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What bridges the gap between self-harm and suicidality? The role of forgiveness, resilience and attachment

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ABSTRACT

Self-harm is the most robust risk for completed suicide. There is a lack of understanding of why some people who self-harm escalate to suicidal behaviour when others do not. Psychological factors such as attachment, self-forgiveness and self-appraisal may be important. To determine whether factors from the Interpersonal Theory and Schematic Appraisals models are useful to identify suicidal behaviour in populations that self-harm. Specifically we investigate whether resilience factors of secure attachment, self-forgiveness and positive self-appraisals significantly influence suicidality in people who self-harm. A cross-sectional online study of 323 participants recruited from self-harm support forum. Validated self-report measures were used to assess appraisals, relationships, self-forgiveness, attachment style, suicidality and self-harm. Emotion coping and support seeking self-appraisals and self-forgiveness were negatively associated with suicidality in participants with a history of self-harm. Dismissing attachment was positively associated with suicidality. The perceived ability to cope with emotions, the perceived ability to gain support and self-forgiveness may protect against suicide in people who self-harm. Conversely the presence of dismissing attachment may increase the risk of suicidality. Findings provide therapeutic targets to reduce risk of suicidality in this high risk group.

1. Introduction

Self-harm may be defined as "self-poisoning or self-injury, irrespective of the apparent purpose of the act" (National Collaborating Centre for Health, 2004). Self-harm is intrinsically linked to suicide given that self-harm represents the most prevalent risk factor for completed suicide. Suicide may be defined as "the act of deliberately killing oneself" and suicidality is an overarching term encompassing suicidal ideation and behaviour (Majid et al., 2015).

Self-harm behaviour is increasing, such that by the age of 15 years, 19% of adolescents will have self-harmed at least once (Mars et al., 2014). More than half the individuals who die as a result of suicide have a history of self-harm (Hamza et al., 2012; Turner et al., 2013; Whitlock et al., 2013), and 1% of people who have self-harmed will go on to die by suicide within the subsequent 12 months (Bebbington et al., 2010). However, the majority of people who self-harm will not complete suicide, nor do they self-harm in the context of an attempt to end life. Ten to 25% of community samples and 30–70% of clinical samples of adolescents and adults report histories of both self-harm and suicidal ideation (Asarnow et al., 2011; Bebbington et al., 2010; Nock et al., 2006; Wilcox et al., 2012).

In addition, in any single act, there may also be a mixture of motivations, such that acts of self-harm and acts of suicidality co-occur in some individuals (Hamza et al., 2012; Victor and Klonsky, 2014). From a clinical perspective, suicide risk assessment within self-harm populations is challenging because motivations and precipitants to suicidality are complex and multi-factorial. Risk factors for suicide include mental illness, personality traits, sociocultural, physical, biological, and genetic factors, all of which may also predispose to self-harm (Brent and Mann, 2005; Haw et al., 2013; Hawton et al., 2013).

There is clear evidence of identifiable psychological factors that influence suicidality (Cox et al., 2012). Individuals who are at highest risk are those whose have perceived burdensomeness or thwarted and the capability to harm themselves (Andover et al., 2012; Joiner, 2009). The Interpersonal Theory of Suicidal Behaviour states that an individual is at risk of suicide if they have both the desire to die by suicide and the ability to do so. Perceived burdensomeness and social alienation are proposed to be key factors in driving the desire to die by suicide (Joiner, 2009). Individuals with a history of self-harm may have an increased ability to die by

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suicide due to the acquired capability via habituating the fear and pain associated with harming oneself (Hamza et al., 2012; Hamza and Willoughby, 2013; Joiner, 2009).

Conversely, the Schematic Appraisals Model of Suicidal Behaviour states that protective (resilience) factors, including positive self-appraisals, self-forgiveness and attachment, may be important for buffering suicidal thoughts and behaviours, potentially providing key targets for interventions (Johnson et al., 2010b). These protective factors may not be simply inversely related to suicidality but may also moderate the impact of other risk factors, such as mental illness or trauma, on suicidality (Panagioti et al., 2014). In populations with a history of self-harm it may be that these appraisals are less prevalent, as they would also protect against self-harm. Alternatively, they may continue to be present, providing a buffer against the step from self-harm to suicidal behaviour.

Understanding what differentiates people that self-harm who do and do not show risk for future suicide is of significant clinical importance for monitoring risk and delivery of interventions (Brausch and Gutierrez, 2010; Hamza et al., 2012; Muehlenkamp and Gutierrez, 2007; Whitlock et al., 2013). The aim of this study was to extend the empirical evidence of potential psychological risk and protective factors of suicidality in a population with a history of self-harm. Specifically, we investigated psychological constructs of positive self-appraisals, attachment and self-forgiveness.

2. Method

2.1. Participants and procedure

Participants were recruited through websites and self-help forum offering support for individuals who self-harm. Website organisers were asked to post a link to the online survey. Inclusion criteria were a current or past experience of self-harming, and being 16 years of age or over. The websites approached offered support for people who self-harm, were often user-led and were all non-statutory organisations. For reasons of confidentiality, websites cannot be named. 15 website organisers were approached and 7 agreed to participate.

Participants read an information sheet and provided consent before completing the anonymous questionnaire. Ethics approval was obtained by the University of Birmingham Ethical Committee (rERN_14-0112). No compensation was offered.

2.2. Measures

The clinical information collected via targeted questions included self-report of lifetime diagnosis of mental illness, current treatment for mental illness, current medication use, alcohol consumption and lifetime history of illicit substance use. Details of all questions are provided as online supplement (Spl 1).

Regular alcohol use was defined as >21 units per week. Regular illicit substance use was defined as > weekly consumption. Self-harming behaviours were indexed on the Deliberate Self-harm Behaviours Questionnaire (DSHBQ; Harris and Roberts, 2013). This measure was designed for online use and includes 22 items, 5 of which chart the frequency and history of lifetime self-harm. These include: 'Have you ever self-harmed' and 'Do you currently self-harm? ", both of which are answered yes/no; 'How often do you self-harm', with eight answer options ranging from more than once per day to once per year; 'When you self-harm/self-harmed, what do/did you usually do? ' (with answer options of cut, burn, scald, bang body parts, pull your hair, scratch, prevent wounds healing, ingest toxic substances, break bones, other); 'How old were you when you first started self-harming? '. Please see online supplement.

Suicidal behaviour was measured on the Suicidal Behaviours Questionnaire-Revised (SBQ-R; Osman et al., 2001). The SBQ-R has four domains which address lifetime suicidality (including thoughts, plans and attempts); suicide ideation in the past year; communication of intent to commit suicidal behaviour; and likelihood of future suicide attempts. Each domain can be assessed individually or the total score provides an indication of overall suicidality, with possible scores ranging from 3 to 18. Higher scores represent greater levels of suicidality risk. The SBQ-R has a Cronbach's alpha of 0.73, suggesting good reliability. (Osman, 2001). A bivariate grouping of suicidal behaviour (yes/no) was defined as those who did or did not report a history of any act of attempted suicide on the SBQ-R.

Attachment style was measured on the Relationship Questionnaire (RQ; Bartholomew and Horowitz, 1991), which assesses four attachment styles: secure, dismissing, preoccupied, and fearful. The measure is designed to gauge general attachment style by using participants' perceptions of how they behave and feel in relationships. Respondents read four short paragraphs describing each style, and then rate how each style corresponds to their general relationships using a 7-point Likert scale ranging from 1 (disagree strongly) to 7 (agree strongly). The RQ has a Cronbach's alpha is 0.91 (Bartholomew and Horowitz, 1991).

Self-forgiveness was measured by the Heartland Forgiveness Scale (HFS) (Hansen, 2013; Thompson et al., 2005). This is a six item self-report measure that assesses an individual's ability to forgive themselves for perceived transgressions. Respondents rate each item on a 7-point Likert scale based upon the extent to which it describes them ('almost always false of me' to 'almost always true of me'). Previous research has found the HFS-Self Forgiveness subscale to have acceptable internal consistency (α=.72; Thompson et al., 2005).

Resilience was indexed on the Resilience Appraisal Scale (RAS; Johnson et al., 2010a), a 12 item self-report measure that assesses an individual's positive self-appraisals. Responses are rated on a five point scale from 'strongly disagree' to 'strongly agree'. It consists of three subscales. The first subscale examines an individual's perceived ability to cope with negative emotions ('I can control my emotions'). The second investigates an individual's perceived ability to problem solve ('I can generally solve problems that occur'). The third subscale reflects an individual's perceived ability to gain social support ('If I were in trouble, I know of others who would be able to help me'). The RAS has a Cronbach's alpha of α=0.86 for the emotion coping subscale, α=0.89 for the problem solving coping subscale and α=0.87 for the support seeking subscale (Johnson et al., 2010a).

2.3. Statistical analyses

Participants with and without a lifetime history of suicidal behaviour (index by any act of harm with suicidal intent as rated on the SBQ-R) were compared on clinical and demographic variables using chi-square tests of association or independent *t*-tests. Pearson's correlations were employed to assess associations between suicidality, attachment, self-forgiveness and resilience factors. In order to determine the most significant predictors for suicidality in this population, significant demographic and clinical variables, together with our target variables of interest (self-forgiveness, attachment style and resilience factors) were entered into a forward stepwise linear regression model.

3. Results

A total of 464 participants took part in the study between May and June 2014. Cases where the survey had not been fully completed (n=132) or if respondents reported never engaging in self-harm (n=9) were omitted, resulting in a total of 323 responses retained for analyses.

3.1. Demographic and clinical characteristics

Demographic and clinical characteristics of the sample are presented in Table 1. Of the 323 participants, 88.2% were female (n=285). Age range was 16–62 years (M = 22.86, SD = 7.62, median = 21.00). 63.7% (n=206) reported current self-harm and 48.9% (n=158) reported having a history of any act of attempted suicide. A psychiatric diagnosis was self-reported by 63.8% (n=206) of the sample; of these participants, 38.7% (n=125) were receiving treatment from mental health services. Of the participants with a diagnosis, 104 (50.5%) reported depression, 28 (13.6%) anxiety, 6 (2.9%) psychosis, 26 (12.6%) personality disorder, 19 (9.2%) bipolar disorder and 23 (11.2%) 'other' diagnosis. 45.8% (n=148) of the total sample reported being on prescribed medication. 71.2% (n=230) of the sample reported no current regular alcohol consumption and 88.2% (n=285) reported no current regular use of illicit substances. Significant differences were found between participants with and without a history of suicidal behaviour: participants with a history of suicidal behaviour were older, more likely to report a psychiatric diagnosis, and regularly use illicit substances.

The sample as a whole reported mean attachment scores of: dismissing 3.69 (SD=1.94); preoccupied 4.03 (SD=2.03); fearful 5.48 (SD=1.75); and secure 2.79 (SD=1.87). Mean self-forgiveness was 17.87 (SD=7.2). Mean resilience factors were 13.01 (SD=4.10) for support seeking; 9.44 (SD=3.96) for emotion coping; and 12.31(SD=3.61) for problem solving. There were significant differences between those with and without a history of suicidal behaviour on self-forgiveness, emotion coping and problem solving (see Table 1).

3.2. Correlations

Preliminary zero-order correlations were conducted to assess the association between suicidal behaviour (as indexed as a continuous score of the SBQ-R), attachment, self-forgiveness and positive self-appraisal scores. These are displayed in Table 2. Secure attachment showed a significant small to moderate association with suicidality ($r=-0.23$, $p<0.001$). Dismissing ($r=0.09$, $p<0.04$) and fearful ($r=0.12$, $p<0.01$) attachment scores showed small associations with suicidality.

Table 1
Clinical and demographic variables.

	Total sample (n=323) N (%)	No Suicidal Behaviour (n=165) N (%)	Suicidal Behaviour* (n=158) N (%)	χ^2(df)	p-value
Age	22.86 (7.62)	21.73 (6.3)	24.0 (8.)	2.73 (321)*	0.006*
Female	285 (88)	142 (80)	143 (90)	1.53 (1)	0.14
White Ethnicity	281 (87)	141 (80)	140 (89)	26.9(20)	0.19
Alcohol regularly (> 21 units per week)	25 (7)	10 (6)	15 (9)	0.126 (1)	0.72
Illicit Substances (regular > weekly consumption)	38 (12)	9 (5)	29 (18)	12.9(1)	0.001**
Employed/ Education/Retired Full Time	263 (81)	141 (85)	122 (77)	5.2 (1)	0.03
Not Employed (Seeking Work/ ill health)	60 (19)	24 (14)	36 (22)		
Qualification:					
None	25 (8)	12	13	0.78 (5)	0.97***
A' Level	71 (22)	36	35		
Degree	83 (26)	43	40		
GCSE/O Level	47 (15)	22	25		
Diploma	51 (16)	23	28		
Other	46 (14)	33	24		
Currently self-harming	206 (64)	106 (52)	100 (48)	0.32 (1)	0.8
Any Diagnosis	158 (47)	26	132	52.31(1)	0.001
	M (SD)	M (SD)	M (SD)	t* (df)	p-value
Attachment					
Dismissing	3.69(1.94)	3.56 (1.86)	3.82 (0.16)	−1.98(321)	0.23
Preoccupied	4.03(2.03)	4.14 (1.87)	3.92 (2.18)	0,95 (321)	0.34
Fearful	5.48(1.75)	5.46 (1.67)	5.52(1.84)	−0.29(321)	0.76
Secure	2.79 (1.87)	2.94 (1.83)	2.62 (1.91)	1.53 (321)	0.12
Self-Forgiveness	17.87 (7.2)	19.38 (6.96)	16.30 (7.26)	3.89 (321)	< 0.001
Resilience					
Support seeking	13.01(4.10)	13.35 (3.90)	12.65 (4.92)	1.53 (321)	0.12
Emotion coping	9.44(3.96)	10.21 (3.96)	8.66 (3.82)	3.57 (321)	< 0.001
Problem solving	12.31(3.61)	12.93 (3.48)	11.66 (3.65)	3.19 (321)	0.002

* Students *t*-test.
** Defined as a life-time history of any act of harm with suicidal intent as rated on the SBQ-R.
*** χ^2 comparing no qualification to any post 16/school leaving age.

Preoccupied attachment was not significantly associated with suicidality. There were moderate inverse associations of suicidality with self-forgiveness ($r = -0.47$, $p < 0.001$) and the three positive resilience subscales of support seeking ($r = -0.30$, $p < 0.001$), emotion coping ($r = -0.38$, $p < 0.001$) and problem solving ($r = -0.34$, $p < 0.001$).

3.3. Stepwise linear regression analysis

The prediction model contained five predictors and was reached in five steps. Non-significant variables that were removed in steps included age, substance misuse, fearful and preoccupied attachment and problem solving. The final model was statistically significant, $F(1, 317) = 283.88$, $p = < 0.001$, and accounted for approximately half of the variance in suicidality ($R^2 = 0.58$, Adjusted $R^2 = 0.46$). Table 3 presents a summary of the model. In the final model, dismissing attachment were positively associated with suicidality. The absence of a diagnosis of mental illness, self-forgiveness, and positive self-appraisal subscales of emotional coping and support seeking were inversely related to suicidality.

Table 2
Pearson correlations for attachment, self-forgiveness and resilience with suicidality.

	Suicidality*	p-value
Attachment		
Dismissing	0.09	< 0.05;
Preoccupied	−0.00	ns
Fearful	0.12	< 0.05;
Secure	−0.21	< 0.001
Self-forgiveness	−0.47	< 0.001
Resilience		
Support seeking	−0.30	< 0.001
Emotion coping	−0.38	< 0.001
Problem solving	−0.34	< 0.001

* As measured by SB total score.

4. Discussion

The purpose of this study was to shed light on associations between psychological factors and suicidality in self-harm populations. We explored the extent to which attachment, self-forgiveness and positive self-appraisals factors differentially influence suicidality in people who self-harm. Our findings showed that higher levels of dismissing attachment were associated with suicidality, while higher levels of self-forgiveness and resilience factors of emotion coping and support seeking were protective against suicidality. These factors have previously been reported in general populations and those at risk of suicide by way of mental illness without a history of self-harm (Breton et al., 2015).

Individuals who self-harm and have dismissing attachment style are likely to possess negative working models of others and

Table 3
Stepwise linear regression model to predict suicidality.

	Standardised Beta	B	95% CI for B	*p*-value
No mental illness diagnosis	−0.22	−1.63	−2.32, −0.93	< 0.001
Self-forgiveness	−0.28	−0.14	−0.19, −0.08	0.004
Social support	−0.15	−0.13	−0.21, −0.04	0.004
Emotion coping	−0.21	−0.19	−0.29, −0.09	< 0.001
Dismissing attachment	0.14	0.26	0.08, 0.43	0.004

negative perceptions of others willingness to connect or help them (Bartholomew, 1990). They may also fear intimacy and dependence. These schema are likely to result in reluctance to seek out relationships with significant others, because of fear of disclosing personal thoughts and emotions (Mikulincer and Nachshon, 1991). This working model may be especially detrimental when the individual is experiencing negative life events, reducing their ability to approach someone and appeal for help (Grunebaum et al., 2010; Levi-Belz et al., 2013; Mikulincer and Shaver, 2010). The difficulty in connecting to others could lead to further detachment, loneliness and alienation, which may drive escalation of suicidal behaviour (Levi-Belz et al., 2013). This is consistent with the interpersonal theory of suicide, which suggests that suicidality arises in part from an acquired capability (e.g., history of self-harm) and thwarted belonging (e.g., via dismissing attachment problems) where connections with valued individuals/groups are unsuccessful (Joiner, 2009).

Neither preoccupied nor fearful attachment was associated with suicidality in this self-harming sample, suggesting that suicidality was less strongly related to other types of insecure attachment styles in this group. It has been suggested that, in some circumstances, suicidality can be seen as an extreme anxious hyper-activation of the attachment system, where suicidality is a means for social benefit (e.g., compassion and attention) (Mikulincer and Shaver, 2010; Zeyrek et al., 2009). This conception of suicidality may not be relevant in people who are already self-harming and then escalate to suicidal behaviour. Research suggests self-injurers may engage in self-harm for multiple functions, including interpersonal positive functions, such as attention or support (Nock, 2010). As suicidality is conducted with the intention to end one's life, anxious hyper-activation of the attachment system in preoccupied and fearful attachment may not impact suicidality in self-injurers, but may influence self-harm episodes (Nock, 2010).

Secure attachment and suicidality were significantly associated in univariate analysis, but the effect was no longer significant after accounting for the other factors in regression analysis. Previous research has illustrated the protective nature of secure attachment in suicidal behaviours (Bostik and Everall, 2007; Davaji et al., 2010; Zeyrek et al., 2009). Overall, our findings highlight the importance of insecure attachment (specifically dismissing attachment) over the protective potential of secure attachment in impacting suicidality in self-injurers (Peter et al., 2008).

Self-forgiveness emerged as being most strongly associated with suicidality, where higher levels of self-forgiveness predicted lower suicidality. This accords with previous research showing that the ability to self-forgive for perceived interpersonal and intrapersonal transgressions may potentially help protect against the consideration of maladaptive behaviour, such as self-harm (Westers et al., 2012). One way to explain this association may be found using Hall and Fincham's (2005) model of self-forgiveness and the interpersonal theory of suicide (Joiner, 2009). People who self-harm may lack the qualities of self-forgiveness and thus experience greater intra-punitive anger, self-resentment, and self-condemnation (e.g., I am a bad person) (Hall and Fincham, 2005; Hirsch et al., 2011; Westers et al., 2012). The lack of self-forgiveness may motivate engagement in self-harm as a form of punishment for the transgressions they feel they have committed (Deiter-Sands and Pearlman, 2009; Westers et al., 2012). Then, frequent exposure of self-harm could enhance tolerance of physiological pain and diminish fear of self-harming (Anestis et al., 2014). This in turn may reinforce negative, self-condemning and self-resentfulness (e.g., 'worthless' 'unforgivable') views of self and deserving of punishment severe enough for perceived transgressions (Westers et al., 2012). As a result, there may be an escalation and engagement in suicidal behaviour as further punishment for transgressions. The lack of self-forgiveness and acquired capability for suicidal behaviour may therefore become a continuous spiral of more severe self-injurious behaviour and a further need to self-punish as a result of a lack of self-forgiveness. In contrast, individuals with high levels of self-forgiveness may have the cognitive skills to alleviate distress and perceptions that real or perceived transgressions and repeated self-harm may produce, possibly conferring protection against suicidality (Hall and Fincham, 2005; Hansen, 2013).

Consistent with previous research (Panagioti et al., 2014; Tsai et al., 2015), we found that the resilience factors of support seeking and emotional coping were inversely associated with suicidality. Specifically, higher levels of support seeking and emotional coping predicted lower suicidality in this sample of people who self-harm. Individuals who self-harm with high support seeking may be aware of the availability of external resources and have more confidence in their ability to gain social support, establishing the possibility of being 'rescued' and reducing the likelihood of suicidality (Johnson et al., 2008; Panagioti et al., 2014; Park et al., 2014; Williams and Williams, 1997). Those with high emotion coping positive self-appraisals may be protected from the pernicious impact of emotional vulnerabilities (Johnson et al., 2010b), while low emotion coping can predispose people who self-harm towards suicidality (Deeley and Love, 2012, 2013). In contrast, problem solving positive self-appraisals was not associated with suicidality, suggesting that this may not be as relevant to suicidality in people who self-harm, compared to more generalised groups. It could also be that it is problem solving ability, rather than the perceived self-appraisal of problem solving, that confers protection. An alternative is that problem solving abilities are particularly poor in both those with a history of self-harm and those with suicidality (Chang, 2002; Johnson et al., 2010b).

4.1. Strengths and limitations

This study is one of the few to investigate the specific question of suicide risk and protective factors in a population who already self-harm, and we report significant findings from a relatively large sample. However, the results must be understood in the context of limitations. The study was cross-sectional, thus no causal inference can be made about the direction of associations of suicidality with attachment, self-forgiveness and positive self-appraisals Female adolescents and participants of white ethnicity were over-represented, limiting the generalizability of the findings. As all measures were self-report and completed online, thus clinical verification was not possible. In addition, the online nature of our sampling is a potential limitation in that self-help groups may not be representative of individuals who self-harm but are not seeking online support. However this method of recruitment also offers an advantage of recruitment of individuals not necessarily help seeking in clinical arenas. Larger systematic, longitudinal studies are much needed to further address these limitations.

4.2. Implications

Present findings have implications for research and clinical applications. Clinicians are often faced with the difficulty of accurately predicting future suicidal behaviour in those presenting with self-harm (Hansen, 2013; Joiner, 2009). Over-estimation of a patient's risk for suicidality results in considerable cost to the individual, their family and health care system; under estimation can result in the loss of life. Tools for the identification of at-risk individuals need improvement (Hansen, 2013). Our findings point to the utility of a buffering conceptualisation of risk, whereby over and about the presence of a mental disorder, self-forgiveness, emotional coping and support seeking are significant factors. The assessment of these factors in self-harming individuals could potentially increase accuracy of determining suicide risk. Attachment, self-forgiveness,

emotion coping and support seeking positive self-appraisals may provide a target for potential interventions to reduce risk in this population. Based on the current evidence, interventions aimed at building secure attachment may not be as beneficial as those targeted at building social networks and promoting positive self-schema in the prevention of suicidality in those who self-harm.

Conflicts of interest

None to declare.

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Appendix A. Supplementary material

Supplementary data associated with this article can be found in the online version at http://dx.doi.org/10.1016/j.psychres.2016.04.103.

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