative research articles found through searching three major databases were incorporated. The author did not contact specialists in this field for unpublished research and grey literature was excluded. Qualitative papers were also excluded as there can be difficulties interpreting qualitative and quantitative studies together. Whilst there are strengths in qualitative research, it was also decided that qualitative studies are more likely to generate themes based on people's experiences and not specifically address the review question, which sought to examine the relationship between self-injury and insecure attachment. This means that there may be a publication bias, as important literature may have been missed. However, having a clear and strict search strategy allows for easy replication and considered synthesis to draw conclusion from the results.

This review also excluded studies that recruited an adolescent population, which significantly reduced the number of potential papers available for review. This was another carefully considered decision because researchers acknowledged that there is already strong body of research which has explored

adolescent self-harm. Researchers made the decision to focus on adults as they are often a neglected and overlooked population. It was also considered important to focus on the adult population for the purpose of this review given the evidence that self-injury and attachment anxiety can continue (and have been shown to be highest) in the adult population. This review may therefore shed new findings and understanding in terms of the long-term consequences of attachment difficulties.

Second, although both the screening (10%, n=33) and quality assessment (25%, n=2) tasks were rated by a second reviewer, only a small percentage of the papers were reviewed in this way. This may mean that the results are subjective and hold some bias. The quality assessment tool (QATSDD; Sirriyeh *et al*, 2011) itself may present some limitations. The QATSDD is a reliable and valid tool that can be used to guide researchers in the assessment of quality in research studies. It has a clear rating system which provides valuable data regarding the quality of studies and key areas to focus the synthesis of research papers. However, the QATSDD has its limitations because it is a broad assessment tool designed to assess quality across studies with different methodologies. For example, it does not address study bias which is an important factor when analysing the quality of qualitative studies. To address this limitation in the current literature review, bias had to be examined separately to address this. This tool was chosen when developing the study protocol, prior to starting the literature searches. At this stage, researchers were uncertain as to the type of studies that may be included in the review, which was why the QATSDD was chosen, despite potential limitations.

Additional limitations refer to the definitions and terminology used to conceptualise adult attachment. All types of insecure attachment were grouped as one concept, e.g. anxious, avoidant and preoccupied were all grouped as insecure attachment, however there may be differences between these varying attachment styles. This was acknowledged and it was considered that separating the different attachment styles would have not in the best interest of the review, as making comparisons and conclusions would been difficult considering the small number of final studies reviewed. The review also included studies that used terminology other than NSSI, e.g. SH, SA and SB, because essentially

they were referring to harmful or risky behaviours that were not intended to end life. The differing terminology may however cause some problems in interpreting the results as they may not be measuring the same concept explicitly.

4.3 Clinical implications and future research

This systematic review has important clinical implications. The results suggest that individuals who engage in NSSI may have formed insecure attachment from early childhood experiences and may have unmet needs in this area. These may be evident in therapy, both in terms of goals for therapy and the impact that an insecure adult attachment may have on the therapeutic relationship itself. An individual with insecure attachment may struggle to engage in therapy altogether and/or find that the risk of NSSI increases with engagement in therapy, particularly if their insecure attachment style is activated by the therapeutic material discussed and/or by the relational style of the therapist. Therefore, when working with individuals who self-injure, it is important to include historical information as part of the assessment process, as well as providing a safe base and secure therapeutic relationship in order to enhance change. It may also be important to be more aware of relational factors, such as transference and countertransference, as these individuals may be more interpersonally sensitive. Wider implications may also need to be considered in relation to how someone is managed by other services for example Accident and Emergency (A&E), Crisis Teams and the Police, as these already potentially traumatic encounters with services may be exacerbated in someone with an insecure attachment style.

This review may also influence the type of therapy used with an individual who engages in NSSI. The National Institute for Health and Care Excellence (NICE, 2013) guidelines state that psychological therapy should be tailored to the individual's needs and suggest that cognitive behavioural therapy, psychodynamic psychotherapy or a problem solving approach is indicated. In light of this review, relational approaches such as psychodynamic psychotherapy, Cognitive Analytic Therapy (CAT) or Mentalisation Based Therapy (MBT) may be more helpful if attachment needs are thought to be an important factor in relation to an individual's NSSI.

Further research needs to be carried out in this area. Developments in building a consensus around definitions, terminology and appropriate measures in this field would be helpful so that future research can be comparable. Several studies found gender and parental differences in their results (Gratz et al., 2002; Tatnell et al., 2018). Further research specifically into this area may therefore be helpful. It may also be important to explore comparisons between clinical and non-clinical populations more specifically, as well as seeing if there are any differences in the findings in relation to length, severity and frequency of NSSI. Additionally, it may be beneficial for further systematic reviews to be carried out with the aim of examining the qualitative literature available in this area of research, as well as the research studies carried out on the adolescent population, as these may provide further insight or comparison to the current review.

5. CONCLUSION

This review aimed to determine whether there is a relationship between insecure attachment and NSSI in adults. The findings of this systematic review suggest that insecure attachment may have an important role to play in NSSI in adults. This review paper highlights the need for further research in this area and the importance of considering early childhood experiences and potential attachment difficulties when assessing and providing treatment for an individual who presents with NSSI.

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Chapter 2: Empirical Paper

The role of shame, self-criticism and fear of compassion on the psychosocial adjustment of individuals who have scars as a result of previous self-injury[3]

[3] Article prepared for submission to *'Suicide and Life Threatening Behavior'* - please see Appendix 5 for the journal's guidelines.

ABSTRACT

Background: Self-injury is prevalent in the general population, estimated as high as 17% in young adult student populations (Whitlock, Eckenrode & Silverman, 2006). The act of self-injury is often used as a way of coping with difficult emotions and can result in severe and lifelong scarring, even when an individual stops harming themselves. This study aims to explore how shame, self-criticism and fear of compassion impacts on the psychosocial adjustment in individuals who have scars as a result of previous self-injury.

Method: The study recruited 91 students from four universities across the North West of England to an online study that required them to answer a series of questionnaires that obtained demographical information and data on shame, self-criticism, fear of compassion and psychosocial adjustment.

Results: Data was analysed by conducting Spearman's Rank-Order correlation tests and hierarchical multiple regression. Results indicated significant models that may explain psychosocial adjustment in individuals who have scars as a result of previous self-injury.

Conclusion: Although this study was carried out with a student population, results indicate the possibility that individuals with scarring as a result of previous self-injury may have ongoing needs that can be aided by psychological intervention; however further research is recommended.

Keywords: *Self-injury, psychosocial adjustment, shame, self-compassion, self-criticism*

1. INTRODUCTION

1.1 Definition of self-injury

When an individual harms themselves intentionally, a range of terminology are used to describe the behaviour. Self-harm, self-injury, non-suicidal self-injury (NSSI), deliberate self-harm and parasuicide have all been used to describe this phenomenon and they are often used interchangeably. The terminology can be further defined by intention, e.g. whether or not the individual intended to end their life. Self-injury is a form of self-harm that is specifically defined as any deliberate, non-suicidal behaviour that inflicts physical harm on the body and is aimed at relieving emotional distress (Life Signs, 2019). Walsh (2012) refers to specific acts of "self-inflicted cutting, hitting, burning and excoriation of wounds" (p. 3) and it is widely recognised that these acts can result in permanent damage to tendons, nerves and scarring, which can lead to permanent disfigurement (NICE, 2004).[4]

Self-harm is a common occurrence, particularly among young people, with an average onset age of 12 – 14 years (Nock, 2009). A survey of young people aged 15-16 years found that more than 10% of girls and 3% of boys had self-harmed in the previous year (NICE, 2012). Prevalence rates have been found to be as high as 17% in young adult student populations (Whitlock, Eckenrode & Silverman, 2006). Moran and colleagues (2012) found that 6 – 8% of young people engage in repeated, chronic self-injury and figures can rise to greater than 50% in individuals who experience a stressful life event such as the death of someone close (Madge et al., 2011). It is however considered difficult to gain a true estimation of the prevalence of self-injury, as this is typically a private act and will not necessarily come to the attention of health care services (Hagell, 2013). These prevalence rates are therefore potentially underestimated.

Whitlock (2010) has categorised self-injury into three categories: mild, moderate and severe, depending on the lethality of the inflicted injuries. The location of the self-injury related scars has been found to

[4] Different terminology will be used interchangeably throughout this paper, due to quoting other research, however it is the behaviour captured by the NSSI definition that is specifically being discussed here.

be important in determining severity as scars in locations other than the arms indicate greater psychiatric symptoms, for example social problems, depressive symptoms and dissociation (Laukkanen, Rissanen, Tolmunen, Kylma & Hintikka, 2013). However, research conducted by Sornberger, Heath, Toste and McLouth (2012) indicate there may be gender differences in relation to scar location; for example females reported more cutting, scratching and injuries to the arms and legs, whereas males reported more burning and hitting, and injuries to the chest, face or genitals.

1.2 Self-injury scars

In terms of cessation and recovery from self-injury, Whitlock et al. (2006) have found that 79.8% of individuals who self-injure report to have stopped within five years of starting and 40% report stopping within one year. However, depending on the severity and frequency of the self-injury, scarring can be longer lasting or permanent. Studies have shown that scars from previous self-injury can result in both positive and negative thoughts and feelings. For example, Franzen and Gottzen (2011) identified both normalising and pathologising discourses when individuals talk about their self-injury scars. They reported that individuals who were normalising of their experiences regarded self-injury as a legitimate way to manage mental health problems; "cutters" were seen as resilient, and both blood and scars were considered beautiful. However, for individuals who were pathologising of their experiences, they considered self-injury as morally reprehensible, where cutting was seen as pathological and their bodies repulsive.

Greater disturbances in body image have been observed in individuals who have scars as a result of self-injury than in individuals with scars from other origins (Dyer, Henrich, Borgmann, White & Georg, 2013) and scar origin was particularly associated with negative body image among men (Dyer, Mayer-Eckhard, White & Alpers, 2015). These findings support previous studies which highlight the difficulties that individuals with self-injury scarring experience on a daily basis. For example, in research carried out by Hodgson (2004), participants raised concerns related to scars that contributed to their concealment from others. Lewis & Baker (2011) found that individuals reported attempting to

avoid stigma by covering scars with clothing, constructing socially acceptable explanations for self-injury scarring and the avoidance of certain situations where their scars may be visible (e.g. swimming).

This supports earlier research by Favazza and Conterio (1989) who found that 46% of individuals who had self-injured regarded their scars with alarm, considered them ugly and attempted to conceal them. A third of these individuals wanted to have their scars surgically removed. These studies highlight the ongoing vulnerability of shame and distress experiences reported by individuals who have scars following self-injury. A quote taken from Tate (2010) provides a summary of the struggles an individual may experience in relation to their self-injury related scars:

"I do not want other people to look at my scars. They are ugly and they remind me of every time that I have been so distressed that I felt I have had no option other than to injure myself. Self-injury is a private matter and even I do not like looking at the results" (Tate, 2010; page 11).

Bachtelle and Pepper (2015), who differentiated between scar related growth and scar related shame, found that individuals who experience higher levels of scar related shame were more likely to self-injure in the future as well as experience feeling such as depression, self-disgust and scar related regret. Shame was also found to be a significant barrier to scar acceptance in a study conducted by Lewis & Mehrabkhani (2015). However they additionally found that acceptance does emerge over a period of time. Those who found acceptance perceived their scars to symbolise resilience and inner strength for overcoming self-injury. An individual's perception of their scars may therefore hinder recovery and may be a continued concern after self-injury cessation (Lewis, 2016).

Previous research into scars and burns has also explored the concept of 'psychosocial adjustment' associated with experiences that are disfiguring and permanent. Larsen (2019) breaks psychosocial adjustment down in to two elements: 'psychosocial' takes into account the social environment and psychological state of being; 'adjustment' refers to the adaptations in life that are continuously made in response to change (e.g. chronic illness or permanent disfigurement). As well as psychologically

accepting their scars, individuals who have previously self-injured may find the scars affect them socially and they may feel a consequent need to make adaptations (such as covering their scars at work).

1.3 Theoretical underpinnings - Shame, self-criticism and fear of compassion

Shame can be defined as an intense emotion involving feelings of inferiority, powerlessness and self-consciousness, with a desire to conceal perceived deficiencies (Tangney, Miller, Flicker & Barlow, 1996; Wicker, Payne & Morgan, 1983). A distinction can be been made between internal and external shame. Internal shame involves negative self-evaluations and seeing the self as unattractive, inadequate and flawed. External shame occurs from the belief or experience that others have a negative view of the self (Gilbert et al., 2010). Feelings of shame can be present as a result of neglectful or abusive experiences in childhood (Andrews, 1998) and can result in feelings of inadequacy and self-criticism (Gilbert et al., 2010).

Self-criticism involves internal views or thoughts about the self that are devaluing, condemning, attacking and critical (Gilbert, Clarke, Hempel, Miles & Irons, 2004). Gilbert et al., (2004) found there are two forms/types of self-criticism, where a) individuals feel either inadequate/inferior to others or b) they feel disgust/hatred towards self. They also identified two functions/reasons for self-criticism, to a) self-correct or b) to hurt/punish self. Self-criticism has been linked with neglectful or abusive upbringing. Individuals who emerge from such difficult experiences with shame, self-criticism or self-hatred are more likely to self-harm (Irons, Gilbert, Baldwin, Baccus & Palmer, 2006).

Individuals with high levels of shame and self-criticism have been found to experience fear, resistance and avoidance of engaging in compassionate behaviours (Gilbert, McEwan, Matos and Rivis, 2011). The Dalai Lama (1995) defines compassion as: ‘an openness to the suffering of others with a commitment to relieve it’. Compassion involves attributes such as kindness, empathy, care and non-judgement, which can be experienced from others, towards others and for the self (Gilbert, 2005, 2009, 2010). Self-compassion has been found to improve psychological well-being (Neff, 2003), however individuals who experience shame and self-criticism can experience compassionate behaviours as

threatening rather than safe/soothing (Gilbert et al., 2011). A more recent study by Xavier, Gouveia & Cunha (2016) found that adolescents are more likely to engage in self-injury, when they experience depressive symptoms and when in conflicts with peers, if they have higher external shame and fear of compassion (resistance to compassionate feelings towards self). Figure 1 provides a summary of this theoretical framework.

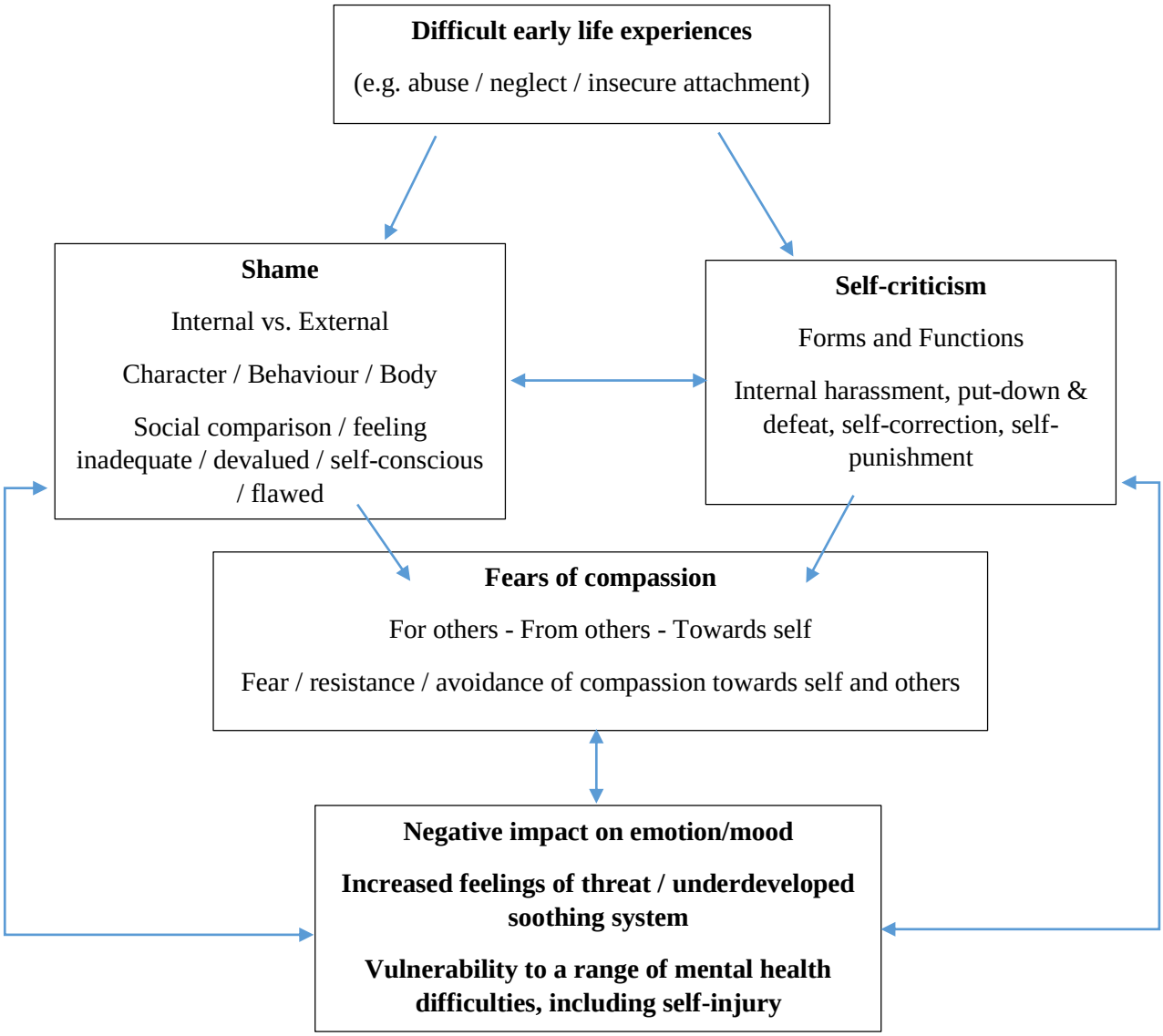

Figure 1: Summary of study's theoretical framework

1.4 Current study - Aims

As previous research suggests, shame, self-criticism and fear of compassion may play an important role in terms of understanding why individuals self-injure. Additionally, Gilbert et al., (2010) specifically studied the role of self-criticism and shame in individuals who self-harm. They identified that a form (type) of self-criticism involving 'self-hating' and a function (reason) of self-criticism involving 'self-persecution' both made independent contributions to predicting self-harm, low mood and anxiety. It is therefore important to explore in this study whether these processes are also on-going in individuals who no longer self-injure but who have scars as a result, particularly because shame has also been found to impact on the recovery from self-injury and the adjustment to scar acceptance (Bachtelle & Pepper, 2015; Lewis & Mehrabkhani, 2015). This study will extend the current literature by examining the role of shame, self-criticism and fear of compassion in relation to the psychosocial adjustment of individuals who have scars as a result of previous self-injury. This study will utilise existing and widely used standardised measures that describe and capture the concepts summarised in table 1 below.

Table 1: Summary of key concepts to be examined in this study

SHAME	
Characterological shame (Negative judgements about personal characteristic/qualities	
Behavioural shame (Negative judgements about one's behaviour)	
Bodily shame (Negative judgements about appearance/body)	
SELF-CRITICISM	
Forms: ***(types)***	**Inadequate self** (feeling internally put-down and inadequate by failures/setbacks)
	Reassure self (the ability to self-reassure when faced with failures/setbacks)
	Hated self (feelings of self-dislike and an aggressive desire to harm self)
Functions: ***(reasons)***	**Self-persecution** (to punish / persecute oneself when faced with failures/setbacks)
	Self-correction (to improve / correct oneself when faced with failures/setbacks)
FEAR OF COMPASSION	
Expressing compassion for others	
Responding to compassion from others	
Expressing compassion towards self	

Note. information summarised from Andrews et al., (2002), Gilbert et al. (2004, 2010, 2011)

The overall aim of the study is to determine which of these concepts explain psychosocial adjustment in individuals who identify themselves as having scarring from previous self-injury.

1.5 Study Hypotheses

Based on previous research, this study will specifically examine the following hypotheses:

1. High scores of shame, self-criticism and fear of compassion will be associated with low levels of psychosocial adjustment in individuals who have scars as a result of previous self-injury
2. Lower scores of bodily shame, self-hatred, self-persecution and self-compassion will predict psychosocial adjustment in individuals who have scars as a result of previous self-injury.

These hypothesis will be examined by analysing the results of correlations and hierarchical multiple regressions computed in SPSS 24 (IBM, 2016).

2. METHOD

2.1 Participants

Participants were students from four university sites in the north west of England. They were invited to take part in the study if they met the following inclusion criteria: (i) at least 18 years of age, (ii) have a history of self-injury, (iii) free from self-injury for at least 1 year and (iv) have visible scars as a result of previous self-injury. Researchers made the conscious choice to recruit university students, rather than individuals who were currently being supported by NHS services or online support communities. This study is specifically interested in psychosocial adjustment in individuals who no longer self-injure and therefore participants were required to have not self-injured for at least 1 year in order to make the distinction between current and past self-injury. As a non-clinical population, students were recruited as they were considered on balance less likely to be currently using self-injury compared with an NHS clinical population or online support group.

A total of 141 participants accessed the online study, with n=91 completing the study in full (see Figure 2 below for flowchart of participants accessing and completing the study).

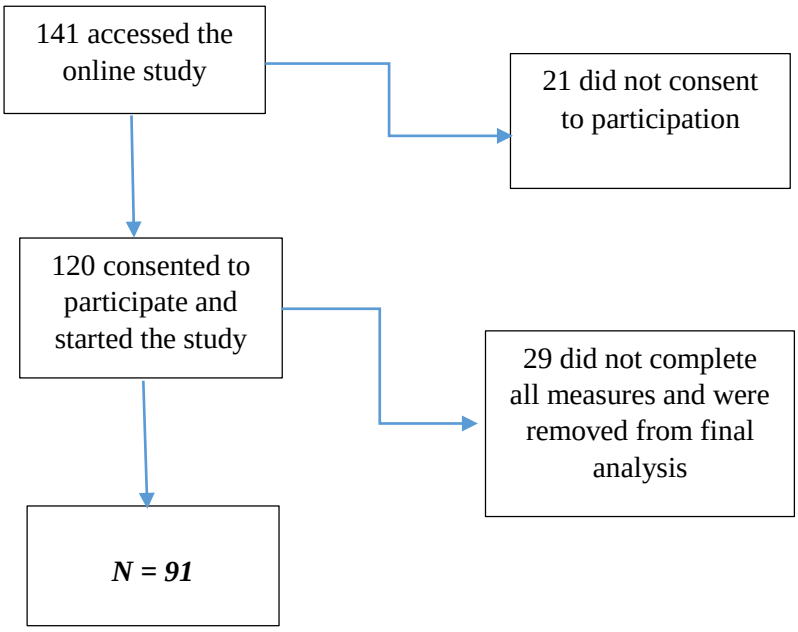

Figure 2: Participant response rate throughout the data collection process

The majority of participants identified themselves as female (87.5%, *n=80*), 11% (*n=10*) identified themselves as male and 1 participant did not specify gender. Participant's ages ranged from 18-48 years (*M=24.28, SD=5.85*) at the time of the study. The average age of self-injury onset was 14.58 years (*range = 4-29 years, SD=3.50*) and the average age of cessation was 20.30 years (*range = 11-41 years, SD=4.81*). Overall, the average length of time that participants engaged in self-injury before cessation was 5.84 years (*range = > 1 year-28 years, SD=4.97*). Participants identified that they had not used self-injury for the past 1-21 years (*M=3.82, SD=4.25*). Full demographic data is summarised in Table 2.

Table 2: Summary of participant demographics

Demographics	**N**	**%**
Gender		
Male	10	11.1
Female	80	87.9
Not specified	1	1.1
Student status		
UK Student	84	92.3
EU Student	3	3.3
International Student	3	3.3
Not specified	1	1.1
Method of SI		
Cutting	73	80.2
Burning	2	2.2
Carving	2	2.2
Pulling Hair	1	1.1
Severe Scratching	4	4.4
Banging or hitting self	2	2.2
Interfering with wound healing (e.g. picking scabs)	5	5.5
Sticking self with needles	1	1.1
Not specified	1	1.1
Location of scars		
Head/face	4	4.4
Neck	3	3.3
Chest	4	4.4
Stomach	19	20.9
Back	2	2.2
Arms – top (bicep/tricep)	35	38.5
Arms - forearms	74	81.3
Legs – calves	10	11.0
Legs – thighs	53	58.2
Feet	6	6.6
Hands	14	15.4
Other	9	9.9
Location of MOST scars		
Chest	1	1.1
Stomach	4	4.4
Back	1	1.1
Arms – top (bicep/tricep)	10	11.0
Arms – forearms	49	53.8
Legs – calves	4	4.4
Legs – thighs	17	18.7
Feet	1	1.1
Hands	2	2.2
Other	2	2.2

2.2 Measures (see Appendix 6)

The researchers were guided by previous studies carried out in this research area when decisions were made about which measures to use. The measures chosen for this study were considered reliable, valid and have been widely used in previous research that has explored the relationship between shame, self-criticism and fear of compassion, thereby enabling the key study aims and hypothesis to be addressed.

Shame Questionnaire:

The Experience of Shame Scale (Andrews, Qian and Valentine, 2002) is a self-report measure consisting of 25 items that measures (i) character shame, (ii) behaviour shame and (iii) body shame. Items are rated on a scale of 1 (never) to 4 (very much). Andrews at al., (2002) report good reliability for the three subscales (character shame, *r = 0.91*; behaviour shame, *r = 0.88*; body shame, *r = 0.74*). Overall the scale has high internal consistency of $\alpha = 0.92$ (Gilbert, Clarke, Hempel, Miles & Irons, 2004). Cronbach's alpha for the overall scale in the current study is $\alpha = 0.96$.

Self-Criticism Questionnaires:

Two measures were utilised to explore self-criticism. These were:

(a) *The Forms of Self-Criticizing/Attacking and Self-Reassurance Scale (Gilbert et al., 2004)* is a 22 item questionnaire, scored on a 5-point Likert scale (*0 = Not at all like me* to *4 = Extremely like me*), that consists of three factors, namely (i) inadequate self, (ii) hated self and (iii) reassured self. The internal scale consistency for this measure is reported as good - high ($\alpha = 0.86$; Gilbert et al., 2004). Cronbach's alpha in the current study was $\alpha = 0.72$.

(b) *The Functions of Self-Criticizing/Attacking Scale (Gilbert et al., 2004)* is a 21 item questionnaire, scored on a 5-point Likert scale (*0 = Not at all like me* to *4 = Extremely like me*), exploring why people may be self-critical when things go wrong for them. There are two subscales: (i) self-correction and (ii) self-persecution. The internal consistencies for both scales are reported to be above $\alpha = 0.92$ (Gilbert et al., 2004). Cronbach's alpha in the current study is $\alpha = 0.91$.

Fear of Compassion Questionnaire:

The Fears of Compassion Scales (Gilbert et al., 2011) consist of a 38-item scale with three subscales scored on a 5 point Likert scale (*0 = Don't agree at all* to *4 = completely agree*), that explore (i) Fear of expressing compassion for others, (ii) Fear of responding to the expression of compassion from others and (iii) Fear of expressing kindness and compassion towards yourself. The internal consistencies for these scales range from $\alpha = 0.78 – 0.92$ (Gilbert et al., 2011). Cronbach's alpha in the current study range from $\alpha = 0.90 – 0.94$.

Psychosocial Adjustment Questionnaires:

At the time of starting this study, there were no standardised measures that this study could use to capture psychosocial adjustment. There were measures that specifically capture psychosocial adjustment to medical illness or burns, however these measures were not considered appropriate for use in the current study. Therefore, two separate measures were identified with the aim of capturing both the psychological and social elements of psychosocial adjustment:

(a) *The modified BBC Subjective Well-Being Scale (Pontin, Schwannauer, Tai & Kinderman, 2013)* is a 24 item psychological well-being scale using a 5-point Likert scoring system (*1 = Not at all* to *5 = Extremely*, with item 4 reversed). The internal consistency is reported to be above $\alpha = 0.94$. Cronbach's alpha in the current study is $\alpha = 0.92$. This measure was chosen to capture the *psychological* aspects of psychosocial adjustment, for example, "Are you happy with yourself and your achievements?" and "Do you feel able to live your life the way you want?".

(b) *The Work and Social Adjustment Scale (Mundt, Marks, Shear & Greist, 2002)* is a 5 item scale which requires respondents to rate the impact of their problem on different areas of their life using a 9-point Likert scale ranging from 0 (not at all) to 8 (very severely). The internal scale consistency ranged from $\alpha = 0.79$ to $\alpha = 0.94$ (Mundt et al., 2002). Cronbach's alpha in the current study is $\alpha = 0.79$. This measure was chosen to capture the *social* impact of scars as a result of previous self-injury. This measure can be adapted so that each item specifically states "scars" as the 'problem', for example "Because of my *scars* my ability to work is impaired".

Control Variables – Mood / Anxiety Questionnaires:

The following questionnaires were used to control for depression and anxiety, as it was predicted that these variables could potentially be present in the population recruited for the study and could impact on psychosocial adjustment scores.

(a) *The Patient Health Questionnaire (PHQ-9, Kroenke, Spitzer and Williams, 2001*) is a 9 item questionnaire developed as a screening tool for depression. Items are scored by one of four responses – not at all / several days / more than half the days / nearly every day. This questionnaire has sensitivity and specificity of *88%* for major depression with a score of 10 or above (Kroenke at al., 2001). Cronbach's alpha in the current study is $\alpha = 0.90$.

(b) *The Generalised Anxiety Disorder Assessment (GAD-7, Spitzer, Kroenke, Williams & Lowe, 2006)* is a 7 item questionnaire developed as a screening tool for generalised anxiety disorder. Items are scored by one of four responses – not at all / several days / more than half the days / nearly every day. Spitzer et al., (2006) report the GAD-7 has good reliability, as well as criterion, construct, factorial, and procedural validity. A cut point was identified that optimized sensitivity (*89%*) and specificity (*82%*). Cronbach's alpha in the current study is $\alpha = 0.89$.

Screening / Demographics Questionnaires:

To screen participants and capture relevant demographics needed for the study, the following questionnaires were also identified from previous studies and used as a basis to develop the questions:

(a) The *Inventory of Statements about Self Injury - Section I (ISAS: Klonsky and Olino, 2008)* is 7 item self-report questionnaire exploring an individual's history of self-harm. Klonsky and Olino (2008) reported that this questionnaire has good internal consistency ($\alpha = .84$). Items 1-3 from *'Section 1. Behaviours'* of the ISAS were used to construct questions for the initial screen of suitable participants. This section lists ways in which individuals self-injure and ask questions about when an individual first self-injured or has most recently self-injured. Cronbach's alpha therefore cannot be calculated.

(b) *The Patient and Observer Scar Assessment Scale (POSAS: Draaijers et al., 2003)* consists of a series of body maps followed by 5 question items scored on a 10-point Likert scale (*0 = No, not at all* to *10*

= *yes*, *very much*). This measure ascertains the location and appearance of scars. The internal consistency was reported to be $\alpha = 0.76$. Only the 5 question items were used in this study.

(c) Further demographic data was also collected, to include current age, gender, age of self-injury cessation and location of most scars.

2.3 Design, ethical and power considerations

A cross-sectional quantitative research design via an online questionnaire based study was used. Ethical approval was gained from the University of Liverpool (Reference: RETH000961) prior to recruitment commencing (see Appendix 7). The ethics committee was notified of any changes to the study (e.g. change in research supervisors) and plan was put in place to report any complaints to the university, however this was not utilised as researchers are not aware of any complaints or risks arising as a result of participation in the study.

Power analysis calculations were also conducted prior to recruitment using G-power 3 (G-Power 3: Faul, Erdfelder, Lang & Buchner, 2007). The calculations were based on a maximum number of 11 potential predictors and an additional 8 control variables (severity of scars / location of scars / mood / anxiety / age / gender / onset of self-injury / duration of self-injury) for hierarchical linear regression analysis. The specified alpha level was set at 0.05, with estimated required power of 0.80 in line with Cohen's guidelines for behavioural research (Cohen, 1988). This yielded an estimated minimum sample size of 123 (Faul et al., 2007). The minimum sample size required was not met, as only 91 of the 121 data sets obtained were full and complete. Post-hoc power analysis was therefore carried out using G-power 3 (G-Power 3: Faul, Erdfelder, Lang & Buchner, 2007) to determine adequate power had been reached. Power was calculated and found to be adequate for both the Work and Social adjustment Scale ($1-\beta = 0.99$) and the BBC Well-Being Scale ($1-\beta = 1.00$).

2.4 Procedure

The study was advertised by posters, university social media accounts (e.g. twitter), email and university intranet sites. The advertisement (see Appendix 8) invited participants to access the study via an

anonymous web link. Participants were recruited between February 2016 and October 2017. They were presented with a participant information sheet (Appendix 9) and a consent form (Appendix 10), in line with the British Psychological Society's (BPS) ethics guidelines for internet mediated research (BPS, 2013); followed by a number of screening questions. Those who met the eligibility criteria were required to answer a number of questions to gain demographic information and then complete the questionnaires that measured shame, self-criticism, fear of compassion, mood and anxiety. Upon completion of the study, participants were signposted to places of support via a debrief sheet (Appendix 11) and invited to leave their email addresses in order to be entered into a prize draw, although this was optional. Any identifiable information (e.g. email addresses) offered by participants were securely stored separate to the questionnaire data prior to analysis so that the responses remained anonymous.

2.5 Data Analysis Procedure

The statistical analysis was carried out using SPSS 24 (IBM, 2016). The data set was initially screened for errors and descriptive statistics were run to analyse demographic data. The participants' completion times were also screened with the aim to ensure quality of data (e.g. that participants responses were considered and not rushed through giving responses at random). The study took on average 36 minutes to complete, (range = 10.42 minutes – 12 hours 11 minutes). Generally those that exited the survey early on did so within the first 4 minutes.

Missing data was analysed by conducting the Little's Missing Completely at Random (MCAR) test, *p value = 1.00*, therefore the data was considered likely to be missing at random. Missing data was found to be less than 2% of the dataset. It was necessary to retain the sample size to meet required power for data analysis. Therefore after examining previous research and measure guidelines, missing values were replaced with mean scores to ensure important data wasn't lost. Internal reliability for the measures utilised in this study were calculated and included above. Normality testing was conducted with the Kolmogorov-Smirnov test and because some variables were not normally distributed. Therefore the correlations used to test hypothesis one, were carried out using Spearman's Rank-Order correlation test.

Categorical control variables were analysed to determine if there were significant differences between the categories. For example, a Mann-Whitney test was used to analyse '*gender'* and a Kruskal Wallis test was used to analyse '*scar location'*, which had a larger number of variables. No significant differences were found and therefore they were not included in hierarchical multiple regression. Two hierarchical multiple regressions were conducted to test hypothesis two, in order to determine which predictors contributed to the two dependent variable measures used to measure psychosocial adjustment. The assumptions of regression were checked and they were upheld.

3. RESULTS

3.1 Hypothesis 1: *High scores of shame, self-criticism and fear of compassion will be associated with low levels of psychosocial adjustment in individuals who have scars as a result of previous self-injury*

Correlations were conducted to explore the relationship between the study variables and examine them in relation to the hypothesis that high scores of shame, self-criticism and fear of compassion will be associated with low levels of psychosocial adjustment in individuals who have scars as a result of previous self-injury. The descriptive statistics for the study variables are summarised in Table 3.

Researchers used Cohen's (1988) conventions to interpret the strength of the relationships between the independent variable scores (shame, self-criticism and fear of compassion) and the dependant variable scores (Work and Social Adjustment Scale and the BBC Wellbeing Scale). Cohen (1988) suggests a small relationship ranging from r = .10 to r = .29, a medium relationship from r = .30 to r = .49 and a large relationship between .50 to r = 1.0.

Table 3
Descriptive statistics for study variables (N=91)

Variable	*M*	*SD*
1. Age	24.278	5.848
2. Gender	-	-
3. Age Started Self-Injury	14.580	3.500
4. Age Stopped Sself-Injury	20.300	4.814
5. Length of Self-Injury (yrs)	5.843	4.972
6. Time since Self-Injury (yrs)	3.824	4.247
7. Location of most scars	-	-
8. Scar severity (overall opinion)	6.522	2.255
9. Characterological Shame	33.132	9.689
10. Behavioural Shame	28.055	6.507
11. Bodily Shame	13.176	2.976
12. Self-Criticism, Inadequate Self	24.308	8.825
13. Self-Criticism, Reassure Self	13.846	6.947
14. Self-Criticism, Hated Self	9.022	5.729
15. Self-Criticism, Self-Persecution	13.044	8.852
16. Self-Criticism, Self-Correction	21.319	11.444
17. Fear of Compassion, For Others	16.615	10.043
18. Fear of compassion, From Others	25.033	13.049
19. Fear of Compassion, Towards Self	26.055	16.051
20. Work and Social Adjustment Scale	6.231	6.678
21. BBC Well-being Scale	66.582	17.142
22. Depression (PHQ-9)	12.121	6.926
23. Anxiety (GAD-7)	10.681	5.789

Note. Items 2 and 7 are categorical variables, therefore no M and SD calculated.

The correlation results indicate that high scores on all three subscales of The Experiences of Shame Scales (ESS), namely characterological shame, behavioural shame and bodily shame, are associated with low scores on The BBC Well-Being Scale (r = -.505 to -.599), indicating large effect sizes. This is also evident for the two subscales of The Functions of Self-Criticism, namely self-persecution and self-correction (r = -.355 and -.651) and all three subscales of The Fear of Compassion Scales which explore the fear of expressing compassion for others, responding to compassion from others and expressing compassion towards self (r = -.340 to -.771), indicating medium to large effect sizes. Interestingly, this is also seen in the 'inadequate self' (r = -.623) and 'hated self' (r = -.679) subscales of The Forms of Self-Criticism Scales, but not for the 'reassure self' (r = .725) subscale. This suggests that the higher the ability to reassure oneself when things go wrong, the higher the well-being score, with medium to large effect sizes.

This trend is also supported by the results for the Work and Social Adjustment Scale, although the strength of the relationship with the independent variables were not as strong, with small to medium effect sizes. The higher scores on this scale indicate increased problems with adjustment to the scars in relation to work, home management, social leisure, private leisure and close relationships. Therefore, high scores in the Work and Social Adjustment Scales are associated with higher scores of characterological shame (r = .358), behavioural shame (r = .313), bodily shame (r = .349); The forms of self-criticism relating inadequate self (r = .291) and hated self (r = .309), but not reassure self which as predicted shows a negative relationship (r = -.261); The functions of self-criticism relating to self-persecution (r = .389) and self-correction (r = .201); and fear of compassion for others (r = .312), from others (r = .472) and towards self (r = .410).

These results therefore support the hypothesis that high scores of shame, self-criticism and fear of compassion are associated with low levels of psychosocial adjustment in individuals who have scars as a result of previous self-injury. The results also support previous research that has highlighted self-hatred, self-persecution and fear of self-compassion as predictors of self-injury. Table 4 provides the means, standard deviations and correlation coefficients between the independent variables (shame, self-criticism and fear of compassion) and the two dependent variable measures used to capture psychosocial adjustment.

Table 4
Correlations between independent variables (Shame, Self-Criticism, Fear of Compassion) and dependent variables (WSAS, BBC)

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. Characterological Shame	1.000												
2. Behavioural Shame	.786**	1.000											
3. Bodily Shame	.544**	.494**	1.000										
4. Self-Criticism (Forms) Inadequate Self	.829**	.775**	.564**	1.000									
5. Self-Criticism (Forms) Reassure Self	-.590**	-.498**	-.447**	-.662**	1.000								
6. Self-Criticism (Forms) Hated Self	.784**	.675**	.572**	.842**	-.640**	1.000							
7. Self-Criticism (Funcs.) Self-Persecution	.718**	.642**	.441**	.793**	-.565**	.806**	1.000						
8. Self-Criticism (Funcs.) Self-Correction	.463**	.358**	.169	.463**	-.196	.428**	.447**	1.000					
9. Fear of Compassion For Others	.195	.196	.156	.254*	-.154	.266*	.430**	.352**	1.000				
10. Fear of Compassion From Others	.622**	.578**	.462**	.664**	-.598**	.616**	.698**	.362**	.545**	1.000			
11. Fear of Compassion Towards Self	.668**	.599**	.493**	.710**	-.675**	.716**	.716**	.571**	.422**	.786**	1.000		
12. Work and Social Adjustment Scale- WSAS	.358**	.313**	.349**	.291**	-.261*	.309**	.389**	.201	.312**	.472**	.410**	1.000	
13. BBC Well-being Scale	-.599**	-.505**	-.505**	-.623**	.725**	-.679**	-.651**	-.355**	-.340**	-.693**	-.771**	-.397**	1.000

Note. N = 91. *p < .05, **p < .01.

3.2 Hypothesis 2: *Scores relating to bodily shame, self-hatred, self-persecution and self-compassion will explain/contribute to psychosocial adjustment in individuals who have scars as a result of previous self-injury*

Hierarchical multiple regressions were used to determine which of the key variables explain psychosocial adjustment. Two separate hierarchical multiple regressions were conducted for the two dependent variable measures used to capture psychosocial adjustment (the Work and Social Adjustment Scale and the BBC Well-being Scale). These two measures have not been combined in previous research and it was uncertain as to how these would work as a single dependent variable. The results of each regression are therefore presented separately.

The Work and Social Adjustment Scale (WSAS)

A hierarchical multiple regression was conducted against the Work and Social Adjustment Scale dependent variable and a significant model was found. Control variables were entered into Step 1, with the measure subscales in each subsequent step.

Incremental steps in the model contributed significant change, as indicated by significant change in both R^2 and F change values (F_{change} ps<.05 for all steps), with an additional 11% of the variance accounted for in Step 2, 7% in Step 3, and 4% in Steps 4 and 5 respectively in predicting psychosocial adjustment using the Work and Social Adjustment scale.

The significant predictors for the Work and Social Adjustment Scale were depression, the age self-injury stopped, overall opinion of the scars (severity), current age and fear of expressing compassion for others. This model explains 42%, F (5, 81) = 11.709, p < .001, of the variance for this dependent variable representing psychosocial adjustment. Upon further examination of these results, all predictor variables have a positive Beta value, apart from 'current age'. This indicates that the scars have a greater impact on Work and Social Adjustment when: (i) there are higher scores of depression, (ii) the older someone is when they stop self-injuring, (iii) the perceived severity of the scars and (iv) the greater

the fear of expressing compassion for others. However, with ‘current age’ the negative Beta value indicates that the older someone is, the less the scars impact on Work and Social Adjustment. The full results of this regression are presented in Table 5.

Although previous research has indicated the important role that bodily shame, self-hatred, self-persecution and fear of expressing self-compassion has on those that self-injure, none of these were included in the final model and therefore have not been found to contribute towards the Work and Social Adjustment Scale scores.

Table 5
Hierarchical Multiple Regression analyses predicting psychosocial adjustment (WSAS)

Predictor	*b*	*SE B*	β	*Sig*
Step 1				
Depression	.382	.096	.396	.000
Step 2				
Depression	.373	.090	.386	.000
Age Stop Self-Injury	.479	.129	.346	.000
Step 3				
Depression	.354	.086	.367	.000
Age Stop Self-Injury	.400	.126	.289	.002
Overall Opinion of scars (severity)	.799	.270	.270	.004
Step 4				
Depression	.312	.086	.324	.000
Age Stop Self-Injury	.653	.168	.470	.000
Overall Opinion of scars (severity)	.812	.264	.274	.003
Age (current)	-.305	.139	-.267	.031
Step 5				
Depression	.254	.088	.263	.005
Age Stop Self-Injury	.641	.164	.462	.000
Overall Opinion of scars (severity)	.868	.259	.293	.001
Age (current)	-.291	.135	-.255	.034
Compassion – For Others	.136	.059	.204	0.25

Note. $R^2 = .157$ for Step 1; $R^2 = .277$, $\Delta R^2 = .119$, F_{change} (1, 84)= 13.860, ps<.001 for Step 2; $R^2 = .346$, $\Delta R^2 = .069$, F_{change} (1, 83)= 8.750, ps=.004 for Step 3; $R^2 = .382$, $\Delta R^2 = .036$, F_{change} (1, 82)= 4.832, ps=.031 for Step 4; $R^2 = .420$, $\Delta R^2 = .038$, F_{change} (1, 81)= 5.245, ps= .025 for Step 5.

Table 6
Hierarchical Multiple Regression analyses predicting psychosocial adjustment (BBC)

Predictor	*b*	*SE B*	β	*p*
Step 1				
Depression	-.1.814	.183	-.733	.000
Step 2				
Depression	-.1746	.176	-.706	.000
Length Self-Injury (yrs)	-.750	.245	-.218	.003
Step 3				
Depression	-1.268	.239	-.512	.000
Length Self-Injury (yrs)	-.714	.235	-.207	.003
Anxiety	-.809	.286	-.273	.006
Step 4				
Depression	-1.114	.239	-.450	.000
Length SI (yrs)	-.699	.228	-.203	.003
Anxiety	-.607	.287	-.205	.038
Characterological Shame	-.368	.142	-.208	.012
Step 5				
Depression	-.950	.215	-.384	.000
Length Self-Injury (yrs)	-.484	.207	-.140	.022
Anxiety	-.349	.261	-.118	.185
Characterological Shame	-.120	.137	-.068	.384
Self-criticism -ReassureSelf	.952	.199	.386	.000
Step 6				
Depression	-.813	.211	-.329	.000
Length Self-Injury (yrs)	-.360	.203	-.104	.081
Anxiety	-.138	.261	-.046	.600
Characterological Shame	.013	.139	.007	.926
Self-criticismReassureSelf	.805	.197	.326	.000
Fear of compassion, Towards Self	-.294	.104	-.275	.006

Note. R^2 = .538 for Step 1; R^2 = .584, ΔR^2 = .047, F_{change} (1, 84)=9.409, ps<.001 for Step 2; R^2 = .621, ΔR^2 = .037, F_{change} (1, 83)= 8.015, ps= .003 for Step 3; R^2 = .649, ΔR^2 = .29, F_{change} (1, 82) = 6.670, ps= .012 for Step 4; R^2 = .727, ΔR^2 = .078, F_{change} (1, 81) = 22.984, ps<.001 for Step 5; R^2 = .752, ΔR^2 = .025, F_{change} (1, 80)=8.024, ps= .006 for Step 6.

The BBC Well-Being Scale (BBC)

A hierarchical multiple regression was also conducted against the BBC Well-being Scale dependent variable and a significant model followed. Control variables were entered into Step 1, with the measure subscales in each subsequent step in the same way as above.

When examining psychosocial adjustment according to the BBC Wellbeing Scale, incremental change was also significant at all stages, with F_{change} *ps*<.05 for all steps. Change in R^2 indicated significant additional variance of 5%, 4%, 29%, 8% and 3% for steps 2 - 6, respectively.

Therefore, significant predictors for the BBC Well-Being Scale were depression, length of time of self-injury (in years), anxiety, characterological shame, reassuring self and expressing kindness and compassion towards self. Overall, this model explains 75.2%, F (6, 80) = 40.364, p < .001, of the variance for this dependent variable representing psychosocial adjustment. Upon examining the Beta values, all values apart from 'Reassure self' from The Forms of Self-Criticism Scales were negative, indicating that the higher the scores of depression, length of self-injury, anxiety, characterological shame and fear of self-compassion, the lower the BBC Well-Being Scale scores. However, when an individual has a greater ability to reassure self, the BBC Well-Being Scale scores increase. The full results of this regression are presented in Table 6. In relation to the hypothesis, only fear of self-compassion was included in the final model and found to contribute to the BBC wellbeing Scale scores.

4. DISCUSSION

The aim of the study was to determine how shame, self-criticism and fear of compassion contribute to psychosocial adjustment in individuals who have scars following a history of self-injury. Shame, self-criticism and fear of compassion have previously been found to be associated with self-injury (Gilbert et al., 2010; Gilbert et al., 2011; Xavier et al., 2016). In the current study the researchers intended to extend the existing literature by examining how these factors contribute to the psychosocial adjustment to scars once self-injury has ceased.

The main findings of this study suggest that there are certain factors that may predict psychosocial adjustment in individuals with scarring as a result of previous self-injury. For example, depression scores, the age an individual stops self-injuring, the individual's overall opinion of the scars in comparison to normal skin (severity), the individuals current age and the fear of expressing compassion

to others scores explained 42% of The Work and Social Adjustment Scale (WSAS) scores which was used to capture aspects of psychosocial adjustment in this study. In addition, depression scores, anxiety scores, the number of years an individual has self-injured, current age, whether an individual feels ashamed about specific personal characteristics not related to body or behaviour (characterological shame), whether an individual can be self-reassuring (by having the ability to focus on positives and reassure themselves when things do not go right), and whether someone is able to express kindness and compassion to themselves explained 75.2% of the BBC Well-being Scale (BBC) scores which was used to capture psychosocial adjustment in this study.

The results from the hierarchical multiple regressions therefore suggest that there may be poorer adjustment to self-injury scars (higher scores on the Work and Social Adjustment Scale) when there are higher depression scores, the older an individual stops self-injuring, where there is a greater perceived severity of scarring, the younger they currently are and the greater the fear of expressing compassion for others. Similarly, there may be improved adjustment to scars (higher scores on the BBC Well-Being Scale) when depression and anxiety are lower, when shame about one's personal character is lower, when there is a greater ability to reassure oneself (when things do not go right) and when there are fewer fears of expressing self-kindness and compassion. Therefore, when an individual reports feeling depressed, when they believe their scars appear very different in comparison to their normal skin and when they struggle to express compassion for others, they are more likely to report difficulties with their ability to work, their home management, their leisure activities and their close relationships. In addition, when someone reports feelings of depression, anxiety, shame about their personal character and an inability to self-reassure (or express kindness and compassion to themselves) they are more likely to report difficulties with their general feelings of happiness and well-being (BBC well-being scale).

In relation to the study hypotheses, the correlational analysis results appear to provide support that high levels of shame, self-criticism and fear of compassion will be associated with lower levels of psychosocial adjustment in individuals who have scars as a result of previous self-injury. However,

there was a greater effect size for the BBC Well-being Scale scores. Previous research by Gilbert et al. (2010) indicated that there were two dimensions of self-criticism that independently predicted psychosocial adjustment, specifically self-hatred and self-persecution. The results for this study did not support this prediction. Interestingly, the effect sizes for the Work and Social Adjustment Scale were smaller than the BBC Well-being Scale, with some scores showing small effect sizes (the forms of self-criticism relating inadequate self and reassure self, and the functions of self-criticism relating to self-correction). For these scores, even though the correlations were significant the strength of the relationship was small, therefore further investigation is needed.

The demographic data obtained supports and extends existing literature, by providing further insight into individuals who have scars as a result of past self-injury. The mean age that individuals reported starting self-injury was 14.58 years, thus supporting research by Nock (2009). Self-injury continued on average for 5.84 years. This is similar to findings by Whitlock et al. (2006), who previously found that 79.8% stop self-injury within 5 years and 40% stop within 1 year. It may be that the longer someone self-injures, the more likely they are to have related scarring. The mean age individuals reported that they stopped self-injury was 20.3 years. This is in line with previously reported statistics (Muehlenkamp, Xhunga & Brausch, 2018). The average length of time since participants last self-injured was 3.82 years (ranging from 1 to 21 years). Larsen (2019) suggests that adjustment is something that continuously changes over time. It is important to consider this here, as individuals who stopped self-injury over 20 years ago may be in a different stage of adjustment to scars than someone who has stopped self-injury 12 months ago.

Additionally, the mean PHQ-9 score was 12.12 and the mean GAD-7 score was 10.68, both of which fall into the *'moderate'* ranges of depression and anxiety, suggesting that this group of individuals may have ongoing difficulties with mood and anxiety. The most common method of self-injury was cutting (80.2%, n=73), which supports previous research findings by Hawton Rodham, Evans & Weatherall (2002). The location of cutting was reported as most common on the forearm area (81.3%, n=74) and

this is where they reported greater scarring (53.8%, n=49). This is an important consideration as scars on the forearm may be harder to conceal, than scars on the stomach or thigh.

Overall, this research study adds to the existing literature, as research in this area is limited. The results indicate that shame, self-criticism and fear of compassion continue to play an important role in individuals after they have stopped self-injury and that there is a medium to strong relationship between these concepts and psychosocial adjustment. This study extends the existing research by identifying which factors explain psychosocial adjustment in individuals who no longer self-injure but have scars as a result. Of interest, is that the predictors found to contribute towards self-injury in previous research appear to be different to those that contribute to psychosocial adjustment in individuals who have self-injury scarring, suggesting that there may be differences between individuals who currently self -injure with those that have stopped self-injury. Specifically, Gilbert et al (2010) found that self-hating (a form of self-criticism) and self-persecution (a function of self-criticism) predicted self-injury. However, these variables were not found to explain psychosocial adjustment in the current study.

4.1 Strengths and limitations

Although the researchers aimed to carry out a research study of a high standard that would contribute to the breadth of self-injury research already available and to clinical practice, there are inevitably design limitations that need to be considered. Firstly, the study was cross-sectional in design and used retrospective self-report measures. Therefore causal relationships between variables need to be interpreted with caution. It is uncertain whether the sample obtained is representative of the general population. For example, the study recruited from a student population, instead of from NHS mental health services or support groups. However, the rationale to recruit from a student population was due to a greater likelihood of recruiting participants that had already stopped self-injury, rather than those accessing services to stop NSSI. Recruitment was undertaken across four sites in the North West. The study recruited participants with a wide range of self-injury history, therefore this could be viewed as a fair and balanced reflection of the continuum of self-injury that occurs amongst this particular age range and demographic.

Overall, there was a difficulty in recruiting, as the study invited participation from a specific and potentially small group of individuals. It took a long time to recruit the number of participants indicated by the power analysis and unfortunately large amounts of data had to be omitted (n = 50). This was due to participants not giving consent or exiting the online study before they had completed all of the measures. It is suspected that even though an optional prize draw was offered as a thank you for participant's time, the large number of measures included and the length of time the study took to complete *(average = 36 minutes; range = 10 minutes to 12 hours 11 minutes)* may have deterred participants from completing the full study. However, the results obtained did meet adequate power and sufficient data was collected to conduct the analysis in line with the hypotheses. The majority of participants who did complete the full study were female and it cannot be certain as to whether more male participants would have provided different results. However, this higher rate of female responses is reflective of existing literature. For example Laye-Gindu & Schonert-Reichl (2005) reported that females are more likely to report self-harm ideation and behaviours than males.

In addition to the number of measures used, another potential limitation to consider is whether the Work & Social adjustment Scale (WSAS) and The BBC Well-being Scale encapsulate the concept of psychosocial adjustment. These measures were chosen by the researchers with the aim of capturing both the psychological and social components of this construct. For example, The BBC Well-Being Scale asks participants about how happy they feel generally in most parts of their life (e.g. 'Do you feel able to enjoy life?', 'Do you feel optimistic about the future?' and 'Are you happy with your looks and appearance?'. This measure captures the psychological state of being. Whereas, the Work and Social Adjustment Scale (WSAS) invites participants to rate how much *'the problem'* (scars) impact on 1) ability to work, 2) home management, 3) social leisure activities, 4) private leisure activities and 5) close relationships. This measure captures the social environment. However, it could be argued that well-being is a separate concept. Kinderman, Schwannaur, Pontin & Tai (2011) suggest that 'well-being' captures multiple domains of human functioning (including emotions, attitudes, self-concept, relationships, work, productivity, physical health, etc.) and concentrates on capability and positive

emotion, rather than disability and negative emotions. When compared to the definition of psychosocial adjustment provided by Larsen (2019), there is some overlap in terms of capturing the multiple domains of the social environment and psychological state of being, as well as acknowledging the adaptations / capabilities in life that are continuously made in response to change (e.g. chronic illness or permanent disfigurement). Although it is considered that there are many similarities between psychosocial adjustment and well-being based on the above definitions, it is acknowledged by researchers that caution should be applied when interpreting the study's results as the measures may be capturing additional variables. Although there are some differences between well-being and psychosocial adjustment, The BBC Well-being scale was used alongside the WSAS to capture psychosocial adjustment for this reason. This could have been further strengthened if adaptations to scars were also captured.

In relation to the quality of data obtained, even though completion times were screened to ensure the responses were of high quality, this additional data may not necessarily indicate quality of responses. For example, there were incomplete sets of data that were recorded as having longer completion times than full datasets. Completion times varied widely because participants may have left the survey open but inactive on their browser before exiting. Participants were also able to exit the survey and return to complete it within a 1 week period. Another limitation to consider is that missing data was managed by calculating mean scores. Although the missing data was minimal (less than 2%), mean imputation may cause some bias, even when the data was determined to be missing completely at random. This method was used because several measures used did not provide guidelines for managing missing data. Manging the missing data consistently was considered important and this method was carried out in order to minimise further loss of data.

Another limitation that has been considered by the researchers is that there was no service user involvement. Upon reflection, consulting individuals (who the study aimed to recruit) in the initial design stage of the study, either by running a pilot or focus group, would have been beneficial. For example, gaining feedback on the impact of scars on daily life, well-being and psychosocial adjustment

may have shaped which measures were used. It would also have been helpful to consult service users again with regards to the online study, for example the length and accessibility of the study, as this may have reduced the attrition of data. In relation to recruitment, the study also did not specifically exclude individuals currently accessing, or those that have previously accessed, psychological support to resolve any potential factors that may impact upon their recovery from self-injury. The study did not include questions relating to mental health or diagnosis and did not differentiate between the intent of self-injury (e.g. with or without suicidal intent). These are important factors that have the potential to impact on an individual's psychosocial adjustment and the results of this study.

4.2 Clinical implications and further research

The results of this study suggest that individuals who have scars as a result of previous self-injury may have ongoing or unmet psychological needs. It may therefore be important to be aware of this if someone is seeking psychological support even when they have stopped self-injuring. Specific areas that may need a focus in therapy relate to depression, anxiety, characterological shame, expressing compassion to others and the ability to reassure self when things go wrong. With this in mind, it may be that a Compassion Focused Therapy approach may be beneficial for these individuals. This is supported by Xavier, Gouvier & Cunha (2016) who studied shame, self-criticism and fear of compassion in adolescents who engage in NSSI.

The majority of research into the area of self-injury has focused on individuals who are currently self-injuring and individuals who have stopped but a lifelong reminder of their emotional struggle. This research is exploratory and provides only a foundation for future research in this area. Further research may wish to extend this research by exploring wider factors that contribute to the psychosocial adjustment of individuals who have scars of a results of previous self-injury; it may also wish to explore this topic within a clinical population or how psychological therapy impacts on an individual's recovery.

5. CONCLUSION

This study aimed to explore the role that shame, self-criticism and fear of self-compassion plays in the psychosocial adjustment of individuals who have scars as a result of previous self-injury. The results indicate that there are several variables that may explain psychosocial adjustment in these individuals, including level of depression and anxiety, the number of years of self-injury, characterological shame, self-reassurance, current age and the age self-injury ceases, subjective opinion of the scars and the fear of expressing compassion for others. This suggests that individuals who have scars as a result of previous self-injury may need support to resolve difficulties in these areas to aid their recovery, however further research is recommended.

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Appendix 1: Author Guidelines for *'Psychology and Psychotherapy: Theory, Research and Practice'*

Article length

Author guidelines state that the maximum word limit for review papers is 6,000 words. This word limit excludes the abstract, reference list, figures and tables. Appendices to be published are however included in the word limit.

Text

Contributions must be typed with double spacing and wide margins. All sheets must be numbered.

Title page

The title page should include a full list of authors, and their affiliations, including the authors contact details.

Abstract

Papers should include an abstract up to 250 words. Review articles should use these headings: Purpose, Methods, Results, Conclusions.

Practitioner points

All articles must include a heading 'Practitioner Points', followed with 2 - 4 bullet points briefly and clearly outlining the relevance of the research to professional practice.

Text

- Systematic reviews must be submitted in accordance with the PRISMA statement on reporting systematic reviews and meta-analyses (http://www.prisma-statement.org).
- For guidelines on editorial style, please consult the APA Publication Manual published by the American Psychological Association.

References and citations

APA style should be used. All journal titles to be given in full and provide DOI numbers where possible for journal articles.

Appendix 2: Study Protocol

Systematic Review Protocol
Katie Toole

Research Question for literature review:

Is insecure attachment related to the incidence of NSSI in adults?

Introduction (from scoping search)

- Glazebrook, Townsend and Sayal (2015) – "those with insecure maternal **attachment** and insecure peer **attachment** were more likely to have repeated **self-harm".**

- Glazebrook, Townsend and Sayal (2016) – "Insecure **attachment** is associated with **self-harm** in young people. Higher quality of **attachment** was associated with greater reliance on problem-focused (adaptive) coping, which in turn was associated with a decreased risk of having **self**-harmed. Furthermore, poorer paternal **attachment** was associated with lower appraisal of problem-solving skills, which in turn was associated with an increased risk of having **self**-harmed. Individuals with insecure **attachment** may be more vulnerable to **self-harm** because they lack other more constructive coping strategies for relieving stress".

- Jose (2013) – "**self-harm** thoughts were common among insecurely attached individuals and **attachment** insecurities seem to exacerbate negative emotions. The findings suggest that assessment of **attachment** styles could help to identify individuals at risk of **self-harm".**

- Hallab & Covic (2010) – "Those who engaged in DSH had poorer quality of **attachment** to both parents but not peers, and higher levels of depression, anxiety and stress. The impact of the quality of **attachment** on DSH was found to be mediated by stress, which suggests that DSH may be a maladaptive coping mechanism. **Attachment** to father and peers was found to be more influential than **attachment** to mother".

- Smith (2006) – "DSH was found to be independently associated with an insecure **attachment** style and a lower perceived QOL".

Method

Search strategy
An initial scoping search was carried out to identify the availability, to trial search terms and to define the research question.

For the review the following databases will be used: Psychinfo, Medline, Web of Science,

Key search terms to be used:

- attachment AND Self-Harm OR Self-Injury OR Non-Suicidal Self-Injury

The number of results from each search will be recorded and then exported to Refworks. All duplicates will be deleted. The references of all relevant articles will be reviewed to identify any

additional articles that may be relevant. For the remaining results, the titles and abstracts will be screened for relevance.

Screening and selection
The titles and abstracts identified from the initial screening will be examined against the following inclusion and exclusion criteria:

	Inclusion Criteria	**Exclusion Criteria**
Population	Adults (mean age >18), individuals who have self-injured	Children/adolescents (mean age <18), individuals who have never self-injured Suicidal behaviour / intent
Interventions	Attachment assessment (questionnaires)	No measures used
Comparator	N/A	N/A
Outcomes	Attachment quality/style, incidence of self-injury.	No styles identified
Study Design	Quantitative Research, cross-sectional or longitudinal	Qualitative Research
Language	English version available	Non-English
Format	Academic Journal Papers	Academic Reviews, Book Chapters, Dissertations

Studies that do not meet the inclusion criteria will not be included in the review. For the remaining studies the full papers will be located and will be further screened using the inclusion/exclusion criteria and the assessed for quality.

Quality Assessment
QATSSD – Sirriyeah et al., (2011)

Study Characteristics
A data summary table will be created in excel to record the characteristics for all remaining studies, for example:

Study Name	Authors / Date	Design	Population	Questionnaires / Measures	Significance Findings	Limitations

Write-up
The results will be written up to provide a narrative summary of the findings, using PRISMA guidelines.

Publication
The aim is to submit the review for publication in the *'Psychology and Psychotherapy: Theory, Research and Practice' journal.* The word limit for this journal is 6,000 words.

Appendix 3: Screening Tool

Screening Tool – inter-rater reliability (10%)

Study question: ***Is insecure attachment related to the incidence of self-harm?***

	Inclusion	**Exclusion**
P	Adults (18+), individuals who have self-injured	Children/adolescents (<18), individuals who have never self-injured
I	Attachment assessment (questionnaires)	No measures used
C	N/A	N/A
O	Attachment quality/style, incidence of self-injury.	No attachment styles identified
Design	Quantitative Research, cross-sectional or longitudinal	Qualitative Research

Study ID / Author(s) / Date	*e.g. ID001 Alpha & Delta (2009)*								
Are participants 18 or older? (Y/N)	*Y*								
Have participants self-injured? (Y/N)	*N*								
Was an attachment measure used? (Y/N)	*Y*								
Were attachment styles identified? (Y/N)	*Y*								
Is the data quantitative? (Y/N)	*Y*								
Include or exclude? (I/E)	*E*								

Appendix 4: Quality Assessment Tool

Quality Assessment – inter-rater reliability (10%)

(See: scoring guidance notes)

QATSDD Criteria *(Sirriyeh et al, 2011)*	**1. Bedi et al., 2014**	**2. Braga et al., 2014**	**3. Gilbert et al., 2009**	**4. Gratz et al., 2002**	**5. Kimball et al., 2007**	**6. Noma et al., 2015**	**7. Stepp et al., 2008**	**8. Tatnell, et al., 2018**
Explicit theoretical framework								
Statement of aims/objectives in main body of report								
Clear description of research setting								
Evidence of sample size considered in terms of analysis								
Representative sample of target group of a reasonable size								
Description of procedure for data collection								
Rationale for choice of data collection tool(s)								
Detailed recruitment data								
Statistical assessment of reliability and validity of measurement tool(s) (Quantitative only)								
Fit between stated research question and method of data collection (Quantitative only)								
Fit between research question and method of analysis								
Good justification for analytic method selected								
Evidence of user involvement in design								
Strengths and limitations critically discussed								

QATSDD Scoring guidance

Appendix 5: Author guidelines for Journal of *'Suicide & Life Threatening Behavior'*

Author Guidelines

Submissions

As of December 1, 2010 all manuscript submissions to Suicide and Life-Threatening Behavior can be made online via Manuscript Central, the web-based submission, tracking and peer review system.

Suicide and Life-Threatening Behavior is devoted to emergent theoretical, scientific, clinical, and public health approaches related to violent, self-destructive, and life-threatening behaviors. It is multidisciplinary and concerned with a broad range of related topics including, but not limited to, suicide, suicide prevention, death, accidents, biology of suicide, epidemiology, crisis intervention, postvention with survivors, nomenclature, standards of care, clinical training and interventions, violence.

Brief Summary. Manuscripts should be submitted with a 200-word abstract. The entire manuscript, including references, quotations, text, and tables, and be double-spaced. American Psychological Association (APA) standard style should be used. Manuscript length, except under unusual circumstances, should not be over 20 double-spaced pages, and, ordinarily, should be shorter.

Original Contributions. Authors should only submit manuscripts that have not been published elsewhere, and are not under review by another publication. Cover Letter. With your submission include a cover letter designating one author as correspondent for the review process, and provide a complete address, including phone and fax. In this letter please attest that neither the manuscript nor any other substantially similar paper has been published, except as described in the letter. The corresponding author should also attest that in the case of several authors, each one has studied the manuscript in the form submitted, agreed to be cited as a coauthor, and has accepted the order of authorship. If author affiliations are given with regard to academic, hospital, or institutional affiliations, it is the author[s] responsibility to obtain any required permissions from the proper authorities to utilize such affiliations.

Editing. Manuscripts will be copyedited, and page proofs will be sent to the authors for review. Authors are responsible for all statements made in their work. Manuscripts should not only be well written in the sense of organization and clarity, but should be explained in a manner that is interesting and engaging to readers with a wide range of backgrounds. All manuscripts should begin with an abstract of the paper.

Manuscript Preparation. Your paper should be double spaced and submitted in Microsoft Word. On the title page list the full names, affiliations, and professional degrees of all the authors. Abbreviations should not be used in the title or abstract, and should be very limited in the text.

Abstracts. An abstract of up to 200 words must include the following sections and headings: Objective: a brief statement of the purpose of the study; Method: a summary of study participants (sample size, age, gender, ethnicity), and descriptions of the study design and procedures; Results: a summary of the primary findings; Conclusions: a statement regarding the implications of the findings. Below the abstract, supply up to five keywords or short phrases.

References. Reference lists should be prepared according to the style illustrated in the articles in this issue of the journal. This approach minimizes punctuation in the specific references, but utilizes the author and date in the text of the articles, to provide maximum information quickly to the reader.

Appendix 6: Measures

Demographic Questions

What is your date of birth?

Gender – are you: Male / Female

Where are you currently studying:

What is your student status? UK Home student / EU Student / International Student

Approximately at what age did you first self-injure?

Approximately at what age did you stop self-injuring?

Which method of self-injury did you use most often?

Where are your self-injury scars location?

Where on your body do you have the most scars from previous self-injury?

In relation to the scars you have as a result of previous self-injury:

(scales from 1 to 10, 1 = no, as normal; 10 = yes, very different)

Have the scars been painful in the past few weeks?

Have the scars been itching in the past few weeks?

Are the scars a different colour to the colour of your normal skin?

Is the stiffness of the scars different from your normal skin at present?

Are the scars more irregular than your normal skin at present?

In relation to the scars you have as a result of previous self-injury:

(scale from 1 to 10, 1 = as normal skin; 10 = very different)

What is your overall opinion of the scars compared to normal skin?

Experience of Shame Scale (ESS)

Everybody at times can feel embarrassed, self-conscious or ashamed. These questions are about such feelings if they have occurred **at any time in the past year.** There are no 'right or 'wrong answers. Please indicate the response which applies to you with a tick.

	not at all	a little	moderately	very much
1. Have you felt ashamed of any of your personal habits?	(1)	(2)	(3)	(4)
2. Have you worried about what other people think of any of your personal habits?	( )	( )	( )	( )
3. Have you tried to cover up or conceal any of your personal habits?	( )	( )	( )	( )
4. Have you felt ashamed of your manner with others?	( )	( )	( )	( )
5. Have you worried about what other people think of your manner with others?	( )	( )	( )	( )
6. Have you avoided people because of your manner?	( )	( )	( )	( )
7. Have you felt ashamed of the sort of person you are?	( )	( )	( )	( )
8. Have you worried about what other people think of the sort of person you are?	( )	( )	( )	( )
9. Have you tried to conceal from others the sort of person you are?	( )	( )	( )	( )
10.Have you felt ashamed of your ability to do things?	( )	( )	( )	( )
11.Have you worried about what other people think of your ability to do things?	( )	( )	( )	( )
12.Have you avoided people because of your inability to do things?	( )	( )	( )	( )

13.Do you feel ashamed when you do something wrong?	( )	( )	( )	( )
14.Have you worried about what other people think of you when you do something wrong?	( )	( )	( )	( )
15.Have you tried to cover up or conceal things you felt ashamed of having done?	( )	( )	( )	( )
16.Have you felt ashamed when you said something stupid?	( )	( )	( )	( )
17.Have you worried about what other people think of you when you said something stupid?	( )	( )	( )	( )
18.Have you avoided contact with anyone who knew you said something stupid?	( )	( )	( )	( )
*19.Have you felt ashamed when you failed in a competitive situation?	( )	( )	( )	( )
*20.Have you worried about what other people think of you when you failed in a competitive situation?	( )	( )	( )	( )
21.Have you avoided people who have seen you fail?	( )	( )	( )	( )
22.Have you felt ashamed of your body or any part of it?	( )	( )	( )	( )
23.Have you worried about what other people think of your appearance?	( )	( )	( )	( )
24.Have you avoided looking at yourself in the mirror?	( )	( )	( )	( )
25.Have you wanted to hide or conceal your body or any part of it?	( )	( )	( )	( )

FORMS of self-criticism

FORMS of self-criticism

FUNCTIONS of self-criticism

Work and Social Adjustment Scale

The BBC Wellbeing Scale

PHQ-9

GAD-7

Appendix 7: Ethical Approval

From: Ethics
Sent: 14 January 2016 10:48
To: O'Carroll, Pierce; Eames, Catrin; Toole, Katie
Subject: RE: RETH000961: Ethics application: The role of shame, self-criticism and fear of compassion on the psychosocial adjustment of individuals who have scars as a result of previous self-injury.

Dear all,

I am pleased to inform you that your application for research ethics approval has been approved. Details and conditions of the approval can be found below.

Reference:	RETH000961
Review type:	Full committee review
Supervisor:	Dr Pierce O'Carroll
Student Investigator:	Miss Katie Toole
Co-Investigator:	Dr Catrin Eames
Department:	Psychological Sciences
Title:	The role of shame, self-criticism and fear of compassion on the psychosocial adjustment of individuals who have scars as a result of previous self-injury.
Lead Reviewer:	Dr Mark O'Brien
Date of initial review:	17/11/2015
Date of Approval:	14/01/2016

The application was APPROVED subject to the following conditions:

Conditions

All serious adverse events must be reported to the Subcommittee within 24 hours of their occurrence, via the Research Integrity and Governance Officer (ethics@liv.ac.uk).

This approval applies for the duration of the research. If it is proposed to extend the duration of the study as specified in the application form, the Subcommittee should be notified. If it is proposed to make an amendment to the research, you should notify the Subcommittee by following the Notice of

Amendment procedure. If the named PI / Supervisor leaves the employment of the University during the course of this approval, the approval will lapse. Therefore please contact the Research Integrity and Governance Officer at ethics@liverpool.ac.uk in order to notify them of a change in PI / Supervisor.

Kind regards,

Matthew

Research Ethics and Integrity

Research Support Office

University of Liverpool

Waterhouse Building (2nd Floor, Block C)

3 Brownlow Street

Liverpool

L69 3GL

Email: ethics@liverpool.ac.uk

Telephone: 0151 794 8290

Website: Research Integrity & Ethics

ⓘ Please ensure you are familiar with the Research Integrity Concordat

Appendix 8: Study Advertisement

Research study: "Thoughts and feelings about scars from previous self-injury"

Participants needed!

We are looking for individuals to take part in a research study looking at thoughts and feelings about scars from previous self-injury.

We invite you to take part if you are:

- **Over the age of 18**
- **Have scars as a result of previous self-injury**
- **Have not self-injured in the past 12 months**

If you would like to participate or want to know more about this study please click on the link below (or copy and paste it into your web browser):

https://livpsych.az1.qualtrics.com/SE/?SID=SV_9tX3FpQUiINtaFD

(Alternatively, email us at katie.toole@liverpool.ac.uk)

Participation is voluntary and you can withdraw at any time.

At the end of the study you will be given the opportunity to be entered into a prize draw to thank you for your time – there are 5 prizes to be won:

£50 shopping voucher
4 x £25 shopping vouchers

Appendix 9: Participant Information Sheet

Participant Information Sheet

Thoughts and feelings about scars from previous self-injury.

Hello. My name is Katie Toole, I am a Trainee Clinical Psychologist from the University of Liverpool. I have set up this online study to look at how people think and feel about the scars they have from previous self-injury. The overall aim is to understand how individuals continue to be affected by these experiences and identify where further support and help might be needed.

You are being invited to participate in this study, but before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully before making your decision. Thank you!

1. **What is the purpose of the study?**

   This study is looking for participants who have scars as a result of previous self-injury. We want to explore how individuals find themselves thinking and feeling about these scars now.

2. **Why have I been invited to take part?**

   You have been invited by the university advertisements because you identify yourself as having some visible scars as a result of previous self-injury. Also you identify yourself as someone who has not used self-injury for at least 12 months.

3. Do I have to take part?

Participation in this study is completely voluntary and you are free to withdraw at any time.

4. What will happen if I take part?

If you do decide to take part, you will be invited to complete a consent form and will then be asked some brief screening questions to confirm your suitability for the study. If you're answers indicate that you are needed for the study, you will then continue to the full study and be asked to complete a series of questionnaires which are designed to look at your current thinking and emotions about your scars. You will also be asked to tell us some more general information about the scars you have. Completing these questionnaires should take no more than 45 minutes.

Once you have completed the study, to thank you for your time you will be invited to leave your email address so that you can be entered into a prize draw for some shopping vouchers. There are 5 voucher prizes to be won (1 x £50 shopping voucher and 4 x £25 shopping vouchers). Leaving your email address for this prize draw is optional and your email address will be kept separate from your questionnaire data. You will then be redirected to a debrief sheet thanking you for your time and providing contact details of support services if needed. This will be the end of your participation.

If your responses mean you are not needed for the study, or if you decide to exit the study at any time, you will also be redirected to the debrief sheet without needing to complete the questionnaires and this will be the end of your participation.

5. Are there any risks in taking part?

As this study is investigating self-injury, some people may find this topic and some of the questions asked difficult and upsetting. If you feel this to be the case you can discontinue from the study at any time. At the time of withdrawal or at the end of the study, you will be provided with a debrief sheet detailing the specific issues explored in the study, as well as information about sources of support for students within the university that you can contact if you wish to seek support.

6. Are there any benefits in taking part?

The aim of this study is to further our understanding about the needs of individuals who have a history of self-injury and scars, so if you do decide to take part it is hoped that your contribution will provide important information to inform future development of appropriate support services.

7. What if I am unhappy or if there is a problem?

If you have concerns with the study please let us know by contacting Catrin Eames via email (catrin.eames@liverpool.ac.uk) or by telephone (0151 794 5530). If you believe your concerns have not been addressed or you have a complaint which you feel you cannot put to the research team you can contact the Research Governance Officer at ethics@liv.ac.uk. When contacting the Research Governance Officer, please provide details of the title (above) of the study, the researcher(s) involved, and the details of the concern or complaint you wish to make.

8. Will my participation be kept confidential?

All of your responses from the online study will remain anonymous and confidential. The data will be saved securely so that only the researchers can access it. The data will only be used for the purpose of this study and the database will be stored securely for at least 10 years after the study.

If you do decide to submit your email address to enter into the prize draw at the end of the study, your email address will not be linked to the data you submit and will be kept separate on a password protected database. This will be deleted once all the prizes have been given out.

9. What will happen to the results of the study?

This research is being carried out as part of the Doctorate in Clinical Psychology course and will be written up as a thesis project. The study's results will also be sent for publication in a journal and therefore will be accessible to the general public. However, as your responses will be anonymous there will be no way of identifying that you have participated or how you answered the questionnaires. If you would like a copy of the final report please make email Katie.toole@liverpool.ac.uk.

10. What will happen if I want to stop taking part?

Even if you have started the study and change your mind about participating, you can withdraw your participation at any time. Your responses up until you exit the study will be automatically stored. Once data is stored, either by exiting early or after completion of the study, there will be no way of withdrawing your data as your results will be anonymous and there will be no way of identifying that they are yours.

11. Who can I contact if I have further questions?

If you have any further questions about this study please contact:

Student Investigator:

Katie Toole

University of Liverpool

Doctorate in Clinical Psychology Programme

Department of Clinical Psychology

The Whelan Building, Brownlow Hill

Liverpool, L69 3GB

Tel – 0151 794 5530

Katie.Toole@liverpool.ac.uk

Thank you for your time!

Appendix 10: Consent Form

UNIVERSITY OF LIVERPOOL

PARTICIPANT CONSENT FORM

Title of Research Project: Thoughts and feelings about scars from previous self-injury.

Researcher(s): Katie Toole (Trainee Clinical Psychologist), Dr Pierce O'Carroll (Clinical Psychologist) and Dr Catrin Eames (Research Tutor).

Please tick box

1. I confirm that I have read and have understood the information sheet dated 09/10/2015 for the above study. ☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time during the study. ☐
3. I understand and agree that once I submit my data it will become anonymised and I will therefore not be able to withdraw my data as it will not be possible to identify individual responses. ☐
4. I understand that I must not take part if I have used self-injury in the past 12 months. ☐
5. I agree to take part in the above study. ☐

Principal Investigator:
Dr Pierce O'Carroll
University of Liverpool
Doctorate in Clinical Psychology Programme
Department of Clinical Psychology
The Whelan Building, Brownlow Hill
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Student Researcher:
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University of Liverpool
Doctorate in Clinical Psychology Programme
Department of Clinical Psychology
The Whelan Building, Brownlow Hill
Liverpool, L69 3GB
Tel – 0151 794 5530
Katie.Toole@liverpool.ac.uk

Appendix 11: Debrief Sheet

Participant Debrief Sheet 1

Thoughts and feelings about scars from previous self-injury

Thank you for taking part, your participation is greatly appreciated. We have set up this study to look at how people think and feel about their scars from previous self-injury. The overall aim is to understand how individuals continue to be affected by these experiences and whether further support and help might be needed.

Sometimes people may find this subject matter and the questions asked difficult. If answering any of the questions has led you to feeling upset or distressed in any way and you would like to speak with someone about your thoughts, please contact one of the following sources of support within your university:

University of Liverpool	Student Counselling Service counserv@liverpool.ac.uk 0151 794 3304
University of Lancaster	Counselling & Mental Health Service counselling@lancaster.ac.uk 01524 592690
Liverpool John Moores	Student Wellbeing & Mental Health Service studentwellbeing@ljmu.ac.uk 0151 231 3579

Liverpool Hope Mental Health & Wellbeing Service

sdw@hope.ac.uk

0151 291 3427

You may also find the following organisations and websites useful:

Samaritans:	www.samaritans.org	08457 90 90 90
Mind:	www.mind.org.uk	0300 123 3393
Self Harm UK:	www.selfharm.co.uk	

Alternatively, you could speak to your GP or contact the study's principle investigator, Pierce O'Carroll at ocarroll@liverpool.ac.uk or 0151 794 5530.

If you have any further questions or concerns about your participation, or you would like to know the results of the study once is it is completed please contact the researcher directly at katie.toole@liverpool.ac.uk.

Lastly, if you would like to be entered in to the prize draw to win one of the following prizes

1 x £50 shopping voucher

4 x £25 shopping vouchers

Please add your email address in the box below:

Thank you once again!

Appendix 12: Table 7
Correlations between independent variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Age	1.000																		
2. Gen	-.247*	1.000																	
3. Age Start	.166	-.209	1.000																
4. Age Stop	.538**	-.046	.140	1.000															
5. YRS Length	.324**	.059	-.495**	.674**	1.000														
6. YRS Since	.538**	-.299**	.184	-.278**	-.284**	1.000													
7. Loc Scars	-.027	-.003	-.175	-.181	-.036	.145	1.000												
8. Scar Severe	.102	.130	.106	.229*	.150	-.082	-.075	1.000											
9. Cha Shame	-.175	.057	-.168	.055	.165	-.269**	-.175	.219*	1.000										
10. Be Shame	-.185	.203	-.213*	.024	.139	-.222*	-.070	.182	.786**	1.000									
11. Bo Shame	.005	.116	-.014	.119	.168	-.190	-.033	.337**	.544**	.494**	1.000								
12. SC Inad	-.138	.190	-.244*	.125	.274**	-.342**	-.184	.207*	.829**	.775**	.564**	1.000							
13. SC Reass	.137	-.136	.041	-.189	-.234*	.390**	.210*	-.208*	-.590**	-.498**	-.447**	-.662**	1.000						
14. SC Hated	-.076	.139	-.237*	.133	.341**	-.281**	-.190	.197	.784**	.675**	.572**	.842**	-.640**	1.000					
15. SC Persec	-.189	.046	-.297**	.144	.364**	-.351**	-.105	.154	.718**	.642**	.441**	.793**	-.565**	.806**	1.000				
16. SC Correc	-.064	-.070	-.246*	-.114	.046	-.072	-.124	.034	.463**	.358**	.169	.463**	-.196	.428**	.447**	1.000			
17. FC Others	-.176	-.054	-.220*	-.116	.089	-.157	.132	-.046	.195	.196	.156	.254*	-.154	.266*	.430**	.352**	1.000		
18. FC Respo	-.183	.106	-.123	.081	.186	-.351**	-.119	.089	.622**	.578**	.462**	.664**	-.598**	.616**	.698**	.362**	.545**	1.000	
19. FC Self	-.111	.138	-.230*	.174	.311**	-.391**	-.125	.152	.668**	.599**	.493**	.710**	-.675**	.716**	.716**	.571**	.422**	.786**	1.000

Note. N = 91. *p < .05, **p < .01.
1 = Age, 2 = Gender, 3 = Age Start SI, 4 = Age Stop SI, 5 = Length of SI (yrs), 6 = Time Since SI (yrs), 7 = Location of most scars, 8 = Scar Severity (overall opinion), 9 = Characterological Shame, 10 = Behavioural Shame, 11 = Bodily Shame, 12 = Self-Criticism (Forms) Inadequate Self, 13 = Self-Criticism (Forms) Reassure Self, 14 = Self-Criticism (Forms) Hated Self, 15 = Self-Criticism (Functions) Self-Persecution, 16 = Self-Criticism (Functions) Self-Correction , 17 = Fear of Compassion for Others, 18 = Fear of Compassion from Others, 19 = Fear of Compassion towards Self