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# Repetitive Self-Injury and the body self

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**Summary**

**Aim**. The assessment of differences in body self and pain thresholds between people inflicting self-injuries in a repetitive manner and those, who do not engage in such behaviour.

**Methods**. The participants were selected through screening and purposive sampling (the study group consisted of 34 people: 29 women, 5 men; and the control group of 32 people: 28 women, 4 men). The Tension Situations Questionnaire and the Inventory of Questions Concerning Self-injury were used in the study. These measures served to assess the presence and circumstances of self-injury. TempTest apparatus (measuring sensitivity to pain) and the Body Self Questionnaire were also used.

**Results**. Individuals inflicting self-injury are characterised by higher indices of body self maladaptiveness than individuals from the control group. In the study group, disorders were found in such aspects of body self as: the perception of sensations, the interpretation and regulation of emotions and physical needs, emotional attitude to body, and the sense of body identity. Women inflicting self-injuries had a higher pain threshold than women from the control group, the reverse pattern was observed in the group of men. However, due to the small size of the male group, the obtained result should be treated with caution.

**Conclusions**. The study showed, that the distorted aspect of personality – the body self – is the important risk factor for the repetitive self-injuries. The lowered pain threshold in men engaging in self-harm, in combination with the increased threshold of pain in self-injuring women is surprising result and demands further investigation.

**Key words:** self-injury, body self, pain threshold

## Introduction

In the literature on the subject, a great deal of attention has been devoted to attempts at characterising non-suicidal self-injury (NSSI) and pointing its significant features [1–8]. The key ones are believed to be the following: (1) the aim, being the experience

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of pain [1] and/or direct destruction of tissue [6], which many researchers believe to be a conscious intention [7, 8]; (2) the repetitiveness of such behaviours [7]; (3) the tension reduction function [2, 5]; and (4) the exclusion of the presence of conscious suicidal intent [6]. People inflicting self-injuries constitute about 4% of adults [9, 10] and 15–20% of adolescents in the general population [11]. The percentages are higher for people from the clinical population – respectively, 21% [9] and 40–60% [12].

Theoretical studies point to numerous risk factors conducive to repetitive self-injury or even believed to be its cause. First of all, the importance of environmental aspects is emphasised, both past and present ones [13]. These include: (1) the experience of early chronic interpersonal trauma (sexual abuse, physical and psychological violence, separation from caregivers); (2) growing up in an environment where the child's needs are disregarded; or (3) contact with a person inflicting self-injury [10, 14]. Authors stress the emotional and motivational aspect as well, point to the relation of self-injury with emotion regulation deficits [15, 16] and with negative evaluation of oneself and one's body [10, 17, 18]. Also the significance of biological factors is highlighted, such as a dysfunction of the limbic system [13] or the opioid system [19].

It should be noted that, despite differences in the importance attributed to particular determinants, there is widespread agreement about the perception of repetitive self-injury as a strategy of coping with negative affect (e.g., a sense of guilt, emptiness, or boundless fury). This way of explaining the phenomenon is particularly strongly stressed in contemporary theories, which, placing emphasis on the function of self-injury, point precisely to the emotion regulation strategy as the main factor sustaining this behaviour [10, 20]. Moreover, in the literature on the subject it is pointed out that inflicting repetitive self-injuries constitutes a manifestation of more general deficits in emotion regulation [15, 21]. This includes difficulties with the verbalisation of one's own emotions and difficulties in adopting adaptive strategies of coping with negative affect [22]. Even though empirical studies comprehensively addressing the relationship between self-injury and generally conceived dysregulation are not yet available, we do have indirect data confirming this relationship. Self-injury has been found to co-occur with the experience of negative affect: anxiety, depression and negative self-esteem [23, 24]. However, the emotion regulation deficits are not a sufficient determinant for engaging in self-injury. Emotional dysregulation may manifest itself in tension-relieving behaviours other than self-injury (e.g., drinking alcohol [25] or binge eating [26]). Therefore, the question arises about the additional factor favouring the expression of the above deficits in the form of acts directed against one's own body. One of the answers takes into account the significance of the body self in the aetiology of self-injury.

In their theoretical studies many authors point to the important role, that the experience of one's own body plays in taking up self-injury [10, 22, 27, 28]. Orbach [27] as well as Mirucka and Sakson-Obada [22] advance the thesis that the quality of early relationship with the caregiver determines the way of experiencing one's own body. Both ignoring the child's needs and using violence, prevent a person from controlling their body and make it a negatively valued self-aspect. In extreme situations, the body is experienced as alien to or dissociated from the psychological self [29]. This manner

of experiencing one's body self paves the way for self-destructive behaviours, in which the body becomes the object of attack, not of care or protection.

Theoretical assumptions concerning the relations between the body self and self-injury have found some empirical confirmation. Wycisk [10], for example, using Orbach's model of the body self [27] as the basis for her research, found that the more often individuals inflict self-injury, the more negative feelings they have for their own body and the worse they feel in physical contacts with others. Moreover, the body protection was lower in self-harm group, comparing to non-injury group. Muehlankamp and Brausch [29] demonstrated that the body self (as understood by Orbach) is an important factor mediating the relation between negative affect and self-injury, which confirms the earlier assumption on the role of the body self in the aetiology of self-injury. Empirical verification has also been carried out with regard to clinical reports on dulled perception of sensations, which many authors believe to be a manifestation of defensive dissociation from the body, taking the form of a sense of indifference and numbness [10, 27, 28]. Raised pain thresholds have been found in people inflicting self-injury – both in questionnaire studies [10, 30] and in experimental ones [31]. However, studies have been conducted on the clinical population. As far as we know, research has not addressed the relationship between self-injury and sensitivity to sensations other than pain.

In the present paper, the conceptualisation of the body self proposed by Sakson-Obada [22] has been applied. It is worth noting at this point that, despite similar theoretical assumptions, Orbach and the above researcher developed different models. Orbach's conceptualisation, apart from emotional attitude to the body, essentially concerns arbitrarily selected behaviours implying physicality (care for the body, health protection, or comfort in physical contact with others). The conceptualisation of the body self referred to in this paper is a proposal of a multidimensional approach to the relations between the body and the mind. Apart from the emotional attitude to the body, it also comprises the regulatory dimension: the perception, interpretation, and regulation of physical experiences. It thus allows for verifying both the thesis about regulation deficits and the thesis about the importance of negative attitude to one's body in the aetiology of self-injury.

In the model thus developed it was assumed that the body self comprises three aspects, namely: (1) function (the perception of sensations, interpretation in terms of bodily needs and emotions, regulation); (2) representation (the body image); and (3) the sense of body identity. In other words, the body self is that aspect of personality which is responsible for processing physical experiences on the psychological plan. The organisation of bodily experiences is possible thanks to the functions of the body self. They are acquired in the process of development, with significant contribution from the people taking care of the child [32]. A description of each function, with examples, is provided in Table 1.

Table 1. **Functions of body self – description and examples**

| The function of the body self | Description of adaptive activity | Examples of dysfunctions |
|---|---|---|
| Sensing – concerns stimuli coming from interoreceptors (e.g., heartbeat) and exteroreceptors (e.g., taste, touch). | The strength of a sensation is proportionate to the modality and to the strength of the stimulated receptors. | skin incision does not cause a feeling of pain (raised sensation thresholds).<br>delicate touch jest perceived as painful (lowered sensation thresholds). |
| Interpretation – concerns both emotions and physical needs. | A person is able to attribute meaning to changes in his/her body and knows when he/she is tired, ill, or angry. | a person is unable to define his/her feelings and does not know if he/she is angry, ill, or tired. |
| Regulation – knowledge about the causes of emotions and physical needs as well as the ability to cope with them. | The ability to identify the cause of an aroused emotion or physical need and to cope with it adaptively. | a person experiences sudden fatigue and does not know what caused it;<br>a person binges on food and is unable to stop doing this despite feeling full. |

Summing up, we may say that a strong body self – considered in terms of its functional dimension – allows a person to perceive the changes taking place in the body (the perception function), understand them (the interpretation function), as well as identify their causes and find ways to cope with them (the regulation function). It was also assumed that the ability to perceive stimuli accurately, to interpret physical emotions and needs correctly, and to cope with them underlies the sense of body identity. This dimension of the body self comprises aspects such as: the core sense of existence, possessing body boundary, a sense of cohesion with one's body, and a sense of its continuity in time and space.

The last dimension of the body self is the affective-cognitive body representation. This dimension refers to body image, extensively presented in the literature [33–36]. In the present study, the key aspect of body image was investigated – namely, emotional attitude to one's appearance.

Two aspects of functioning in which the body self may manifest its activity were taken into account. These are body protection and comfort with physical closeness [32].

## Aim

The aim of the study was to compare the self – injury group with group of people who do not undertake such acts in terms of body self. It was expected that individuals engaging in repetitive self-injury would differ from the control group in the following dimensions of the body self: (1) the functional dimension (sensation problems were expected in the form of raised sensation thresholds and difficulties with the interpretation and regulation of emotions and physical needs); (2) the body image dimension (negative emotional attitude towards one's body was expected); (3) the identity

dimension (body identity disorders were expected); (4) the behavioural dimension (body protection deficits were expected). The above hypothesis was verified using a questionnaire measure. Also a hypothesis concerning differences in changes in pain perception between people inflicting self-injury and those, who do not undertake such acts, was verified. A raised pain threshold was expected. Pain threshold was measured using calibrated equipment (TempTest) in people inflicting self-injury. The question of differences regarding excessive sensitivity and regarding comfort with physical closeness remained open. Theoretical or clinical suggestions which could stand as a hypothesis about the direction of this relationship were not found.

## Procedure

The entire research was divided into two stages: screening and the proper study. The first (screening) stage aimed at selecting both the control group and the study group. All the subjects have expressed conscious agreement to participate in the study. Its plan was approved by the Committee on Research Involving Human Subjects, Institute of Psychology at the Adam Mickiewicz University in Poznan. Recruitment took place in three Universities in Poznan (Adam Mickiewicz University, University of Arts, Poznan School of Social Sciences). In this phase of the study, Kubiak's Tension Situations Questionnaire [37] was used in order to identify people coping with tension by inflicting self-injury (the study group) and people declaring the absence of such behaviour (the control group). A total of 1,162 people filled in the questionnaires. Only 19 people met the criterion for inclusion in the study group and at the same time volunteered for the study; therefore, purposive sampling was applied: participants were invited through advertisements, placed in institutions providing psychological assistance in Poznan (MONAR, Public Mental Health Centres, private psychological offices). From purposive sampling, 26 people volunteered and 15 of them were included in the study group.

Inclusion in the study group required meeting three criteria: (1) presence of self – harm behaviour with tension coping function; (2) the frequency of self-injurious acts exceeding four in the previous six months; (3) the form of self-injury being severe and not socially approved (e.g., skin incision, body burning). The firs aspect was diagnosed using the Inventory of Distress Situations developed by Kubiak [37]. Next two were checked using the Inventory of Questions Concerning Self-injury, inspired by K. Juzwin's tool [38]. Ultimately, the study group consisted of 34 people (29 women and 5 men) and the control group consisted of 32 people (28 women and 4 men). The all participants' age ranged from 19 to 33 years (mean: 23 years). Most participants (68.5%) lived in big cities; the remaining people were inhabitants of smaller towns (16.9%) and villages (14.6%).

During individual meetings with the researcher (the second stage of the study, which took place in Institute of Psychology, Adam Mickiewicz University in Poznan) the participants took part in pain threshold measurement as well as completed the Body Self Questionnaire [32].

## Methods

The Inventory of Distress Situations developed by Kubiak [37] is an S-R inventory which measures: (1) the tendency to experience distress (2) transsituationality of ways of coping with distress; (3) the presence of self-injury as a way of coping with distress. Each of the 20 items consists of: (1) a characteristics of a situation which may cause distress; (2) a 10-point scale measuring the level of distress experienced in this situation; (3) a set of possible ways of coping in this situation (including self-injurious behaviours). A detailed description of tool can be found in an unpublished dissertation of A. Kubiak [37].

The Inventory of Questions and Statements About Self-Injury was used for detailed analysis of self-harm. It consists of three parts. In the first part there are two questions referring to the presence of self-injury currently and/or in the past. The second part consists of 16 questions which measure, among others, the form, frequency and age of the onset of self-injury. This part of the inventory was inspired by Self-Injury Self-Report Inventory (SISRI) by K. Juzwin [38]. The third part of the inventory is an adapted Inventory of Statements About Self-Injury (ISAS) by David E. Klonsky (2007) and measures the functions of self-injury (Klonsky and Glenn, 2008). A detailed description of tool can be found in an unpublished dissertation of A. Kubiak [37].

TempTest Apparatus. The apparatus is modeled on the device for measuring pain constructed by Israel Orbach et al. [39] and serves to examine sensitivity to the pain that results from heating parts of the body. The participant uses a key to indicate the lowest value of the stimulus at which he/she starts to experience painful stimulation, and this indication ends the measurement. Calculations were performed on the mean values of three measurements (according to suggestion of the author of the tool).

The Body Self Questionnaire measures three dimensions of the body self (functions, the sense of body identity, and body image) and two aspects of behaviour regulated by this aspect of personality. It consists of 10 scales measuring raised sensation thresholds, lowered sensation thresholds (the function of sensing), interpretations of sensations in emotional terms, interpretations of sensations in terms of physical states (the interpretation function), regulations of physical states, regulations of emotions (the regulatory function), the sense of body identity, emotional attitude towards the body, and comfort with physical closeness together with body protection (two aspects of behaviour). All scales have satisfying level of validity and reliability [32].

## Results

In order to verify the hypothesis concerning body self, differences between individuals habitually inflicting self-injury and those who do not engage in such behaviours, Student's t-test for independent samples was used. Its results are presented in Table 2.

Table 2. **The difference in body self between the study and control group**

| Scale | Group | M (SD) | t (89) | p |
|---|---|---|---|---|
| Raised threshold | control | 17.6 (4.6) | -5.21 | 0.000 |
| | self-harm | 25.1 (7.4) | | |
| Lowered threshold | control | 13.9 (3.6) | -2.67 | 0.000 |
| | self-harm | 17.5 (6.7) | | |
| Interpretation in terms of emotion | control | 17.7 (6.1) | -2.56 | 0.011 |
| | self-harm | 22.8 (7.2) | | |
| Interpretation in terms of physical needs | control | 15.2 (4.6) | -3.65 | 0.000 |
| | self-harm | 20.1 (4.9) | | |
| Regulation of emotion | control | 24.7 (5.3) | -5.10 | 0.000 |
| | self-harm | 32.5 (6.6) | | |
| Regulation of physical needs | control | 26.6 (7.0) | -3.48 | 0.000 |
| | self-harm | 33.1 (7.6) | | |
| Sense of identity | control | 13.7 (4.8) | -5.79 | 0.000 |
| | self-harm | 23.9 (9.2) | | |
| Body acceptance | control | 22.6 (8.9) | -3.38 | 0.000 |
| | self-harm | 30.3 (111) | | |
| Protection of the body | control | 19.9 (6.0) | -2.53 | 0.013 |
| | self-harm | 24.9 (5.0) | | |
| Comfort in physical closeness | control | 31.6 (7.9) | -2.80 | 0.004 |
| | self-harm | 36.4 (10.4) | | |

M (SD) – mean (standard deviation)

The analysis of results revealed statistically significant differences between the study group and the control group for each dimension of the body self. In all of the dimensions people inflicting self-injuries scored significantly higher than people from the control group. This means that, in comparison with individuals not engaging in self-injury, those inflicting it more frequently experience states of both lowered and – what is interesting – raised sensitivity to sensations from the body and from the environment. They also declare more difficulties in recognising emotions and physical needs (e.g., fatigue or sexual arousal) as well as more problems in coping with them. Moreover, individuals inflicting self-injuries experience significantly more disturbances in the sense of body identity and have much more negative emotions towards their bodies than people who do not engage in acts of this kind. We may therefore say that people injuring their bodies are characterised by a global maladaptiveness of the body self, manifesting itself in disturbances concerning functions, body self-image, and the

sense of body identity. They also suffer from body protection deficits and discomfort with physical closeness.

In order to verify the hypothesis about differences in pain thresholds between the study and control groups, Student's t-test for independent samples was used. The results of the analysis showed no significant differences in the analysed variable (Mstud = 43.4; Mcont = 42.1; t(89) = – 0.187; p = 0.852). Additional comparisons were made separately for the male group and the female group. It was found that women inflicting self-injuries had a higher pain threshold than women from the control group (Mstud = 44.24; Mcont = 42.41; t(55) = 2.11; p = 0.012). Although the group of men is not large, which means the results should be treated with caution, they do show a reverse relationship compared to that which is found in the group of women (Mstud = 38.51; Mcont = 46.39; t(7) = 7.81; p = 0.000; *d* = 5.24). It turned out that men inflicting self-injury are more sensitive to pain than men from the control group. The different directions of the relationship in the male and female groups help to understand why statistical analyses showed no differences in pain thresholds when genders were not distinguished.

## Discussion and conclusions

The presented study has been the first one to combine exploration of the relation between the self-injury with the broadly understood body self in one project. First of all, confirmation of the expected relationship between the functional dimension of the body self and self-injury has been obtained. People inflicting self-injury not only have difficulties with the interpretation of their own experiences in terms of emotions and physical needs (e.g., hunger or fatigue), but even if they do make such an identification they find it hard to recognise the causes and are unable to adopt adaptive strategies of coping with them (the regulatory function). Moreover, people inflicting self-injury declare the experience of dulled sensation states, not limited to pain stimuli but also including lowered sensitivity to tastes, smells, or touch. What is interesting in the context of this result is the differences between the study group and the control group with regard to the second aspect of sensation – namely, lowered sensation threshold. It turns out that people inflicting self-injury are sometimes so oversensitive to stimuli that they perceive them as irritating or even painful. Given that the raised and lowered threshold variables are strongly correlated (r = 0.777; p = 0.001), and given that it is impossible for raised sensitivity and dulled sensation to occur simultaneously, it can be concluded that these two states alternate. It was proved in another study, that this pattern of sensation disorders is characteristic for victims of chronic early childhood trauma [32]. Its counterpart is found in the alternating states of numbness and increased vigilance, characteristic for the post-traumatic stress disorder. It must also be added that individuals inflicting self-injury not only negatively evaluate their appearance but also experience disturbances in the sense of their physical identity. Problems with determining the limits of one's body, a sense of being alien to one's body, or a sense of internal death are manifestations of extreme difficulties that the body self experiences in performing its functions.

It is worth noting, that another study have shown that the dysfunctional pattern of body self (disorder of the functions and the sense of body identity, negative attitude towards one's own body) is the result of early interpersonal trauma [32, 40]. Interpersonal trauma is also related with self-injury undertaken to regulate emotional tension [10]. In context of these data, results obtained in presented study argues for presenting a hypothetical mechanism accounting for self-injury, in which the body self acts as a mediator between interpersonal trauma and the behaviour in question. In other words, self-destructive behaviours can be expected in those people in whom trauma has left its mark in the form of global dysfunctions of the body self (disturbances concerning the sensation, interpretation, and regulation of physical experiences, disturbances in the sense of body identity, and a negative emotional attitude towards the body). The presented model, taking into account both the situational factor (trauma) and the personality factor (the body self) in the aetiology of self-injury, opens interesting research problem, which has not been subjected to empirical verification yet.

The differences between the control group and the study group in terms of two behaviours that, in the model presented earlier, are regulated by the body self, were also investigated. Individuals inflicting self-injury not only experience more negative emotions in situations of physical closeness but also avoid situations of this kind. Moreover, they are characterised by body protection deficits: for example, they follow doctor's orders, are careful when crossing the street, or care about body weight less often than people from the control group. It must be added that the two aspects of behaviour are significantly related to all aspects of the body self: for comfort, the correlations range from $r = 0.265$, $p = 0.16$ (raised threshold) to $r = 0.429$, $p = 0.000$ (regulation of needs); for body protection, they range from $r = 0.367$; $p = 0.000$ (body acceptance) to $r = 0.519$, $p = 0.000$ (regulation of needs). The obtained result confirms the thesis that confusion in one's own sensations and emotions combined with a negative attitude towards one's body not only contributes to problems with the regulation of interpersonal distance but also underlies self-care function deficits in people who inflict self-injury [27].

Sensation deficits were investigated not only by means of the declarative method but – in the case of pain thresholds – also using calibrated equipment. Confirmation was found for the hypothesis about raised pain thresholds in the female group. The result obtained in the male group was totally the reverse and therefore surprising. Men inflicting self-injuries were much more sensitive to pain than men from the control group. Small size of the male group does not give background to interpretation of obtained result.

The obtained results confirm the thesis about global deficits in the perception of sensations as well as in the regulation of emotions and physical needs in people who inflict self-injuries. This kind of disturbances accompanied by a negative assessment of one's own body was also reflected in deficits concerning self-protection and body protection. This result constitutes a confirmation of the thesis advanced by Orbach [27] and Suchańska [41] about the lack of developed self-care function in people inflicting self-injury. It also allows to acknowledge the way of experiencing the body

as an important risk factor (though a rarely explored one so far) in the aetiology of repetitive self-injury.

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