



# The affect stabilization function of nonsuicidal self injury in Borderline Personality Disorder: An Ecological Momentary Assessment study



Kristof Vansteelandt<sup>a,\*</sup>, Marlies Houben<sup>b</sup>, Laurence Claes<sup>b,c</sup>, Ann Berens<sup>c</sup>, Ellen Sleuwaegen<sup>c</sup>, Pascal Sienaert<sup>a</sup>, Peter Kuppens<sup>b</sup>

<sup>a</sup> KU Leuven, University Psychiatric Center KU Leuven, Leuvensesteenweg 517, 3070 Kortenberg, Belgium

<sup>b</sup> KU Leuven, Faculty of Psychology and Educational Sciences, Tiensestraat 102, 3000 Leuven, Belgium

<sup>c</sup> University Department of Psychiatry, Campus Psychiatric Hospital Duffel, Stationsstraat 22, 2570 Duffel, Belgium

## ARTICLE INFO

### Article history:

Received 26 October 2016

Received in revised form

8 February 2017

Accepted 15 February 2017

Available online 21 February 2017

### Keywords:

Nonsuicidal Self-injury (NSSI)

Affect stabilization

Borderline Personality Disorder (BPD)

Ecological Momentary Assessment (EMA)

Affect regulation

Heterogeneous mixed models

## ABSTRACT

Nonsuicidal Self-Injury (NSSI) is prominent in individuals with Borderline Personality Disorder (BPD), and there is abundant evidence that affect regulation plays an important role in NSSI in the majority of patients. Affective variability is a core feature of BPD, and thus, we hypothesize that NSSI has an affect stabilization function in BPD. Affect stabilization is a process through which individuals attempt to make their affect more stable by reducing affective variability. We tested this hypothesis in 32 participants with BPD who reported on their NSSI and affect –using a displeasure-pleasure (valence) and activation-deactivation (activation) dimension– in an experience sampling study with 10 random signals scheduled per day for 8 days. Results indicated that individuals who engaged in NSSI show more Within Subject (WS) variance in valence and activation than individuals who did not engage in NSSI. However, within the NSSI patients, individuals who engaged more frequently in NSSI during the study showed less WS variance in valence and activation than patients who engaged less frequently in NSSI. This suggests that NSSI may be reinforced by its affect stabilization function. In the discussion, we explore alternative explanations for the relation between NSSI and affective variability, and consider the clinical implications.

© 2017 Elsevier Ltd. All rights reserved.

## 1. Introduction

Nonsuicidal Self-Injury (NSSI), the deliberate and direct destruction of body tissue in the absence of lethal intent (Claes & Vandereycken, 2007; Nock & Favazza, 1986; Nock, 2010; Nock, Wedig, Janis, & Deliberto, 2008), is prominent in a wide range of disorders in general (Nock, Joiner, Gordon, Lloyd-Richardson, & Prinstein, 2006) and in patients with Borderline Personality Disorder (BPD) in particular. NSSI is estimated to occur in between 50

and 80% of patients with BPD (Snir, Rafaëli, Gadassi, Berenson, & Downey, 2015; Soloff, Lis, Kelly, Cornelius, & Ulrich, 1994; Zanarini et al., 2007). Moreover, NSSI is listed as one of the diagnostic criteria of BPD and is even a separate category in Section III of the Diagnostic Manual of Mental Disorders, 5th edition (DSM-5, American Psychiatric Association, 2013). Given the fact that individuals who engage in NSSI are at increased risk for lasting physical injury (Stanley, Gameroff, Michalsen, & Mann, 2001; Stellrecht et al., 2006) and suicide (Brown, Comtois, & Linehan, 2002; Joiner, 2005; Nock et al., 2006), and given the enormous associated public health costs of NSSI (see Linehan, 1993) including increased emergency room utilization (Olfson, Gameroff, Marcus, Greenberg, & Shaffer, 2005), there is no doubt that it is important to gain more insight into the function of this behaviour.

### 1.1. Affect optimization and stabilization

Several studies have examined the reasons underlying NSSI. While NSSI has multiple functions (Brain, Haines, & Williams, 1998,

*Abbreviations:* NSSI, Nonsuicidal Self-injury; BPD, Borderline Personality Disorder; EMA, Ecological Momentary Assessment; FGA, First Generation Antipsychotics; SGA, Second Generation Antipsychotics.

\* Corresponding author. KU Leuven, University Psychiatric Center KU Leuven, Leuvensesteenweg 517, B-3070 Kortenberg, Belgium.

*E-mail addresses:* [Kristof.Vansteelandt@upckuleuven.be](mailto:Kristof.Vansteelandt@upckuleuven.be) (K. Vansteelandt), [Marlies.Houben@kuleuven.be](mailto:Marlies.Houben@kuleuven.be) (M. Houben), [Laurence.Claes@kuleuven.be](mailto:Laurence.Claes@kuleuven.be) (L. Claes), [Ann.Berens@emmaus.be](mailto:Ann.Berens@emmaus.be) (A. Berens), [Ellen.Sleuwaegen@emmanus.be](mailto:Ellen.Sleuwaegen@emmanus.be) (E. Sleuwaegen), [Pascal.Sienaert@kuleuven.be](mailto:Pascal.Sienaert@kuleuven.be) (P. Sienaert), [Peter.Kuppens@kuleuven.be](mailto:Peter.Kuppens@kuleuven.be) (P. Kuppens).

2002; Brown et al., 2002; Gratz, 2003; Haines & Williams, 2003; Haines, Williams, Brain, & Wilson, 1995; Kerr & Muehlenkamp, 2010; Kleindienst et al., 2008; Klonsky, 2006; Nock & Prinstein, 2004; Paris, 2005), it has become clear that, in the majority of individuals, affect regulation plays an important role (Adrian, Zeman, Erdley, Lisa, & Sim, 2011; Armeij, 2012; Crowell et al., 2012; Gratz & Chapman, 2007; Klonsky, 2006; Skodol et al., 2002; Zanarini et al., 2008). In this study, we define affect regulation as the ability to regulate and modulate the experience and expression of emotions (Stepp et al., 2014). Thus, we distinguish affect regulation from both affect itself, and affective instability. Affective instability is another defining feature of BPD, and refers to the tendency to experience emotions that fluctuate frequently and intensively over time (American Psychiatric Association, 2013; Nica & Links, 2009). It is important to note that affect regulation may occur in both maladaptive (e.g., NSSI) and adaptive forms (e.g., cognitive reappraisal).

In this paper, inspired by the work of Hedeker, Mermelstein, and Demirtas (2012), we aim to further elaborate the concept of affect regulation by making a distinction between two subtypes of affect regulation: affect optimization and affect stabilization. *Affect optimization* involves adjusting one's affect to an optimal level, for example by reducing negative affect. When examining this construct in the context of NSSI, one would consider the effect of NSSI on the subjects' affect level (e.g. how negative or positive affect is), and whether negative affect improves when a person engages in NSSI. Until now, theory on NSSI in general and in BPD in particular has focused mainly on this form of affect regulation. Indeed, both the biosocial theory (Linehan, 1993) and the emotional cascade model (Selby & Joiner, 2013; Selby, Anestis, Bender, & Joiner, 2009) hypothesize that NSSI in BPD is a maladaptive affect regulation strategy that provides an effective, short-term relief of the patient's large emotional burden. Moreover, according to these theories, NSSI is not only maintained by the negative reinforcement of aversive affective and physiological tension, but also interferes in the learning of adaptive affect regulation strategies such as cognitive reappraisal or behavioural distraction (Brown, 1998).

*Affect stabilization* involves attempting to make one's affect more stable, reducing affective variability. When examining this construct in the context of NSSI, one would consider the effect of NSSI on affective variability (e.g., how labile affect is), and whether affect stabilizes when a person engages in NSSI. Understanding variability is important, as research has shown that not only mean levels of variables, but also their variability can convey important information (Hertzog & Nesselroade, 2003). Affect stabilization may be particularly interesting in BPD, as affective instability is a defining characteristic of this disorder. In summary, affect optimization targets the *level* of affect whereas affect stabilization targets the *variability* of affect. We hypothesize that NSSI may serve an affect stabilization function in BPD patients.

### 1.2. Ecological Momentary Assessment

We use an Ecological Momentary Assessment (EMA) protocol to examine the affect stabilization function of NSSI. EMA has many names (e.g., diary studies, experience sampling, ambulant monitoring) and exists in many shapes (e.g., time contingent, event contingent), but at its core EMA consists of intensive repeated measurements of individuals in their natural circumstances at specific moments in time, using an electronic device like a smartphone. For an overview of diary methods, designs, and intensive longitudinal methods, see Bolger and Laurenceau (2013), and Mehl and Conner (2012).

We opted for this method primarily because Snir et al. (2015) argue that not all functions of NSSI may be consciously accessible; instead, the affect optimization and stabilization function of

NSSI may operate outside conscious awareness. Therefore, they argue that these functions may not be amenable to self-report, and should be examined using indirect methods. We address this concern using EMA methods, since these methods allow us to estimate the affective variability of a participant without asking the participant to report directly on his or her affective variability. In addition, EMA techniques minimize the impact of retrospective recall bias, and are better suited to examine dynamic change processes, including NSSI (Ebner-Priemer & Trull, 2009).

### 1.3. Literature examining the affect optimization and stabilization function of NSSI

To date, a number of EMA studies have examined the affect optimization function of NSSI. In particular, these studies (Armeij, 2012; Houben et al., 2017; Muehlenkamp et al., 2009; Snir et al., 2015) have examined in detail the affective experiences surrounding a NSSI episode. A common finding across these studies is that negative affect increased prior to a NSSI episode. In addition, the studies including positive affect found that positive affect decreased prior to the NSSI event (Muehlenkamp et al., 2009) or in the time interval when the NSSI occurred (Houben et al., 2017).

However, the results of these studies regarding affect following the NSSI episode are more mixed. The only study providing support for the affect optimization function of NSSI was conducted by Armeij (2012), using a sample of college students. The researchers found that negative affect peaked during the NSSI episode and faded gradually in the hours following the episode, with affective change surrounding the NSSI episode roughly approximating a quadratic curve. These patterns of affective change were detected only at times in which individuals engaged in NSSI, and were absent for individuals who did not report NSSI over the course of the study.

In contrast with this study, other EMA studies involving individuals with eating and personality disorders found no decrease in negative affect following a NSSI episode. For example, Muehlenkamp et al. (2009) found that patients with bulimia nervosa reported an increase in positive affect following a NSSI episode while negative affect remained unchanged. In another study, Snir et al. (2015) found no evidence that general negative affect showed a quadratic relationship—a curve with one inflexion point—surrounding NSSI acts in individuals with BPD and avoidant personality disorders. On the contrary, while general negative affect indeed increased before the NSSI urge, it showed a further increase after the NSSI urge, and then faded following a complex function with multiple turning points (or vertices). Finally, in a recent study in patients with high levels of BPD symptoms, Houben et al. (2017) found that high levels of negative emotion predicted a higher probability of subsequent NSSI. They also found that the NSSI event itself was associated with an increase in negative emotion and a decrease in positive emotion in the same time interval, but contrary to expectations, negative emotions showed a further increase in the next time interval.

In summary, the hypothesis that NSSI is negatively reinforced by a subsequent reduction in negative affect was supported in a sample of college students (Armeij, 2012), but not in (pathological) groups with a disorder (Houben et al., 2017; Muehlenkamp et al., 2009; Snir et al., 2015). This suggests that the mechanisms involved in NSSI may be different in groups of individuals with a disorder. Moreover, the fact that two studies (Houben et al., 2017; Snir et al., 2015) in patients with BPD found that negative affect increased rather than decreased following NSSI prompted us to further reflect on reinforcing mechanisms for NSSI that are specific to BPD patients. Given the fact that affective instability is a defining feature of BPD, we hypothesized that in this group, NSSI may have an affect stabilization function.

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات