An Exploration of the Relationship between Interpersonal Needs and Nonsuicidal Self-Injury in Adolescents

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Abstract

Nonsuicidal self-injury has become a worrying phenomenon among adolescents worldwide, emphasising the need for increasing public health awareness and exploration of the factors associated with this behaviour. This study was framed using Joiner's Interpersonal–Psychological Theory of Suicide and Nock and Prinstein's four-function model of nonsuicidal self-injury. The aim of this study was to explore the relationship between the interpersonal needs constructs of Joiner's theory and nonsuicidal self-injury and is motivated by the need to explore the contagion of self-injury. A cross-sectional convenience sampling method was used to obtain a sample of 216 adolescents, who were recruited from four schools in the greater Durban area, South Africa. Regression analyses were performed to establish whether a relationship exists between the interpersonal needs constructs and nonsuicidal self-injury. The results indicated a positive relationship between perceived burdensomeness and the occurrence of nonsuicidal self-injury in this sample, thereby illuminating thwarted interpersonal needs as a contributor to the occurrence of nonsuicidal self-injury in adolescents.

Keywords: nonsuicidal self-injury, interpersonal–psychological theory of suicide, interpersonal needs, thwarted belongingness, perceived burdensomeness

Introduction

Self-injury has become a worrying phenomenon in the nomenclature of adolescent experience, and appears to occur in the absence of any characteristic markers (Deiter, Nicholls, and Pearlman 2000). Nonsuicidal self-injury (NSSI) refers to the deliberate harm to one's own bodily tissues without having any obvious suicidal intent or ideation

UNISA university of south africa PRESS

Southern Africa Journal of Social Work and Social Development
https://unisapressjournals.co.za/index.php/SWPR/index
Volume 32 | Number 3 | 2020 | #7640 | 18 pages

https://doi.org/10.25159/2708-9355/7640
ISSN 2708-9355 (Online)

(Lundh, Karim, and Quilisch 2007). It is also distinguished from behaviour whose harmful consequences are unintended (for example, an accidental drug overdose). Culturally sanctioned body modification, such as tattooing, is also excluded from the classification of NSSI (Nock 2009).

Research into self-injury has gained momentum in recent years with prevalence rates of between 6 per cent and 65 per cent being reported among adolescents (Baetens et al. 2015; Monto, McRee, and Deryck 2018). South African prevalence rates appear to be in line with global estimates (Bantjes et al. 2016; Lippi 2015; Van der Wal 2017). Stemming from this, a wealth of interest has been generated on the antecedents to and prevention of this behaviour (Whitlock, Lader, and Conterio 2007). Previously seen to be a distinct feature and diagnostic criterion of other mental disorders such as borderline personality disorder, NSSI is now considered to be a clinically significant condition that warrants consideration as a condition for further study in the Diagnostic and Statistical Manual for Mental Disorders (DSM-5) (APA 2013).

One of the factors implicated in NSSI is interpersonal difficulties (Zetterqvist 2015). Joiner's Interpersonal–Psychological Theory of Suicide (2005) posits that the joint presence of two interpersonal constructs, namely, thwarted belongingness (TB) and perceived burdensomeness (PB), may result in suicidal ideation. However, although there is widespread research interest in the individual fields of interpersonal needs and self-injury, the association between them has been largely neglected (Muehlenkamp et al. 2013), with there also being a noticeable gap in South African literature. In this gap exists the opportunity to examine whether the inadequate meeting of interpersonal needs and NSSI correlate or overlap in their aetiology and whether the failure to meet these needs mediates the occurrence of self-injurious behaviour. The present study sought to explore these associations.

Literature Review

Demographics of NSSI

Gender appears to be an important socio-demographic indicator of NSSI, with a wealth of studies indicating that females self-harm more than their male counterparts (Hawton et al. 2002; Ross and Heath 2002; Whitlock et al. 2011). In South African research, it has been found that males constituted a sizeable 40.5 per cent of a self-harming sample (Bantjes et al. 2016), but consistent with international research, the study found that females self-harmed more than males, and more frequently cited family discord as the trigger for their self-harm.

With regard to race, Lippi (2015) found that the respondents belonging to the Asian and mixed-race groups were significantly more likely to engage in self-harm than both their black African and white counterparts, a finding confirmed in other South African research (Joe et al. 2008). Much of the international literature (for example, Lloyd-

Richardson et al. 2007), however, paint a contrasting picture of Caucasian individuals being more likely to engage in self-injury.

The literature indicates that the age of onset of NSSI can be as early as seven years (Barrocas et al. 2012) and may continue until the individual's early twenties (Lippi 2015) with most occurrences being during adolescence (Baetens et al. 2015). Childhood maltreatment and abuse play a robust role in the ontogenesis of NSSI (Begin et al. 2017) and are often associated with the development of insecure attachment styles (Erozkan 2016). Although the present study did not focus on potential traumatic antecedents to NSSI, it is a crucial element of the interpersonal dynamics underlying NSSI behaviour.

Interpersonal Needs and NSSI

A great deal of local and international literature exists on human interpersonal behaviour, all supporting the commonly held notion that humans have an innate drive to seek out lasting social connections (Barzilay et al. 2015; Buitron et al. 2016; Naidoo and Collings 2018). Maslow (1948) described "belongingness" as one of the higher requirements in the fulfilment of the hierarchy of needs and one of the fundamental drives of the human condition. This suggests that beyond basic needs, individuals require a sense of social inclusion, affection, and having a defined role in society to facilitate optimum development and a sense of self-worth. In a study on the role of interpersonal antecedents of NSSI, Tatnell et al. (2014) found that family support, attachment anxiety, and self-efficacy were robust predictors of NSSI.

Theoretical Foundations

The Interpersonal–Psychological Theory of Suicide (Joiner 2005) suggests that an individual will only die by suicide if they have both the desire to die and the capability to enact suicidal behaviour. Joiner's theory describes the two interpersonal constructs, TB and PB, as being proximal states in the development of suicidal desire. TB refers to the unmet need to belong and integrate into a supportive social group (Van Orden et al. 2012). Unmet psychological needs "to belong" may have an impact on the self-preservation instinct and result in an increasing capability to engage in NSSI. PB refers to the perception that one is expendable and is a burden to others. Joiner (2005) posits that individuals have a need to not just receive care and support from others but to be in a position to reciprocate that care and support.

The acquired capability for suicide is posited to result from repeated exposure to pain-inducing events such as NSSI, and, in the presence of TB and PB, mediates the continuum from suicide ideation to attempt. From Joiner's (2005) perspective, there is therefore an indirect relationship between NSSI and thwarted interpersonal needs. This study, however, intends to explore whether a more direct relationship exists between the two variables.

In an attempt to understand NSSI in its totality, Nock and Prinstein (2004) examined self-injury from a functional, rather than a syndromal perspective. They proposed four primary functions of self-injury which are classified in two dichotomies: functions which are automatic (in the self) and social (pertaining to others); and functions which were positively reinforced versus those that are negatively reinforced. Nock and Prinstein (2004) define the four functions of self-injury as serving "automatic negative reinforcement" (for example, to stop painful feelings in the self), "automatic positive reinforcement" (for example, to feel something), "social negative reinforcement" (for example, to avoid doing something unpleasant), and "social positive reinforcement" (for example, to show others your pain). The implications of conceptualising NSSI from this model are twofold. First, the adherence to a functional perspective allows for the identification of factors that serve to produce and maintain NSSI. Second, the model places equal emphasis on social precursors to NSSI rather than primarily focusing on internal factors. The present study thus aimed to investigate the relationship between interpersonal needs and the occurrence and functions of NSSI. The hypothesis we entertained was that thwarted interpersonal needs would predict NSSI in our sample of adolescents.

Method

Research Design

The study employed a cross-sectional design using the survey method. The quantitative methodology selected was considered ideal as relationships between the demographic variables, interpersonal needs and the functions and occurrence of NSSI could be analysed (Gravetter and Forzano 2009).

Respondents

Using a convenience sampling method, the respondents were recruited from four high schools in Durban. The schools were selected because of their proximity to the first author's tertiary institution and were made up of public schools from the quintiles 4 and 5 categorisation indicating fee-paying schools (Western Cape Government Education 2013). The sample consisted of 216 adolescents ranging between 13 and 19 years, made up of 166 females (76.9%) and 50 males (23.1%). In terms of race[1], 42.6 per cent were black African, 42.6 per cent were Indian, 7.9 per cent were mixed race and 6.9 per cent were white, representing the major ethnic groups in the country.

1 The authors recognise that the categorisation of race in South Africa is based on unscientific criteria and does not support such race demarcations. However, since race has been shown to be a risk factor in NSSI in South Africa, the variable was included.

Instruments

- A biographical questionnaire asked the respondents to answer questions related to their race, gender, age and grade. No identifying information was requested.
- The Inventory of Statements about Self-Injury (ISAS) is a self-report instrument that assesses frequency and functions of 12 NSSI behaviours, occurring intentionally and without suicide intent (Klonsky and Glenn 2009). The first section of the ISAS assesses the lifetime frequency of 12 NSSI behaviours including cutting, burning, interfering with wound healing and swallowing dangerous substances. The respondents who endorse one or more NSSI behaviours are requested to answer questions about the age of onset, the experience of pain during NSSI behaviour, whether they engage in NSSI alone or in company, the time between NSSI behaviours, and the desire to stop self-harming (Klonsky and Glenn 2009). The second section assesses 13 functions of NSSI which are divided into two categories: intrapersonal and interpersonal functions. The respondents are asked to endorse statements beginning with: "When I self-harm, I am," with options of "calming myself down", "punishing myself", etc. and which are scored as "0 = not relevant", "1 = somewhat relevant", or "2 = very relevant". The ISAS subscales have been found to have good internal consistency ($\alpha = .88$ and $\alpha = .80$ for the intrapersonal and interpersonal subscales respectively), and construct validity in previous research (Klonsky and Glenn 2009), with subsequent findings indicating that the ISAS behavioural and functional subscales demonstrate good test–retest stability over one year. The descriptive statistics for the intrapersonal functions subscale in the present study were: range = 0–30, $M = 8.10$, $SD = 8.35$, $\alpha = .93$, skewness (statistic = .016, SE = .166, z = 0.10), and kurtosis (statistic = −1.255, SE = .330, z = 5.08), and for the interpersonal functions subscale: range = 0–48, $M = 7.64$, $SD = 9.56$, $\alpha = .93$ skewness (statistic = .384, SE = .166, z = 2.31), and kurtosis (statistic = −1.255, SE = .330, z = 3.80). Given the dearth of research testing the validity and reliability of the ISAS in the African context, our finding of strong reliability for the instrument in the present study attests to its usefulness in our context.
- The Interpersonal Needs Questionnaire (Van Orden et al. 2008) is a 12-item self-report scale designed to measure the respondents' current perceptions about the extent to which they feel like a burden to others (PB) and connected to others (TB). There are 7 items on the PB subscale and 5 items on the TB subscale. An example of an item measuring PB is "I feel I have failed the people in my life" and an example of an item measuring TB is "I feel disconnected from other people". Items on the scale are scored in a 7-point Likert-type manner and some items are reverse scored. The internal consistency of the PB and TB subscales has been found to be in the range of .75 to .90 in a study conducted by Hill and Pettit (2012). Comparable consistency coefficients were found for TB ($\alpha = .91$) and PB ($\alpha = .85$) in a South African study by Naidoo (2016). Descriptive statistics for PB in the

present study were: range = 5–35, M = 20.66, SD = 10.73, α = .85, skewness (statistic = .294, SE = .166, z = 1.77), and kurtosis (statistic = −1.057, SE = .330, z = 3.20), and for TB: range = 7–49, M = 15.93, SD = 7.12, α = .70, skewness (statistic = .037, SE = .166, z = .22), and kurtosis (statistic = −.859, SE = .330, z = 2.60).

The original z-values of the subscales fell outside the parameters of $-3.29 > z < 3.29$, set out by Pallant (2013) and the data were further normalised using a square-root transformation. The above descriptive statistics represent the normalised data which were used for all analyses.

Procedure

Following clearance and permission from both school principals and parents, the first author sought assistance from educators and guidance counsellors employed at the school to address learners detailing the nature and purpose of the study. Following the written provision of assent, the respondents were provided with a research packet which included a biographical questionnaire, and the INQ and ISAS questionnaires. Owing to the strong reliability and validity of the instruments found in previous research (Klonsky and Glenn 2009; Naidoo 2016), the instruments were not pretested. Data collection was completed in a single setting at each school and lasted approximately 30 minutes.

Ethical Considerations

Ethical clearance was obtained from the Biomedical Research and Ethics Committee of the first author's institution (Protocol no: BE298/17, sub-study of BE138/14) and permission from the Department of Education and the school principals. Permission for involvement in the study was sought from the parents, and the children of those who responded were invited to participate after signing individual assent forms. During the completion of the questionnaires, the first author was available at all times to answer any questions, and to monitor for any possible distress arising from participation in the research. Debriefing arrangements were made with school counsellors and it was reiterated to the respondents that any feelings of distress should be communicated to the researcher. Follow-up counselling at the Centre of Applied Psychology at the first author's institution was also made available, however, none of the respondents reported distress or availed themselves of the opportunity for counselling.

Data Analysis

The data were analysed using the Statistical Package for the Social Sciences (SPSS), version 24. Following frequency analyses, demographic predictors of the continuous constructs of the study were obtained by conducting MANOVAs and *t*-tests, whereas the demographic predictors of NSSI (dichotomised for analysis) were explored using chi-square analyses. Lastly, a hierarchical binary logistic regression analysis was

performed to explore whether a relationship exists between the INQ subscales and the occurrence of NSSI. Given the community sample used in this study (as distinguished from a clinical population), a large proportion of the respondents did not endorse self-harm behaviour contributing to a pointy, heavy-tailed distribution which lent itself to very high positive kurtosis values (Field 2009) on the NSSI frequency score. The distribution was therefore normalised using a square-root transformation and the occurrence of NSSI was dichotomised into a yes/no variable for further analyses.

Results

Prevalence of NSSI in the Sample

The respondents were asked to indicate if and how many times they had engaged in NSSI behaviour by: "cutting, biting, burning, carving, pinching, pulling hair, scratching, hitting self, interfering with wound healing, rubbing the skin, sticking self with needles, swallowing dangerous substances, and other." Of the 60.6 per cent of the sample that engaged in self-harm, only 2.7 per cent reported having engaged in self-harm once and the remaining 57.9 per cent reported having engaged in self-harm between 2 to 4 700 times (M = 118, SD = 430.7).

The most common behaviour reported was "interfering with wound healing" (31%), followed by "banging or hitting self" (26.9%), and "cutting" (24.5%).

With regard to age, some respondents indicated that they were as young as 5 years old when they started self-harming. The majority of the sample indicated that they started to self-harm at about age 13 (25%). Furthermore, 44.1% of respondents indicated that they had self-harmed as recently as the month before the study.

Chi-square analyses did not indicate a significant difference in demographic variables with regard to the types of NSSI behaviour that were endorsed.

Functions of NSSI in the Sample

Chi-square analyses were conducted to determine if there were significant gender differences in the functions that NSSI served in the sample. The findings indicated that males were significantly more likely than females to endorse NSSI to serve the function of "pushing the limits" ($\chi 2$ (1, n = 216) = 13.3, p = .001), "to fit in" ($\chi 2$ (1, n = 216) = 10.07, p = .006), and "to get back at someone" ($\chi 2$ (1, n = 216) = 7.61, p = .02), classified as interpersonal functions. The findings also indicated that females were more likely than males to endorse NSSI behaviours due to "reacting to feeling unhappy" ($\chi 2$ (1, n = 216) = 7.04, p = .03), and "to avoid suicide impulse" ($\chi 2$ (1, n = 216) = 5.86, p = .05); indicating a higher endorsement of intrapersonal functions.

Demographic Variables associated with NSSI

Chi-square tests to compare the incidence of NSSI in the different age and race groups indicated no significant differences. A chi-square test for independence indicated a significant gender difference in the occurrence of non-suicidal self-harm ($\chi 2$ (1, n = 216) = .37, p = .05, *phi* = .14) whereby females were more likely to report having engaged in NSSI than males.

Demographic Variables associated with INQ Subscales and ISAS Functions

Independent samples *t*-tests indicated that there were no significant gender differences in the mean scores for the PB, TB, intrapersonal and interpersonal subscales. Similarly, three-way MANOVAS to explore age and race differences in mean scores for the PB and TB, and the intrapersonal and interpersonal subscales indicated no significant age and gender effects.

Correlations between INQ Subscales and ISAS Functions

A Pearson's correlation analysis between the ISAS functions (intrapersonal and interpersonal subscales) and the INQ subscales (PB and TB) was conducted. The results of the analysis are outlined in Table 1.

Table 1: Correlations between INQ subscales and ISAS functions

Variable	**Correlations**			
	1	2	3	4
PB	–			
TB	0.582**	–		
Intrapersonal	0.470**	0.286**	–	
Interpersonal	0.310**	0.221**	0.823**	–

** Correlation is significant at the 0.01 level (2-tailed)

As can be seen in Table 1, a significant positive correlation exists between PB and TB. There were also moderate, positive correlations between PB and the intrapersonal and the interpersonal subscales. The analyses indicated weaker relationships between TB and the intrapersonal and interpersonal subscales.

Interpersonal Needs as Predictors of NSSI

A hierarchical binary logistic regression analysis was conducted to assess whether PB and TB were able to predict the occurrence of NSSI after controlling for the influence of gender (the only variable found to be significantly associated with the occurrence of NSSI). Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multi-collinearity and homoscedasticity. The occurrence of self-harm was regressed on gender in Step 1, with PB and TB being added at Step 2 (see Table 2).

Table 2: Binary logistic regression model predicting NSSI behaviour

Step	Variable	OR	95% CI	*P*	Model			Change	
					R^2	X^2 (*df*)	*P*	ΔR^2	*P*
1					.027	4.29 (1)	.038	.027	.038
	(Constant)	0.92		.002					
	Gender	1.97	1.04–3.72	**.038**					
2					.259	45.90 (3)	< .001	.232	.038
	(Constant)	.014		**.000**					
	Gender	1.88	0.94–3.79	.075					
	PB	2.18	1.54–3.09	**.000**					
	TB	1.26	0.83–1.90	.276					

Significant predictors are presented in bold, $p < 0.05$.
OR = odds ratio, CI = confidence interval, R^2 = variance

In Step 1, gender explained 2.7 per cent of the variance in NSSI ($\Delta R^2 = .027$, $p < .05$), with the odds ratio (OR) indicating that females were twice as likely to report having engaged in NSSI behaviour than their male counterparts.

Following inclusion of the independent measures (PB and TB) at Step 2, the total variance explained by the model as a whole was 25.9 per cent ($\Delta R^2 = .259$, $p < .001$). This finding represents a change in variance of 23.2 per cent after controlling for the effects of gender. The results also indicated a significant main effect of PB (OR = 2.18, $p < .001$), but no significant main effect of TB (OR = 1.26, $p = .276$). The OR of 2.18 for PB suggests that the respondents who reported feelings of PB were twice as likely to report NSSI as the respondents who did not.

Discussion

The results of the present study indicate a high prevalence of NSSI in the sample. Lundh, Karim, and Quilisch (2007) reported similar results with 65.5 per cent of their adolescent sample reporting at least one engagement in self-injury. Conversely, other authors (Hawton et al. 2002; Klonsky 2011) reported much lower prevalence rates of between 5.9 per cent and 6.9 per cent. This may be accounted for by definitional issues in NSSI research; for example, Taylor, Peterson, and Fischer (2012) used a single endorsement of NSSI to calculate prevalence whereas You and Leung (2012) required multiple specific behaviours to satisfy their definition and other studies have not distinguished between suicidal and non-suicidal intent (Lundh, Karim, and Quilisch 2007).

In the present study, cutting was one of the most common NSSI behaviours endorsed. This finding is corroborated by the literature (Favaro, Ferrara, and Santonastaso 2007; Plener et al. 2009), and cutting being one of the more lethal forms of self-harm is a worrying statistic especially in light of the majority of the respondents reporting

multiple acts of self-injury in their lives. A possible explanation for the significant percentage of the sample indicating a continuous self-injury trend may relate to Joiner's theory (2005) which posits that increasing acts of NSSI result in a heightened capacity to engage in suicidal behaviour through repeated exposure to painful experiences. Therefore, it can be theorised that the first act of self-injury acts as a gateway for increasingly lethal acts of self-harm.

The findings of the present study provide insight into the functions that self-injury serves. The most commonly endorsed reasons for NSSI included releasing emotional pressure, expressing anger to self for being worthless, calming down, reducing anxiety, and reacting to feeling unhappy. It is interesting to note that all of the most-endorsed functions of self-injury serve intrapersonal functions (for example, to regulate affect and to punish oneself). Nock and Prinstein's (2004) four-function model of NSSI posits that self-injury is maintained through reinforcement processes, indicating either positive or negative reinforcement in the intrapersonal or interpersonal domains, suggesting that if the reward of NSSI acts outweigh the pain of engaging in NSSI, the behaviour will be repeated and will increase in frequency. Findings from other studies support the four-function model (Lloyd-Richardson et al. 2007; Muehlenkamp et al. 2013), suggesting that both intra- and interpersonal precedents need to be monitored.

The only demographic variable which was significantly associated with the occurrence of NSSI in this sample was gender, with females reporting a higher occurrence of NSSI than males. The gender effect on NSSI has been substantiated by a number of studies (Brunner et al. 2007; Madge et al. 2011), with some studies reporting that females self-injure up to four times (Hawton et al. 2002) more than males. Other studies have suggested that gender serves a less predictively salient role in the occurrence of self-injury (Baetens et al. 2015; Lundh, Karim, and Quilisch 2007).

Whitlock et al. (2011) provide a twofold explanation for the phenomenon of female-dominated self-injury practices, indicating that male-preferred forms of NSSI typically present as outward displays of aggression and may resultantly mask serious intent. Furthermore, these authors suggest that males are more likely to engage in self-injury as a function of sensation-seeking due to impulse and anger-control factors (Strüber, Lück, and Roth 2008). These differences may also explain why NSSI is viewed as a female behaviour, as sensation-seeking and anger control are not seen as the prototypical forms of NSSI and may receive less research attention (Whitlock et al. 2011).

No significant associations were found between the other demographic variables in the study (age and race), and the occurrence of NSSI. This finding, corroborated by other cross-national studies (for example, Giletta et al. 2012) suggests that self-injury is becoming a widespread, inclusive contagion that characterises the adolescent period across race groups.

The present study indicated that a significant relationship exists between PB and NSSI in the sample. This finding has been extensively corroborated by research (Chu, Rogers, and Joiner 2016; Hill and Pettit 2012; Muehlenkamp et al. 2013). Another study in South Africa found that emotional reactivity was shown to increase the prevalence of NSSI, whereas the experience of a positive support system was shown to mediate this relationship (Van der Wal 2017).

Research has also implicated conflicted family environments, which may lead to perceptions of burdensomeness in adolescents, leading to NSSI. Wedig and Nock (2007) found that parental criticism significantly predicted the occurrence of adolescent self-injury in their sample, more so than self-criticism. Linehan (1993) found that the link between PB and NSSI is in part accounted for by psychopathology, similarly suggesting that an invalidating family environment served to facilitate the development of NSSI, and in turn, borderline personality disorder. However, if looked at through a different lens, borderline personality disorder is an identifying label for a cluster of traits which often arise from invalidating family environments and trauma, leading to feelings of chronic emptiness and unstable relationship patterns, with sufferers often engaging in self-injury (APA 2013).

In the present study, the respondents who reported PB were twice as likely to engage in NSSI behaviour as those who did not report PB. Therefore, it may be surmised that PB plays a pivotal role in the enactment of self-injurious behaviour and may provide for an environment in which psychopathology such as borderline personality disorder may manifest, explaining the frequent history of self-harm in these individuals. This may support the findings of the present study which indicate that the respondents who reported PB were likely to engage in NSSI to serve intrapersonal functions such as soothing feelings of guilt and shame or expressing anger to self for being worthless. This experience of shame and guilt is thus masked in order to avoid rejection, negative evaluation, or ostracisation (Chu, Rogers, and Joiner 2016), possibly arising from a fear of burdening others. The lack of support from loved ones may then cyclically reinforce the sense of PB, with the resultant guilt encouraging silence instead of disclosure.

PB was also found to be correlated with interpersonal functions of NSSI in the present study. In a study among clinical outpatients, Hames et al. (2015) found that PB predicted excessive reassurance-seeking from others. This may provide insight into the theoretical linkage between PB and interpersonal functions of NSSI, particularly in relation to the need to secure attention and reassurance from others.

Clinical Implications

The study findings provide insight into the relationship between PB and NSSI and have important implications for understanding the interpersonal dynamics underlying self-injury. The uncovering of antecedents of NSSI can result in customised treatment options and strategies to prevent self-injury in adolescence – a high-risk period

according to the NSSI incidence rates reported in this and other studies (Hawton et al. 2002; Lundh, Karim, and Quilisch 2007).

The finding that PB was significantly related to the incidence of NSSI in the present study has important implications for intervention efforts by mental healthcare workers in that the focus on reducing perceptions of burdensomeness may moderate the engagement in NSSI behaviours. Cognitive-behavioural and mindfulness therapies may be useful in dealing with the dysfunctional self-talk and perceptions of alienation associated with PB. A plethora of research has shown the efficacy of dialectical-behaviour therapy in treating or reducing the prevalence of NSSI through its emphasis on emotional regulation (McCauley et al. 2018). Similarly, interventions aimed at strengthening family systems are also likely to reduce engagement in NSSI. In particular, family therapists are in a prime position to offer empirically based counselling to improve communication and disrupt maladaptive family dynamics, thereby mediating self-injury (Halstead et al. 2014). In addition, timely intervention efforts may improve self-esteem and identify risk factors such as negative internal schemas and aggressive self-talk (Xavier et al. 2016). Finally, limiting access to the means to self-injurious behaviour is an important practical intervention (Sarchiapone et al. 2011). In conclusion, the findings emphasise the need for contextually sensitive, age-appropriate intervention efforts aimed at the reduction of self-injury through the understanding of PB as a critical role player in the development of NSSI.

Limitations

Owing to the convenience sampling method being used for this study, the findings may not accurately reflect the experiences of the general South African adolescent population. In addition, this study relied on self-reported data, and due to the sensitive nature of the research questions, some respondents may not have responded to questions in a way that reflect their true experiences. However, the quantitative method of inquiry allowed for anonymity of the respondents and it is hoped that the findings accurately represent the experiences of this sample.

Finally, the cross-sectional nature of the study meant that all the data were collected at a single point in time and although analyses suggest that thwarted interpersonal needs predicted NSSI in this sample, a finding supported by extant literature, it is difficult to draw conclusions about the direction of the relationship between the two variables. A longitudinal study exploring this relationship may provide more conclusive answers.

Conclusion

With a myriad of challenges faced in adolescence, public health efforts need to focus on intervening in this vulnerable stage of development. If self-harming behaviour is seen as an act of soothing distress or alerting others to one's distress, then the source of

this distress clearly needs attention. With the present study illuminating the relationship between interpersonal needs and NSSI, it is hoped that customised treatment strategies for NSSI may result from this research effort.

Acknowledgements

The authors wish to thank all the gatekeepers and respondents for their contributions to and involvement in the study. The authors would also like to express their gratitude to the Honours Psychology students from the University of KwaZulu-Natal who assisted in collecting some of the data.

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