

Original research

## Relations Between Dependency, Negative Affects, Interpersonal Difficulties and Self-injury

Sacha Daelman<sup>1,2,✉</sup>, Geneviève Bloch-Torrico<sup>1</sup>, Jean Gagnon<sup>1,2,3</sup>

<sup>1</sup> Department of Psychology, University of Montreal, Montreal, Canada

<sup>2</sup> Centre for Interdisciplinary Research in Rehabilitation of Greater Montreal (CRIR), Montreal, Canada

<sup>3</sup> Centre de recherche en neuropsychologie et cognition (CERNEC), Montreal, Canada

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**Abstract:** Research has shown that self-injury is associated with dependency characterized by fear of abandonment. Few studies have explored this relation, but emotional and relational problems, as well as some intrapersonal and interpersonal functions of self-injury, appear to be connected to both variables. With a sample of 58 outpatients, we assessed self-injury and its functions with the Inventory of Statements About Self-Injury, affective and interpersonal problems with the Revised Diagnostic Interview for Borderlines and anaclitic neediness with the Depressive Experiences Questionnaire. The findings suggest that anaclitic neediness favours the experience of affective and interpersonal difficulties which influence the frequency of self-injury. Also, anaclitic neediness was found to be associated with marking distress, anti-dissociation, interpersonal influence and autonomy avoidance functions of self-injury.

**Keywords:** Self-injury, functions, dependency, affect regulation, anaclitic neediness

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Self-injury can be defined as a deliberately self-inflicted physical injury, done without suicidal intent and that is not considered acceptable by peers of the same culture (Klonsky, 2007; Muehlenkamp, 2005; Walsh, 2012). Self-injury includes a range of behaviours such as self-directed cutting, burning, hitting, biting and scratching, which occur as commonly in clinical and non-clinical populations (e.g. Briere & Gil, 1998; Klonsky, 2011; Laye-Gindhu & Schonert-Reichl, 2005). Across various studies, prevalence rates are estimated at 4 % to 5.9 % for the general population, 13.9 % to 46.5 % among adolescents, 21 % in clinical populations, up to 38 % among students, and as high as 75 % in people with

Borderline Personality Disorder (BPD; Briere & Gil, 1998; Clarkin, Widiger, Frances, Hurt, & Gilmore, 1983; Gratz, Conrad, & Roemer, 2002; Klonsky, 2011; Lloyd-Richardson, Perrine, Dierker, & Kelley, 2007; Muehlenkamp & Gutierrez 2007; Soloff, Lis, Kelly, Cornelius, & Ulrich, 2005; Whitlock, Eckenrode, & Silverman, 2006). Self-injury is an important issue for health professionals, as a result of its physical and psychological consequences (Skegg, 2005), in addition to the costs generated by its direct and indirect medical care (O'Sullivan, Lawlor, Corcoran, & Kelleher, 1999).

The present article will look specifically at impulsive self-injury, which designates behaviours based on impulses to seek quick relief from intense negative affects (Simeon & Favazza, 2001). This type of self-injury is recognized for its association with BPD (Brown, Comtois, & Linehan, 2002; Gunderson, 2011), the other personality disorders (Haw, Hawton, Houston, & Townsend, 2001; Krynska, Heller, & De Leo, 2006), as well as

✉ Sacha Daelman, Ph.D.  
Department of psychology, University of Montreal,  
C.P. 6128, Centre-ville Station,  
Montreal, Quebec, H3C 3J7, Canada  
E-mail: Sacha.Daelman@umontreal.ca

numerous psychiatric issues, such as depression, anxiety and eating disorders (e.g. Dulit, Fyer, Leon, Brodsky, & Frances, 1994; Ross & Heath, 2002). Interpersonal dependence is a factor that has been identified both in theory and through empirical studies as contributing to this type of self-injury. Nonetheless, to our knowledge, few studies have investigated whether emotional experiences or individual interpersonal characteristics explain this relation. Furthermore, while available literature on this topic indicates that dependency contributes to various intra- and inter-personal functions that motivate certain individuals with psychopathology to self-injure, the distinct nature of these functions remains undefined.

There is an array of documented risk factors for suicidal behavior, perhaps most notably depression (Hawton & James, 2005). Research has also linked various, but distinct, psychological constructs with a shared focus on the future to suicidal behavior.

#### *Definitions of dependency and associations to self-injury*

Dependency is a large and complex construct which has been examined from multiple theoretical perspectives (Pincus & Gurtman, 1995). Among studies which have found an association between dependency and self-injury, dependency was measured using a variety of variables, such as oral dependency, attachment anxiety or anaclitic dependency. These versions of dependency differ by class and by definition, but all are characterized by a strong desire to be connected with the other, and by a fear of abandonment.

A study by Baity and colleagues (2009) demonstrated that the level of oral dependency, representing an individual who is "overly effusive and pursuant in its need for others" and fears of being abandoned, differentiated the self-injuring BPD participants from BPD participants who had not harmed themselves for at least the past six months. Furthermore, no difference was found in the level of oral dependency between the BPD group presenting no recent self-injuring and a non-clinical control group. These authors concluded that BPD individuals who resorted to self-injury had a greater tendency to depend on others than those who did not self-injure. According to the researchers, these individuals may experience emotional triggers in connection with relationships which they feel are either too close or too distant. Self-injury could allow these individuals to replace the emotional pain felt following an emotional trigger with physical pain, or it could work to halt the dissociative process connected with the experience of intense emotions (Baity et al., 2009).

Nevertheless, the results of the study by Baity and colleagues (2009) did not clarify how or why dependency is associated with self-injury. As a matter of fact, the need to regulate negative emotions using self-injury is common to all impulsive self-harming groups and not exclusive to people with dependency issues (Klonsky, 2009). This commonality underscores the importance of shedding light on the mechanisms underlying this particular association. However, the results of this study are supported by other findings which report that self-injury is precipitated and influenced by feelings related to loss, rejection or abandonment in BPD (Leibenluft, Gardner, & Cowdy, 1987), in heterogeneous clinical populations, (Rosen, Walsh, & Rode, 1990), as well as among adolescents in the community (Nock, Prinstein, & Sterba, 2009).

Other empirical findings, pulled from research on the link between dependency and self-injury from an attachment perspective, highlight that an individual's affective difficulties mediate this association. Dependency has previously been identified as a facet of attachment in adults (Bartholomew & Horowitz, 1991). This type of dependency is better known today as "attachment anxiety". Individuals with this type of anxiety are characterised by a desire to get closer to the other, as well as by a fear of rejection and abandonment. They tend to be more vigilant concerning the other's level of interest and engagement in, and fidelity to their relationship (Brassard, Shaver, & Lussier, 2007; Brennan & Shaver, 1995). In numerous studies of clinical and non-clinical populations, attachment anxiety was associated with thoughts of self-injury and self-injury behaviours (Gormley & McNiel, 2010; Levesque, Lafontaine, Bureau, Cloutier, & Dandurand, 2010; Stepp et al., 2008). Furthermore, Gormley and McNiel (2010) identified that depressive symptoms mediated the relation between attachment anxiety and self-injury in an inpatient sample. The authors concluded that when individuals with attachment anxiety experienced high levels of distress, they perceived their attachment figures as inadequate. Subsequently, these individuals would expect the people they were dependent on not to be able to relieve their anguish. This negative expectation activated their fear of abandonment and intensified any existing depressive symptoms, contributing in this way to the onset of self-injurious behaviours (Gormley & McNiel, 2010). This interpretation supports the idea that affective and interpersonal elements are linked to the depressive experience of the individual and contribute to the association between dependency and self-injury.

A form of dependency related to the depressive experience, labelled “anaclitic” (Blatt, D’Afflitti, & Quinlan, 1976), has allowed us to deepen our understanding of the role played by the relational maturity of the dependency in self-injury. This dependency is a fundamental aspect of personality development which, when dysfunctional, can lead to depressive experiences that manifest more specifically in the interpersonal sphere (Blatt, 1974; Luyten, Blatt, & Corveleyn, 2005). The dependent person would tend to have feelings of helplessness and weakness, a significant fear of being abandoned by the other, and a desire to be protected, loved and cared for.

Several studies have explored the links between the anaclitic type of dependency and self-injury using the *Depressive Experiences Questionnaire* (DEQ). A study by Casillas and Clark (2002) reported that the global dependency score measured by the DEQ was not associated with self-injury. The authors did however emphasize that their results obtained using this measure were unexpected. They suggested that the difference could indicate a variation in the type of dependency they were targeting in their study and the type they actually measured.

This opinion is supported by Blatt, Zohar, Quinlan, Zuroff and Mongrain (1995) who identified that the dependency factor in the DEQ actually included two sub-types of dependency, marked by level of maturity. The first sub-type, relatedness, represents a mature type of dependency. This factor assesses interpersonal relationships in which individuals would feel loneliness in response to their disruption or sadness in response to the loss of or separation from certain significant figures. The second sub-type, anaclitic neediness, is a less mature dependency and represents a generalized, undifferentiated, dependence on others. Feelings of helplessness, fear of separation and abandonment, loss of gratification, and frustration from it would not be linked to a particular relationship (Blatt, 2004; Blatt et al., 1995).

This distinction adds to the comprehensiveness of previous definitions of dependency by making explicit the way differences in developmental maturity may underpin dependency. This distinction also integrates the idea that dependency may not be connected with actual relationships, but with internal and diffuses representations that an individual makes of his or her affective relationships. Levy, Edell and McGlashan (2007) found in a sample of inpatients that anaclitic neediness was significantly and positively correlated with self-destructive behaviours, such as self-injury, included in the diagnostic criteria for BPD. This was not found to

be true for relatedness. Thus, self-injury would seem to be related to a less mature type of generalised dependency.

In summary, these results allow us to determine that an association between self-injury and dependency does exist, and to suppose that it occurs in the context of a developmentally immature personality. These researches also open the door to an exploration of the effect of affective and interpersonal difficulties on this association. If an association were found to exist, it would indicate that multiple functions of self-injury are also influenced by this type of dependence. Indeed, self-injury has for functions both the regulation of internal states, such as emotions, as well as the interpersonal environment (Klonsky & Glenn, 2009; Nock & Prinstein, 2004). Given the emotional and relational features of anaclitic dependency, it is possible that immature dependency is linked to self-injury behaviours motivated by either of these functions.

#### *Intrapersonal and interpersonal functions of self-injury*

Over the past several years, researchers have been particularly interested in the functions underpinning self-injury (Klonsky, 2007; Klonsky & Glenn, 2009; Nock & Prinstein, 2004). In studies of self-injury, the term “function” was defined by the antecedent and consequent events purported to cause or maintain the behaviour, which were identified using functional analysis (Nock, 2009, 2010; Nock & Prinstein, 2004). The term “function” was defined also by the potential reasons or specific goals motivating behaviour (Klonsky, 2007; Klonsky & Glenn, 2009). In the present study we use “function” in the sense of the second definition, to identify the goals behind self-harm associated with relationally immature dependence. Current researches support the notion that two principal types of functions encompass the various reasons behind self-injury. The intrapersonal function refers to the use of the behaviour to modify an internal state, such as distress, whereas the interpersonal function describes the use of the behaviour to effect change in the social environment (Klonsky & Glenn, 2009; Nock, 2009; Turner, Chapman, & Layden, 2012). Research on the intrapersonal function of self-injury indicates that affect regulation and self-punishment are the most frequently endorsed reasons in both clinical and non-clinical populations studied (Brown et al., 2002; Kleindienst et al., 2008; Klonsky, 2009, 2011; Laye-Gindhu & Schonert-Reichl, 2005; Rodham, Hawton, & Evans, 2004). In affect regulation, self-injury represents a maladaptive strategy aimed at relieving affective tension or intense negative

emotions (Gratz, 2003; Klonsky, 2009; Putnam & Silk, 2005). According to Suyemoto (1998), affect regulation serves to express and externalize intolerable emotions as much as it does to produce a sense of control over the emotions. As the researches described earlier suggest, these emotions include, among others, fear of abandonment, with the need to regulate these emotions using self-injury following the feeling of abandonment. Thus, this behaviour would regulate overwhelming affects by creating a sense of control over them by transforming the passive pain of abandonment into the active pain of the injury (Suyemoto, 1998). The affect regulation role of self-injury is supported by correlational studies (Anderson & Crowther, 2012; Gordon et al., 2010; Kimball & Diddams, 2007; Klonsky, 2009), as well as by experimental studies (Brain, Haines, & Williams, 1998; Haines, Williams, Brain, & Wilson, 1995) and by studies that have applied the ecological momentary assessment (Armey, Crowther, & Miller, 2011; Nock et al., 2009).

In regards to self-punishment, self-injury can be understood as a response to a generally devalued view or hate of the self (Favazza, 1996; Walsh & Rosen, 1988). Here it can be understood specifically as an emotional regulation method which targets aversive feelings related to the representation of the self (Turner et al., 2012). Fear of abandonment may also be regulated in this way. In fact, it has been postulated that self-injury may represent a way to punish the self for feeling dependent, as well as for the anger resulting from feeling abandoned. Directed at the self, this anger would protect the relationship with the other while also confirming the negative self-image of the one who feels abandoned. In this way, the one who abandons is not hated, but the individual him or herself, both for the remaining feelings of anger and need for the other (Suyemoto, 1998). Empirically, researches has demonstrated that self-hatred and anger at the self (Nock et al., 2009), low self-esteem (Laye-Gindhu & Schonert-Reichl, 2005) and self-criticism (Glassman, Weierich, Hooley, Deliberto, & Nock, 2007; Wedig & Nock, 2007) are associated with self-injury. As with affect regulation, numerous studies have found results in clinical and non-clinical populations which indicate that a large proportion of individuals who engage in self-injury report doing so for reasons of self-punishment, anger directed towards the self or feelings of failure (Briere & Gil, 1998; Brown et al., 2002; Klonsky, 2009, 2011; Laye-Gindhu & Schonert-Reichl, 2005; Nixon, Cloutier, & Aggarwal, 2002; Nock & Prinstein, 2004; Turner et al., 2012). Concerning the interpersonal function of self-injury, this may be construed as representing, for

the individual, a more efficient form of communicating distress or trying to confirm the other's affection than for instance screaming or crying for help (Klonsky, 2007; Nock, 2008). Among other things, the function of interpersonal influence may be to help circumvent abandonment. The use of self-injury to influence interpersonal relationships may be motivated by the need to manage the relational environment in order to avoid abandonment and obtain the protection and forgiveness of the other (Allen, 1995; Klonsky, 2007). According to the research, results obtained in studies of different clinical and non-clinical samples demonstrated that an important number of individuals who self-injure report doing so for attention, to communicate with others or to influence their interpersonal environment (Briere & Gil, 1998; Brown et al., 2002; Klonsky, 2011; Laye-Gindhu & Schonert-Reichl, 2005; Nixon et al., 2002; Nock & Prinstein, 2004; Turner et al., 2012). In addition, while other researches also point to how interpersonal difficulties can influence the decision to engage in self-injury, other analyses highlight that it is especially done through an emotional dysregulation (Adrian, Zeman, Erdlay, Lisa, & Sim, 2011).

To summarise, the intrapersonal and interpersonal functions of self-injury have already been described as potentially linked to dependency and the fear of abandonment. Given what has been emphasized, an association between these different functions and immature dependency, such as anaclitic neediness, seems possible. What is more, these associations with dependency open the way to exploring whether autonomy avoidance is also a function of self-injury. It has already been suggested that the use of dysfunctional impulsive behaviours may allow for the circumvention of autonomy enhancing situations, which would favour dependency relationships while decreasing negative emotions linked to feelings of abandonment (e.g. Masterson, 2000).

#### *Objectives and hypotheses*

To our knowledge, the associations between dependency and self-injury have scarcely been empirically studied to date and deserve further consideration. The aim of the current study was to determine whether both negative affect and interpersonal difficulties contributed to the link between self-injury and immature dependency. In addition, the study also attempted to identify the various intrapersonal and interpersonal functions, such as affect regulation, self-punishment and interpersonal influence, which might be associated with this dependency.

Given what has been discussed thus far, several hypotheses appeared to deserve particular consideration: (1) anaclitic neediness would be positively correlated to frequency of self-injury; (2) negative affects and interpersonal difficulties would each be found to act as mediators in this relation; (3) anaclitic neediness would be positively correlated with different intrapersonal and interpersonal functions, specifically affect regulation, self-punishment and interpersonal influence. An additional goal of this research was to explore whether there was an association between anaclitic neediness and a hypothetical function of autonomy avoidance.

## Method

### *Participants and procedure*

A total of 59 French-speaking outpatients participated in this study, which has been approved by research ethic committee. They were selected if they had at least 18 years old and if they consulted regarding psychological difficulties. They were interviewed and given questionnaires to complete at a community psychology clinic, between December 2012 and May 2014. Exclusion criteria were the presence of autism spectrum disorder or psychotic disorder, due to the potential influence on self-injurious behaviour. One participant was excluded, resulting in a final sample of 58 participants.

### *Measures*

#### *Structured Clinical Interview for DSM-IV Axis II (SCID-II).*

The structured interview SCID-II (First, Spitzer, Gibbon, Williams, & Benjamin, 1997) was used to determine the presence of personality disorders among participants due to the strong correlation known to exist with self-injury. Item validity and inter-rater reliability, as well as test-retest and internal consistency of the interview have been found previously (see Farmer & Chapman, 2002; Maffei et al., 1997). The French version has been used considering its clinical relevance in identifying the presence of personality disorders.

#### *Brief Symptom Inventory (BSI).*

The BSI (Derogatis, 1993) is a 53-item self-report questionnaire which measures various symptoms of psychopathology. Items are rated on a five-point Likert scale, ranging from 0 (not at all) to 4 (extremely). The symptoms assessed are somatization, obsession-compulsion, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation and psychoticism. The

questionnaire has shown satisfactory construct and convergent validity, in addition to good internal and temporal consistency (Derogatis, 1993). Its French version also has demonstrated acceptable convergent validity and a satisfactory level of internal and temporal consistency (Gosselin & Bergeron, 1993). The present study used the Global Severity Index score (GSI), a sum of all items, to evaluate the severity of psychopathological symptoms among participants. Its internal consistency for the sample was 0.95.

#### *Inventory of Statements About Self-Injury (ISAS).*

An early section of ISAS (Klonsky & Glenn, 2009; Klonsky & Olino, 2008) is a questionnaire to assess the lifetime frequency and context of 12 self-injury behaviours. To avoid extreme data, frequency was weighted on a scale from 0 (never) to 4 (nine times or more) based on its distribution. This section has been shown to have test-retest reliability that varies between 0.52 and 0.83 after a year (Glenn & Klonsky, 2011a; Klonsky & Olino, 2008). It also has been demonstrated to have good convergent and construct validity (Glenn & Klonsky, 2010; Klonsky & Olino, 2008). A second section of ISAS evaluates 13 self-injury functions grouped by two factors, intrapersonal (i.e., affect regulation, anti-dissociation, anti-suicide, marking distress, self-punishment) and interpersonal (i.e. autonomy, interpersonal boundaries, interpersonal influence, peer bonding, revenge, self-care, sensation seeking, toughness; Klonsky & Glenn, 2009). These factors contain 15 and 24 items, respectively, with three items per function, all rated on a Likert scale, ranging from 0 (not relevant) to 2 (very relevant). The scores represent the average of the items and their respective functions. Individuals who did not engage in self-injury responded by indicating that the proposed statements were not relevant to their experience. This permitted the evaluation of whether or not the variability in the dependency reported in this heterogeneous clinical sample was correlated with self-injury via a given function. This measure has demonstrated criteria validity (Glenn & Klonsky, 2009; Klonsky & Glenn, 2009), as well as good internal and temporal coherence (Glenn & Klonsky, 2011a, 2011b; Klonsky & Glenn, 2009). For the present study, a back-translation method was used to create a French version of the ISAS. In the French version, the intrapersonal and interpersonal functions were found to have internal coherence levels of 0.91 and 0.90, respectively. In addition, an independent exploratory scale of 12 items to measure the function of autonomy avoidance was created (e.g., I avoid the idea of facing my responsibilities; Other people help me solve my problems; I do not have

to respect my obligations;  $\alpha = 0.89$ ). This measure was created in order to explore whether this function is another form of motivation behind self-injurious behaviours in individuals who report higher dependency scores.

#### *Revised Diagnostic Interview for Borderlines (DIB-R).*

The sections of the DIB-R (Guttman & Laporte, 1993; Zanarini, Gunderson, Frankenburg, & Chauncey, 1989) on affects and interpersonal difficulties have been used to assess the level of negative affects and of interpersonal difficulties participants experienced over the course of the past two years. The section on affects (DIB-R-A) has 20 questions and contains five sub-sections to evaluate depression, guilt, anger, anxiety and dysphoria. The section on interpersonal difficulties (DIB-R-R) consists of 32 questions and nine sub-sections, which assess intolerance to aloneness, abandonment or annihilation concerns, counter-dependency, relationship instability, dependence, manipulation or devaluation, demandingness, regressions in therapy and the countertransference reactions of mental health professional. The sub-sections are scored from 0 to 2 and the total score of a section is calculated using the sum of the sub-section scores. This sum is then weighted on a scale of 0 to 2 for the DIB-R-A and from 0 to 3 for the DIB-R-R. The validity and reliability of the DIB-R has been surveyed in previous research (Tragesser et al., 2010; Zanarini, Frankenburg, & Vujanovic, 2002; Zanarini et al., 1989). The French version of the interview has been previously used in researches to constitute BPD groups (Guttman & Laporte, 2000; Laporte & Guttman, 2001). In the current sample, the internal coherence was 0.69 for the DIB-R-A and 0.72 for the DIB-R-R.

#### *Depressive Experiences Questionnaire (DEQ).*

The DEQ (Blatt et al., 1976; Boucher, 2004) measures representations about the self and others using three factors, dependence, self-criticism and self-efficacy. The 66 items of this questionnaire are rated on a 7-point Likert scale, from 1 (strongly disagree) to 7 (strongly agree). The current research used the sub-factor of anaclitic neediness (10 items) identified by Blatt and colleagues (1995). The score corresponds to the sum of its items. The French version of the questionnaire has demonstrated a satisfactory level of internal and temporal consistency, in addition to good convergent validity (Boucher, Cyr, & Fortin, 2006). In the present sample, the internal consistency of anaclitic neediness was 0.70.

#### *Data analysis*

All variables used in the parametric analyses showed acceptable departures from normality on skewness and kurtosis statistics (Curran, West, & Finch, 1996; Kline, 2011), with the exceptions of the interpersonal factor of self-injury and the autonomy avoidance function. Thus, square root data transformations were performed to obtain acceptable departures from normality on these statistics. Pearson's correlations were conducted between the categories of functions and the frequency of self-injury, anaclitic neediness and DIB-R dimensions. Among the specific functions, only autonomy avoidance was included due to its exploratory nature and the fact that it was not integrated into the larger factors of the ISAS. Next, two hierarchical regressions were performed using steps from Baron and Kenny (1986) for testing mediation, and Preacher and Hayes' (2004) bootstrap method to estimate indirect effect. These provided an estimate of the mediation effects of negative affects and interpersonal problems in the association between anaclitic neediness and self-injury frequency. To detect a medium effect size with a statistical power of 0.80 in these main analyses, G\*Power software suggested a sample with approximately 60 participants (Faul, Erdfelder, Buchner, & Lang, 2009). Preliminary analyses showed no violation of linearity, multicollinearity or homoscedasticity. Finally, due to the restriction in the variance caused by the low number of items for specific factors of the ISAS, Spearman's correlations were conducted in order to determine which factors were associated with anaclitic neediness.

#### **Results**

##### *Clinical and self-injury features of the sample*

In the sample, twenty-nine percent (29 %) were men and 75.9 % were single. The average age of participants was 34.38 years ( $SD = 11.36$ ): 32.98 years ( $SD = 11.24$ ) for women and 37.76 years ( $SD = 11.26$ ) for men. Among these participants, 56.90 % had a university education. Also, 67.2 % had consulted previously for familial, psychological or psychiatric difficulties. Among them, 71.1 % said they received psychiatric or neuropsychological diagnostics: 9 depressive disorders, 9 anxiety disorders, 4 BPD, 4 attention-deficit/hyperactivity disorder, 2 adjustment disorder, 1 bipolar I, 1 bipolar II, 1 epilepsy and 1 dysphasia/dyspraxia. Assessed with the SCID-II, 37.9 % of participants had one or more personality disorders: 11 borderline, 6 obsessive-compulsive, 3 paranoid, 1 dependent, 1 avoidant, 2 narcissistic, 2 passive-aggressive and 2 not otherwise specified. The

average global score on the GSI for the sample was 0.93 (SD = 0.59). These results are comparable to those obtained with a normative outpatient sample (Derogatis, 1993). These findings confirm the clinical difficulties of the participants.

Among participants, 36.2 % reported having engaged in self-injury and 61.9 % of this group also presented a personality disorder. Table 1 shows the proportion of respondents who engaged in self-injury by behaviour type.

Table 1. Types and frequencies of self-injury in participants who self-injure

	<i>n</i>	%
Banging or hitting self	10	47.6 %
Biting	8	38.1 %
Pulling hair	7	33.3 %
Severe scratching	5	23.8 %
Cutting	4	19.0 %
Pinching	4	19.0 %
Burning	2	9.5 %
Carving	2	9.5 %
Interfering with wound healing	2	9.5 %
Others (e.g. sex for being physically hurt)	2	9.5 %
Sticking self with needles	1	4.8 %
Swallowing dangerous substances	1	4.8 %
Rubbing skin against rough surface	0	0 %

Note. Total *n* = 21.

While many respondents were unable to determine the frequency of their self-injury behaviours, it was nonetheless possible to highlight that frequency varied a great deal among participants, ranging from a single gesture to almost daily self-injuries. Self-injury was consistently described as having been done impulsively. In addition, close to 67 % of participants who engaged in self-injury confirmed having done so in the last year, which facilitated the interpretation of the relations between the various measures.

#### *Correlation and mediation analyses*

Table 2 displays Pearson's correlations between categories of functions and frequency of self-injury, anaclitic neediness and DIB-R dimensions. Results show that self-injury frequency ( $M = 1.03$ ;  $SD = 1.58$ ) has moderate to strong positive correlations with anaclitic neediness ( $M = 40.80$ ;  $SD = 10.35$ ;  $r(56) = 0.31$ ,  $p < 0.05$ ), DIB-R-A ( $M = 0.96$ ;  $SD = 0.65$ ;  $r(56) = 0.57$ ,  $p < 0.001$ ) and DIB-R-R ( $M = 0.74$ ;  $SD = 1.24$ ;  $r(56) = 0.40$ ,  $p < 0.001$ ).

Table 2. Pearson's correlations between functions and frequency of self-injury, anaclitic neediness and DIB-R affect and interpersonal dimensions

	1	2	3	4	5	6	7
1. Self-injury frequency	1.0						
2. Anaclitic neediness	0.31 <sup>*</sup>	1.0					
3. Intrapersonal function of self-injury	0.87 <sup>***</sup>	0.25 <sup>†</sup>	1.0				
4. Interpersonal function of self-injury	0.83 <sup>***</sup>	0.14	0.82 <sup>***</sup>	1.0			
5. Autonomy avoidance function of self-injury	0.71 <sup>***</sup>	0.26 <sup>*</sup>	0.70 <sup>***</sup>	0.62 <sup>***</sup>	1.0		
6. DIB-R-A	0.57 <sup>***</sup>	0.31 <sup>**</sup>	0.55 <sup>***</sup>	0.53 <sup>***</sup>	0.29 <sup>*</sup>	1.0	
7. DIB-R-R	0.40 <sup>***</sup>	0.42 <sup>***</sup>	0.44 <sup>***</sup>	0.26 <sup>*</sup>	0.23	0.58 <sup>***</sup>	1.0

Note. <sup>\*</sup> $p < 0.05$ ; <sup>\*\*</sup> $p < 0.01$ ; <sup>\*\*\*</sup> $p < 0.001$ ; <sup>†</sup> $p = 0.06$ ;  $n = 58$ .

Furthermore, a positive correlation between anaclitic neediness and autonomy avoidance ( $M = 1.36$ ;  $SD = 3.26$ ;  $r(56) = 0.26$ ,  $p < 0.05$ ), and a trend between anaclitic neediness and intrapersonal functions of self-injury were found ( $M = 0.72$ ;  $SD = 1.16$ ;  $r(56) = 0.25$ ,  $p = 0.06$ ), but no correlation was found for the global score of interpersonal functions ( $M = 0.21$ ;  $SD = 0.55$ ;  $r(56) = 0.14$ ,  $p = 0.30$ ). Finally, anaclitic neediness and the scores for intrapersonal and interpersonal functions were moderately and positively associated with affective

and interpersonal difficulties as measured using the DIB-R.

Two hierarchical regressions were conducted using these results. According to the findings (Table 3), anaclitic neediness predicted the frequency of self-injury, explaining 9.5 % of its variance ( $\beta = 0.31$ ,  $p < 0.05$ ;  $R^2 = 0.10$ ). However, once the relation was controlled for with the addition of the DIB-R-A score to the regression, it added 24.6 % to the explained variance of the frequency of self-injury ( $\beta = 0.52$ ,  $p < 0.001$ ;  $\Delta R^2 = 0.25$ ,  $p < 0.001$ ).

Table 3. Negative affects mediating the relation between anaclitic neediness and self-injury frequency

	B	SE	$\beta$	$p$	$R^2$
Step 1					0.10
Anaclitic neediness	0.05 <sup>*</sup>	0.02	0.31	0.019	
Step 2					0.34
Anaclitic neediness	0.02	0.02	0.14	0.218	
DIB-R-A	1.27 <sup>***</sup>	0.28	0.52	0.000	

Note. <sup>\*</sup> $p < 0.05$ ; <sup>\*\*\*</sup> $p < 0.001$ .

Anaclitic neediness, however, became non-significant ( $\beta = 0.14$ ,  $p = 0.22$ ;  $R^2 = 0.34$ ;  $F(2,55) = 14.21$ ,  $p < 0.001$ ), suggesting a mediation effect of negative affects in the relation between anaclitic neediness and frequency of self-injury. Confirming the mediation effect, a bias-corrected confidence

interval (95 %) for the indirect effect of anaclitic neediness through DIB-R-A based on 1,000 random samples from the original data was found to be different from zero (0.003-0.057). Moreover, according to the Table 4, when the DIB-R-R score was included in a hierarchical regression with

anaclitic neediness ( $\beta = 0.33, p < 0.05; \Delta R^2 = 0.09, p < 0.05$ ), it added 9.0 % to the explained variance of the frequency of self-injury.

Table 4. Interpersonal problems mediating the relation between anaclitic neediness and self-injury frequency

	B	SE	$\beta$	$p$	$R^2$
Step 1					0.10
Anaclitic neediness	0.05*	0.02	0.31	0.019	
Step 2					0.19
Anaclitic neediness	0.03	0.02	0.17	0.208	
DIB-R-R	0.42*	0.17	0.33	0.017	

Note. \*  $p < 0.05$ .

Again, the effect of anaclitic neediness became non-significant ( $\beta = 0.17, p = 0.21; R^2 = 0.19; F(2,55) = 6.22, p < 0.01$ ), suggesting a mediation effect of interpersonal difficulties in the association between anaclitic neediness and the frequency of self-injury. Despite the fact that it was not above zero, the confidence interval (95 %) for the indirect effect of anaclitic neediness through DIB-R-R based on 1,000 bootstrap samples nevertheless tended to support this mediation effect (0.000-0.0427).

#### Self-injury specific functions

Concerning the more specific functions of self-injury, Spearman's correlations allowed for the identification of different intrapersonal and interpersonal functions that play a role in the association between self-injury and anaclitic neediness. These analyses also allowed for the assessment of whether these two variables converge with the corresponding difficulties in the DIB-R (see Table 5).

Table 5. Endorsement of functions of self-injury for the self-injuring group and Spearman's correlations with anaclitic neediness and DIB-R dimensions for the whole sample

	% (n)	Anaclitic neediness	DIB-R-A	DIB-R-R
Affect regulation	95.2 (20)	0.18	0.56***	0.41***
Self-punishment	71.4 (15)	0.17	0.37**	0.16
Anti-dissociation	42.9 (9)	0.26*	0.54***	0.51***
Anti-suicide	47.6 (10)	0.25 <sup>t</sup>	0.39**	0.24 <sup>t</sup>
Marking distress	61.9 (13)	0.31*	0.39**	0.39**
Autonomy	4.8 (1)	0.03	0.21	0.24 <sup>t</sup>
Interpersonal boundaries	14.3(3)	0.17	0.26 <sup>t</sup>	0.24 <sup>t</sup>
Interpersonal influence	47.6 (10)	0.30*	0.46***	0.40**
Peer bonding	19.0 (4)	-0.19	0.13	-0.17
Revenge	23.8 (5)	0.21	0.30*	0.26*
Self-care	19.0 (4)	0.05	0.23	0.16
Sensation seeking	23.8 (5)	-0.01	0.31*	0.12
Toughness	38.1 (8)	0.11	0.26*	0.13
Autonomy avoidance	61.9 (13)	0.26*	0.29*	0.23 <sup>t</sup>

Note. \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ ; <sup>t</sup> $p < 0.08$ ;  $n = 21$  for the self-injuring group;  $n = 58$  for the correlations.

The findings indicated that affect regulation ( $M = 3.86$ ;  $SD = 1.82$ ), self-punishment ( $M = 2.38$ ;  $SD = 2.09$ ) and autonomy avoidance ( $M = 3.76$ ;  $SD = 4.57$ ) were the functions most frequently endorsed by participants with a history of self-injury. In addition, interpersonal influence ( $M = 1.19$ ;  $SD = 1.66$ ), also important among participants who self-injure, was endorsed by 47.6 % in this group. The variation of anaclitic neediness for the entire sample was found to be correlated with the following functions: marking distress, anti-dissociation and interpersonal influence. The same correlation was found for autonomy avoidance. These functions were also found to be correlated with the DIB-R-A and DIB-R-R. Of note is that neither affect regulation nor self-punishment was found to be significantly correlated with anaclitic neediness.

### Discussion

The first observation made from these results is on the proportion of individuals in the clinically heterogeneous sample who reported having engaged in self-injury. The scale used to measure self-injury included a large range of behaviours over a long period of time, which might explain that 36.2 % of participants indicated having intentionally engaged in one of the self-injury behaviours examined, with two-thirds of those respondents reporting having done so in the last year. The large range of behaviours and the length of time assessed may also explain why this proportion was higher than the 21 % observed in other research with a similar sample (Briere & Gil, 1998). However, these results can also be understood as underscoring the common use of physical self-attack when individuals are faced with a difficult or distressing situation. Thus, a certain number of individuals experiencing psychological difficulties may be likely to resort to self-injury at some point in time in order to modify their internal state or their environment (Nock, 2010).

As expected, the frequency of self-injury was positively correlated with the immature dimension of dependency, anaclitic neediness. These results converge with those from studies conducted by Baity and colleagues (2009), as well as by Gormley and McNeil (2010). In these studies, dependency, representing a relational immaturity as suggested by "orality" and attachment insecurity, was found to be associated with self-injury. Anaclitic neediness has been described as a less mature form of dependency with a non-specific and generalised feeling of abandonment (Blatt, 2004; Blatt et al., 1995). The results of this research show that in a heterogeneous clinical population, the individuals whose personality is characterised by

an immature and generalised type of dependency were more likely to resort to self-injury more frequently than their counterparts. These findings also converge with data which indicate that impulsive self-destructive behaviours are associated with anaclitic neediness, but not with relatedness (Levy et al., 2007). Relatedness represents a more mature form of dependency because it is connected to the fear of solitude and sadness experienced following real loss and conflict (Blatt et al., 1995).

More highly dependent individuals who self-injure may have a tendency to experience their dependency through fear of abandonment and a desperation that surpasses the feelings of solitude and sadness connected with relatedness. These more dependent individuals may have negative expectations regarding the emotional support they expect to obtain from others when they are experiencing distress. In this context, self-injury may be a way for these individuals to cope with their internal state of distress, which is accentuated by a diffuse and immature fear of abandonment which occurs in difficult situations.

As expected, affective and interpersonal difficulties functioned as mediators in the relation between anaclitic neediness and the frequency of self-injury. These findings converge with research that has shown that negative emotions (Anderson & Crowther, 2012; Armeij et al., 2011), affective dysregulation (Kimball & Diddams, 2007) and interpersonal difficulties (Adrian et al., 2011) contribute to self-injury behaviour. The present research improves our understanding of this relation by demonstrating how a higher degree of affective and interpersonal difficulties can explain the relation between anaclitic neediness and self-injury. In addition, the strong correlation found between affective and interpersonal difficulties highlights that these phenomena are firmly linked. It is therefore plausible that individuals with greater anaclitic neediness are more vulnerable, due to their fear of abandonment, to experiencing intense negative emotions in the context of interpersonal difficulties, which in turn could affect the occurrence of self-injury.

A trend between anaclitic neediness and the intrapersonal function of self-injury scores was also found, but not for the interpersonal scores. These results differ from previous research findings which have shown that both the affective dimension and the interpersonal sphere contribute to self-injury in more highly dependent individuals. In a step towards resolving these differences, our results indicated that not all the functions which composed the scores were correlated with dependency. Specifically, the functions found to be

positively associated with dependency were: anti-dissociation, marking distress, interpersonal influence and autonomy avoidance. This suggests that the higher an individual's level of anaclitic neediness, the greater the likelihood that the individual will engage in self-injury for one of the reasons provided above.

These findings reinforce the notion that certain individuals, who are dependent and fear abandonment in a diffuse and generalised way, seek to reduce and control their internal states using self-injury. These results support those of previous research which has demonstrated that self-injury is reinforced by its regulatory effect on internal affective tension (Brain et al., 1998; Gordon et al., 2010; Haines et al., 1995; Klonsky, 2009). Furthermore, the presence of anti-dissociation among the functions identified coincides with results from a conclusion by Baity and colleagues (2009) in which self-injury was understood to help interrupt the dissociative state linked with intense emotions in more highly dependent individuals. It is also possible that marking distress is associated with anaclitic neediness because of the interpersonal and emotional nature of the scale (e.g., When I self-harm, I am signifying the emotional distress I'm experiencing). Thus, the individual might experience distress and resort to self-injury for multiple reasons. For instance, due to the impact that self-injury has on the emotions that it both symbolises and helps to manage. Also by way of the effect of self-injury behaviour on the interpersonal environment, because people in the individual's social network can actually see the individual's distress as it is marked directly on the body.

This perspective is coherent with findings that have specified that the greater the degree of anaclitic neediness an individual is found to have, the greater the likelihood that self-injury will be used to influence others. This interpretation builds on research that has underscored how self-injury can be used to attract attention and encourage caregiving from others (Briere & Gil, 1998; Laye-Gindhu & Schonert-Reichl, 2005; Nock & Prinstein, 2004). In fact, it specifies that dependency contributes to this function. It is interesting to note that the association between interpersonal influence and anaclitic neediness is present despite the absence of an association between anaclitic neediness and the interpersonal functions score. This divergence can be explained by the absence of a correlation between numerous other interpersonal functions and anaclitic neediness, such as asserting autonomy, self-care or toughness, which would

not have relation with self-injury in more dependent individuals.

Recent research has made it clear that than individual's interpersonal context is an important factor in explaining the behaviour of self-injury, particularly in the context of affective dysregulation (Adrian et al., 2011; Muehlenkamp, Brausch, Quigley, & Whitlock, 2012). In regards specifically to anaclitic neediness, the interpersonal context seems to influence self-injury more commonly via functions such as interpersonal influence and autonomy avoidance, which may be explained by the impact these functions can have on the emotions experienced by the individual. In terms of autonomy avoidance, the exploratory results suggest that self-injury may allow individuals to avoid situations which require responsibility and resourcefulness and produce stress. Thus, it is plausible that autonomy avoidance plays a role in regulating the experiences of individuals who fear abandonment because situations which require autonomy skills could increase their affective stress through the fear of losing the dependency relationship.

Unexpectedly, affect regulation and self-punishment were not found to be significantly correlated with anaclitic neediness. Considering that almost all the participants who reported engaging in self-injury indicated having done so to regulate their emotions, the function of affect regulation can be understood as existent among those who self-injure, but not restricted to those with greater dependency issues. Individuals with higher dependency endorsed functions for emotional regulation, but unlike others who resorted to self-injury, they also endorsed more frequently marking distress, a function that comprises affect regulation and integrates relational challenges. In regards to self-punishment, in the same way, our findings also indicate that this function is not correlated with anaclitic neediness, nor is it specifically associated with dependency. Nonetheless, an alternative explanation is that self-punishment may be addressed in a secondary manner by other emotional regulation functions (Klonsky, 2007, 2009). Self-punishment may have been reported as having less importance for participants even if it was present.

#### *Strengths and limitations of the study*

Despite an interest in self-injury, it is only quite recently that researchers have actively begun to study its functions. One strength of the present study is that it is among the only studies we know of that has examined relational dependency empirically in terms of its contribution to self-

injury and its functions. In addition, by studying self-injury and its functions in a heterogeneous clinical sample and not only with individuals who self-injure, we were able to evaluate the variation of anaclitic neediness in this group. This in turn permitted us to assess whether the anaclitic neediness variable itself contributes to self-injury and its functions. Furthermore, the use of an inclusive list of self-injury behaviours allowed us to consider a larger population of self-injuring individuals in the context of the types of self-injuries inflicted.

This study has certain methodological limitations. The cross-sectional design precludes conclusions on causal relations between the variables. Furthermore, due to the restricted sample size, the findings should be interpreted with caution. The hypothetical associations between variables in several analyses, particularly in correlations, remain unclear because of the lack of statistical power. Indeed, the use of the DIB-R in individual interviews to obtain data other than by self-report questionnaires limited the number of participants, thereby increasing the possibility of Type II error. Moreover, the sample size and the restricted variance limited the use of parametric analyses with specific functions of self-injury. In spite of this limit, the sample size was sufficient to obtain significant results on most of the correlations testing the hypotheses. Regarding both of the regression analyses, effect sizes indicate satisfactory statistical power to obtain significant results, given the sample. Lastly, as the measure of autonomy avoidance was used in an exploratory manner, any tentative conclusions drawn from the results must be made with caution and used primarily to encourage further investigation of this phenomenon.

It is probable that other psychological and clinical factors contribute to the relations observed, this is important to consider in future research. For example, an important number of participants who reported engaging in self-injury also presented a personality disorder. With a larger sample, it could be pertinent to explore the importance of the presence or absence of a personality disorder on the relation between dependency and self-injury. Also, the mediation effect of the affective difficulties is stronger than the mediation effect of interpersonal problems and the results show a large relation between both variables. Thus, it would be interesting to explore empirically how they could interact in the occurrence of self-injury in a dependent population. Indeed, the present work suggests that, because of its anaclitic neediness, an individual would be more vulnerable

to feel intense negative emotions, leading to self-injury, in context of interpersonal difficulties.

Despite the limitations of this study, the findings contribute to a better understanding of the functions served by self-injury, as well as the context in which these functions operate for certain groups of individuals. This enhanced comprehension in turn opens the way for the additional research on the subject, and new questions. It also encourages the increased precision of current models, the establishment of preventive measures and the elaboration of targeted, empirically supported treatments.

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