Interpersonal processes and emotions in non-suicidal self-injury: shame, guilt and help-seeking

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Table of Contents

Page

Introductory Chapter: Thesis Overview……..…….....1

References.....3

Chapter 1: Literature Review.....5

Abstract…….....…….....6

Introduction…….....8

Method.....12

Results.....15

Discussion.....35

References.....40

Chapter 2: Empirical Paper.....51

Abstract…….....……...52

Introduction…….....54

Method.....59

Results.....65

Discussion.....77

References.....83

List of Tables

Chapter 1: Systematic Review

Table 1: Characteristics of Included Studies.....19

Table 2: Risk of Bias Assessment.....23

Table 3: Association Between Shame/Guilt and NSSI Across Studies.....25

Chapter 2: Empirical Paper

Table 4: Sample characteristics (n=178).....67

Table 5: Means and Standard Deviations of Baseline Questionnaire Measures...69

Table 6: Linear Regression Analysis Predicting Help-Seeking Intentions for Formal and Informal Sources.....72

Table 7: Logistic Regression Analyses Predicting Help-Seeking Behaviour at Follow Up for Formal and Informal Sources.....75

List of Figures

Chapter 1: Literature Review

Figure 1: Flow diagram of included studies.....18

Chapter 2: Empirical Paper

Figure 2: Flow diagram of participant recruitment and retention.....66

List of Appendices

Appendix A: Author Guidelines for the British Journal of Clinical Psychology……...92

Appendix B: Pre-Registered Systematic Review Protocol.....95

Appendix C: Risk of Bias Assessment Tool.....97

Appendix D: Risk of Bias Assessment with Comments to Guide Decisions.....100

Appendix E: Study Measures (Removed for copyright reasons).....109

Appendix F: Study Advertisement Poster.....116

Appendix G: Research Review Committee Approval Letter.....117

Appendix H: Research Ethics Committee Approval Letter.....118

Appendix I: Sponsorship Approval Letter.....120

Appendix J: Participant Information Sheet – Baseline.....121

Appendix K: Participant Information Sheet – Follow-Up.....125

Appendix L: Participant Consent Form.....129

Appendix M: Normality Plots of Regression Standardized Residuals.....130

Appendix N: Regression Analysis Predicting Help-Seeking Intentions for

Informal Sources with Residual Cases Removed.....132

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Introductory Chapter: Thesis Overview

The overarching aim of the current thesis was to examine the role of psychological factors in the experience of non-suicidal self-injury (NSSI). Specifically, this included consideration of the factors associated with NSSI, namely, shame and guilt, as well as an examination of those factors affecting help-seeking amongst individuals who have NSSI. This brief prefatory chapter presents an introduction to the topic area of NSSI and its relevance to clinical psychology. Following this, an overview of the thesis chapters is provided.

NSSI is a growing problem worldwide (Geulayov et al., 2016) and is associated with significant emotional and economic costs (Arbuthnott & Lewis, 2015; Tsiachristas et al., 2017). The term NSSI refers to an act of deliberate destruction of one's own body tissue, in the absence in suicidal intentions (Nock, Joiner, Gordon, Lloyd-Richardson & Prinstein, 2006), and is used to describe a range of behaviours, such as cutting or carving skin, self-battery, and burning (Barrocas, Hankin, Young & Abela, 2012). Whilst NSSI constitutes a clinical problem in its own right (Wilkinson & Goodyer, 2011), it is also associated with suicidal thinking and behaviour, with the two commonly co-occurring (Andover, Morris, Wren & Bruzzese, 2012). Consequently, there is a need to further understand the psychological processes that underpin NSSI, to enable the development of effective approaches to prevention and treatment.

Theoretical accounts suggest a variety of pathways by which NSSI may emerge (Nock, 2009). A number of these accounts highlight the potential role of aversive emotional experiences as precipitants to NSSI (Chapman, Gratz & Brown, 2006; Nock, 2009). This is supported by empirical investigations of the functions of NSSI. Findings suggest that escape from negative or unwanted emotions is the most frequently cited reason for engaging in NSSI

(Klonsky, 2011; Taylor et al., 2018). However, less is known about the role of specific emotional states, in particular, self-directed emotions such as shame and guilt. Chapter one therefore presents a systematic review of the literature regarding the associations between shame, guilt, and NSSI.

Following this, chapter two presents an empirical investigation of the factors that underpin help-seeking amongst individuals who have NSSI. Despite its links with psychological distress, a significant proportion of individuals with NSSI do not seek or receive any help (Rowe et al., 2014). A number of interventions are emerging for NSSI (Turner, Austin & Chapman, 2014). However, for these to be effective, individuals must first seek help. Chapter two therefore sought to investigate the factors that predict help-seeking amongst individuals with NSSI. In extension of the available literature, this study used a longitudinal design to shed light on predictors of help-seeking over time.

It is worth noting that the empirical study described herein was conducted as part of a wider project with another trainee clinical psychologist. Consequently, the study documentation (e.g., ethical approval documents) included in the appendices relate to the wider study, of which the empirical paper presented in this thesis is a part. It is anticipated that both the review and empirical chapters of this thesis will be submitted to the British Journal of Clinical Psychology. Consequently, chapters have been prepared in line with the relevant author guidelines (Appendix A).

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Chapter 1: Literature Review

An examination of the relationship between shame, guilt and non-suicidal self-injury: A systematic review [1]

[1] Prepared according to author guidelines for the British Journal of Clinical Psychology (5,000 word limit excluding abstract, tables, figures, and references)

Abstract

Objectives: Non-suicidal self-injury (NSSI) is a public health concern that is associated with significant psychological distress. Theoretical approaches highlight the role of aversive emotions, with literature suggesting that shame and guilt may be associated with NSSI. This review therefore sought to provide a systematic review of the relationship between shame, guilt and NSSI.

Methods: A systematic search of electronic databases (PsycINFO; Medline; CINAHL Plus; Web of Science and ProQuest) was undertaken using the following search terms related to (i) NSSI: *NSSI* OR *suicid** OR *self-harm* OR *self-injur** OR *self-mutilation* OR *overdose* OR *DSH* OR *parasuicid**; and (ii) shame or guilt: *ashamed* OR *shame** OR *guilt** OR *self-blame* OR *self-disgust*. Risk of bias assessments were undertaken for included papers and results were narratively synthesised.

Results: Seventeen studies were identified for inclusion. Of these, sixteen studies examined shame and four examined guilt. A number of methodological issues were identified within the included studies, with a paucity of longitudinal designs and lack of justification for sample sizes evident. Nonetheless, a positive association between shame and NSSI was observed and this was not readily explained by confounding factors. There was no consistent evidence of an association between guilt and NSSI.

Conclusions: Results of this review indicate a positive association between shame and NSSI. However, the direction of this relationship is not yet established. The available evidence does not provide support for a positive association of guilt and NSSI. Clinically, consideration should be given to the role of shame amongst individuals who present with NSSI.

Practitioner Points

- Shame appears to show a positive association with non-suicidal self-injury (NSSI), and this association remains after controlling for confounding factors.
- There is a lack of evidence regarding the relationship between guilt and NSSI, with the available studies providing inconsistent findings.
- Shame should be considered as part of psychological assessments with individuals who have NSSI.
- Several methodological issues were identified in the reviewed studies, including small samples and lack of sample size justification. Results should be interpreted in light of these issues.
- Reviewed studies were limited by cross-sectional designs and so the direction of relationships cannot be established.

Keywords: shame, guilt, non-suicidal self-injury (NSSI), systematic review

Introduction

Non-suicidal self-injury (NSSI) poses a significant public health concern worldwide (Garcia-Nieto, Carballo, Díaz de Neira Hernando, de León-Martinez & Baca-Garcia, 2015; Glenn & Klonsky, 2013). Defined as the deliberate destruction of one's own body tissue, in the absence of suicidal intent (Nock, 2010), the term NSSI is commonly applied to behaviours such as cutting, burning, and self-battery (Lloyd-Richardson, Perrine, Dierker & Kelley, 2007). Amongst adults, an average lifetime prevalence rate for NSSI of 5.9% is estimated (Klonsky, 2011). This is elevated further amongst adolescents for whom lifetime rates of 12-31% have been recorded (Muehlenkamp, Claes, Havertape & Plener, 2012). Despite being distinguished from suicidal behaviour, individuals who engage in NSSI are at increased risk of suicidal ideation and attempts (Coppersmith, Nada-Raja & Beautrais, 2017; Nock, Joiner, Gordon, Lloyd-Richardson & Prinstein, 2006). Specifically, the odds of suicide attempts is increased four-fold amongst individuals who have NSSI (Ribeiro et al., 2016). Hence, interventions that seek to address NSSI may positively impact upon the risk of future suicidal behaviour. Moreover, the economic and emotional costs of NSSI, at both an individual and systemic level, are well documented (Arbuthnott & Lewis, 2015; Kinchin, Doran, Hall & Meurk, 2017). In England alone, hospital treatment costs of £162 million per year have been estimated (Tsiachristas et al., 2017). Taken together, NSSI should be considered an important clinical outcome in its own right.

Associations between NSSI and psychological distress are well documented (Richmond, Hasking & Meaney, 2017). Specifically, correlations with depressive and anxious symptomatology are reported across studies (Garisch & Wilson, 2015), alongside findings of poor self-esteem (Forrester, Slater, Jomar, Mitzman & Taylor, 2017), increased hopelessness (Fox et al., 2015), and difficulties in affect regulation (Muehlenkamp, Kerr, Bradley, & Larsen, 2010). Studies concerning the function of NSSI highlight the intrapersonal nature of this behaviour, with escape from negative or unwanted emotions identified as the most commonly cited function of

NSSI, followed by a desire to self-punish (Klonsky, 2011; Taylor et al., 2018). Interpersonal functions, such as eliciting help or support, have also been reported, albeit to a lesser degree (Taylor et al., 2018). Nonetheless, a significant proportion of individuals do not seek help in relation to NSSI (Rowe et al., 2014). As a result, there is a need to further understand the emotional experience of individuals who engage in NSSI, in particular, focusing upon the role of aversive, self-directed emotions. The current review focuses upon two such emotional states, those of shame and guilt.

Shame and guilt have been described as self-conscious, 'moral' emotions, which arise in response to an evaluation of the self (Tangney, Stuewig & Mashek, 2007). Although routinely considered in tandem, shame and guilt are thought to represent distinct, yet overlapping, emotional experiences (Tangney et al., 2007). Current thinking regarding this distinction points to a differential focus on the self versus one's behaviour. At its core, shame can be seen as a cognitive affective construct, comprising negative judgements of the self (Chou et al., 2018). These judgements are global, undesirable, and characterised by an evaluation of the self as inherently flawed, inadequate or bad (Gilbert & Proctor, 2006). Contrastingly, in guilt the focus is on behaviour, and the negative evaluation of this. Hence, the object of focus is something done by the individual that is perceived as bad or wrong, rather than the individual themselves. As a result, the phenomenological experiences of guilt and shame are said to diverge significantly (Lewis, 1971).

Traditionally, the conceptualisation of shame has centred upon the individual's perception of themselves, referred to as 'internal shame'. However, developments in the literature have suggested a second facet of shame, the focus of which is upon how we are experienced in the minds of others. This is referred to as 'external' shame, and refers to the individual's perception of being negatively judged by others (Matos, Pinto-Gouveia, Gilbert, Duarte & Figueiredo, 2015). In addition, shame may be thought to arise in relation to different aspects of the self, such as one's

character, behaviour, or body (Andrews, Qian & Valentine, 2002). As a result, a range of psychometric measures have been developed and used to assess these various components of shame. No such distinctions have been made in relation to guilt thus far. Furthermore, whilst it is acknowledged that shame and guilt may occur in relation to specific incidents or events, it is now also recognised that some individuals have a greater tendency, or proneness, to experience feelings of shame or guilt across a range of situations (Tangney, 1990).

Both shame and guilt may be experienced as unwanted or aversive emotional states. However, literature suggests that shame may be particularly pernicious due to its close ties with an individual's sense of self (Lewis, 1971). Indeed, shame is closely linked with various indices of psychological distress, including poor self-esteem, depression, and hostility (Gilbert, 2000; Kim, Thibodeau & Jorgensen, 2011; Velotti, Garofalo, Bottazi & Caretti, 2017). Moreover, results of a meta-analysis suggested that depressive symptoms were more strongly associated with shame than guilt (Kim et al., 2011). That said, guilt too may be experienced as painful, and may give rise to feelings of regret or remorse (Tangney, Miller, Flicker & Barlow, 1996). Whilst guilt may lead an individual to engage in reparative action to address the perceived problematic behaviour (Pivetti, Camodeca & Rapino, 2016), responses to shame are typically less adaptive and include rumination (Cheung, Gilbert & Iron, 2004), submission (Gilbert, Pehl & Allan, 1994), avoidance (Schoenleber & Berenbaum, 2012), and attempts to conceal oneself or ones perceived faults (Tangney et al., 1996). In light of the available literature, it is hypothesised that shame will show a stronger relationship with NSSI than guilt.

To date, a number of theories regarding the onset and maintenance of NSSI have been proposed and may shed light upon on the hypothesised links with shame and guilt. The Experiential Avoidance Model (Chapman, Gratz & Brown, 2006) asserts that NSSI is predominantly maintained by negative reinforcement, characterised by escape from unpleasant internal states. It is plausible therefore, that NSSI may serve an escape function, by which the

experience of aversive emotions of shame and guilt are avoided. An alternative theory, the self-punishment hypothesis, proposes that engagement in NSSI arises out of beliefs about the self as deserving of punishment (Glassman, Weierich, Hooley, Deliberto & Nock, 2007; Nock, 2009). Consequently, it may be that NSSI is used as a form of self-punishment in response to evaluation of the self as bad, in the case of shame, or of having done something bad or wrong, as is the case for guilt. In their model of shame regulation, Schoenleber and Berenbaum (2012) propose that individuals may engage in NSSI as a means of managing feelings of shame. They argue that the functions of experiential avoidance and self-punishment are not mutually exclusive, and that NSSI may serve both of these functions simultaneously (Schoenleber & Berenbaum, 2012). Similarly, Nock's (2009) integrated theoretical model of NSSI draws upon both of these hypotheses in consideration of the various pathways to NSSI (Nock, 2009). Importantly, engagement in NSSI may be associated with different functions across individuals, with multiple functions endorsed by some (Klonsky, 2009).

The current research aims to provide a systematic review of the available literature pertaining to NSSI and its relationships with shame and guilt. In particular, the review will seek to establish the presence, and if applicable, the direction and magnitude of these relationships, through means of a narrative synthesis.

Method

Protocol registration

A systematic review protocol was developed and pre-registered online with PROSPERO (CRDCRD42017056165) (Appendix B). Within the current study, a deviation from the registered protocol was required. Specifically, whilst the protocol refers broadly to 'self-harm', this review will focus solely upon NSSI and its relationship with shame and guilt. This departure from the protocol was required due to the overly large number of studies identified when using a broader definition of 'self-harm', to ensure feasibility of the review.

Search strategy

First, scoping searches were undertaken to aid the identification of relevant search terms. Following this, four databases were searched (PsycINFO; Medline; CINAHL Plus; Web of Science) to identify relevant published studies (from earliest records until March 2017). The thesis and dissertation database ProQuest was also searched to identify relevant studies in the grey literature. The following search terms were used related to (a) NSSI: *NSSI* OR *suicid** OR *self-harm* OR *self-injur** OR *self-mutilation* OR *overdose* OR *DSH* OR *parasuicid**; and (b) shame or guilt: *ashamed* OR *shame** OR *guilt** OR *self-blame* OR *self-disgust*. Search terms for the two groups were combined using the Boolean operator "AND". First, titles and abstracts were screened independently by the first author (KS). Following this, the full texts of the remaining articles were read to determine eligibility for inclusion. This was carried out independently by the first author (KS) and another researcher (AN), with discrepancies addressed through discussion with a third author (PT). Following the identification of included studies, reference lists of these papers were hand searched and corresponding authors were emailed to identify any further potentially eligible studies.

An overly inclusive approach using multiple alternative terms was taken to identify relevant studies. For example, the terms "self-blame" and "self-disgust" were included as to account for the possibility that shame or guilt may have been referred to in these terms. A similar approach was taken for NSSI search terms due to the conceptual overlap present in the literature regarding suicidal and non-suicidal self-injurious behaviour. The extent to which the identified studies could be classified as measuring the concepts of interest was then determined during screening.

Inclusion and exclusion criteria

Studies included in the review were required to meet the following inclusion criteria; i) quantitative research studies using either a cross-sectional, correlational, case-control, or prospective study design, or intervention studies/trials where there is suitable baseline or follow-up data in the control arm, ii) comprising original research, iii) written in English, iv) measuring shame and/or guilt, and v) measuring NSSI. Studies using broader terms such as deliberate self-harm or self-injury were included only if they specified that behaviours were non-suicidal in intent. Where this was unclear or indicated suicidal intentions, i.e., suicide attempts, these studies were excluded. Studies that assessed shame or guilt using a single item measure were not included in the review. Furthermore, studies in which guilt was assessed solely as part of a depression or mania measure, such as the Beck Depression Inventory (BDI-II; Beck, Steer & Brown, 1996), were not included due to concerns that such measures may not provide a valid and accurate measure of the key constructs.

Risk of bias assessment

Studies included in the review were evaluated for risk of bias using an adapted version of the Agency for Healthcare Research and Quality (AHRQ; Williams, Plassman, Burke, Holsinger &

Benjamin, 2010) risk of bias tool (see Appendix C). The AHRQ has previously been adapted for use in systematic reviews of self-injurious behaviour and associated constructs (Hughes, Knowles, Dhingra, Nicholson & Taylor, 2018; Taylor, Hutton & Wood, 2015). The tool assesses risk of bias over eleven domains, including the validity of measures used, unbiased selection of participants, and appropriateness of analytic methods. Ratings of 'yes', 'no', 'partial' and 'cannot tell' were made by the first author (KS) for each domain. This allowed for comparisons to be made across included studies.

Data extraction

Data extraction was undertaken by the first author (KS) using a standard extraction form. For a proportion of studies (n=5) data was independently extracted by a second researcher (RC) to ensure consistency. Extracted data included study details (author, date, study location), study design information (type of design, number of groups, recruitment method), participant characteristics (target sample, age, gender), measures used (NSSI, shame, and guilt), and key findings (bivariate and multivariate).

Due to the considerable variability in measures of shame, with ten different measures used, high levels of heterogeneity were anticipated, thus limiting the reliability of meta-analytic methods. Therefore, a narrative synthesis of eligible studies was conducted.

Results

Search results

The search yielded a total of 3925 results, from which 17 publications were identified for inclusion in the review. Adapted from the Preferred Reporting Items for Systematic Reviews (PRISMA) flow chart, a flow diagram of the screening process from identification through to inclusion is presented in Figure 1 (Moher, Liberati, Tatzlaff & Altman, 2009).

Overview of included studies

The characteristics of included studies are presented in Table 1. Of the 17 included studies, 11 were conducted in the US, with the remaining studies also carried out in Western countries (UK, Canada, and Portugal). All but two studies comprised samples with a greater proportion of females than males, with two studies recruiting exclusively female samples (Schoenleber, 2013; Schoenleber, Berenbaum & Motl, 2014). Two studies conducted in forensic settings reported samples comprising solely of male participants (Mallindine, 2002; Todd, 2002). Regarding age, the majority of studies included younger samples, with 11 studies reporting a mean age of 25 years or below. Of these, two studies recruited school-aged children (Duggan, Heath & Hu, 2015; Xavier, Pinto-Gouveia, & Cunha et al., 2016a), with all other studies using adult samples. All but one study included individuals with and without NSSI, with the exception of Stanciu (2015) who recruited only individuals with a history of NSSI. Where studies recruited a discrete comparison or control sample, a description of the comparison group is provided separately[2]. Eight studies

[2] In Table 1, participant characteristics for a comparison group are presented for only one study (Mallindine, 2002). This was the only study to actively recruit a comparison group. Other studies where group comparisons were examined recruited from one target sample, and subsequently allocated participants to groups based on information relating to NSSI.

were reported in peer-reviewed journals, with a further nine identified as unpublished theses or dissertations.

Risk of bias

The results of the risk of bias assessment are presented in Table 2. Further information used to guide decisions regarding quality ratings are provided in Appendix D. Twelve of the included studies did not report a power calculation, resulting in a lack of clarity about whether the sample size provided sufficient power to detect an effect, if one were present. Three studies (Gandy, 2013; Pritchard, 2014; Todd, 2002) described a priori power calculations and subsequently included the recommended number of participants. A further two studies (Donhauser, 2007; Paulson, 2013) did not achieve the sample size suggested by the power calculation. Furthermore, whilst five studies used large sample sizes (n = 223-782), the remaining studies (k = 12) had samples of < 200. These studies may be at greater risk of Type II error, and results should therefore be interpreted with caution.

Seven studies (Brown, Williams & Collins, 2007; Flett, Goldstein, Hewitt & Wekerle, 2012; Schoenleber, 2013; Schoenleber et al., 2014; Stanciu, 2015; Todd, 2002; VanDerhei, Rojahn, Stuewig & McKnight, 2014) failed to provide information regarding the presence and handling of missing data. Consequently, the randomness of missing data cannot be established, and may constitute a source of bias. Where details of missing data were provided, the majority of studies reported acceptable levels of missing data at less than 20%. In terms of study design, only one study used a longitudinal design (Duggan et al., 2015), although the relationships of interest were not examined longitudinally. All other studies (k = 16) utilised cross-sectional designs, thus precluding the ability to draw conclusions regarding cause and effect. Whilst the majority of studies did attempt to control for confounding variables at some level (k = 11), only two studies

adequately controlled for both demographic and known risk factors (Gandy, 2013; VanDerhei et al., 2014). Where this was not achieved, it is unclear whether the relationship observed is solely the result of the included factors.

Two main strengths of the literature were identified. First, the majority of studies (k = 13) provided sufficient information in order to adequately characterise the study sample, including information pertaining to age, gender, and ethnicity at a minimum. Second, fifteen studies utilised valid and established measures of shame and guilt for which psychometric information was available. Exceptions to this were two studies sampling forensic populations (Mallindine, 2002; Todd, 2002), where the psychometric properties of the chosen measures were established in participant groups different to the target samples.

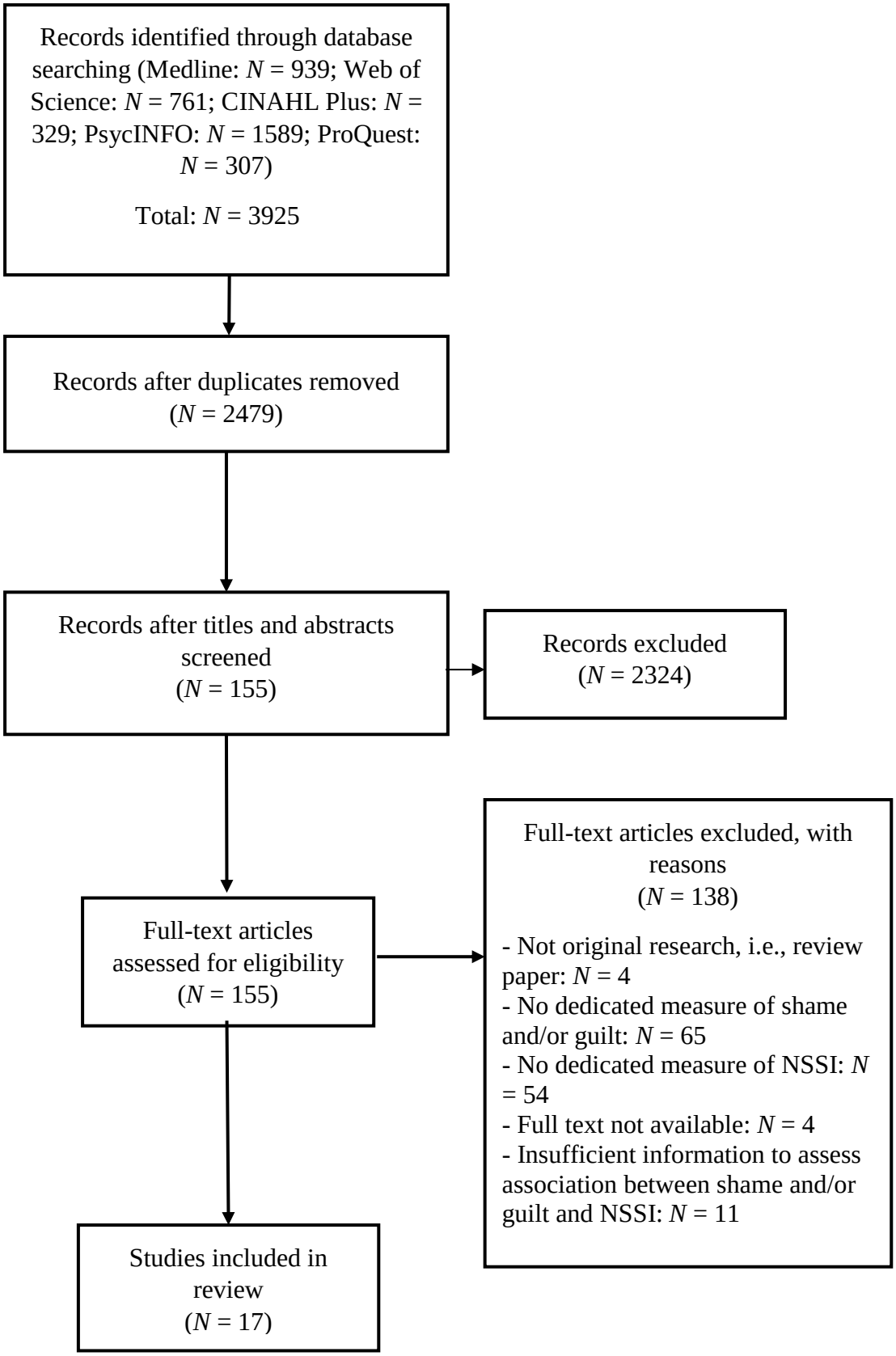

Figure 1: Flow diagram of included studies

Table 1

Characteristics of Included Studies

Authors, year and country	Source	Design	Participant characteristics	Comparison group characteristics (If applicable)	NSSI measure	Shame/Guilt measures
Brown et al. (2007); US	Peer-reviewed journal	Cross-sectional	University students (n=223); 76.2% female; *M* age (SD) = 19.4 (2.1); Recent NSSI n=23; Past NSSI n=39; No NSSI = 161	-	DSHI	Guilt: PANAS-X
Donhauser (2007); US	Unpublished study	Cross-sectional	Adult survivors of CSA (n=51); 84.3% female *M* age (SD) = - (-)	-	DSHI	Shame: ISS
Duggan et al. (2015); Canada	Peer-reviewed journal	Longitudinal	High school students (n=120); 56.7% female *M* age (SD) = 12.3 (0.5)	-	HIDS	Shame: OBCS-Y
Erchull et al. (2013); US	Peer-reviewed journal	Cross-sectional	Adult females (n=160); 100% female; *M* age (SD) = 23.1 (3.6)	-	DSHI	Shame: OBCS
Flett et al., (2012); Canada	Peer-reviewed journal	Cross-sectional	Undergraduate students (n=319); 64.9% female; *M* age (SD) = 18.9 (2.3)	-	SHI	Shame: ESS
Gandy (2013); US	Unpublished study	Cross-sectional	Adult survivors of CSA (n=103); 71.8% female; *M* age (SD) = 39.9 (13.8)	-	NSSII composite measure	Shame: TOSCA-3 Guilt: TOSCA-3

Table 1 (continued)

Characteristics of Included Studies

Authors, year and country	Source	Design	Participant characteristics	Comparison group characteristics (If applicable)	NSSI measure	Shame/Guilt measures
Lear (2014); US	Unpublished study	Cross-sectional	Undergraduate students (n=147); 83% female; NSSI n=70, *M* age (SD) = 19.7 (2.0); No NSSI n=77, *M* age (SD) = 19.4 (1.4)[1]	-	ISAS	Shame: TOSCA-3; ESS
Mallindine (2002); UK[2]	Unpublished study	Cross-sectional	Forensic inpatients – NSSI group (n=21); 0% female; *M* age (SD) = 31.7 (7.0)	Forensic inpatients No NSSI group (n=15) 0% female; *M* age (SD) = 39.9 (8.6)	Information from clinical records	Shame: OAS
Nelson and Muehlenkamp (2012); US	Peer-reviewed journal	Cross-sectional	Undergraduate students (n=341); 82.4% female; *M* age (SD) = 20.2 (2.0);	-	DSHI	Shame: OBCS
Paulson (2013); US	Unpublished study	Cross-sectional	Adult survivors of CSA (n=58); 66.1% female; *M* age (SD) = 41.7 (15.0)	-	NSSII composite	Shame: TOSCA-3 measure
Pritchard (2014); Canada, UK, US, Australia, New Zealand[3]	Unpublished study	Cross-sectional	Adults who self-identified as experiencing disordered eating, NSSI, or both (n=182); 84.2% female; *M* age (SD) = 22.7 (5.7)	-	DSHI	Shame: OBCS

Table 1 (continued)

Characteristics of Included Studies

Authors, year and country	Source	Design	Participant characteristics	Comparison group characteristics (If applicable)	NSSI measure	Shame/Guilt measures
Schoenleber (2013); US	Unpublished study	Cross-sectional	Community-based and undergraduate sample (n=115); 100% female; *M* age (SD) = - (-)[4]	-	ISAS	Shame: TOSCA-3 Guilt: TOSCA-3
Schoenleber et al. (2014); US	Peer-reviewed study	Cross-sectional	Community-based and undergraduate sample (n=67); 100% female; *M* age (SD) = 23.7 (6.4)	-	ISAS	Shame: TOSCA-3
Stanciu (2015); US	Unpublished study	Cross-sectional	NSSI sample (n=93); 80.2% female; *M* age (SD) = 25.0 (6.9)	-	DSHI	Shame: SVQ; SSGS Guilt: SSGS
Todd (2002); UK	Unpublished study	Cross-sectional	Male prisoners (n=73); 0% female; *M* age (SD) = 30.8 (-)	-	Information from clinical records	Shame: TOSCA-SD; OAS
VanDerhei et al. (2014); US	Peer-reviewed study	Cross-sectional	Undergraduate students (n=378); 71% female; *M* age (SD) = 20.8 (4.7)	-	ISAS	Shame: TOSCA-3 Guilt: TOSCA-3
Xavier et al. (2016a); Portugal	Peer-reviewed study	Cross-sectional	Middle and secondary school children (n=782); 52.8% female; *M* age (SD) = 14.9 (1.8)	-	RTSHIA (Portuguese version)	Shame: OAS-2 (Portuguese version)

CSA = Childhood Sexual Abuse; DSHI = Deliberate Self-Harm Inventory (Gratz, 2001); ESS = Experience of Shame Scale (Andrews et al., 2002); HIDS = How I Deal with Stress questionnaire (Ross & Heath, 2002); ISAS = Inventory of Statements About Self-injury (Klonsky & Glenn, 2009); ISS = Internalised Shame Scale (Cook 1987); NSSII = Non-Suicidal Self-Inflicted Injury; OAS = Other As Shamer scale (Goss, Gilbert & Allen, 1994); OAS-2 = Other As Shamer scale – version 2 (Matos et al., 2015); OBCS = Objectified Body Consciousness Scale (McKinley & Hyde, 1996); OBCS-Y = Objectified Body Consciousness Scale - Youth (Lindberg, Hyde & McKinley, 2006); PANAS-X = Positive and Negative Affect Schedule – Expanded Form (Watson & Clark, 1994); RTSHIA = Risk-Taking and Self-Harm Inventory for Adolescents (Vrouva, Fonagy, Fearon & Roussow, 2010); SHI – Self-Harm Inventory (Sansone, Wiederman & Sansone, 1998); SSGS = State Shame and Guilt Scale (Marschall, Sanftner & Tangney, 1994); SVQ = Shame Variability Questionnaire (Brown, Rizvi, & Linehan, unpublished); TOSCA-3 = Test of Self-Conscious Affect – version 3 (Tangney, Dearing, Wagner & Gramzow, 2000); TOSCA-SD = Test of Self-Conscious Affect – Socially Deviant version (Hanson & Tangney, 1996)

[1] Mean age of total sample not specified, information only provided according to NSSI group status; [2] Only participant characteristics relevant to current analyses reported; [3] Online study open to individuals living in the countries listed; [4] Does not report mean and SD for total sample

Table 2

Risk of Bias Assessment

Authors	Unbiased selection of cohort	Selection minimises baseline differences[a]	Sample size calculated/ justified	Adequate description of cohort	Valid method to assess shame/guilt	Valid method to assess NSSI	Assessors blind to shame/guilt or NSSI	Adequate follow-up (only if longitudinal)	Missing data minimal	Control of confounders	Analysis appropriate
Brown et al. (2007)	No	No	No	Yes	Yes	Yes	Cannot tell	N/A	Cannot tell	No	Yes
Donhauser (2007)	Partial	N/A	Partial	Yes	Yes	Yes	Yes	N/A	Yes	Partial	Partial
Duggan et al. (2015)	Partial	Yes	No	No	Yes	Partial	No	Partial	Yes	Partial	Yes
Erchull et al. (2013)	Partial	N/A	No	Yes	Yes	Yes	Yes	N/A	Yes	Partial	Yes
Flett et al. (2012)	Partial	N/A	No	Partial	Yes	Partial	Yes	N/A	Cannot tell	Partial	Yes
Gandy (2013)	Partial	N/A	Yes	Yes	Yes	Partial	Yes	N/A	Yes	Yes	Yes
Lear (2014)	Partial	N/A	No	Yes	Yes	Yes	Yes	N/A	Yes	No	Yes
Mallindine (2002)	Partial	Partial	No	Yes	Partial	No	No	N/A	No	No	Yes
Nelson and Muehlenkamp (2012)	Partial	No	No	Yes	Yes	Yes	Yes	N/A	Yes	No	Yes
Paulson (2013)	Partial	N/A	Partial	Yes	Yes	Partial	Yes	N/A	Yes	Partial	Partial
Pritchard (2014)	Partial	N/A	Yes	Partial	Yes	Yes	Yes	N/A	Yes	Partial	Yes

Table 2 (continued)

Risk of Bias Assessment

Authors	Unbiased selection of cohort	Selection minimises baseline differences[a]	Sample size calculated/ justified	Adequate description of cohort	Valid method to assess shame/guilt	Valid method to assess NSSI	Assessors blind to shame/guilt or NSSI	Adequate follow-up (only if longitudinal)	Missing data minimal	Control of confounders	Analysis appropriate
Schoenleber (2013)	Cannot tell	No	No	Yes	Yes	Yes	Yes	N/A	Cannot tell	Partial	Yes
Shoenleber et al. (2014)	Cannot tell	No	No	Yes	Yes	Yes	Yes	N/A	Cannot tell	Partial	Yes
Stanciu (2015)	Partial	N/A	No	Yes	Yes	Yes	No	N/A	Cannot tell	Partial	Yes
Todd (2002)	Yes	Partial	Yes	Yes	Partial	No	No	N/A	Cannot tell	Partial	Yes
VanDerhei et al. (2014)	Partial	N/A	No	Yes	Yes	Yes	Yes	N/A	Cannot tell	Yes	Yes
Xavier et al. (2016a)	Partial	N/A	No	Partial	Yes	Partial	Yes	N/A	Yes	Partial	Yes

[a] Criteria applicable only to certain design

Table 3

Association Between Shame/Guilt and NSSI Across Studies

Study	Shame/Guilt variable	NSSI variable	Shame Bivariate association of shame and NSSI	Multivariate association of shame and NSSI	Guilt Bivariate association of guilt and NSSI	Multivariate association of guilt and NSSI
Correlational (n=13)						
Donhauser (2007)	Characterological shame	NSSI frequency	-	Student sample: b=.06, t(27)=3.38, p<.01, controlling for CSA severity; Clinical sample: (b=.02, t(27)=0.67, p>.05, controlling for CSA severity	-	-
Erchull et al. (2013)	Bodily shame	NSSI presence	r=.18, p<.05	-	-	-
Flett et al. (2012)	Characterological; behavioural; bodily shame	No. of NSSI behaviours	Females: Sig. associations of NSSI behaviours with characterological (r=.28, p<.01), bodily (r=.28, p<.01), and overall shame (r=.25, p<.01). There was no association with behavioural shame (r=.11, p>.05). Males: no association of NSSI behaviours with any shame variable	-	-	-

Table 3 (continued)

Association Between Shame/Guilt and NSSI Across Studies

Study	Shame/Guilt variable	NSSI	Shame Bivariate association of shame and NSSI	Multivariate association of shame and NSSI	Guilt Bivariate association of guilt and NSSI	Multivariate association of guilt and NSSI
Gandy (2013)	Shame proneness; guilt proneness	NSSI severity[a]; NSSI history	Sig. association of NSSI severity with shame proneness (r=.259, p=.039); sig. association of NSSI history with shame proneness (r=.249, p=.044)	Sig. association of NSSI history with shame proneness, controlling for effects of guilt proneness (r=.321, p=.009)	-	-
Lear (2013)	Shame proneness; bodily shame	NSSI frequency; NSSI variety	-	Shame proneness: No sig. association with NSSI frequency (β=-.004; t(67)=-.03, p=.98) or NSSI variety (β=-.16; t(67)=-1.25, p=.21), adjusting for self-concept clarity Bodily shame: No sig. association with NSSI frequency (β=-.04; t(63)=.11, p=.92) or NSSI variety (β=-.07; t(62)=-.45, p=.66), adjusting for self-concept clarity	-	-

Table 3 (continued)

Association Between Shame/Guilt and NSSI Across Studies

Study	Shame/Guilt variable	NSSI	Shame Bivariate association of shame and NSSI	Multivariate association of shame and NSSI	Guilt Bivariate association of guilt and NSSI	Multivariate association of guilt and NSSI
Nelson and Muehlenkamp (2012)	Bodily shame	NSSI presence	r=.20, p<.01	-	-	-
Paulson[b] (2013)	Shame proneness	NSSI severity[a]	r=.15, p=.26	-	-	-
Pritchard (2014)	Bodily shame	NSSI frequency	r=-0.11, p>0.05	-	-	-
Schoenleber (2013)	Shame proneness; guilt proneness	No. of NSSI behaviours; NSSI presence	Sig. association of shame proneness and NSSI behaviours (r=.55)[c]	Adjusting for negative affect proneness, shame proneness associated with NSSI presence (OR=2.12, p=.01)	No association of guilt proneness with NSSI behaviours (r=.16)[d] or NSSI frequency (r=.14)[d]	Adjusting for negative affect proneness, guilt proneness showed no association with NSSI presence (OR=0.69, p=.169)
Schoenleber et al. (2014)	Shame proneness	NSSI frequency	NSSI sample: r=.58, p<.001	-	-	-
Stanciu[e] (2015)	Trait shame; state shame; state guilt	NSSI recency	Sig. association of NSSI recency with state shame (r=-.391; p<.001) and trait shame (r_s(83)= -.228; p=.038)	Sig. association of state shame and NSSI recency, controlling for effects of state guilt (r=-.424, p<.001)	-	Sig. association of state guilt and NSSI recency, controlling for effects of state shame (sr=.207, p=.042)

Table 3 (continued)

Association Between Shame/Guilt and NSSI Across Studies

Study	Shame/Guilt variable	NSSI variable	Shame Bivariate association of shame and NSSI	Multivariate association of shame and NSSI	Guilt Bivariate association of guilt and NSSI	Multivariate association of guilt and NSSI
VanDerhei et al. (2014)	Shame proneness; guilt proneness	NSSI presence; NSSI frequency	Sig. association of shame proneness with NSSI presence (OR=1.65, p<.01) and NSSI frequency (OR=1.67, p=.03)	Adjusting for age, school year, sex, ethnicity, and internalizing tendencies, a sig. association of shame proneness with NSSI presence (OR=1.37, p=.02) and NSSI frequency (OR=1.73, p=.014) remained	Sig. negative association of guilt proneness with NSSI presence (OR=0.76, p<.01) and NSSI frequency (OR=0.66, p<.01)	Adjusting for age, school year, sex, ethnicity, and internalizing tendencies, there was no association of guilt proneness with either NSSI presence (OR=0.96, p>.05) or NSSI frequency (OR=0.80, p=.14)
Xavier et al. (2016a)	External shame	NSSI frequency	r=.39, p<.001	-	-	-
Group comparison (n=7)						
Brown et al. (2007)	Guilt	NSSI Recent vs. NSSI Past vs. No NSSI	-	-	Sig. group differences observed (F(2,220)=18.3, p=.0001); Recent NSSI sig. higher in guilt than Past NSSI (d=.49, p<.0045) and No NSSI (d=.1.12, p<.0045). Past NSSI higher in guilt than No NSSI group (d=.56, p<.0045).	-

Table 3 (continued)

Association Between Shame/Guilt and NSSI Across Studies

Study	Shame/Guilt variable	NSSI variable	Shame Bivariate association of shame and NSSI	Multivariate association of shame and NSSI	Guilt Bivariate association of guilt and NSSI	Multivariate association of guilt and NSSI
Duggan et al. (2015)	Bodily shame	NSSI Stop vs. NSSI Maintain vs. No NSSI	At T1, NSSI Stop (M=3.75; SD=1.14) and NSSI Maintain (M=3.75; SD=1.14) sig. higher shame than No NSSI group (M=2.68; SD=0.87). At T2, no sig. differences between NSSI Stop (M=4.70; SD=.97) and No NSSI groups (M=4.74; SD=..90)[f]	-	-	-
Mallindine (2002)	External shame	NSSI vs. No NSSI	No sig. difference between groups (t(34)=1.56, p=.065)	-	-	-
Nelson and Muehlenkamp (2012)	Bodily shame	NSSI vs. No NSSI	Females: NSSI group sig. higher in shame than No NSSI group (d=6.34, p<.01)[g] Males: no sig. difference between groups	-	-	-
Schoenleber (2013)	Shame proneness; guilt proneness	NSSI vs. No NSSI	NSSI group sig. higher in shame (M=3.4; SD--) than no NSSI group (M=3.0; SD--)[h]	-	No sig. difference between groups	-

Table 3 (continued)

Association Between Shame/Guilt and NSSI Across Studies

Study	Shame/Guilt variable	NSSI variable	Shame Bivariate association of shame and NSSI	Multivariate association of shame and NSSI	Guilt Bivariate association of guilt and NSSI	Multivariate association of guilt and NSSI
Schoenleber et al. (2014)	Shame proneness	NSSI vs. No NSSI	No sig. difference between groups (t=2.05, n.s.)	-	-	-
Todd (2002)	Shame proneness; external shame	NSSI current imprisonment vs. No NSSI current imprisonment	Shame proneness: NSSI group sig. higher in shame (t(64)=2.74, p=.008); External shame: no sig. difference between groups (t(67)=2.05, p=.044)[i]	-	-	-

Significance indicates p<0.05 unless stated otherwise; [a] NSSI severity = composite measure of NSSI frequency and recency; [b] Analyses conducted on reduced sample of n=36; [c] Reported as significant but p value not reported; [d] Reported as non-significant but p value not reported; [e] Analyses conducted on reduced sample of n=68; [f] Reported as significant but inferential statistics not reported; [g] Cohen's d calculated for review using Means and SDs; [h] Reported as significant but p value and SD's not reported; [i] Study used a significance level of p<0.0125 due to multiple analyses

NSSI and Shame

Within group differences

Eleven studies explored correlational associations between shame and NSSI at the bivariate level. Of these, nine studies reported significant positive associations between shame and NSSI, with correlations ranging from *r*=.18 to *r*=.58. Positive associations of NSSI were observed with various indices of shame, including shame proneness (Gandy, 2013; Schoenleber, 2013; Schoenleber et al., 2014; VanDerhei et al., 2014), external shame (Xavier et al., 2016a), bodily shame (Flett et al., 2012; Nelson & Muehlenkamp, 2012), characterological shame (Flett et al., 2012), state and trait shame (Stanciu, 2015). Three studies reported analyses in which no bivariate association of NSSI and shame was found (Erchull et al., 2013; Paulson, 2013; Prichard, 2014). One of these studies lacked power due to a small sample size used in analyses (n = 36; Paulson, 2013). In the study from Prichard (2014), all participants self-identified as experiencing difficulties with eating, NSSI, or both. It may be that amongst individuals with greater levels of clinical complexity, including eating difficulties, the relationship between shame and NSSI is diminished. Finally, Flett et al., (2012) reported differential findings for males and females. For females, number of NSSI behaviours was positively associated with characterological, bodily, and overall shame (*r*=.25-*r*=.28), but not with behavioural shame. For males, no association of any of the shame variables with NSSI was found (Flett et al., 2012).

Six studies explored the relationship between NSSI and shame in a multivariate analysis. Of these, four studies (Gandy, 2013; Schoenleber, 2013; Stanciu, 2015; VanDerhei et al., 2014) observed significant relationships at the bivariate level, which subsequently held when other factors were controlled for (e.g., sex, age, ethnicity, internalizing tendencies, guilt, and negative affect proneness). Amongst these four studies, participants included

undergraduate students, community samples, adult survivors of childhood sexual abuse, and a specific NSSI sample. Three studies with significant effects utilised a measure of shame proneness, whilst one study used a measure of state shame (Stanciu, 2015). Two studies (Donhauser, 2007; Lear, 2013) described only multivariate analyses, reporting mixed findings. Lear (2013) reported no association between shame proneness and NSSI frequency or variety, once the effects of self-concept clarity were adjusted for. In contrast, Donhauser (2007) found an association between characterological shame and NSSI frequency in the student, but not clinical, sample, whilst controlling for CSA severity. However, lack of power was an issue due to the small sample size (student sample n = 30, clinical sample n = 21; Donhauser, 2007).

Between group differences

Six studies examined group differences in shame according to NSSI status. Findings across studies were mixed, with two studies reporting significantly higher levels of shame amongst those with NSSI compared to those without (Duggan et al., 2015; Schoenleber, 2013). Two studies reported no difference in shame between NSSI and control groups (Mallindine, 2002; Schoenleber et al., 2014), whilst a further two studies described mixed results (Nelson & Muehlenkamp, 2012; Todd, 2002). Specifically, in one study group differences in bodily shame were observed for females, but not for males (Nelson & Muehlenkamp, 2012). In a separate study, levels of shame proneness were significantly higher in the NSSI group, whilst there were no group differences in external shame (Todd, 2002).

The two studies that focussed on the role of external shame found no difference between those with and without experience of NSSI in group comparisons (Mallindine, 2002;

Todd, 2002). Both studies were conducted with male, forensic participants. Notably, Mallindine (2002) reported that overall the male participants sampled reported lower levels of external shame and other indices of psychological distress when compared with non-clinical populations, irrespective of their NSSI status. It is conceivable that factors such as social desirability and underreporting may have impacted upon participants' responses and subsequent findings.

NSSI and Guilt

Within group differences

Three studies examined within group effects of the relationship between NSSI and guilt. At the bivariate level, two studies were identified with conflicting results observed. The first study from VanDerhei et al. (2014) observed a significant negative association of guilt proneness with both the presence (OR=0.76, p=.01) and frequency (OR=0.66, p=.01) of NSSI. That is, high guilt proneness was actually associated with less NSSI. The second study from Schoenleber (2013) observed no such relationship. In terms of design, both studies comprised predominantly female, undergraduate samples, and utilised the same measure of guilt proneness (TOSCA-3). Schoenleber (2013) did, however, also include a subset of community-based, non-student participants that may have contributed to the conflicting results of the two studies. Nonetheless, the findings from VanDerhei et al. (2014), whilst significant, indicate a small, negative effect.

At the multivariate level, results were again mixed. Both studies to examine guilt proneness showed no significant association with NSSI once controlling for other factors (Schoenleber, 2013; VanDerhei et al., 2014). The association observed at the bivariate level was reduced to non-significance when adjusting for age, sex, ethnicity, school year, and

internalizing tendencies (VanDerhei et al., 2014). In contrast, an association between state guilt and NSSI recency remained significant whilst adjusting for the effects of state shame (Stanciu, 2015). This too showed a negative relationship, with higher state guilt associated with more distal NSSI.

Between group differences

Only two studies examined group differences related to guilt. The first of these, Brown et al. (2007), compared three groups of undergraduate students (NSSI Recent vs. NSSI Past vs. No NSSI) on a measure of guilt. Significant group differences were observed, with post-hoc comparisons showing those with recent NSSI to report the highest levels of guilt. Levels of guilt reported by the recent NSSI group, were significantly higher than those reported by the past NSSI group. Furthermore, the lowest levels of guilt were observed for participants with no NSSI. The second study, from Schoenleber (2013), reported no differences in guilt proneness between individuals with and without NSSI. These conflicting results and small number of available studies preclude the ability to draw conclusions regarding group differences in guilt of individuals with and without NSSI.

Discussion

The aim of the current study was to provide a systematic review of the available literature regarding NSSI and its relationships with shame and guilt. It was predicted that both shame and guilt would show a positive association with NSSI. Furthermore, it was anticipated that shame would show a stronger association with NSSI than guilt. Seventeen studies were identified for inclusion in the review. Of these, sixteen studies examined shame, whilst four studies assessed relationships with guilt.

For shame, the majority of included studies found evidence of a positive bivariate relationship with NSSI. The size of this relationship differed across studies, although effect sizes were mostly in the small to medium range. Where confounding factors were adjusted for, the relationship between shame and NSSI remained for four out of six studies. Adjusting for the effects of guilt or guilt proneness, the effect of shame was actually seen to increase (Gandy, 2013; Stanciu, 2015). A similar effect has previously been demonstrated within the context of depression, with so called 'guilt free' shame more strongly associated with depression than when guilt is not adjusted for (Stuewig & McCloskey, 2005). Fewer studies assessing group differences in shame were identified, with more mixed findings evident from those available. Overall, results suggest an association between shame and NSSI that is not readily explained by confounding variables. This effect appears more pronounced in correlational studies, which capture indices of the severity of NSSI (i.e., frequency, recency, variety of behaviours), as opposed to group comparison studies that are typically based on the presence or absence of NSSI. At present, there is no evidence to indicate whether shame is a cause, consequence, or epiphenomena of NSSI.

For guilt, the small number of studies meeting criteria for inclusion in the review places significant limits on the extent to which conclusions can be drawn. That said, current findings

suggest that there is no consistent evidence of an association between guilt and NSSI at present. The prediction that guilt would be positively associated with NSSI was not supported, with some studies reporting a negative correlation. One possible reason for the low number of studies identified may be linked to the decision to exclude studies measuring event-specific shame or guilt. That is, studies in which concepts were assessed in relation to a single event or experience, such as grief or trauma-related guilt or shame, were excluded from this review. The decision to exclude these studies was taken in light of the potential confounding effects of event-specific factors. To illustrate, in the case of war-related guilt, event specific factors such as the presence of direct combat exposure have been shown to influence the relationship between guilt and suicidal ideation (Bryan, Ray-Sannerud, Morrow & Etienne, 2013). Similarly, emotional responses to trauma, including shame, have been shown to vary according to trauma type (Amstadter & Vernon, 2008). It was anticipated that the inclusion of such studies would blur the relationships between key variables and impact upon the generalisability of findings.

A small number of studies sought to investigate potential gender differences in the relationship between shame and NSSI. Where assessed, results indicated a stronger association of NSSI and shame for females. A number of studies have demonstrated higher levels of shame amongst females compared with males, with discrepancies increased further on measures of global, or trait, measures of shame (Cheung et al., 2004; Else-Quest, Higgins, Allison & Morton, 2012). Whilst population level studies report similar prevalence rates of NSSI for males and females overall (Klonsky, 2011; Whitlock, Eckenrode & Silverman, 2006), it is possible that sex differences in pathways to self-injury, such as emotional antecedents, may be present. It is suggested that future research would benefit from exploring this possibility further.

The review identified a number of methodological issues that were apparent in the extant literature. One such concern was the use of primarily cross-sectional designs, which precluded the ability to draw conclusions regarding causality. Current theoretical accounts posit that NSSI may occur as an escape response to unmanageable emotions (Chapman et al., 2006), or as a form of self-punishment (Glassman et al., 2007; Nock, 2009). The findings of this review are potentially coherent with both of these theoretical approaches. To date, empirical evidence regarding the functions of NSSI also lends support to these theoretical frameworks (Taylor et al., 2018). Nonetheless, it is also plausible that shame may arise as a consequence of NSSI. The experience of scar-related shame has been documented, highlighting shame as a potential consequence of self-injury (Bachtelle & Pepper, 2015; Gratz, 2003). Moreover, there is evidence to suggest that NSSI-related shame is associated with greater anticipated future self-injury (Bachtelle & Pepper, 2015), suggesting that shame and NSSI may indeed have a bidirectional relationship. Future research would benefit from a longitudinal, multi-wave approach to understanding the relationship between shame and NSSI, in order to establish the direction of these relationships.

A further issue identified by the review relates to the variety of measures used to assess key constructs, namely shame. Across studies included in this review, ten different measures of shame were used, assessing multiple types of shame (i.e., bodily, external, etc.). This heterogeneity of measures limits the extent to which comparisons between studies can be made and is problematic for summarising effects. It is suggested that researchers within this field would benefit from adopting a common set of measures across studies. This would facilitate comparisons regarding the severity and impact of guilt and shame across studies and population groups.

A final issue relates to the cultural sensitivity of the shame measures utilised within the reviewed studies. Cultural differences in both the precipitants to and manifestations of shame

have been highlighted, underscoring the potential role of cultural expectations in the experience of shame (Abu-Kaf & Priel, 2008; Brown, 2006). However, the majority of measures used within reviewed literature were both developed for and tested within predominantly western, individualist cultures. As a result, the extent to which these measures can be considered both sensitive and generalizable to a range of cultures is limited.

Whilst the current review provides an important contribution to the literature regarding the associations of shame, guilt, and NSSI, these should be considered in light of the following limitations. First, the decision to use a narrative synthesis approach, as opposed to meta-analytic methods, has been criticised for its potential lack of transparency and susceptibility to researcher bias (Campbell, Katikireddi, Sowden, McKenzie & Thomson, 2018). Whilst a number of steps were taken to mitigate against this, including the use of pre-specified methods of data extraction and the inclusion of a structured risk of bias tool, it is acknowledged that this constitutes a limitation of the review. Second, the decision to include only studies written in English may have led to the exclusion of relevant research written in other languages. Third, the current review focussed solely on quantitative research. Future studies would benefit from consideration of qualitative studies, which may shed light on the potential mechanisms underlying the relationship between shame and NSSI.

Results of this review lend support for the role of shame in NSSI. However, further research is needed to understand the impact of shame in help-seeking amongst individuals with NSSI. Previous research has identified shame as a barrier to seeking help for psychological difficulties (Rusch et al., 2014). Amongst individuals who self-injure, the majority do not seek professional help (Michelmore & Hindley, 2012; Rowe et al., 2014). It is plausible that behavioural responses to shame, including concealment and avoidance (Schoenleber & Berenbaum, 2012; Tangney et al., 1996), may impact upon the extent to

which help is sought. Future research would benefit from considering the role of shame in help-seeking for NSSI.

For clinicians, the findings of this review underscore the need to consider shame as a potential contributing factor in the assessment of individuals presenting with NSSI. Whilst the functions of NSSI vary both between and within individuals (Klonsky, 2009), assessment of the presence and relevance of shame to NSSI is recommended. Additionally, interventions designed to reduce shame may be of benefit to those with, or at risk of, NSSI. One such approach is that of Compassion Focussed Therapy (CFT), a third-wave cognitive therapy designed for individuals with high levels of shame (Gilbert, 2010). At its core, CFT seeks to develop the individual's ability for self-compassion, whilst increasing experiences of safety and self-soothing as alternative responses to shame (Gilbert, 2009). This is particularly germane as research suggests that self-compassion is protective against NSSI (Xavier, Pinto-Gouveia, & Cunha, 2016b). Outside of the NSSI literature, preliminary evidence suggests that the use of CFT may lead to reductions in both internal and external shame, and self-criticism (Judge, Cleghorn, McEwan & Gilbert, 2012; Leaviss & Uttley, 2015), whilst the potential use of CFT as applied to NSSI has been discussed elsewhere (Van Vliet & Kalnins, 2011).

To conclude, the current review extends the current literature concerning the role of shame in NSSI. As such, clinicians should consider the potential role of shame as part of the assessment process for individuals presenting with NSSI. Methodological limitations in the extant literature mean that conclusions cannot yet be drawn regarding the direction of the relationship between shame and NSSI. Future research using longitudinal designs is necessary to better understand the mechanisms underpinning this relationship.

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Chapter 2: Empirical paper

Predictors of help-seeking in non-suicidal self-injury [3]

[3] Prepared according to author guidelines for the British Journal of Clinical Psychology (5,000 word limit excluding abstract, tables, figures, and references)

Abstract

Objectives: A significant proportion of individuals who have NSSI do not seek any support. If interventions for NSSI are to be effective, individuals must first seek help. This study aimed to prospectively examine the role of psychological factors as predictors of help-seeking amongst individuals with NSSI.

Design: A longitudinal questionnaire design was used.

Methods: Adults with experience of NSSI (N=178) were recruited to participate in an online study. Participants completed self-report measures of shame, attachment style, previous help-seeking experience, NSSI urges, and help-seeking intentions at baseline (T1). Participants then completed a measure of actual help-seeking behaviour one month later (T2). Linear regression was used to examine the associations of predictor variables and help-seeking intentions at baseline. Logistic regression was used to assess the predictive effect of baseline measures of shame, attachment style, previous help-seeking, NSSI urges, and help-seeking intentions on actual help-seeking behaviour at follow-up.

Results: Attachment avoidance showed a significant, negative association with help-seeking intentions for formal and informal sources. Baseline help-seeking intentions predicted help-seeking behaviour at follow-up for formal sources, with a trend effect observed for informal sources. NSSI urges were positively associated with both help-seeking intentions and behaviour for formal, but not informal, sources. Finally, having sought help previously was predictive of informal, but not formal, help-seeking intentions and behaviour.

Conclusions: Results underscore the prospective role of help-seeking intentions as predictive of actual behaviour. Interventions designed to enhance help-seeking intentions may serve to increase the likelihood that help will be sought in relation to NSSI.

Practitioner Points

- Lower attachment avoidance was associated with greater intentions to seek help.
- Baseline help-seeking intentions were predictive of actual help-seeking at follow-up.
- More severe NSSI urges predicted both intentions and actual help-seeking from professional sources.
- The majority of participants in this study had sought help for NSSI at some point in the past. Results may be less representative of those individuals with no previous help-seeking.
- Most participants in the current study were female. Consequently, the extent to which the current results apply to males is unknown.

Keywords: non-suicidal self-injury (NSSI), help-seeking, shame, attachment

Introduction

Non-suicidal self-injury (NSSI) is a common clinical problem worldwide (Garcia-Nieto, Carballo, Díaz de Neira Hernando, de León-Martinez & Baca-Garcia, 2015), and is associated with significant psychological distress (Richmond, Hasking & Meaney, 2017). NSSI has been defined as the direct and deliberate destruction of one's own body tissue, without suicidal intent (Nock, Joiner, Gordon, Lloyd-Richardson & Prinstein, 2006), and is frequently applied to behaviours such as scratching, cutting, and burning (Lloyd-Richardson, Perrine, Dierker & Kelley, 2007). Amongst adults, it is estimated that 5.5% of individuals will engage in NSSI during the lifetime (Swannell, Martin, Page, Hasking & St John, 2014), with 0.9% of adults reporting NSSI within the past 12 months (Klonsky, 2011). In adolescents, prevalence rates are further increased, with lifetime rates of NSSI estimated at between 16.1-18% (Muehlenkamp, Claes, Havertape & Plener, 2012; Swannell et al., 2014). Moreover, NSSI has been identified as a risk factor for future suicidal behaviour (Franklin et al., 2017), increasing the odds of suicide attempts four-fold (Ribeiro et al., 2016). Life expectancy too is compromised amongst those who self-injure (Bergen et al., 2012). Despite this, between a third and one half of individuals do not seek any help in relation to NSSI (Rowe et al., 2014). Supporting individuals with NSSI to seek help and support is therefore important if interventions are to be effective. To achieve this we need an understanding of the factors that facilitate or thwart help-seeking for this population.

Whilst there remains some debate regarding definitions of help-seeking, there is over-arching consensus that this is a problem-focused, planned behaviour, involving interaction with another perceived source of help (Cornally & McCarthy, 2011). To date, research examining the role of help-seeking in NSSI has been largely descriptive, focusing on prevalence rates and

seeking to determine the frequency with which different sources of support are sought (Rowe et al., 2014). Within the current study, help-seeking will be considered in relation to any form or source of help related to NSSI. Moreover, sources of help-seeking are commonly separated into two categories, namely formal (e.g., health professionals) and informal sources (e.g., family or friends) (Rickwood, Deane, Wilson & Ciarrochi, 2005). Research has shown that in adolescence informal help-seeking is more common than formal help-seeking (Goodwin, Mocarski, Marusic & Beautrais, 2013; Michelmore & Hindley, 2012; Rowe et al., 2014), though this difference may not emerge for adults (Nada-Raja et al., 2003). Consequently, the examination of both formal and informal help-seeking is important.

Research has sought to identify both facilitators and barriers to help-seeking in NSSI. Whilst there is a dearth of evidence regarding facilitating factors, the available studies highlight the key roles of past positive experiences, assurances of confidentiality, and accessibility (Rowe et al., 2014). In contrast, a number of barriers to help-seeking for psychological problems have been identified. Findings from a systematic review highlighted stigmatisation, poor mental health literacy, and a preference for self-reliance as key barriers to seeking help (Gulliver, Griffiths, & Christensen, 2010). Psychological factors of shame (Salaheddin & Mason, 2016) and insecure attachment (Moran, 2007; Vogel & Wei, 2005) have too been identified as potential barriers, and will now be explored further.

Shame has been described as a self-conscious emotion, centred on negative judgements of the self (Tangney, Stuewig & Mashek, 2007). It is conceptualised as involving a range of experiences, which may include feelings of inferiority, self-criticism, and a perception of the self as flawed or bad (Gilbert et al., 2010). Typically, responses to shame are thought to be maladaptive, comprising avoidance (Schoenleber & Berenbaum, 2012), denial, and attempts to hide or conceal oneself (Tangney et al., 1996). High levels of shame have been observed amongst individuals who have NSSI (Schoenleber Berenbaum & Motl, 2014; VanDerhei,

Rojahn, Stuewig & McKnight, 2014). Furthermore, across a number of studies investigating help-seeking in those who self-injure, shame has been identified as a barrier (Fortune, Sinclair & Hawton, 2008; Long, Manktelow & Tracey, 2015; Longden & Proctor, 2012). It may be that for individuals with high levels of shame, feelings of inadequacy may impact upon the extent to which they see themselves as deserving of help. Alternatively, it is possible that the process of help-seeking activates feelings of shame, and that help is subsequently not sought in an attempt to avoid this aversive state.

A further avenue to consider relates to attachment style. Attachment style has been defined as a pattern of relational expectations, emotions, and behaviours resulting from early caregiving experiences, which impacts interpersonal behaviour and development across the lifespan (Fraley & Shaver, 2000; Shaver & Mikulincer, 2002). Help-seeking intentions have been shown to vary according to attachment style (Vogel & Wei, 2005). Specifically, greater attachment anxiety has been shown to correlate with greater help-seeking intentions, whilst an avoidant attachment style is associated with greater reluctance to seek help (Vogel & Wei, 2005). This pattern of results is perhaps unsurprising in considering the key features of these attachment styles. For attachment anxiety, key features of reassurance, proximity seeking, and fear of abandonment (Eastwick & Finkel, 2008) may lead to a tendency towards help-seeking from others, as a means by which attachment-related anxiety is reduced. In contrast, attachment avoidance is characterised by compulsive self-reliance and mistrust in others intentions (Mikulincer & Shaver, 2018). It may be that individuals with a more avoidant style have learned to rely only on themselves, and anticipate that others would be unable to meet their needs anyway. Moreover, a tendency for emotional cut-off (Wei, Vogel, Ku & Zakalik, 2005) may mean that individuals with an avoidant style do not readily recognise problems and subsequently do need seek support. To date, studies of the impact of both shame and

attachment style have been limited by cross-sectional designs and a focus on help-seeking intentions, rather than behaviour. The current study aims to redress this.

A final predictor of help-seeking behaviour investigated in this paper is the role of past help-seeking experiences upon future help-seeking. It is likely that individual's past experiences of seeking help will be a major determinant of how they feel about seeking help again, and this has been shown in qualitative research of those attending hospital due to self-injury (Hunter, Chantler, Kapur & Cooper, 2013). However, this work has been scarce and has focused on help-seeking intentions rather than actual behaviour. The extent to which such experiences impact upon actual help-seeking behaviour over time is unknown.

The role of NSSI severity in the help-seeking process should also be considered. Amongst adolescents who self-injure, there is some evidence of a help-negation effect (Wilson & Deane, 2010), whereby intentions to seek help decrease as the frequency of self-injury increases (Frost, Casey & O'Gorman, 2017), whilst other studies have reported the opposite effect (Frost & Casey, 2016). Notably, this help negation effect has so far been demonstrated only within the context of informal help-seeking (i.e., from friends and family) (Frost et al., 2017). At present, the association between NSSI severity and help-seeking remains unclear. Therefore, there is a need to account for the severity of NSSI urges or behaviour in the prediction of help-seeking.

In consideration of the factors that predict help-seeking, it is necessary to consider both intentions and behaviour (Nagai, 2015). Behaviour change models such as the Theory of Planned Behaviour (Ajzen, 1991) emphasise the role of intentions as precursors to action. This is supported by meta-analytic findings that demonstrate moderate to large associations between intentions and subsequent behaviour (Armitage & Conner, 2001). Furthermore, altering intentions has been shown to bring about changes in individuals' behaviour (Webb & Sheeran,

2006). Nonetheless, problems related to the so-called intention-behaviour gap have been highlighted (Sheeran & Webb, 2016). Investigations of the relationship between help-seeking intentions and behaviour within the context of psychological difficulties have demonstrated a disparity between intentions to seek help and subsequent healthcare utilisation (Chin, Chan, Lam, Lam & Wan, 2015). Consequently, the current study will examine both intentions and behaviour in order to enhance understanding of the help-seeking process amongst individuals who have NSSI.

Aims and Hypotheses

The current study had three over-arching aims. The first aim was to investigate the prevalence of help-seeking behaviour amongst a sample of individuals with experience of NSSI. The second aim was to examine whether variables of shame, attachment style, and previous help-seeking experiences were associated with concurrent help-seeking intentions. The third and final aim was to determine whether the above variables of shame, attachment style, and previous help-seeking experiences, would predict help-seeking behaviour over a one month follow-up period, whilst also accounting for NSSI urges and lifetime help-seeking.

First, it was predicted that more help-seeking intentions, would be associated with lower levels of shame, attachment avoidance, and less negative help-seeking experiences, as well as greater attachment anxiety. Second, it was hypothesised that actual help-seeking behaviour at follow-up would be predicted by lower levels of shame, less attachment avoidance, and less negative help-seeking experiences, as well as greater attachment anxiety and more help-seeking intentions at baseline.

Method

Design

A cross-sectional and longitudinal, online questionnaire design was used. The outcome variables were baseline help-seeking intentions and actual help-seeking behaviour at follow-up. Predictor variables were measures of shame, attachment style (i.e., anxiety and avoidance), previous help-seeking experience (i.e., support, hostility, satisfaction), NSSI urges, and lifetime help-seeking.

Power calculation

A power calculation was conducted using G Power (Faul, Erdfelder, Lang & Buchner, 2007). This indicated that a multiple linear regression with eight predictor variables would require a sample size of n = 94 to achieve 80% power with $\alpha = .05$, assuming an effect size of $R^2 = .15$.

Participants

Participants were adults with experience of non-suicidal self-injury (NSSI) recruited via opportunistic sampling. To participate, individuals were required to meet the following inclusion criteria: 1) aged 18 years or over, 2) having engaged in NSSI twice or more within their lifetime, including at least once within the past twelve months, 3) in possession of sufficient levels of literacy to complete online questionnaire measures unaided, and 4) residing in the UK.

Measures

Baseline measures

At baseline, demographic and clinical characteristics were collected including age, gender, ethnic group, sexuality, education or employment status, and psychiatric diagnosis. Participants then completed a series of questionnaire measures, as detailed below (see Appendix E for copies of measures).

Help-seeking behaviour: The Actual Help-Seeking Questionnaire (AHSQ; Rickwood & Braithwaite, 1994) was used to measure participants' actual help-seeking behaviour in relation to non-suicidal self-injury over the lifetime. The AHSQ was adapted for the specific needs of the current study, in line with author instructions (Rickwood & Braithwaite, 1994), in order to provide a measure of overall, formal, and informal help-seeking behaviour. Participants are required to indicate whether or not they have ever sought help from a specified source (e.g., friend, GP) in relation to non-suicidal self-injury. The AHSQ was used to measure help-seeking behaviour for formal and informal sources (1 = help sought; 0 = no help sought).

Previous help-seeking: As there were no existing measures of help-seeking experience related to NSSI, three items were developed for use in the current study to provide a brief measure that would capture prior experiences of help-seeking. These three items were developed in light of previous research about what matters in help-seeking encounters (Marchland & Skinner, 2007). Items assessed perceived satisfaction ('Overall I have been satisfied with the help or support I have received from others about my self-harm'), hostility ('When I asked for help or support about my self-harm, others were hostile towards me'), and

support ('When I asked for help or support about my self-harm, others responded positively towards me'). Participants indicated their agreement with each statement on a five-point scale (1=Strongly Agree to 5=Strongly Disagree).

Help-seeking intentions: Help-seeking intentions will be measured using the General Help-Seeking Questionnaire (GHSQ; Wilson, Deane, Ciarrochi & Rickwood, 2005). The GHSQ provides a measure of individuals' intentions to seek help from a range of formal and informal sources. Participants rate on a seven-point scale (1=Extremely Unlikely to 7=Extremely Likely) the likelihood that they will seek help from a range of sources in relation to a specified problem, in this case non-suicidal self-injury. In the current study, Cronbach's alpha was .74.

NSSI Urges: NSSI urges were measured using the Alexian Brothers Urge to Self-Injure Scale (ABUSI; Washburn, Juzwin, Styer & Aldridge, 2010). The ABUSI is a brief, five-item measure of the severity of self-injurious urges, occurring in the past week. Items assess the frequency, severity, and duration of self-injurious urges, with participants indicating their responses on a seven-point scale. High internal consistency ($\alpha = 0.92$), test-retest reliability, and good convergent validity have been demonstrated (Washburn et al., 2010). For the current study, Cronbach's alpha was .93.

Attachment: Attachment was measured using the Experiences in Close Relationships Scale – Revised (ECR-R, Fraley, Waller & Brennan, 2000). The ECR-R is a self-report questionnaire comprising two 18-item subscales, i) attachment anxiety (e.g., 'I need a lot of reassurance that I am loved by my partner') and ii) attachment avoidance (e.g., 'I try to avoid

getting close to my partner'). Participants indicate their agreement with each item regarding their feelings/experiences in romantic relationships on a seven-point scale (1=Disagree Strongly to 7=Agree Strongly). The ECR has been shown to have high internal consistency (α=.90; Aderka et al., 2009). In the current study, alpha coefficients for the attachment anxiety and attachment avoidance subscales were .70 and .78 respectively.

Shame: Shame was assessed using the State Shame and Guilt Scale (SSGS) (Marshall, Sanftner & Tangney, 1994). The SSGS is a 15-item self-report scale measuring momentary, i.e., state, feelings of shame, guilt, and pride experiences, which comprise three separate subscales. The current study utilised the shame subscale only (e.g., I feel like I am a bad person'). Items are rated on a five-point likert scale according to the strength of the experience and/or feeling (e.g., 1= not feeling this way at all, 5= feeling this way very strongly). The shame subscale of the SSGS has been shown to demonstrate good internal consistency (α = .89). The alpha coefficient in the current study was .83.

Follow-up measures

Follow-up measures were completed one month after baseline. At follow-up, participants repeated the AHSQ as outlined above. The timeframe was adapted to measure actual help-seeking behaviour over the preceding month, i.e., the follow-up period (1 = help sought; 0 = no help sought).

Procedure

As the study took place online, a broad recruitment strategy was used in order to reach eligible participants. As the research outcomes related to help-seeking intentions and behaviour, it was important to ensure that the study was advertised in a range of settings, and not solely those where individuals are already seeking help. Consequently, the study was advertised electronically and in person to students of one University in England, to self-harm online forums, and in adult mental health services of two mental health trusts. The study was also advertised via social media, namely, Facebook and Twitter (see Appendix F for study advertisement poster).

Participants completed the above battery of questionnaire measures at baseline. Participants who provided consent for follow-up were then contacted via email one month later to complete the follow-up survey.

Ethical approval

The current study was approved by the Greater Manchester West Research Ethics Committee (Reference: 17/NW/0059) (see Appendix G, H, and I for approval documentation). Informed consent was gained for the baseline and follow-up survey (see Appendix J, K, and L for Participant Information Sheets and Consent Form).

Statistical Analysis Strategy

All analyses were conducted using SPSS Version 22 (IBM Corp, 2013). First, univariate regression analyses were conducted to examine the relationships between all key predictor and outcomes variables. For help-seeking intentions and help-seeking behaviour, linear regression

and logistic regression were used, respectively. Variables with non-significant relationships were then excluded from further multivariate analyses. Those variables with a significant bivariate association with help-seeking intentions they were included together in a multiple linear regression analyses to examine their independent association with help-seeking intentions. Logistic regression was used to examine the relationship between multiple predictors and help-seeking behaviour at follow-up, adjusting for lifetime help-seeking behaviour reported at baseline.

The role of potential outliers and influential cases was considered in each analysis, by examining standardized residuals and Cook's distance statistics (Cook & Weisberg, 1982). Where potential influential cases were identified a sensitivity analysis was conducted, where analyses were re-run with these cases removed to check the robustness of results. Variance inflation factors (VIF) and tolerance values were also examined and indicated no problems with multicollinearity with all VIF's substantially below 10 (Myers, 1990) and tolerance values above 0.2 (Menard, 1995). For the linear regressions, residuals were normally distributed (see Appendix M for plots).

Results

Sample characteristics and missing data

An initial 236 individuals began the online consent process, with a final dataset of 178 participants obtained (see Figure 2 for participant flow through the study). Of these 178 participants, 161 had complete data on all variables. Follow-up data was available for 82 participants. Missing data ranged from 2.2-10.1% per variable, with the measure of help-seeking intentions (the GHSQ), having the largest proportion missing. Most commonly, missing data was observed where participants dropped out of the survey early, thus not completing whole measures. Results of Little's MCAR test suggested that data were missing completely at random (MCAR) (X^2= 266.86, *df* (238), p = .096). Where an individual item was missing on a scale or subscale, mean imputation was used to calculate a total score (n = 17 cases). No more than one item was missing on any scale or subscale. Participant demographic characteristics are shown in Table 4, whilst scores, i.e., means and standard deviations, on key measures are presented in Table 5.

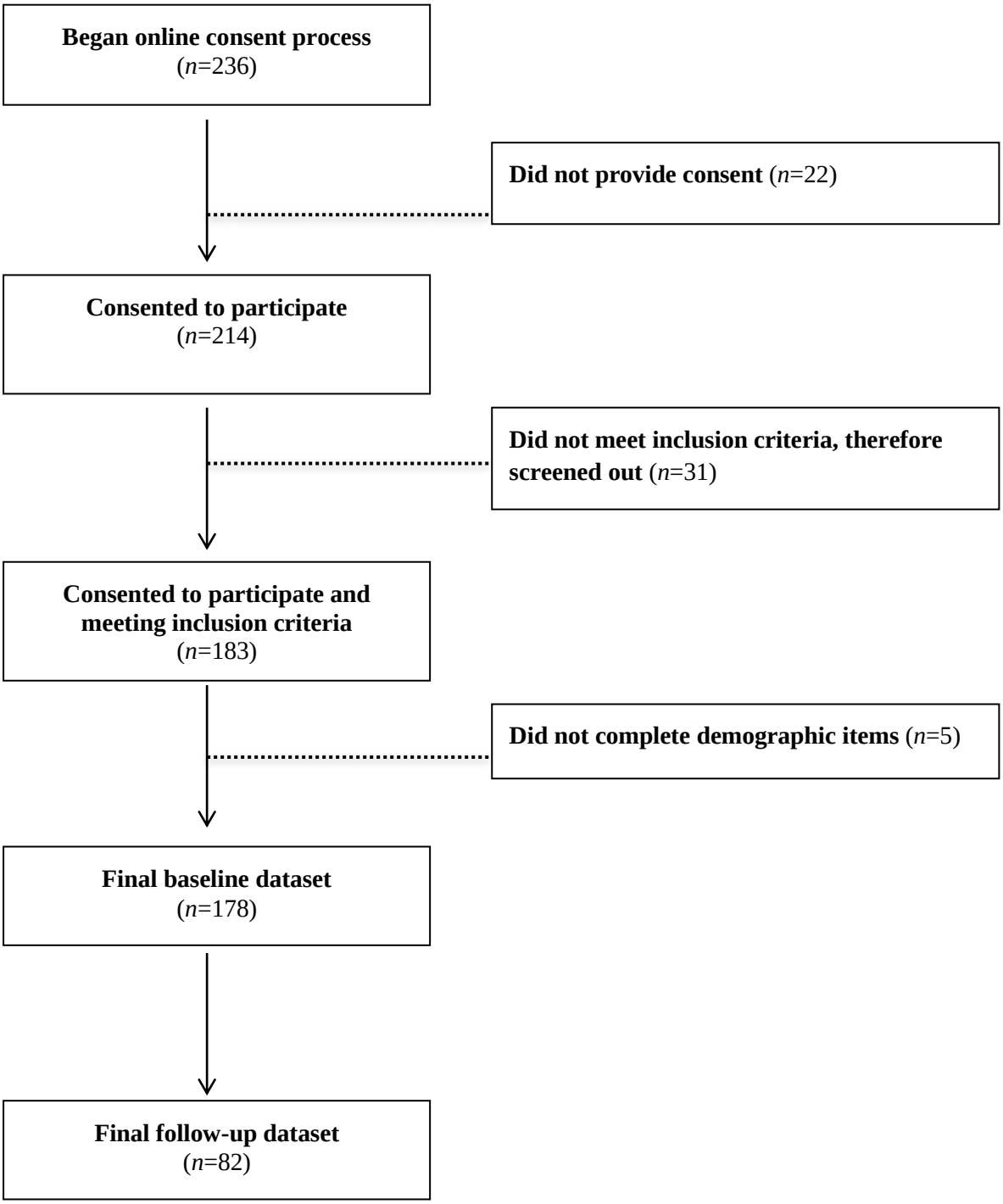

Figure 2: Flow diagram of participant recruitment and retention.

Table 4
Sample Characteristics (n=178)

Demographic characteristics		Total sample *n (%)*	Previous help-seeking (n=148) *(%)*	No previous help-seeking (n=13) *(%)*
Age (years)				
	18-24	95 (53.4)	76 (51.4)	10 (76.9)
	25-29	35 (19.7)	33 (22.3)	0 (0)
	30-34	20 (11.2)	16 (10.8)	0 (0)
	35-39	13 (7.3)	10 (6.8)	1 (7.7)
	40-44	6 (3.4)	5 (3.4)	1 (7.7)
	45-49	5 (2.8)	5 (3.4)	0 (0)
	50 and above	4 (2.3)	3 (2.1)	1 (7.7)
Gender				
	Female	154 (86.5)	130 (87.8)	11 (84.6)
	Male	20 (11.2)	14 (9.5)	2 (15.4)
	Other	4 (2.2)	4 (2.7)	0 (0)
Ethnic group				
	White: British	135 (75.8)	115 (77.7)	7 (53.8)
	White: Irish	3 (1.7)	2 (1.4)	1 (7.7)
	White: Other	17 (9.6)	14 (9.5)	2 (15.4)
	Chinese	5 (2.8)	4 (2.7)	1 (7.7)
	Mixed Caribbean	3 (1.7)	2 (1.4)	1 (7.7)
	Mixed Other	4 (2.2)	3 (2.0)	0 (0)
	Arab	3 (1.7)	1 (0.7)	1 (7.7)
	Other	8 (4.8)	8 (5.6)	1 (7.7)
Sexuality				
	Bisexual	54 (30.3)	44 (29.7)	5 (38.5)
	Homosexual	17 (9.6)	13 (8.8)	1 (7.7)
	Heterosexual	90 (50.6)	76 (51.4)	7 (53.8)
	Asexual	3 (1.7)	3 (2.0)	0 (0)
	Unsure	10 (5.6)	9 (6.1)	0 (0)
	Other	4 (2.2)	3 (2.0)	0 (0)
Employment status				
	Employed – full-time	41 (23.0)	32 (21.6)	3 (23.1)
	Employed – part-time	17 (9.6)	14 (9.5)	0 (0)
	Unemployed	15 (8.4)	14 (9.5)	0 (0)
	Student – full-time	74 (41.6)	61 (41.2)	9 (69.2)
	Student – part-time	9 (5.1)	8 (5.4)	0 (0)
	Other	22 (12.3)	19 (12.9)	1 (7.7)

Table 4 (continued)

Sample Characteristics (n=178)

Demographic characteristics	Total sample *n (%)*	Previous help-seeking (n=148) *(%)*	No previous help-seeking (n=13) *(%)*
Psychiatric diagnosis			
Yes	114 (64.0)	98 (66.6)	5 (38.5)
No	54 (30.3)	42 (28.4)	8 (61.5)
Not specified	10 (5.6)	8 (5.4)	0 (0)

Table 5
Means and Standard Deviations of Baseline Questionnaire Measures

Baseline measures	Total sample (n=161) *M* (SD)	Previous help-seeking (n=148) *M* (SD)	No previous help-seeking (n=13) *M* (SD)
Informal help-seeking intentions (GHSQ)	10.96 (5.82)	11.24 (5.86)	7.85 (4.41)
Formal help-seeking intentions (GHSQ)	8.99 (4.98)	9.27 (4.99)	5.77 (3.70)
Shame (SSGS)	15.88 (5.39)	15.89 (5.58)	15.69 (3.71)
Attachment avoidance (ECR-R)	22.07 (8.66)	22.16 (8.70)	22.76 (8.08)
Attachment anxiety (ECR-R)	27.74 (7.88)	27.48 (7.89)	31.00 (7.38)
NSSI urges (ABUSI)	12.90 (8.81)	14.04 (8.74)	4.38 (3.48)

Prevalence of help-seeking behaviour

Within the final dataset, 161 individual provided information about help-seeking. Of these 161, 91.9% (95% CI = 86.3% - 95.4%) reported to have sought help relating to NSSI at some point in their lifetime. Rates of lifetime help-seeking from formal and informal sources were similar, at 82.0% (95% CI = 74.8% - 87.4%) and 81.4% (95% CI = 74.3% - 86.9%) respectively. Of the 82 participants providing follow-up data, 46 (56.1%; 95% CI = 44.7% - 66.9%) had sought help in relation to NSSI during the one-month follow-up period. Due to the small number of participants who had not sought help at some point in their lifetime, baseline help-seeking behaviour was not used as an outcome.

Predicting help-seeking intentions

A series of univariate regression analyses were conducted to assess the association baseline help-seeking intentions had with shame, attachment anxiety, attachment avoidance, previous help-seeking experience, and NSSI urges. Results of these cross-sectional analyses are presented in Table 6, separated into formal and informal sources.

For informal help-seeking intentions, significant univariate relationships with attachment avoidance and lifetime help-seeking were observed, and were subsequently examined using a multivariate analysis. The overall regression model was significant, f (2, 157) = 17.26, p<.001, accounting for 18% of the variance in informal help-seeking intentions (R^2 = .18). Both attachment avoidance and lifetime help-seeking remained significantly associated with informal help-seeking intentions. Examination of standardized residuals highlighted four cases with a standardized residual > 3. These four cases were subsequently removed and the analysis re-run. With these cases removed, results remained consistent with the original analysis (see Appendix N).

For formal help-seeking intentions, significant univariate relationships with attachment avoidance and self-injury urges were observed. A trend towards significance was also found for lifetime help-seeking. These three variables were subsequently examined in a multivariate analysis. A multiple linear regression analysis was conducted with three predictor variables, attachment avoidance, self-injury urges, and lifetime help-seeking with an outcome variable of formal help-seeking intentions. The overall regression model was significant, f (2, 157) = 6.98, p<.001, though accounted for only 8% of the variance in formal help-seeking intentions (R^2 = .08). Both attachment avoidance and self-injury urges were observed to be significantly associated with formal help-seeking intentions.

Table 6

Linear Regression Analysis Predicting Help-Seeking Intentions for Formal and Informal Sources

		Univariate analyses			Multivariate analysis		
		Unstandardized		Standardized	Unstandardized		Standardized
Outcome	Predictor	B	CI (95%)	β	B	CI (95%)	β
Help-seeking	Shame	-0.108	-.277-.060	-0.101			
intentions	Attachment anxiety	-0.009	-.124-.107	-0.012			
- Informal	Attachment avoidance	-0.213***	-.313--.112	-0.315	-0.210****	-.306--.113	-0.311
	Help-seeking - Support	-0.188	-.907-.531	-0.041			
	Help-seeking - Hostility	0.032	-.321-.960	0.078			
	Help-seeking – Satisfaction	-0.126	-.754-.503	-0.031			
	Self-injury urges	0.016	-.087-.120	0.025			
	Lifetime help-seeking – informal	4.303***	2.066-6.539	0.289	4.231****	2.109-6.353	0.285
Help-seeking	Shame	0.054	-.091-.198	0.058			
intentions	Attachment anxiety	0.019	-.080-.118	0.031			
– Formal	Attachment avoidance	-0.096**	-.186--.007	-0.167	-0.136***	-.228--.043	-0.235
	Help-seeking - Support	-0.168	-.783-.447 -	0.043			

* trend effect ($p = 0.054$), *$p<0.05$, **$p<0.01$, ***$p<0.001$

Table 6 (continued)

Linear Regression Analysis Predicting Help-Seeking Intentions for Formal and Informal Sources

		Univariate analyses			Multivariate analysis		
		Unstandardized		Standardized	Unstandardized		Standardized
Outcome	Predictor	B	CI (95%)	β	B	CI (95%)	β
Help-seeking	Help-seeking - Hostility	0.048	-.502-.597	0.014			
intentions	Help-seeking - Satisfaction	-0.384	-.919-.151	-0.112			
- Formal	Self-injury urges	0.094**	.007-.181	0.167	0.122**	.027-.216	0.216
	Lifetime help-seeking – formal	1.964*	-.038-3.966	0.152	1.109	-.946-3.164	0.086

* trend effect (p = 0.054), ** p<0.05, ***p<0.01, ****p<0.001

Predicting actual help-seeking behaviour at follow-up

Univariate logistic regression analyses were then conducted to examine the relationships between predictor variables and actual help-seeking behaviour (1 = help sought; 0 = no help sought) at follow-up. Baseline predictor variables were shame, attachment anxiety, attachment avoidance, past help-seeking experience (satisfaction, hostility, and support), and NSSI urges. Previous (i.e., lifetime) help-seeking was included as a covariate.

For informal help-seeking behaviour, univariate analyses identified two variables with a significant relationship to help-seeking behaviour at follow-up (see Table 7). These were subsequently examined in a multivariate logistic regression. When entered together, only lifetime history of help-seeking predicted informal help-seeking behaviour at follow-up. Examination of standardized residuals and Cook's distance statistics highlighted two cases that were potentially having undue influence upon the results (Standardized residuals = 2.746-3.520; Cook's distance – 1.017-1.153). Examination of these influential cases identified an issue of separation in the data, likely due to the small numbers of participants without a history of help-seeking. Re-running this analysis with this covariate (lifetime help-seeking) excluded led to similar results, with baseline informal help-seeking intentions still associated with help-seeking behaviour at follow-up (OR = 1.212, $p<0.001$, 95% CI = 1.079-1.363).

For formal help-seeking behaviour, baseline urges to self-injure and help-seeking intentions showed significant univariate associations with formal help-seeking behaviour at follow-up. In the multivariate analysis, both of these variables remained predictive of formal help-seeking behaviour. Examination of Cook's distance statistics and standardized residuals indicated that no cases were exerting undue influence in the analysis.

Table 7

Logistic Regression Analyses Predicting Help-Seeking Behaviour at Follow Up for Formal and Informal Sources

		Univariate analyses			Multivariate analysis		
Outcome	Predictor	OR	p-value	OR CI (95%)	OR	p-value	OR CI (95%)
Help-seeking	Shame	.991	0.833	.907-1.082			
behaviour	Attachment anxiety	.980	0.491	.924-1.039			
- Informal	Attachment avoidance	.956	0.135	.901-1.014			
	Help-seeking - Support	1.120	0.523	.791-1.587			
	Help-seeking - Hostility	1.246	0.170	.910-1.706			
	Help-seeking – Satisfaction	.989	0.940	.743-1.317			
	Self-injury urges	1.009	0.743	.959-1.061			
	Lifetime help-seeking – informal	12.800	0.017**	1.592-102.932	9.120	0.041**	1.091-76.238
	Help-seeking intentions – informal	1.135	0.010**	1.030-1.249	1.102	0.054*	.998-1.216
Help-seeking	Shame	1.101	0.053	.999-1.214			
behaviour	Attachment anxiety	.988	0.688	.932-1.048			
– Formal	Attachment avoidance	1.011	0.721	.954-1.070			

* trend effect, ** $p<0.05$, ***$p<0.01$, ****$p<0.001$

Table 7 (continued)

Logistic Regression Analyses Predicting Help-Seeking Behaviour at Follow Up for Formal and Informal Sources

		Univariate analyses			Multivariate analysis		
Outcome	Predictor	OR	p-value	OR CI (95%)	OR	p-value	OR CI (95%)
Help-seeking	Help-seeking - Support	1.385	0.080	.962-1.995			
behaviour	Help-seeking - Hostility	1.281	0.127	.932-1.761			
- Formal	Help-seeking - Satisfaction	1.028	0.851	.771-1.371			
	Self-injury urges	1.094	0.003**	1.032-1.160	1.078	0.027**	1.009-1.152
	Lifetime help-seeking – formal	2.417	0.209	.610-9.567			
	Help-seeking intentions – formal	1.260	0.000****	1.122-1.416	1.236	0.001****	1.096-1.393

* trend effect, ** $p<0.05$, ***$p<0.01$, ****$p<0.001$

Discussion

This study was the first to investigate the prospective role of key psychological factors as predictors of help-seeking behaviour within the context of NSSI. Three aims were specified. The first aim was to examine the prevalence of help-seeking behaviour amongst a sample of individuals with experience of NSSI. The second aim was to examine whether shame, attachment style, and previous help-seeking experiences were associated with help-seeking intentions, adjusting for NSSI urges and lifetime help-seeking. The third and final aim was to determine whether these same factors, alongside baseline help-seeking intentions, would predict help-seeking behaviour over a one month follow-up period.

The prevalence of lifetime help-seeking behaviour in the current study was high, with over 90% of the sample reporting to have sought help in relation to NSSI during their lifetime. This rate of help-seeking exceeds that observed in previous studies (Michelmore & Hindley, 2012, Rowe et al., 2014), which have primarily focused upon adolescent and young adult samples. Earlier estimates of help-seeking behaviour amongst adult samples (Nada-Raja et al., 2003) have identified rates more closely aligned with those found in the current study. It is plausible that amongst adult samples, individuals may have been exposed to a greater number of potential sources of help during the lifetime, as compared with young people. Moreover, additional barriers relating to autonomy and knowledge of available help sources may have less impact upon adults (Fortune et al., 2008). In light of this finding, longitudinal approaches that track help-seeking behaviour from adolescence to adulthood may help to determine whether help-seeking does in fact increase with age.

In considering the relationships between key predictor and outcome variables, there were four main findings. First, urges to self-injure were associated with both intentions to seek help and actual help-seeking behaviour at follow-up in relation to formal help-seeking sources. That

is, more severe NSSI urges predicted greater professional help-seeking, but showed no relationship with informal help-seeking (i.e., from family and friends). It may be that formal help-seeking in particular is driven by a person's sense of clinical need, and so factors such as current NSSI urges have a greater impact. These findings echo those of previous research, that more severe self-injury is linked with greater intentions to seek help (Frost & Casey, 2016). The current study found no evidence to support the help negation effect previously demonstrated for informal help-seeking (Frost et al., 2017).

Second, results suggested that attachment avoidance was negatively associated with intentions to seek help from both formal and informal sources. That is, as attachment avoidance increased, intentions to seek help reduced. This finding is consistent with that of previous research, which suggests that an avoidant attachment style is associated with greater reluctance to seek help (Vogel & Wei, 2005). Attachment avoidance is characterised by features of compulsive self-reliance and mistrust of others intentions (Mikulincer & Shaver, 2018). It may be that individuals who are high in attachment avoidance do not see the need to seek support from others, or, anticipate that others cannot meet their needs. The positive associations between attachment anxiety and willingness to seek help that have been demonstrated elsewhere (Vogel & Wei, 2005) were not replicated in this study. This suggests that attachment anxiety may be a less pertinent factor within the context of help-seeking for NSSI.

Third, prior (i.e., lifetime) help-seeking for NSSI was associated with greater informal help-seeking intentions and help-seeking behaviour at follow-up. Although a trend effect was observed for the association between prior help-seeking and formal help-seeking intentions, this effect was diminished in the multivariate analysis. It is possible that informal help-seeking may rely on the presence of established relationships (i.e., with friends or family). Once these relationships are in place, and help-seeking becomes a possibility, then it may continue without much impact from other factors. For example, supportive conversations with a peer or family

member may become integrated into the repertoire of exchanges that subsequently take place within the context of the relationship. This may contrast with formal help-seeking in which relationships with professionals are often brief and less established.

Fourth, intentions to seek help at baseline were predictive of actual help-seeking at follow-up for both formal and informal sources. For informal sources, this effect was reduced to a trend in the multivariate analysis. Nonetheless, these results are consistent with theoretical accounts such as the Theory of Planned Behaviour (Ajzen, 1991), which emphasises the role of behavioural intentions as precipitants to action. There is a dearth of research concerning the relationship between help-seeking intentions and behaviour for psychological difficulties, with the available evidence demonstrating conflicting results regarding the extent to which help-seeking intentions translate into action (Chin et al., 2015; Ten Have et al., 2010). The current findings suggest that within the context of NSSI, help-seeking intentions do predict subsequent help-seeking behaviour. Furthermore, the use of a longitudinal design bolsters the ability to infer the direction of this relationship, the effects of which remained after adjusting for lifetime help-seeking.

It is notable that neither shame nor previous help-seeking experiences (i.e., satisfaction, hostility, support) were related to any facet of help-seeking. For shame, these results conflict with previous accounts highlighting shame as a barrier to seeking help amongst individuals who self-injure (Fortune, Sinclair & Hawton, 2008; Long, Manktelow & Tracey, 2015; Longden & Proctor, 2012). Given the high rates of help-seeking reported, it is possible that the current sample represented a group in which help-seeking was viewed as more acceptable, and less shaming. Alternatively, it may be that a more global, trait based measure of shame may be more closely linked to help-seeking, as opposed to the state-based measure used here.

Six limitations of the current study warrant further consideration. First, within the sample recruited to the current study, the vast majority of participants had sought help in relation to

NSSI at some point during the lifetime. As a result, the extent to which the study was able to capture data relating to those individuals with no previous help-seeking experience was limited. It is possible that biases arising from self-selection may have emerged due to the online recruitment method used. This too may have led to the recruitment of a particularly well-functioning sample. Second, the sample recruited to the current study was largely female, with insufficient data from other sex groups to conduct comparisons. Whilst the frequency of NSSI has been shown to be higher amongst females, there is evidence to suggest that males are less likely to seek help, and that pathways to help-seeking are influenced by gender differences (Disabato et al., 2018; Rowe et al., 2014). The small proportion of males sampled within this study precluded the ability to make comparisons, therefore it is unclear to what extent the current findings are generalizable to males with NSSI experience. Third, the current research focussed upon the roles of individual level factors upon help-seeking intentions and behaviour. Consequently, the impact of factors related to service provision and the availability of professional help sources was not considered, despite the current dearth of information available in this area (Michelmore & Hindley, 2012). Fourth, despite being the first study to utilise a longitudinal approach, it is recognized that the follow-up period used (i.e., one month), was relatively short. Future studies would benefit from employing a longer follow-up period to assess whether the predictive factors identified herein hold over a lengthier timeframe. Fifth, previous research has highlighted differences in prevalence rates and attitudes towards help-seeking across cultures (Mojaverian, Hashimoto & Kim, 2013). As the current study was conducted in a predominantly western, individualist context, the extent to which these results are generalizable to different cultural contexts is unknown. Finally, the current study relied upon the use of self-report measures. Whilst this was necessary for the measurement of certain intrapsychic constructs, such as shame, questions have been raised regarding the reliability of

self-report data (Kurtzman, 2000). It may be advantageous for future studies to triangulate self-report measures with clinical record data, for example, relating to service utilisation.

The current findings have two main clinical implications. First, the results of this study underscore the role of intentions as predictive of future professional help-seeking amongst individuals who engage in NSSI. It is suggested that interventions that aim to increase intentions to seek help may be beneficial. One approach that may prove fruitful is that of motivational interviewing. Motivational interviewing is a therapeutic approach designed to enhance readiness for change, by supporting the individual to resolve feelings of ambivalence about making such changes (Hettema, Steele & Miller, 2005). Approaches that seek to explore and address perceived barriers to help-seeking may serve to improve intentions, and subsequent behaviour. Second, whilst the direct approaches outlined above may benefit those already in contact with healthcare services, they are unlikely to reach those who do not access such services. As such, a broader public health approach may prove fruitful in this area. Whilst so-called anti-stigma campaigns have been shown not to impact intentions to seek help for mental health problems (Henderson, Evans-Lacko & Thornicroft, 2013), increased knowledge (i.e., mental health literacy) has been shown to positively predict increased intentions (Rusch, Evans-Lacko, Henderson, Flach & Thornicroft, 2011). Therefore, programmes designed to increase knowledge of NSSI may serve to increase intentions. Preliminary research from school-based programmes suggests that such programmes do positively impact upon intentions to seek help for NSSI (Muehlenkamp, Walsh & McDade, 2010).

In light of these results, two areas for further research are suggested. First, the finding that only lifetime informal help-seeking, that is, having previously sought help, was predictive of informal help-seeking behaviour suggests that more research is needed to understand the process by which individuals decide to seek help from family and friends. Such research may benefit from examining the roles of perceived social support and attitudes toward self-injury

and help-seeking with the individuals social network. Second, the results of this study suggested a relationship between attachment avoidance and help-seeking intentions, and in turn, a relationship between intentions to seek help and subsequent behaviour. Whilst the current study was not designed to test a mediational pathway, the investigation of potential mediational relationships may shed light on indirect pathways to help-seeking.

To conclude, this was the first study to prospectively examine the role of key psychological factors as predictors of help-seeking in non-suicidal self-injury. The current study underscores the need to examine separately the pathways to formal and informal help-seeking in NSSI. Further research is required to examine potential mediational pathways to help-seeking behaviour, and to understand the role of psychological factors in individuals who have NSSI but have never sought help.

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Appendices

Appendix A

Author Guidelines for the British Journal of Clinical Psychology

The British Journal of Clinical Psychology publishes original contributions to scientific knowledge in clinical psychology. This includes descriptive comparisons, as well as studies of the assessment, aetiology and treatment of people with a wide range of psychological problems in all age groups and settings. The level of analysis of studies ranges from biological influences on individual behaviour through to studies of psychological interventions and treatments on individuals, dyads, families and groups, to investigations of the relationships between explicitly social and psychological levels of analysis. All papers published in The British Journal of Clinical Psychology are eligible for Panel A: Psychology, Psychiatry and Neuroscience in the Research Excellence Framework (REF).

The following types of paper are invited:
• Papers reporting original empirical investigations
• Theoretical papers, provided that these are sufficiently related to the empirical data
• Review articles which need not be exhaustive but which should give an interpretation of the state of the research in a given field and, where appropriate, identify its clinical implications
• Brief reports and comments

1. Circulation

The circulation of the Journal is worldwide. Papers are invited and encouraged from authors throughout the world.

2. Length

The word limit for papers submitted for consideration to BJCP is 5000 words and any papers that are over this word limit will be returned to the authors. The word limit does not include the abstract, reference list, figures, or tables. Appendices however are included in the word limit. The Editors retain discretion to publish papers beyond this length in cases where the clear and concise expression of the scientific content requires greater length. In such a case, the authors should contact the Editors before submission of the paper.

3. Submission and reviewing

All manuscripts must be submitted via Editorial Manager. The Journal operates a policy of anonymous (double blind) peer review. We also operate a triage process in which submissions that are out of scope or otherwise inappropriate will be rejected by the editors without external peer review to avoid unnecessary delays. Before submitting, please read the terms and conditions of submission and the declaration of competing interests. You may also like to use the Submission Checklist to help you prepare your paper.

By submitting a manuscript to or reviewing for this publication, your name, email address, and affiliation, and other contact details the publication might require, will be used for the regular operations of the publication, including, when necessary, sharing with the publisher (Wiley) and partners for production and publication. The publication and the publisher recognize the importance of protecting the personal information collected from users in the operation of these services, and have practices in place to ensure that steps are taken to

maintain the security, integrity, and privacy of the personal data collected and processed. You can learn more at https://authorservices.wiley.com/statements/data-protection-policy.html.

4. Manuscript requirements

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

• Manuscripts should be preceded by a title page which includes a full list of authors and their affiliations, as well as the corresponding author's contact details. You may like to use this template. When entering the author names into Editorial Manager, the corresponding author will be asked to provide a CRediT contributor role to classify the role that each author played in creating the manuscript. Please see the Project CRediT website for a list of roles.

• The main document must be anonymous. Please do not mention the authors' names or affiliations (including in the Method section) and refer to any previous work in the third person.

• Tables should be typed in double spacing, each on a separate page with a self-explanatory title. Tables should be comprehensible without reference to the text. They should be placed at the end of the manuscript but they must be mentioned in the text.

• Figures can be included at the end of the document or attached as separate files, carefully labelled in initial capital/lower case lettering with symbols in a form consistent with text use. Unnecessary background patterns, lines and shading should be avoided. Captions should be listed on a separate sheet. The resolution of digital images must be at least 300 dpi. All figures must be mentioned in the text.

• All papers must include a structured abstract of up to 250 words under the headings: Objectives, Methods, Results, Conclusions. Articles which report original scientific research should also include a heading 'Design' before 'Methods'. The 'Methods' section for systematic reviews and theoretical papers should include, as a minimum, a description of the methods the author(s) used to access the literature they drew upon. That is, the abstract should summarize the databases that were consulted and the search terms that were used.

• All Articles must include Practitioner Points – these are 2–4 bullet points to detail the positive clinical implications of the work, with a further 2–4 bullet points outlining cautions or limitations of the study. They should be placed below the abstract, with the heading 'Practitioner Points'.

• For reference citations, please use APA style. Particular care should be taken to ensure that references are accurate and complete. Give all journal titles in full and provide DOI numbers where possible for journal articles.

• SI units must be used for all measurements, rounded off to practical values if appropriate, with the imperial equivalent in parentheses.

• In normal circumstances, effect size should be incorporated.

• Authors are requested to avoid the use of sexist language.

• Authors are responsible for acquiring written permission to publish lengthy quotations, illustrations, etc. for which they do not own copyright. For guidelines on editorial style, please consult the APA Publication Manual published by the American Psychological Association.

If you need more information about submitting your manuscript for publication, please email Vicki Pang, Editorial Assistant (bjc@wiley.com) or phone +44 (0) 1243 770 410.

5. Brief reports and comments

These allow publication of research studies and theoretical, critical or review comments with an essential contribution to make. They should be limited to 2000 words, including references. The abstract should not exceed 120 words and should be structured under these headings: Objective, Method, Results, Conclusions. There should be no more than one table or figure, which should only be included if it conveys information more efficiently than the text. Title, author name and address are not included in the word limit.

6. Supporting Information

BJC is happy to accept articles with supporting information supplied for online only publication. This may include appendices, supplementary figures, sound files, videoclips etc. These will be posted on Wiley Online Library with the article. The print version will have a note indicating that extra material is available online. Please indicate clearly on submission which material is for online only publication. Please note that extra online only material is published as supplied by the author in the same file format and is not copyedited or typeset. Further information about this service can be found at http://authorservices.wiley.com/bauthor/suppmat.asp

Appendix B

Pre-Registered Systematic Review Protocol

Review title.

An examination of the relationship between shame and guilt and self-harm: a systematic review

Review question.

1) What is the size and nature of the relationship between shame and self-harm?
2) What is the size and nature of the relationship between guilt and self-harm?
3) What is the size and nature of the relationship between shame and/or guilt and help-seeking amongst individuals with current or past self-harm?

Searches.

The electronic databases, PsycINFO, MEDLINE, CINAHL and Web of Science, will be searched, using the following search terms (ashamed OR shame* OR guilt* OR self-blame OR self-disgust) AND (suicid* OR self- harm OR self-injur* OR self-mutilation OR NSSI OR overdose OR DSH OR parasuicid*).

Dissertation databases, EThOS and ProQuest, will also be searched.

Following this, hand searches of the references lists of relevant research papers and key review articles will be completed. Corresponding authors of included papers will also be contacted regarding any other published or unpublished data that may be eligible for inclusion in the review. Finally, conference abstracts and theses/dissertations identified through the searches will be followed-up in addition to peer-reviewed journals.

Participants/population.

Individuals, i.e., children and adults, with current or past self-harm behaviour, and those without (comparators).

Intervention(s), exposure(s).

.Not applicable.

Types of study to be included.
Inclusion criteria: 1) quantitative research studies using either a cross-sectional, correlational, case-control, or prospective study design, or intervention studies/trials where there is suitable baseline or follow-up data in the control arm, 2) comprising original research, 3) written in English, 4) measuring shame and/or guilt, and 5) measuring self-harm (defined below). Exclusion criteria: 1) qualitative research, 2) case studies, 3) experimental designs, or 4) review, commentary or discussion articles.

Primary outcome(s).

Frequency and severity of self-harm.

Data extraction (selection and coding)

The selected databases will be searched using the terms indicated. Dissertations identified in the literature search will be followed up by contacting the author(s). Conference abstracts identified in the search that are linked to potentially eligible research will also be followed up by contacting the authors, and corresponding authors will be contacted in relation to any published or unpublished data that may be eligible for inclusion. An initial screening of paper titles and abstracts will be completed by the first reviewer (KS), to determine eligibility for inclusion in the review. Papers that clearly do not meet inclusion criteria will be excluded at this point. Full-text screening of the remaining papers will then be undertaken in parallel by two members of the review team, with ineligible papers excluded following this. In the event that eligibility remains unclear, this will be discussed with the involvement of a third reviewer.

For the studies selected for review, data will then be extracted. This will include the extraction of general study information (e.g., author, date, geographical location), participant characteristics, study design, tools used to measure shame, guilt, self-harm, and help-seeking (where measured), information pertaining to the statistical analysis completed, and the study results. Any missing data will be requested by contacting study authors.

Risk of bias (quality) assessment.

Quality assessment will be undertaken using an adapted version of the Agency for Healthcare Research and Quality (AHRQ; Williams, Plassman, Burke, Holsinger & Benjamin, 2010) assessment tool. This will be completed, independently, by two members of the review team. Where there are discrepancies between the two reviewers in relation to quality assessment, these will be resolved through further discussion with a third reviewer.

Strategy for data synthesis.

A narrative synthesis of the extracted research findings is planned.

Appendix C

Risk of Bias Assessment Tool

The studies will be assessed using the criteria below. Each criterion will be graded as 'yes', 'no', 'partially' or 'cannot tell'.

1. Unbiased recruitment of cohort

Factors to consider:

Inclusion/ exclusion criteria

- Is it clearly described?

Recruitment strategy

- Is it clearly described?
- Sample is representative of the population of interest
- Relatively free from bias (selection bias might be introduced e.g. by recruitment via advertisement)

2. Selection minimises baseline differences in demographic factors? (for controlled studies only)?

Factors to consider:

- Was selection of the comparison group appropriate? Consider whether these two sources are likely to differ on factors related to the outcome (other than shame, guilt, and NSSI). Note that in instances of NSSI versus non-clinical controls, differences in clinical characteristics would be expected, but matching on key demographics (age, gender, ethnicity, education, etc.) would still be required to minimize bias.

3. Sample size calculated/justified?

Factors to consider:

- Did the authors report conducting a power analysis or describe some other basis for determining the adequacy of study group sizes for the primary outcome(s) of interest to us?
- Did the eventual sample size deviate by < 10% of the sample size suggested by the power calculation?

4. Adequate description of cohort?

Factors to consider:

- Consider key demographic information such as age, gender and ethnicity.
- Information regarding education or socio-economic characteristics is also important.

5. Valid method to assess shame/guilt

Factors to consider:

- Was the method used to assess shame/guilt clearly described? (Details should be sufficient to permit replication in new studies)
- Do they clearly define what they mean by shame/guilt?
- Was a valid and reliable measure used to assess shame/guilt? (For this question if they have developed their own study tool, did they use factor analysis to test validity of tool? Has the measure they used been used in other studies? (Note that measures that consist of single items of scales taken from larger measures are likely to lack content validity and reliability).
- Were these measures implemented consistently across all study participants?

6. Valid method to assess NSSI

Factors to consider:

- Was the method used to assess NSSI clearly described? (Details should be sufficient to permit replication in new studies)
- Do they clearly define what they mean by NSSI?
- Were primary outcomes (i.e., NSSI) assessed using valid and reliable measures? (Note that measures that consist of single items of scales taken from larger measures are likely to lack content validity and reliability).
- Were these measures implemented consistently across all study participants?

7. Assessors blind to shame/guilt or NSSI?

Factors to consider:

- Were the study investigators who assessed outcomes blind to the clinical status of participants? (Note that even in single-arm studies some degree of blinding is possible, for example using external interviewers with no knowledge of participants' clinical status).
- In studies where researcher effects are not likely due to method (e.g., online questionnaire or mailed questionnaire where there is no contact with researcher) there is unlikely to be bias here and blinding will not be needed.

8. Adequate follow-up (only applicable for longitudinal studies)

Factors to consider:

- A justification of the follow-up period length is preferable.
- A follow-up period of at least 6 months is preferable for assessing NSSI (though if thoughts or cognitions relating to NSSI are the outcome, a shorter follow-up may be needed).
- Follow-up period should be the same for all groups.

9. Adequate handling of missing data/missing data minimal

Factors to consider:

- Are the details of missing data clearly reported, including how missing data was handled in the analyses?
- Did missing data exceed 20% the study? (from whole sample or any group)
- If missing data was present and substantial, were steps taken to minimize bias? (e.g. sensitivity analysis or imputation)**.**

10. Analysis controls for confounders?

Factors to consider:

- Does the study identify and control for important confounding variables and effect modifiers?
- Did the study control for likely demographic and clinical confounders?

11. Analytic methods appropriate?

Factors to consider:

- Was the kind of analysis done appropriate for the kind of outcome data (categorical, continuous, etc.)?
- Was the number of variables used in the analysis appropriate for the sample size? (The statistical techniques used must be appropriate to the data and take into account issues such as controlling for small sample size, clustering, rare outcomes, multiple comparison, and number of covariates for a given sample size).

Appendix D

Risk of Bias Assessment with Comments to Guide Decisions

Authors	Unbiased selection of cohort	Selection minimises baseline differences	Sample size calculated/ justified	Adequate description of cohort	Valid method to assess shame/guilt	Valid method to assess NSSI	Assessors blind to shame/guilt or NSSI	Adequate follow-up (only if longitudinal)	Missing data minimal	Control of confounders	Analysis appropriate
Brown et al. (2007)	No: queries regarding representat-iveness of psychology students; vague details of recruitment procedures	No: no attempt to match groups on demographic features	No: not mentioned	Yes: age gender, ethnicity, and relationship status reported	Yes: validated measure of guilt used (PANAS-X)	Yes: used validated measure (DSHI); widely used	Cannot tell: insufficient information regarding procedure	N/A	Cannot tell: no mention of missing data	No: no information regarding confounders	Yes: ANOVA used to examine group differences
Donhauser (2007)	Partial: inclusion criteria re: experience of CSA stated; recruitment procedure outlined; possible bias from recruitment sources, e.g., counselling services	N/A	Partial: power calculation presented; final sample size >10% lower than suggested by power calculation	Yes: age, gender, ethnicity reported	Yes: validated measure of shame used (ISS)	Yes: used validated measure (DSHI); widely used	Yes: anonymous online study	N/A	Yes: <20% data missing; incomplete responses (n=8) not analysed	Partial: CSA severity included as control variable; no other confounders controlled for	Partial small sample size for mediation analyses; did use bootstrap which is more appropriate for small samples

Duggan et al. (2015)	Partial: Detailed description of recruitment procedures; sampled only Grade 7 students	Yes: comparison group matched on gender and school	No: not mentioned	No: descriptive information not provided for subset used in this study	Yes: used subscale of validated measure (OBCS-Y)	Partial: single item from validated measure (HIDS)	No: NSSI participants identified through screening for interview with researcher	Partial: adequate follow-up of 1 year; lack of justification for time frame	Yes: <20% data missing; incomplete responses n=6) excluded from analysis	Partial: gender included in analysis; no other confounders considered	Yes: MANOVA used to assess group differences
Erchull et al. (2013)	Partial: Recruitment strategy is clearly described; potential bias due to use of snowball sampling	N/A	No: not mentioned	Yes: age, gender, ethnicity, education, SES, and sexuality reported	Yes: used subscale of validated measure (OBCS)	Yes: used validated measure (DSHI); widely used	Yes: used anonymous, online survey method	N/A	Yes: <20% data missing; no participant missed more one item in a scale; no use of imputation reported	Partial: controlled for age, but no significant associations identified with shame or NSSI	Yes: association examined using correlation and path analysis; path analysis of cross-sectional data

Flett et al. (2012)	Partial: recruitment strategy is outlined; no details of inclusion/ exclusion criteria are provided; potential for bias in recruitment	N/A	No: not mentioned	Partial: age, gender, birth place, living situation, and educational status recorded; ethnicity not reported	Yes: used validated measure of shame (ESS); widely used	Partial: measure taken using items from two validated self-harm measures	Yes: participants approached directly by researcher; but measures completed without researcher present	N/A	Cannot tell: no mention of missing data	Partial: analyses conducted separately according to gender; no specific information regarding confounders	Yes: correlation appropriate to assess association between variables
Gandy (2013)	Partial: clear inclusion criteria; recruitment strategy detailed; possible bias from recruitment of those accessing support services	N/A	Yes: power analysis presented; final sample exceeded suggested sample size	Yes: extensive demographic information presented; additional clinical information also described, e.g., details of CSA and service contact	Yes: validated measure of shame proneness (TOSCA-3)	Partial: single items from validated measures	Yes: no contact with researchers; online study	N/A	Yes: <20% data missing; exclude pairwise option used to retain sample size where relevant data available	Yes: effects of guilt were controlled for; correlations between demographic variables and key study variables were assessed to examine confounding effects	Yes: correlation to assess association with appropriate sample size

Lear (2014)	Partial: clear recruitment strategy; target population college students, but sampled from psychology department	N/A	No: not mentioned	Yes: age gender, and ethnicity reported	Yes: validated measures of shame and shame proneness (ESS; TOCSA-3)	Yes: validated measure of NSSI (ISAS)	Yes: measures completed independently of researcher	N/A	Yes: <20% missing data; cases with substantial missing data excluded from analysis	No: no mention of confounders	Yes: regression used to assess association between predictor and outcome variables
Mallindine (2002)	Partial: participants appear to represent target population, i.e., high secure patients; recruitment strategy clear; possible bias resulting from consent process (from Responsible Clinician)	Partial: attempted to match groups; generally well-matched but differences in age and level of support on ward were present	No: not mentioned	Yes: age, gender, ethnicity, and offence related information recorded	Partial: validated measure used (OAS); validity for this specific population unclear	No: history of NSSI determined from clinical records	No: measures completed in interview with researcher	N/A	No: reference made to missing data but no details of how this was managed	No: no mention of confounders	Yes: non-parametric tests used to examine group differences

Nelson and Muehlenkamp (2012)	Partial: Potential biases from self-selection and recruitment strategy	No: no attempt to match groups on demographic factors	No: not mentioned	Yes: age, gender, ethnicity, and academic discipline reported	Yes: used subscale of validated measure (OBCS)	Yes: used validated measure (DSHI); widely used tool	Yes: no contact with assessors; online study	N/A	Yes: <20% data missing; incomplete responses (n=8) not analysed	No: no information regarding confounders	Yes: correlation used for continuous data; appropriate for aims
Paulson (2013)	Partial: Recruitment procedure clearly documented; inclusion/ exclusion criteria stated; potential for bias in recruitment due to clinician identification of potential participants	N/A	Partial: conducted post-hoc power analysis; sample size deviated by >10% of sample size suggested by power analysis	Yes: age, gender, ethnicity, employment status, and level of education reported	Yes: validated measure of shame proneness (TOSCA-3)	Partial: single items from validated measures	Yes: no contact with assessors as measures completed online	N/A	Yes: <20% data missing; incomplete responses (n=6) not analysed	Partial: examined impact of demographic factors, no significant relationships to main variables identified, therefore not included in analysis	Partial: correlation used to examine association of key variables; analysis did not take into account small sample size

Pritchard (2014)	Partial: clearly described target population and recruitment procedure; inclusion/ exclusion criteria outlined; possible bias from online recruitment	N/A	Yes: power calculation presented; final sample size exceeds suggested sample size	Partial: age, gender, and nationality recorded; did not report ethnicity data	Yes: used subscale of validated measure (OBCS)	Yes: used validated and widely used measure (DSHI)	Yes: online survey method used	N/A	Yes: <20% data missing; incomplete responses (n=9) not analysed	Partial: adjusted for age and history of trauma; no other confounding factors considered	Yes: correlation used to assess association between key variables
Schoenleber (2013)	Cannot tell: recruitment methods unclear; lack of information regarding two groups recruited	No: no attempt to match groups on any demographic factors	No: not mentioned	Yes: age, gender, and ethnicity reported	Yes: widely used and validated measure of shame proneness (TOSCA-3)	Yes: used validated measure of NSSI (ISAS)	Yes: self-report measures completed independently	N/A	Cannot tell: no mention of missing data	Partial: adjusted for effects of negative affect proneness; no other confounds considered	Yes: association between variables examined with correlation analyses; logistic regression used for binary outcome

Shoenleber et al. (2014)	Cannot tell: lack of clarity re: sample; addition of student participants is not clearly justified	No: no attempt to match groups on demographic characteristics	No: not mentioned	Yes: age, gender, and ethnicity reported	Yes: validated measure of shame proneness (TOSCA-3)	Yes: validated measure used (ISAS)	Yes: self-report measures	N/A	Cannot tell: no mention of missing data	Partial: does not control for any demographic factors, but controls for NA-proneness, NA aversion, punishment-deservingness	Yes: correlation and regression used to examine association
Stanciu (2015)	Partial: Recruitment procedures clearly described; inclusion/ exclusion criteria stated; possible self-selection bias	N/A	No: not mentioned	Yes: age, gender, and ethnicity described	Yes: previously used and replicable measures of shame (SVQ and SSGS)	Yes: validated measure used (DSHI)	No: measures completed in interview session with researcher	N/A	Cannot tell: no mention of missing data	Partial: analysis controls for guilt; no other confounders considered	Yes: correlation to assess association between variables

Todd (2002)	Yes: clear recruitment procedures and inclusion criteria; random sampling of controls	Partial: matching based upon ethnicity was undertaken	Yes: power calculation reported; suggested sample size achieved	Yes: age, gender, ethnicity reported	Partial: used measures validated in other samples, though validity for use in target population unclear	No: NSSI information drawn from clinical records	No: measures completed in interview format with researcher	N/A	Cannot tell: no mention of missing data	Partial: controls for depression and prison status which were identified as potential confounders	Yes: group differences examined using t-tests and ANCOVA
VanDerhei et al. (2014)	Partial: Inclusion criteria not stated; recruitment methods clear; potential self-selection bias	N/A	No: not mentioned	Yes: age, gender, ethnicity, school year reported	Yes: validated and widely used measures of shame- and guilt-proneness (TOSCA-3)	Yes: validated measure used (ISAS)	Yes: self-report measures completed independently	N/A	Cannot tell: no mention of missing data	Yes: controls for effects of gender, age, school year, race/ethnic group, and internalizing tendencies	Yes: logistic regression used for binary outcome; negative binomial regression for frequency outcome

Xavier et al. (2016a)	Partial: recruitment strategy clearly described, inclusion/ exclusion criteria not described; potential bias from parental consent requirement	N/A	No: not mentioned	Partial: age, gender, years in education, no details of ethnicity or SES	Yes: validated measure (OAS2); used in other studies	Partial: subscale of validated measure; subscale has good internal consistency; used in other studies	Yes: measures completed in classroom setting with researcher present but measures self-report	N/A	Yes: states no missing data, so no further steps needed	Partial: age, gender, and years in education controlled in for multivariate analysis, but not in correlation	Yes: correlation and path analysis used with continuous data; sufficient sample size for analytic method

Appendix E

Study Measures

State Shame and Guilt Scale (SSGS)

REMOVED FOR COPYRIGHT REASONS

Actual Help Seeking Questionnaire (AHSQ)

REMOVED FOR COPYRIGHT REASONS

Previous Help-Seeking Experience

If you have **ever** sought help or support from others about your self-harm/NSSI, please rate your agreement with the following statements: (If you have **never** sought help or support from others about self-harm, please tick 'Not applicable')

	Strongly agree (1)	Somewhat agree (2)	Neither agree nor disagree (3)	Somewhat disagree (4)	Strongly disagree (5)	Not applicable
When I asked for help or support about my self-harm, others responded positively towards me	○	○	○	○	○	○
When I asked for help or support about my self-harm, others were hostile towards me	○	○	○	○	○	○
Overall, I have been satisfied with the help or support I have received from others about my self-harm.	○	○	○	○	○	○

General Help-Seeking Questionnaire (GHSQ)

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Alexian Brothers Urge to Self-Injure Scale (ABUSI)

REMOVED FOR COPYRIGHT REASONS

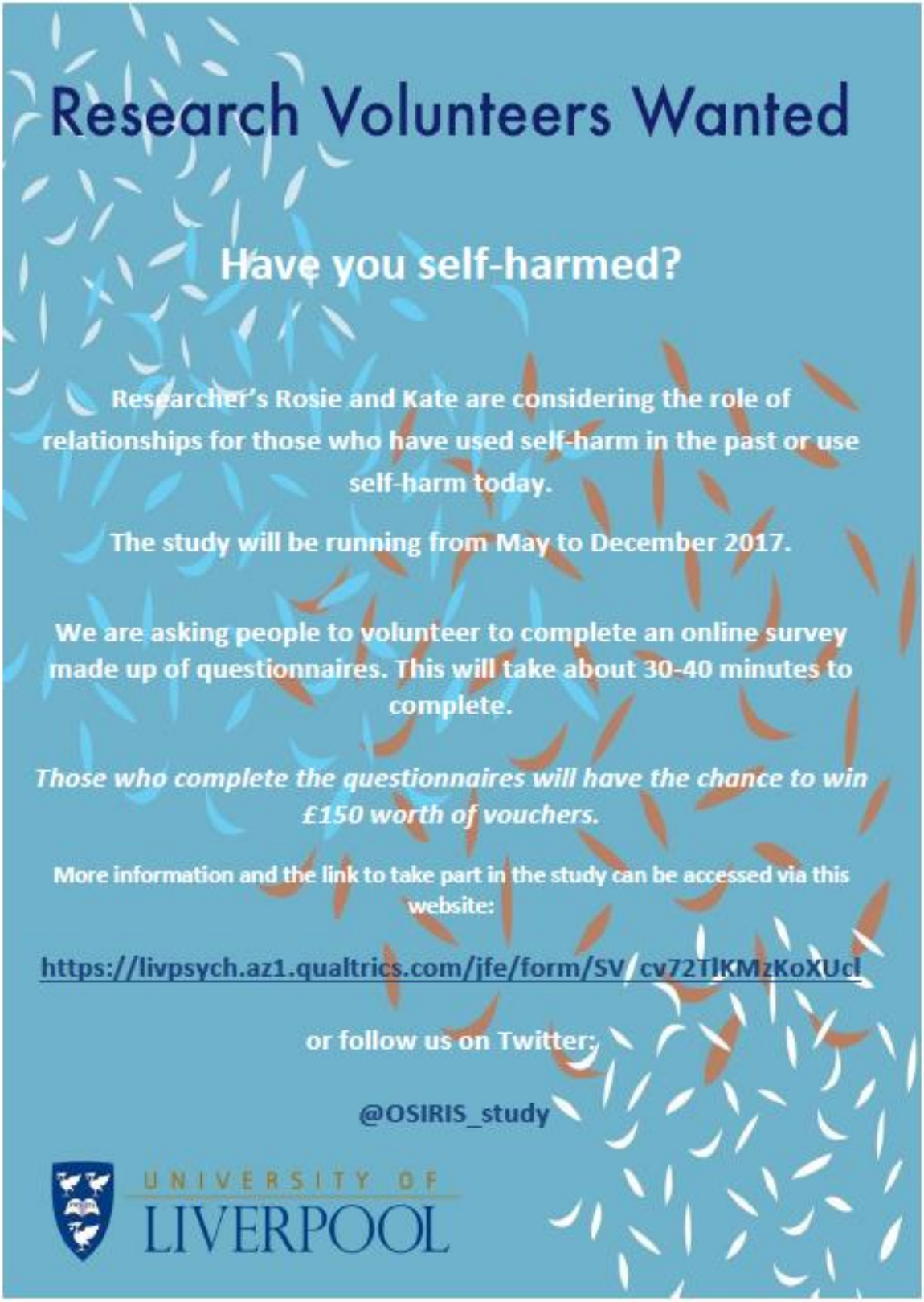
Experience in Close Relationship Scale – Revised (ECR-R)

REMOVED FOR COPYRIGHT REASONS

REMOVED FOR COPYRIGHT REASONS

Appendix F

Study Advertisement Poster



Appendix G

Research Review Committee Approval Letter

UNIVERSITY OF LIVERPOOL

D.Clin.Psychology Programme
Division of Clinical Psychology
Whelan Building, Quadrangle
Brownlow Hill
LIVERPOOL
L69 3GB

Tel: 0151 794 5530/5534/5877
Fax: 0151 794 5537
www.liv.ac.uk/dclinpsychol

15th August 2016

Kate Sheehy
Clinical Psychology Trainee
Doctorate of Clinical Psychology Doctorate Programme
University of Liverpool
L69 3GB

RE: Predictors of help-seeking in non-suicidal self-injury
Trainee: Kate Sheehy
Supervisors: Dr Peter Taylor, Dr Ellie Pontin

Dear Kate,

Thank you for your response to the reviewers' comments of your research proposal submitted to the D.Clin.Psychol. Research Review Committee (letter dated 25/07/16 and further 06/08/16).

I can now confirm that your amended proposal (version 2, date 25/07/16) and revised budget (version 3, dated 06/08/16) meet the requirements of the committee and have been approved by the Committee Chair.

Please take this Chairs Action decision as ***final*** approval from the committee.

You may now progress to the next stages of your research.

I wish you well with your research project.

Dr Catrin Eames
Vice-Chair D.Clin.Psychol. Research Review Committee.

Appendix H

Research Ethics Committee Approval Letter

NHS
Health Research Authority
North West - Greater Manchester West Research Ethics Committee
Barlow House
3rd Floor
4 Minshull Street
Manchester
M1 3DZ

Telephone: 0207 104 8021

14 March 2017

Dr Peter Taylor
Department of Clinical Psychology
Second Floor, Zochonis Building
University of Manchester
M13 9PL

Dear Dr Taylor

Study title:	**Online Study of Interpersonal Resources In Self-Harm (OSIRIS)**
REC reference:	**17/NW/0059**
Protocol number:	**UoL001268**
IRAS project ID:	**219294**

Thank you for your submission, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair.

We plan to publish your research summary wording for the above study on the HRA website, together with your contact details. Publication will be no earlier than three months from the date of this opinion letter. Should you wish to provide a substitute contact point, require further information, or wish to make a request to postpone publication, please contact hra.studyregistration@nhs.net outlining the reasons for your request.

Confirmation of ethical opinion

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

Conditions of the favourable opinion

The REC favourable opinion is subject to the following conditions being met prior to the start of the study.

Management permission must be obtained from each host organisation prior to the start of the study at the site concerned.

Management permission should be sought from all NHS organisations involved in the study in accordance with NHS research governance arrangements. Each NHS organisation must confirm through the signing of agreements and/or other documents that it has given permission for the research to proceed (except where explicitly specified otherwise).

The HRA website also provides guidance on these topics, which is updated in the light of changes in reporting requirements or procedures.

User Feedback

The Health Research Authority is continually striving to provide a high quality service to all applicants and sponsors. You are invited to give your view of the service you have received and the application procedure. If you wish to make your views known please use the feedback form available on the HRA website: http://www.hra.nhs.uk/about-the-hra/governance/quality-assurance/

HRA Training

We are pleased to welcome researchers and R&D staff at our training days – see details at http://www.hra.nhs.uk/hra-training/

17/NW/0059	**Please quote this number on all correspondence**

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

Yours sincerely

Dr Lorraine Lighton (Chair)
Chair

Email:nrescommittee.northwest-gmwest@nhs.net

Enclosures: "After ethical review – guidance for researchers"

Copy to: *Mr Alex Astor*
Ms Pauline Parker, Mersey Care NHS Foundation Trust

Appendix I

Sponsorship Approval Letter

Dr Taylor
Institute of Psychology, Health and Society
University of Liverpool
Block B Waterhouse Building
Brownlow Street
Liverpool L69 3GL

Mr Alex Astor
Head of Research Support – Health and Life Sciences

University of Liverpool
Research Support Office
2nd Floor Block D Waterhouse Building
3 Brownlow Street
Liverpool
L69 3GL

Tel: 0151 794 8739
Email: sponsor@liv.ac.uk

21 April 2017

Sponsor Ref: UoL001268

Re: Sponsor Permission to Proceed notification

"Online Study of Interpersonal Resources in Self Harm (OSIRIS)"

Dear Dr Taylor

All necessary documentation and regulatory approvals have now been received by the University of Liverpool Research Support Office in its capacity as Sponsor, and we are satisfied that all Clinical Research Governance requirements have been met. You may now proceed with any study specific procedures to open the study.

If you have any queries regarding the sponsorship of the study please do not hesitate to contact the Clinical Research Governance Team on 0151 794 8373 (email sponsor@liv.ac.uk).

Yours sincerely

Mr Alex Astor
Head of Research Support – Health and Life Sciences
Research Support Office

Appendix J

Participant Information Sheet – Baseline

Participant Information Sheet 1

Date: 22.02.2017; Version 2

Study Title: Online Study of Interpersonal resources in Self-Harm (OSIRIS)

We would like to invite you to take part in our research study. Before you decide we would like you to understand why the research is being done and what it would involve for you.

What is the purpose of the study?

This research concerns the experiences of people who have engaged in self-harm. By "self-harm" we mean when a person intentionally damages or injures their body, such as by cutting, biting, hitting, pinching or burning yourself.

The goal of this study is to better understand how self-harm may affect a person's social relationships and how their social relationships may also affect their self-harm. We are interested in two types of social relationships.

The first is how a person may or may not seek help from others when they are in distress. We know that whilst for some people the experience of trying to seek help from others can be positive and mark the first step towards recovery, for others these experiences can also be negative (e.g., hostile or unhelpful reactions from others) and might stop a person from trying to seek help again.

The second aim of the study is to understand how the new phenomenon of dating apps, (such as tinder, grindr and happn) may affect those who engage in self-harm. Similarly to seeking help, whilst dating app use may be a positive and rewarding experience, it may also have negative consequences particularly when users experience rejection online.

By undertaking this research, we hope it will contribute to gaining more clinical information to help better inform guidelines and advice on how individuals who experience self-harm can be best supported and helped.

Who we are interested in hearing from?

This study is for anyone who has experienced two or more instances of self-harm. One of these instances must have been in the past year (but the other instance could be at any time in your life). Please note it is not essential that you use dating apps or have sought help in the past, we are looking for a range of experiences. We also require that you are fluent in English.

Do I have to take part?

No – it is your decision entirely. If you decide to take part, you will be asked to first complete a consent form. However, you are free to withdraw at any time, without giving a reason, even after you give your consent to take part. If you do decide to withdraw from the study, you can have the data you provide destroyed, up until the time when this data is made anonymous. There are two ways of having your data destroyed: a) whilst completing the survey you will be given the option to withdraw and then a further option to have your data destroyed; b) If you provide an email address on the survey you can then request your data be destroyed even after you have completed the survey, up until the time the data is anonymised, by emailing the research team (osiris.study@gmail.com) within the following timeframes. If you provide us with an email address to take part in the prize draw, or to receive a summary of the research findings, then you can ask for your data to be destroyed up to one month after you take part. If you choose to take part in our follow-up surveys, you can ask for your data to be destroyed up to one month after completion of or withdrawal from the study. After these times, your data will be anonymised. This means it will not be possible to link you to your specific responses, and so your data cannot be destroyed after these points. Please also note, if you decide not to leave your email address on the survey it will not be possible to link you to your specific responses, and so will be impossible to destroy your data after you complete the survey.

What will I have to do if I take part in the study?

As part of the study we will ask participants to fill in a number of questionnaires. This is an online study so you will be able to take part anywhere that you can access the internet. If you choose to continue you will first be asked to complete a consent form. You will then be presented with a series of questionnaires to complete. This will need to be completed in a single sitting, but it will be possible to take short breaks during their completion. We expect the questionnaires to take up to 30-40 minutes to complete. These questionnaires will ask some information about your relationships with others, wellbeing, experiences of shame and rejection and topics related to self-harm. An example question is "How often have you thought about injuring yourself or about how you want to injure yourself?**"**

Once you have completed the questionnaires, you will be asked if you would like to be included in our prize draw, for a chance to win £150 in vouchers. If you would like to be included, we will ask you to provide an email address to contact you on if successful. The study will also be asking participants if they would like to take part in a follow-up. If you

want to take part you will be asked to provide an email address for us to contact you on in the future. You do not have to take part in the prize draw or the follow up if you choose not to.

The follow up study involves us sending you an email link every month for three months. The link will take you to a very short questionnaire that will take no longer than 5 minutes to complete, and will ask about your experiences of self-harm, relationships with others and help seeking. Each follow-up also includes the chance to take part in separate prize draws, each with a chance to win £50 in vouchers.

Who is conducting the research?

The study is being conducted by Rosanne Cawley & Kate Sheehy, trainee clinical psychologists at the University of Liverpool. It is also being supervised by Dr Peter Taylor, a clinical psychologist and lecturer and the University of Manchester and Dr Ellie Pontin, a clinical psychologist at the University of Liverpool.

What are the possible risks of taking part?

The questionnaires will take time to complete (approximately 30-40 minutes) and may involve upsetting questions. However, you are free to withdraw from the study at any time, and we will provide contact details for additional support, such as self-harm charities, should you wish to contact them. There are no direct benefits from taking part, however the research will help us to further improve the services and support delivered to those who self-harm.

What are the possible benefits of taking part?

Although we cannot promise the study will help you directly, the information we collect will help improve our understanding of self-harm and could shape treatment in the future. We expect that this research will help inform and improve services for those who self-harm. You will also be able to request that you receive a summary of the study findings and implications upon its completion.

What happens when the research study ends?

The findings will be written up as part of Rosanne Cawley and Kate Sheehy's thesis, which will be part of their doctoral training as clinical psychologists. The researchers will also publish the findings in academic journals and present the research at conferences or information events to disseminate the study outcomes with other researchers, academics, clinicians, policy-makers and the general public. No confidential information will be used in these reports.

What if there is a problem?

If you have a concern about any aspect of this study, you should speak to the researchers who will do their best to answer your questions (osiris.study@gmail.com). If you have a complaint, then you can also contact the Research Governance Officer at the University of Liverpool at

ethics@liv.ac.uk or on 0151 794 8290. When contacting the Research Governance Officer, please provide details of the name or description of the study (so that it can be identified), the researchers involved, and the details of the complaint you wish to make.

What about confidentiality?

All of your responses will be kept confidential and made anonymous, so no one will have knowledge concerning your identity, or about which responses you gave. Your responses will only be accessed by the research team conducting the study. All information collected will be kept on a University of Liverpool password-protected computer for 10 years in line with University of Liverpool policy for the storage of research data. Dr Ellie Pontin will be the custodian of all study data. After 10 years, all information stored on the password-protected computer will be deleted, and therefore completely destroyed.

Who is organising and funding the study?

The University of Liverpool have provided the funds to carry out this study. The University of Liverpool is also the study sponsor.

Who has reviewed the study?

This study was given a favourable ethical opinion for conduct in the NHS by the Greater Manchester West Research Ethics Committee.

Who can I contact for further information?

If you have any questions at all, at any time please contact:

Miss Rosanne Cawley Rosanne.Cawley@liverpool.ac.uk

Miss Kate Sheehy Kate.Sheehy@liverpool.ac.uk

Alternatively, you may prefer to contact Dr Peter Taylor, peter.taylor-2@manchester.ac.uk or Dr Ellie Pontin, epontin@liverpool.ac.uk

Thank you very much for taking time to read this information sheet.

Appendix K

Participant Information Sheet – Follow-Up

Participant Information Sheet Follow Up Assessment 1

Date: 22.02.2017; Version 2

Study Title: Online Study of Interpersonal resources in Self-Harm (OSIRIS)

We would like to invite you to take part in a follow-up survey as part of our research study. You may remember that one month ago, you completed a series of questionnaires about your experiences of self-harm and the kinds of relationships you have with others. This is now a short follow-up of those questionnaires, designed to see if there have been any changes since you completed the original questionnaires.

Before you decide whether you would like to complete the follow-up survey we would like you to understand why the research is being done and what it would involve for you.

What is the purpose of the study?

This research concerns the experiences of people who have engaged in self-harm. By "self-harm" we mean when a person intentionally damages or injures their body, such as by cutting, biting, hitting, pinching or burning yourself.

The goal of this study is to better understand how self-harm may affect a person's social relationships and how their social relationships may also affect their self-harm. We are interested in two types of social relationships.

The first is how a person may or may not seek help from others when they are in distress. We know that whilst for some the experience of trying to seek help from others can be positive and mark the first step towards recovery, for others these experiences can also be negative (e.g., hostile or unhelpful reactions from others) and might stop a person from trying to seek help again.

The second aim of the study is to understand how the new phenomenon of dating apps, (such as tinder, grindr and happn) may affect those who engage in self-harm. Similarly to seeking

help, whilst dating app use may be a positive and rewarding experience it may also have negative consequences, particularly when users experience rejection online.

By undertaking this research, we hope it will contribute to gaining more clinical information relevant to how individuals who experience self-harm can be best supported and helped.

Who we are interested in hearing from?

As you completed the original series of questionnaires the web link to this follow-up assessment has been sent to you by the research team.

When recruiting for the study we invited anyone who had experienced two or more instances of self-harm in their lifetime. One of those instances must have been in the past year (but the other instance could be at any time in your life). **Please note it was not essential that you use dating apps or have sought help in the past, we are looking for a range of experiences.** We also required that you are fluent in English.

Do I have to take part?

No – it is your decision entirely. If you decide to take part, you will be asked to complete a consent form. However, you are free to withdraw at any time, without giving a reason, even after you give your consent to take part. If you do decide to withdraw from the study, you can have the data you provide destroyed, up until the time when this data is made anonymous. There are two ways of having your data destroyed: a) whilst completing the survey you will be given the option to withdraw and then a further option to have your data destroyed; b) If you provide an email address on the survey you can then request your data be destroyed even after you have completed the survey, up until the time the data is anonymised, by emailing the research team (orisis.study@gmail.com) within the following timeframes. If you provide us with an email address to take part in the prize draw, or to receive a summary of the research findings, then you can ask for your data to be destroyed up to one month after you first take part. If you choose to take part in our follow-up surveys, you can ask for your data to be destroyed up to one month after completion of or withdrawal from the study. After these times, your data will be anonymised. This means it will not be possible to link you to your specific responses, and so your data cannot be destroyed after these points.

What will I have to do if I take part in the follow-up assessment?

The brief follow-up assessment will ask participants to score their activity over the past month. The follow-up assessment will involve just one 23-item questionnaire consisting of items about help-seeking, dating app use, shame or rejection felt during the past month and any self-harming urges or actions. This is an online study so you will be able to take part anywhere that you can access the internet. We expect this questionnaire to take no longer than 5 minutes to complete.

Once you have completed the questionnaire you will be asked if you would like to be included in our prize draw for £50 in vouchers, we will ask you to provide an email address

to contact you on if successful. You do not have to take part in the prize draw if you choose not to.

This is the first follow up assessment and after completing it you will be asked if you would like to take part in the next follow-up in one months' time. There will be 3 follow-up assessments in total (over 3 months). The follow-up study involves us sending you an email link every month for three months. Each follow-up also includes the chance to take part in separate prize draws.

Who is conducting the research?

The study is being conducted by Rosanne Cawley & Kate Sheehy, trainee clinical psychologists at the University of Liverpool. It is also being supervised by Dr Peter Taylor, a clinical psychologist and lecturer at the University of Manchester and Dr Ellie Pontin, a clinical psychologist at the University of Liverpool.

What are the possible risks of taking part?

The questionnaires may involve upsetting questions. However, you will have answered some of these questions previously in the original series of questionnaires. We remind you that you are free to withdraw from the study at any time, and we will provide contact details for additional support, such as self-harm charities, should you wish to contact them. There are no direct benefits from taking part, however, the research will help us to further improve the services and support delivered to those who self-harm.

What are the possible benefits of taking part?

Although we cannot promise the study will help you, the information we collect will help improve our understanding of self-harm and could shape treatment in the future. We expect that this research will help inform and improve services for those who self-harm. You will also be able to request that you receive a summary of the study findings and implications upon its completion.

What happens when the research study ends?

The findings will be written up as part of Rosanne Cawley and Kate Sheehy's thesis, which will be part of their doctoral training as clinical psychologists. The researchers will also publish the findings in academic journals and present the research at conferences or information events to disseminate the study outcomes with other researchers, academics, clinicians, policy-makers and the general public. No confidential information will be used in these reports.

What if there is a problem?

If you have a concern about any aspect of this study, you should speak to the researchers who will do their best to answer your questions (Osiris.study@gmail.com). If you have a

complaint, then you can also contact the Research Governance Officer at the University of Liverpool at ethics@liv.ac.uk or on 0151 794 8290. When contacting the Research Governance Officer, please provide details of the name or description of the study (so that it can be identified), the researchers involved, and the details of the complaint you wish to make.

What about confidentiality?

All responses will be kept confidential and made anonymous, so no one will have knowledge concerning your identity, or about which responses you gave. Your responses will only be accessed by the research team conducting the study. All information collected will be kept on a University of Liverpool password-protected computer for 10 years in line with University of Liverpool policy for the storage of research data. Dr Ellie Pontin will be the custodian of all study data. After 10 years, all information stored on the password-protected computer will be deleted, and therefore completely destroyed.

Who is organising and funding the study?

The University of Liverpool have provided the funds to carry out this study. The University of Liverpool is also the study sponsor.

Who has reviewed the study?

This study was given a favourable ethical opinion for conduct in the NHS by the Greater Manchester West Research Ethics Committee.

Who can I contact for further information?

If you have any questions at all, at any time please contact:

Miss Rosanne Cawley Rosanne.Cawley@liverpool.ac.uk

Miss Kate Sheehy Kate.Sheehy@liverpool.ac.uk

Alternatively, you may prefer to contact Dr Peter Taylor, peter.taylor-2@manchester.ac.uk or Dr Ellie Pontin, epontin@liverpool.ac.uk

Thank you very much for taking time to read this information sheet.

Appendix L

Participant Consent Form

CONSENT FORM

Study Title: Online Study of Interpersonal resources in Self-Harm (OSIRIS)

Name of Researchers: Rosanne Cawley & Kate Sheehy

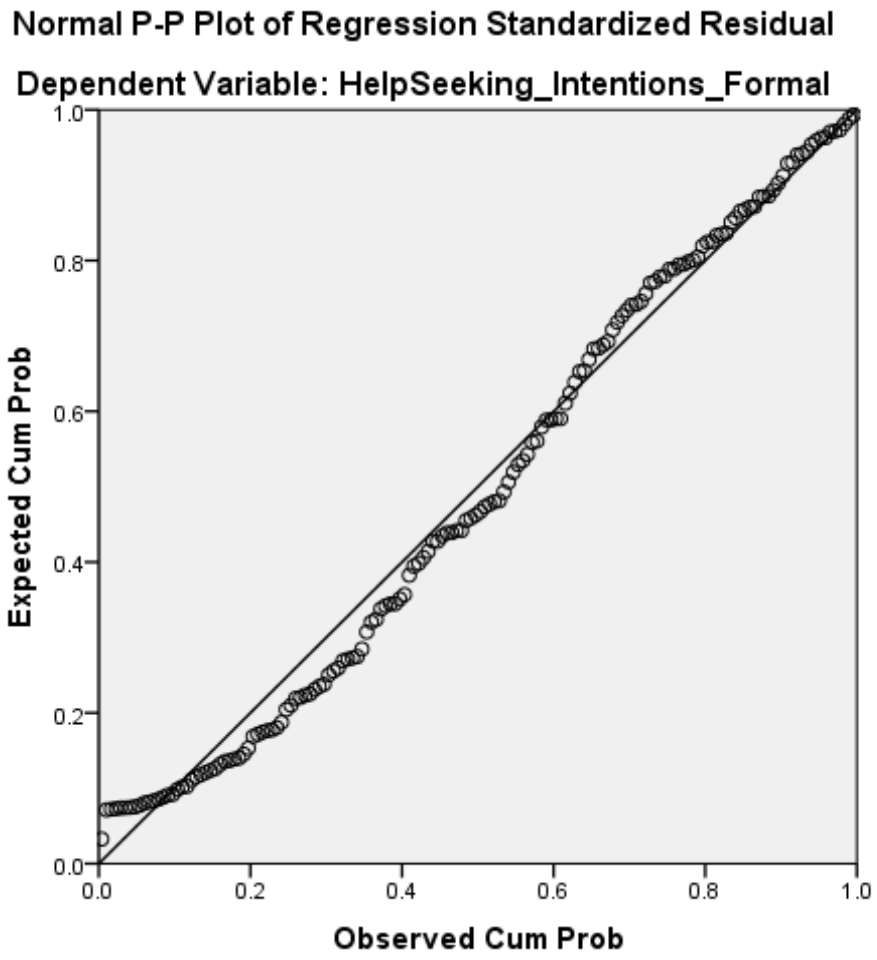
		Please tick the box
1	I confirm that I have read and understand the information sheet dated 22/02/2017 (Version 2) for the above study. I have had the chance to think about the information, ask questions and have my questions answered.	
2	I understand that taking part is voluntary and that I can change my mind at any time without giving any reason, without my medical care or legal rights being affected.	
3	I agree to take part in the above study.	
4	I would like to receive a summary of the findings at the end of study.	

Click to continue with the study Next

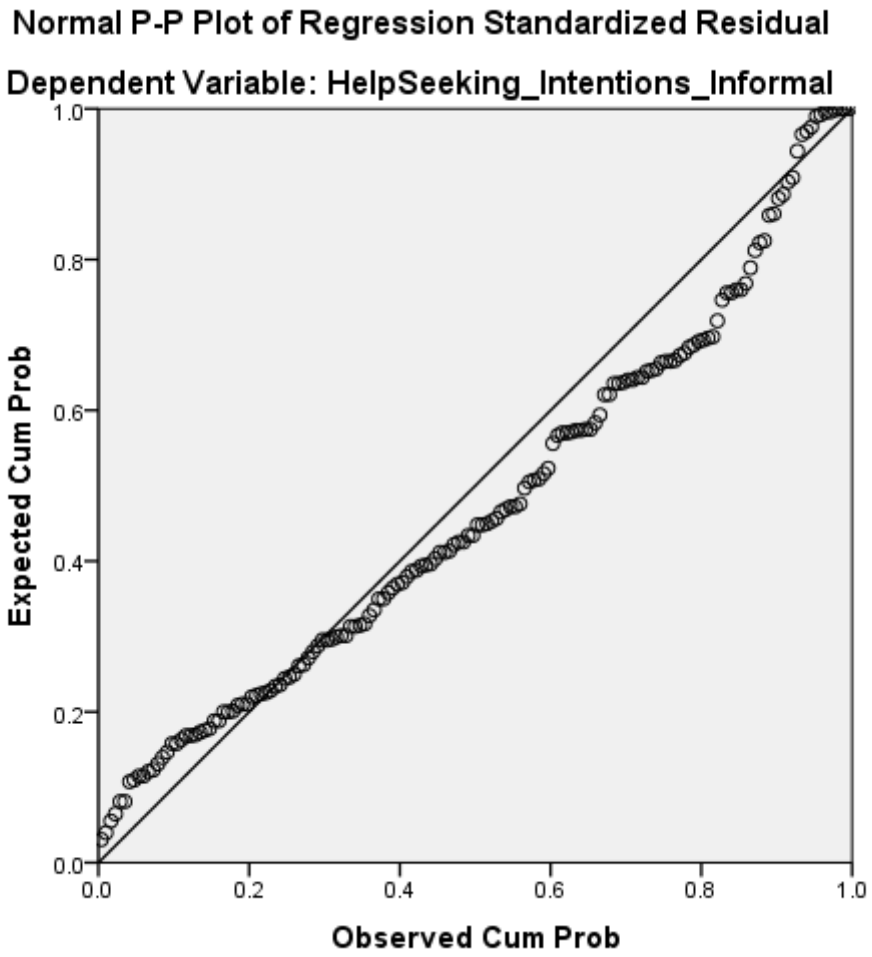
Appendix M

Normality Plots of Regression Standardized Residuals

Normality plot for multiple linear regression with Formal Help-Seeking Intentions as outcome



Normality plot for multiple linear regression with Informal Help-Seeking Intentions as outcome



Appendix N

Regression Analysis Predicting Help-Seeking Intentions for Informal Sources with Residual Cases Removed

		Univariate analyses			Multivariate analysis		
		Standardized			Standardized		
Outcome	Predictor	β	p-value	CI (95%)	β	p-value	CI (95%)
Help-seeking	Shame	-0.123	0.126	-.258-.032			
intentions	Attachment anxiety	-0.016	0.840	-.112-.091			
- Informal	Attachment avoidance	-0.336	0.000**	-.282--.108	-.343	0.000***	-.282--.115
	Positive self-harm beliefs	-0.047	0.566	-.094-.052			
	Help-seeking - Support	-0.007	0.933	-.646-.593			
	Help-seeking - Hostility	0.168	0.037*	.037-1.131	0.091	0.269	-.247-.881
	Help-seeking – Satisfaction	-0.298	0.279	-.841-.244			
	Self-injury urges	0.012	0.877	-.082-.096			
	Lifetime help-seeking – Informal	0.295	0.000**	1.798-5.634	0.250	0.003**	1.118-5.175

* $p<0.05$, ** $p<0.01$, *** $p<0.001$