

RESEARCH ARTICLE

Motivational Dynamics Among Eating-disordered Patients With and Without Nonsuicidal Self-injury: A Self-Determination Theory Approach

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Abstract

Objective: The presence of nonsuicidal self-injury (NSSI) in eating-disordered (ED) patients is considered a complicating factor in treatment with a possibly adverse influence on patients' motivation to change. Using Self-Determination Theory as a guiding framework, we compared ED patients with and without NSSI in terms of their well-being and their motives to undertake psychotherapeutic change.

Method: Data were collected in a sample of 95 ED patients, including 37 patients displaying at least some type of NSSI.

Results: Patients with NSSI, relative to those without, felt more externally pressured to undertake change and reported lower overall well-being. Mean level differences in well-being between both patient groups were fully accounted for by patients' externally pressuring motives for pursuing change.

Discussion: In ED patients with NSSI, there is an important link between their more externally driven motivation to change and their lowered psychological well-being. It is discussed how clinicians can approach these patients to pursue change. Copyright © 2012 John Wiley & Sons, Ltd and Eating Disorders Association.

Keywords

eating disorders; nonsuicidal self-injury; motivation; self-determination theory; external pressure; autonomy

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Published online in Wiley Online Library (wileyonlinelibrary.com) DOI: 10.1002/erv.2215

Nonsuicidal self-injury (NSSI) refers to socially unaccepted forms of direct and deliberate destruction of one's own body tissue without suicidal intent, such as cutting, carving and burning of the skin (Claes & Vandereycken, 2007). The prevalence of NSSI in eating-disordered (ED) patients ranges between 25.4% and 55.2% (Svirko & Hawton, 2007). Importantly, ED patients with NSSI display more symptoms of psychopathology and report more traumatic experiences, which may make treatment more difficult (Claes, Vandereycken, & Vertommen, 2001, 2003; Favaro & Santonastaso, 1998, 2000). Even when patients succeed in giving up NSSI, their ED symptoms seem to increase and vice versa. This pattern of symptom change suggests a balance between both types of self-harming behaviours, such that losing control in one behavioural domain requires compensation in the other (Muehlenkamp et al., 2009; Strong, 1998; Vega, 2007). Comparable concerns have been mentioned in the treatment of borderline patients (Lynch & Cozza, 2009).

The simultaneous occurrence of ED symptoms and NSSI thus seems to form a complicating factor that may impede treatment and that may require a stronger motivation to change in the patients concerned. The purpose of the present study is to compare the motivational profile and well-being of ED patients with and without NSSI by drawing from Self-Determination Theory (SDT; Deci & Ryan, 2000; Ryan, Lynch, Vansteenkiste, & Deci, 2011).

Motivation and self-determination theory

In the field of ED, the study of motivational dynamics has received increasing attention over the past decade, both at the conceptual level (Nordbo et al., 2008) and at the empirical level (Casasnovas et al., 2007). Various models have been proposed, including the Readiness and Motivation Interview (Geller & Drab, 1999), the Socratic Method (Vitousek, Watson, & Wilson, 1998) and Motivational Enhancement Therapy (Treasure & Ward, 1997), an application of Motivational Interviewing (Miller & Rose, 2009) in the context of ED. A common characteristic of these models is that they primarily grew out of clinical practice with ED patients. SDT, a more general theory on optimal motivation and personality development, has been proposed as an alternative and useful framework to study the motivational dynamics of ED patients (Vansteenkiste, Soenens, & Vandereycken, 2005). To our knowledge, no empirical study to date relied on this framework to study motivational processes among ED patients.

Rather than treating motivation as a unidimensional concept that varies in degree, SDT employs a multidimensional view on patient motivation, thereby distinguishing between four different types of motivation (Vansteenkiste et al., 2005; Ryan & Deci, 2000). First, external regulation refers to the pursuit of therapeutic change to meet external expectations, to obtain promised rewards or to avoid

threatening sanctions. The patients feel like they have no other choice but to pursue change. Second, in the case of introjected regulation, the therapeutic change is pursued to avoid feelings of guilt, shame or anxiety, or to prove oneself and to bolster one's self-worth.¹ Although the reason for change has been taken in, the patients are not pursuing change completely willingly. Instead, the change is accompanied with feelings of internal conflict and tension. Only when patients see the personal relevance of the change, its pursuit is self-endorsed and, hence, enacted more willingly. Identified regulation constitutes a third type of regulation, referring to the identification with the personal value of change. When patients not only value the change by itself but see how the change fits with other personally endorsed values and convictions, the reasons for change are said to be integrated. Integrated regulation represents the fourth type of regulation. These four types of regulation are said to lie on a continuum of increasing internalisation (i.e. self-endorsement) of change, with external regulation representing the complete absence of internalisation and integrated regulation representing full internalisation.

The present study

The first aim of the present study was to compare the motivational profile of ED patients with, relative to those without, NSSI. We hypothesised that ED patients with NSSI would report more external and less internalised motivation for change (Hypothesis 1). When confronted with NSSI, the social environment (e.g. family members and counsellors) often reacts by criticising and forbidding these behaviours out of health concerns (Glassman, Weierich, Hooley, Deliberto, & Nock, 2007; Wedig & Nock, 2007; Yates, Tracy, & Luthar, 2008). In spite of these well-meant concerns, however, patients with NSSI will likely experience these prohibitions as controlling and intrusive. These patients typically consider self-harming behaviours as their personal affairs. Moreover, they are unlikely to directly give up NSSI because of its functional role. The self-injury indeed provides a sense of comfort by alleviating negative affect (Claes, Klonsky, Muehlenkamp, Kuppens, & Vandereycken, 2010). Because prohibitions of personal issues are likely to be perceived as illegitimate (Soenens, Vansteenkiste, & Niemiec, 2009), merely prohibiting NSSI among ED patients would put them under further pressure to pursue change and would hamper the internalisation of change. Patients may feel like they have more to lose in therapy: they are asked to give up both their disordered eating habits and their self-injurious behaviours. Because they desire maintaining a sense of control over both sets of

behaviours, they might feel more strongly pressured at the beginning of treatment relative to patients who do not display NSSI.

A second aim of this contribution was to examine whether the hypothesised higher external pressure and diminished internalisation of change among patients with NSSI would explain why they report lower overall well-being. Within SDT, it is maintained that the experience of volition and psychological freedom in handling one's eating problem is critical for patient well-being. When patients feel pressured to meet external or internal expectations for change, they are expected to suffer psychologically from such pressure (e.g. Dwyer, Hornsey, Smith, Oei, & Dingle, 2011). Therefore, we hypothesised that any mean-level differences in well-being between ED groups with and without NSSI groups could be accounted for (i.e. mediated) by the hypothesised mean-level differences in external pressure to pursue change and diminished internalisation of change (Hypothesis 2). Although most studies among ED patients focus on behavioural outcomes (e.g. weight gain and dropout), we believe that well-being is a valuable outcome in its own right. Moreover, if patients are satisfied with their lives and report positive feelings, they likely have more energy available to pursue change and to cope with stressors, while at the same time being more accepting of input from the external environment. Indeed, in the eating disorders literature, it is increasingly recognised that patient well-being is a key outcome variable and an important predictor of recovery (Engel, Adair, Las Hayas, & Abraham, 2009; Williams, Watts, & Wade, 2012). Notably, in all of the analyses, we controlled for severity of ED symptoms to rule out the possibility that any observed differences in motivation and well-being between patients with and without NSSI could be accounted for by the differential presence of ED symptoms.

Method

Participants

The ED sample consisted of 95 women admitted to a specialised inpatient treatment unit. Patients were diagnosed according to DSM-IV criteria (APA, 1994) on the basis of a standardised interview and questionnaire (Eating Disorder Evaluation Scale): 44 patients were diagnosed as anorexia nervosa, restrictive type, 12 as anorexia nervosa, bingeing-purging type, 28 as bulimia nervosa and 11 as eating disorder not otherwise specified. The age ranged from 14 to 42 years with a mean of 21.5 years ($SD = 6.23$). No significant age differences were found between the different ED subgroups [$F(3, 91) = 0.63, ns$].

On the Self-Injury Questionnaire-Treatment Related, 37 patients (38.9%) reported at least one type of NSSI, whereas 58 (61.1%) patients did not display any type of NSSI. The presence/absence of NSSI was not significantly related to the different types of ED diagnosis ($\chi^2_{(3)} = 5.07, ns$). Of the 37 NSSI patients, 20 (21.1%) displayed cutting, 19 (20.0%) hair pulling, 14 scratching (14.7%), 12 bruising (12.6%) and 4 (4.2%) burning. On the Eating Disorder Inventory-II, the patients with and without NSSI did not differ significantly in terms of drive for thinness, bulimia and body dissatisfaction.

Procedure

Eating-disordered patients completed questionnaires as a part of the routine assessment at admission. Participation was voluntary,

¹Recent research (Assor, Vansteenkiste, & Kaplan, 2009) indicated that introjected regulation consists of two subcomponents, that is, the avoidance of guilt, shame and anxiety (termed introjected avoidance regulation) and the active approach of and search for self-worth (termed introjected approach regulation). Introjected avoidance regulation was found to yield a more negative pattern of correlates relative to introjected approach regulation, which yielded less beneficial correlates compared with identified regulation. In the present study, we could not disentangle both subcomponents of introjection because our scale did not contain sufficient items to do so. It might be interesting for future research to examine differential relations of both types of introjection with NSSI, motivation, well-being and therapeutic outcome.

and anonymity was guaranteed. All participants gave written informed consent. The study was approved by the university Institutional Review Board and by the Ethical Committee of the hospital concerned. All questionnaire items were rated on Likert scales ranging between 1 (*completely disagree*) and 5 (*completely agree*), unless indicated otherwise.

Instruments

NSSI

We made use of the *Self-Injury Questionnaire* (Claes et al., 2001). Patients were asked if they had deliberately injured themselves (yes/no) in the past year by means of five different behaviours, that is, (i) hair pulling, (ii) scratching, (iii) bruising, (iv) cutting and/or (v) burning; if so, they had to specify how often this happened. Additionally, patients were asked to provide information about the age of onset of NSSI and the body parts that were injured. We created a dichotomized NSSI score with ED patients displaying one or more of the NSSI behaviours being assigned a score of '1' and ED patients not engaging in any of the NSSI behaviours being assigned a score of '0'.

Motives for therapeutic change

The *Self-Regulation Questionnaire-Eating Problems* was developed for this study. It aims to assess patients' motives for doing something about their eating problem. We created a set of 16 items that aimed to tap patients' external motives (e.g. 'because others would be mad at me if I wouldn't do so'; 'because others pressure me to do so'; four items), introjected motives (e.g. 'because I would feel guilty and ashamed if I wouldn't'; four items), identified motives ('because this is personally important to me'; four items) and integrated motives ('because I have thought well about this issue and I believe that taking responsibility for my eating problem will be important for other things in my life'). Item development was based on SDT and existing questionnaires, including the Treatment Self-Regulation Questionnaire (Pelletier, Tuson, & Haddad, 1997) and self-regulation questionnaires in other life domains (e.g. education and work) (Ryan & Connell, 1989). The following stem was used: 'The reason why I would try to deal with my eating problem in a responsible way is ...'. These 16 items were subjected to a principal component analysis with promax rotation. Three factors with an eigenvalue higher than one (i.e. 4.80, 2.97 and 1.20) were retained, and these factors could be clearly interpreted in terms of a distinction between identified/integrated regulation, introjected regulation and external regulation. All items loaded on their intended factors with a minimal loading of .40, except for one introjected regulation item that was removed. Cronbach's alphas of these scales were .82, .71 and .84, respectively.

To further examine the validity of this newly developed measure, we inspected the correlation pattern between the three subscales. Given that these three types of regulation are hypothesised to fall along a continuum of increasing internalisation and self-determination, they should form a simplex pattern with regulatory types next to each other on the continuum (e.g. identified/integrated and introjected regulation) being more strongly correlated than two subtypes located further apart (e.g. identified/integrated and external regulation). The pattern of correlations generally reflected

such a simplex pattern, with external and identified/integrated regulation being significantly negatively correlated ($r = -.34, p < .01$), whereas external and introjected regulation were unrelated ($r = .07, ns$). Further, introjected and identified/integrated regulations were positively correlated ($r = .48, p < .01$).

Well-being

Participants were administered three scales tapping into personal well-being. The *Satisfaction With Life Scale* (Diener, Emmons, Larsen, & Griffin, 1985) is a 5-item scale assessing the general life-satisfaction component of subjective well-being. Cronbach's alpha was .69. The *Short Index of Self-Actualization* is a 15-item index of self-actualization (Jones & Crandall, 1986). Cronbach's alpha was .60. The *Positive and Negative Affect Scales* (Watson, Clark, & Tellegen, 1988) comprise two mood scales, one measuring positive affect and the other measuring negative affect. Each of the 20 items is rated on a 5-point scale ranging from 1 (*very slightly or not at all*) to 5 (*extremely*) to indicate the extent to which the respondent has felt this way over the past six weeks. Cronbach's alphas for positive and negative affect were .85 and .77, respectively. As in previous studies (e.g. Sheldon & Kasser, 1998), a composite well-being score was calculated as the mean score of the standardised scores of (Positive Affect + Satisfaction With Life Scale + Self-Actualization) – (Negative Affect).

Severity of eating disorder symptoms

Because we aimed to control for severity of ED symptoms in some of the analyses, participants completed the three main scales from the Dutch version (Van Strien, 2002) of the Eating Disorder Inventory-II (Garner, 1991), that is, Drive for Thinness (alpha = .87), Bulimia (alpha = .94) and Body Dissatisfaction (alpha = .95). Participants rated how much each item applied to them on a scale ranging from 1 (*never*) to 6 (*always*). Information on the validity and psychometric characteristics of the EDI-II is provided in Garner (1991).

Results

Plan of analyses

Consistent with our two aims, we performed two sets of analyses. First, using a Multivariate Analysis of Covariance (MANCOVA), we examined mean-level differences between ED patients with and without NSSI in terms of motivation and well-being. Second, we made use of a series of regression analyses to examine the role of the motivation to change as an intervening variable in the association between NSSI and well-being.

Aim 1: mean level differences

Table 1 presents the means and SDs of ED patients with and without NSSI with respect to motivation to change and psychological well-being. A Multivariate Analysis of Variance (MANOVA) indicated that, across all outcomes, both groups significantly differed from each other, Pillai's trace, $F(4, 89) = 2.64, p < .05$. Subsequent univariate ANOVAs indicated that patients with NSSI scored higher on external motivation but not on introjected or identified/integrated motivation and that patients with NSSI scored significantly lower on the composite score of well-being as well as on the separate scores for self-actualization and life satisfaction (but

Table 1 Mean level differences in well-being and motivation between eating disorder patients without and with non-suicidal self-injury (NSSI)

	Without NSSI		With NSSI		
	(N = 58)		(N = 36)		
	M	SD	M	SD	
Well-being composite	0.48	2.60	-0.86	2.24	6.60**
External regulation	2.57	1.08	3.19	1.10	7.18**
Introjected regulation	3.71	0.83	3.82	0.88	Ns
Identified/integrated regulation	4.37	0.56	4.26	0.64	Ns

** $p < 0.01$.

not on scores for positive and negative affect). To examine whether any of the observed mean-level differences between both groups could be accounted for by the different prevalence of ED symptoms, we conducted an additional MANCOVA analysis, inserting the three scores for severity of ED symptoms (i.e. drive for thinness, body dissatisfaction and bulimia) as covariates. The overall effect remained significant, Pillai's trace, $F(4, 82) = 2.81$, $p .05$, suggesting that the observed differences in patient motivation and well-being could not be accounted for by severity of ED symptoms.

Aim 2: mediation

To find out whether mean-level differences in well-being between ED patients with and without NSSI could be accounted for by the motives for dealing with the eating problems, we performed a series of mediation analyses with group membership as the independent variable, with the composite well-being score as the dependent variable and with motivation to change as the mediating variable. We used the procedure of Kenny, Kashy, and Bolger (1998), which includes four steps. Step 1 involves determining the magnitude of the association between the independent variable (i.e. group membership) and the dependent variable (i.e. well-being). Step 2 requires finding a significant association between the independent variable and the mediating variable (i.e. patient motivation). Step 3 requires finding a significant association between the mediating variable and the dependent variable, while controlling for the independent variable. Finally, in Step 4, the decrease in the association between the independent variable and the dependent variable after controlling for the mediating variable is inspected. Mediation is established when an initially significant association in Step 1 is reduced to nonsignificance in Step 4 and when the independent variable yields a significant indirect association with the dependent variable via the intervening variable.

Given that the ANOVAs pointed out that both ED groups differed in terms of external regulation to change (and not in terms of introjected and identified/integrated regulation), only external regulation was considered as a potential mediator. Step 1 involves regressing well-being on group membership. A significant association was obtained ($\beta = -.27$, $p < .01$), indicating that ED patients with NSSI scored lower on well-being compared with those without NSSI. Step 2 involves regressing external motivation to change on group membership. A significant association was found ($\beta = .27$, $p < .01$), with patients with NSSI reporting more external pressure to change

compared with those without NSSI. When simultaneously regressing patient well-being onto group membership and external motivation to change, external motivation to change was significantly negatively associated with well-being ($\beta = -0.30$, $p < .01$) in Step 3, whereas group membership was no longer significantly associated with well-being ($\beta = -.18$, *ns*) in Step 4. To examine whether group membership yielded a significant indirect association with well-being through external motivation to change, we calculated the *z*-test proposed by MacKinnon, Lockwood, Hoffman, West, and Sheets (2002), which was found to be significant ($z = -1.99$, $p < .05$). These findings suggest that patients with NSSI display lower overall well-being at the beginning of therapy because they feel more externally pressured to do something about their eating problem.

Discussion

This is the first study to examine the quality of motivation to undertake psychotherapeutic change in ED patients with and without NSSI. Using SDT as guiding framework, we found that patients with NSSI, relative to those without, felt more externally pressured to undertake change. Several explanations can be put forward. First, the direct environment (e.g. parents and family) of ED patients with NSSI might put more pressure on these patients because they consider the engagement in self-injury as a signal of a seriously deteriorating physical and mental condition (Glassman et al., 2007; Wedig & Nock, 2007; Yates et al., 2008). Hence, the social environment might start to prohibit the engagement in NSSI, thereby failing to really understand what this behaviour means for the patient. Such a lack of understanding would leave the patient with the feeling that she has no other choice but to relinquish NSSI and to do something about her eating problem more generally.

Second, the higher prevalence of external pressure might also be indicative of the fact that patients with NSSI feel they have to give up more, that is, they need to relinquish both their self-injury and their eating symptoms. Because they perceive the engagement in NSSI as a fundamental part of their identity and are emotionally attached to these behaviours, they might be very sensitive to any request for therapeutic change. As a result, they are more likely to resist change (Muehlenkamp et al., 2009; Strong, 1998; Vega, 2007). To the extent that they do pursue change, it is likely that their change attempts are more externally driven.

Another interesting finding is that the elevated external pressure characteristic of patients with NSSI, relative to those without, could explain mean-level differences in well-being between both ED groups. Although similar findings have been reported in domains as diverse as education, work, sport and ecology (Ryan & Deci, 2000), this constitutes, to the best of our knowledge, one of the first empirical confirmations of the role of controlled dynamics among ED patients (see also Strauss & Ryan, 1987). It appears that the pursuit of change out of a desire to meet external expectations, to avoid threatening punishments or to obtain controlling rewards has a cost for one's personal well-being. We hasten to add though that no conclusions regarding causality can be drawn from the present cross-sectional data. Although we modelled the engagement versus nonengagement in NSSI as a predictor of external pressure and subsequent lowered well-being, it is also possible that ED patients engage in NSSI to cope with their experienced negative affect.

Future research may examine whether the experienced pressure to enter treatment predicts therapeutic progress. On the basis of SDT, one would expect that the pressure to change has a boomerang effect: rather than contributing to the relinquishment of NSSI, patients might more rigidly stick to these behaviours in an attempt to manifest their resistance and to pursue a sense of freedom. Alternatively, if patients comply with the pressuring expectation to give up their NSSI, they might compensate this relinquishment by increasing their ED symptoms. Unfortunately, sticking to NSSI or increasing ED symptoms would provide patients only with a sense of *pseudo-autonomy* (Shapiro, 1981). That is, the experience of autonomy would not constitute real volition as defined within SDT, because the sense of control and independence pursued through the rigid engagement in NSSI or ED symptoms would be reactive in nature (i.e. an expression of overt reactance against authority) (Koestner & Losier, 1996) and would likely come with feelings of pressure. Instead, on the basis of SDT, it can be predicted that if patients relinquish NSSI willingly, this might provide a more stable motivational basis for decreasing their ED symptoms as well. When change in one domain is undertaken volitionally, patients have no need to defy authority and to fight for their freedom. That is, they have no need to regain a lost freedom as they stand behind the change they pursue.

Future research could also explore the parental antecedents of this elevated external pressure for change among ED patients with NSSI. It is likely that patients with NSSI experience their parents as more controlling and as less accepting, both with respect to the way they handle their eating problems and with respect to how they function more generally. Indeed, the emergence of NSSI could be traced back to a different socialisation history from the perspective of SDT, where self-injuring patients would have been exposed to a social environment that thwarts their basic psychological needs for autonomy, competence and relatedness (Friedman, Glasser, Laufer, Laufer, & Wohl, 1972; Nock, 2009). Interpreted in this way, the engagement in NSSI can be viewed as a coping mechanism, such that it would be functional in handling the negative affect that follows from need frustration and would, as such, represent a need substitute (Deci & Ryan, 2000).

Practical implications

From the SDT perspective, rather than forcing patients to give up NSSI, it is critical to foster the internalisation of change such that change is pursued willingly. When the importance of change is well-understood and self-endorsed, treatment gains are more likely to be maintained over time (Ryan & Deci, 2000). To foster this self-endorsement of change, therapists would need to create a need-supportive environment, that is, to support clients' needs for autonomy (i.e. feeling volitional), competence (i.e. feeling effective) and relatedness (i.e. experiencing a close bond).

Need-supportive clinicians would offer choice (Vandereycken & Vansteenkiste, 2009), for instance, by allowing patients to choose whether they would want to give up their NSSI or ED symptoms and at which rate they want to refrain from engaging in any of these behaviours. If patients instead feel forced to work on both problems simultaneously, they might not only feel pressured but also overwhelmed and misunderstood, thereby compensating the relinquishment of one symptom with the return of another symptom.

Further, need-supportive clinicians would display a sincere interest and an unconditionally accepting attitude towards ED patients (Ryan & Deci, 2008), such that patients feel secure to freely talk to their therapists about their deepest concerns and anxieties. Such free emotional expression regarding the importance and critical role of NSSI for the patients themselves would be a starting point for a gradual and self-endorsed release of their NSSI. The strict prohibition of NSSI is unlikely to contribute to open interactions as these prohibitions may come across as intrusive and may signal a lack of real understanding by the clinician of the meaning of NSSI for the patients themselves. Rather than prohibiting NSSI, the clinician would try to roll with the patient's resistance to pursue change, as emphasised within motivational interviewing (Miller & Rollnick, 2002). Thus, rather than arguing in favour of change, the critical issue involves exploring why the patient is unwilling to pursue any change. Indeed, even nonengagement in change can be a temporary and meaningful choice (Ryan *et al.*, 2011; Vansteenkiste, Williams, & Resnicow, 2012) that clinicians could respect. To avoid increasing resistance, understanding and empathy are critical (Miller, Benefield, & Tonigan, 1993). By taking the patients' frame of reference, by validating their perspective and by trying to fully understand the meaning of self-injury for the patients themselves, they might begin to gradually accept the personal importance of the behaviour change for their own goals and well-being. This implies that patients can find personal reasons why they should engage in changing their NSSI, for instance, 'to get rid of scars', 'for in the long run it does not solve my problems', and 'because it interferes with important activities in my life'.

Limitations

The present study suffers from various limitations, including its cross-sectional nature, which prevents one from drawing causal inferences. Thus, there is a need for longitudinal research to examine whether patients with NSSI display decreasing levels of well-being over time due to the external pressures for change they face or whether ED patients instead engage in NSSI to cope with the lowered well-being and external pressures. Of course, it is possible that these variables are bidirectionally related. Further, all variables were self-reported such that any observed association might be artificially inflated due to shared method variance. Future, several of the present measures focused on patients' motivational orientation towards their ED rather than towards their NSSI, which allowed for a direct comparison of the mean scores between ED patients engaging and not engaging in NSSI. Yet, future research might do well to obtain specific measures related to NSSI, for instance, to examine the dynamics of parents' and clinicians' attitude towards self-injury, the patients' reactions to these external influences and the inner motives of their actual disengagement in NSSI.

Conclusion

The issue of NSSI has rarely been systematically addressed from a broader motivational perspective. We introduced SDT as a useful perspective to gain insight in the motivational dynamics of self-injurious behaviour in ED patients. Patients with NSSI reported more externally driven motivation to change, which could account for their lowered psychological well-being.

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