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Deliberate self-injury functions and their clinical correlates among adolescent psychiatric inpatients

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Summary

Aim. The aim of the study was to analyze the relationships between clinical variables (the severity of depression symptoms, feelings towards the body, dissociation, number and type of traumatic events) and deliberate self-injury functions. Moreover, we investigated whether the group self-mutilating adolescents is internally diverse in terms of how important individual functions of self-mutilation are, and whether the subgroups singled out by these functions differ between each other in terms of clinical variables.

Method and material. The Inventory of Statements about Self-Injury was used. Characterizations of the examined individuals and other research tools are included in our previous article (year, issue, pages).

Results. Associated with negative feelings towards the body are the functions of self-injuries (anti-dissociation, self-punishment) that can be described as interpersonal. High levels of depression symptoms (self-depreciation included) are mainly associated with the self-injury functions: self-punishment, anti-dissociation, establishing interpersonal boundaries. Affect regulation becomes more important as a function of self-inflicted injuries in cases of biological dysregulation and intense dissociative symptoms.

Conclusions. The adolescents' psychiatric inpatients are internally diverse in terms of dominant functions of self-injuries, which can be categorized into intra – and interpersonal. Intrapersonal functions dominate when an individual experiences severe depression, dissociative symptoms, and negative feelings towards the body. In cases of moderate intensity of depression, dissociative symptoms and negative feelings towards the body, both intrapersonal and interpersonal functions of self-mutilation, are similarly important. Further research is required to explain the lowest severity of depression symptoms, dissociative symptoms and negative feelings towards the body co-occurs with no awareness of self-injuries functions.

Key words: self-injury functions and depressive symptoms, dissociation, body image

Introduction

An individual can interact with the surrounding reality thanks to a sense of physical boundaries, but also due to a feeling of body integrity. The body is the most fundamental and primary element of the Self, the foundation of a sense of identity, a reflection of emotional states, inner experiences and tensions. Sometimes it becomes an object of concern, care, love, but sometimes also of hate, anxiety, negligence or attack [1, 2]. The experiences of existing in one's body may become distorted at different stages of development, leading to a variety of psychopathological symptoms.

Intentional self-mutilation is commonly perceived as trying to end one's existence, a phenomenon which contradicts an instinct of self-preservation natural for human beings. Is it true, however, that the main objective which a self-injuring individual struggles to achieve is, always and invariably, self-annihilation? As a matter of fact, acts of self-aggression express desires which are quite the opposite. For a self-injurer this is the way to survive at all costs, while at the same time he or she is aware of the risks and costs which self-mutilating behaviors incur. This kind of behavior may therefore play a specific role, adaptive and defensive in nature, and helps the engaged person protect their own Self from disintegration [2, 3]. This adaptive function is endowed upon acts of self-mutilation by being aware of mental anguish stemming from, among other things, traumatic experiences, and perceiving the links between inner tension and the acts themselves. A resulting situation, seemingly paradoxical, is one where inflicting physical pain upon oneself is done in order to obtain the benefits of improving one's mental condition [4]. This proves that apart from the outright destructive image of self-inflicted injuries, they can be seen as a specific desperate attempt to preserve one's inner integrity [5].

As pointed out in the literature on the subject, the functions of self-mutilation are manifold – just as varied as are the separate, individual experiences and subjective affective states that precede the behaviors. For most people, these are associated with particularly stressful, painful experiences which can be traced back to one's childhood period. Babiker and Arnold [2] single out fifteen functions, categorizing them into a few main groups: related to coping and survival; associated with the Self; those that help to handle difficult personal experiences; related to self-punishing and seeing oneself as a victim; those that regulate interpersonal relations. The following are among the most important of these functions, and were described by other researchers as well [4, 6–11]: affect regulation (relieving emotional arousal identified as experiencing tension, fear or anger); focusing the pain (transforming emotional discomfort into physical pain in order to manage it effectively); increasing one's sense of autonomy and control; breaking out of dissociative states and restoring a sense of reality; a chance to take care of oneself; self-punishment (individuals who during their lifetimes were being convinced about their worthlessness or about any other "defect", tend to treat self-injuries as deserved punishment, and self-harm resulting from self-depreciation is not in conflict with internal values, rather it is experienced as egosyntonic); punishing other people and influencing them.

Additionally, Babiker and Arnold [2] also mention an important role of self-mutilation in the following processes: expressing one's personal experience in front of oneself; re-enacting trauma; purification; punishing one's oppressor; coping with confusions brought about by one's sexuality. Though the repertoire of functions described by the above-mentioned authors is already broad and varied, we believe the following aspects are also worth discussing: (1) proving group membership (through self-mutilation an individual may identify him – or herself with a popular schoolmate, thus gaining a tool to clarify and define themselves; as much as 65% of teenagers uses the acts of self-mutilation as subjects for discussion with their mates, and nearly 25% performs them in the presence of others [12]); (2) establishing borders (according to the object relations theory, self-mutilating individuals are seen as having a wrong sense of their own Self due to an uncertain and non-secure attachment to their mothers, and subsequent problems with a child's individuation and mental separation from its mother lead to self-injuries, which are supposed to prove that an individual has cut off from the environment and has formed his or her own separate identity [10]); (3) generating excitement (an individual's goal is to produce strong emotions, such as agitation, euphoria or excitement; this function is also associated with affect regulation, but in this case the aim is to trigger emotions that are very strongly manifested in physiological terms and associated with an adrenaline rush); (4) avoiding suicide (the issue of self-mutilation which prevents committing suicide was described in detail by Menninger [13] – he defined self-inflicted injury as a compromise between the desire to live and the desire to die, and called self-injury "a partial suicide"); thanks to self-mutilation the suicide instinct can be focused on only one selected part of the body, so that the organism as a whole can avoid being killed [14].

In the absence of skills with which to develop constructive mechanisms of coping with difficult personal experiences, self-injuring is used instead [14]. It becomes an important part of one's life providing for a variety of needs, and thus it grows to be a habitual behavior, and one hard to break [2].

Purpose of the research

The aim of our research studies was to analyze the functions of self-injury and their clinical correlates, such as: the severity of depressive symptoms, feelings towards the body, dissociation, and the number and type of traumatic events in life.

The literature on the subject does not present any unambiguous stance on how various self-injury functions correlate with the factors examined in this paper. Therefore, the following research questions were raised: (1) Do any links exist between the examined variables and self-injury functions, and if so – what are they and how strong they are? (2) Is the group of examined self-mutilating adolescents heterogeneous, i.e., internally varied in terms of how important particular self-injury functions are? (3) Do the subgroups singled out by self-injury functions differ from each other in terms of clinical and socio-demographic variables?

Participants

The participants' characteristic is provided in our previous article*.

Research methods

We used research methods described in the previous article* and the Inventory of Statements about Self-Injury (ISAS) [15] (included in the Appendix), which for the purpose of this study was translated from English into Polish. The reliability analysis indicated a high level of the tool's reliability (Cronbach's alpha was 0.870).

The questionnaire consists of two parts. In the first part, data were collected about the frequency of self-injurious behaviors, their type, "initiation age", experiencing or not experiencing pain during a self-destructive act, whether the wounds are inflicted in solitude or in the presence of others, and how long it takes for a person to feel relief. Examined in the second part were various functions that self-mutilation may potentially serve. Thirteen distinct functions were singled out: affect regulation, items 1, 14, 27; interpersonal boundaries, items 2, 15, 28; self-punishment, items 3, 16, 29; self-care, items 4, 17, 30; anti-dissociation/feeling-generation, items 5, 18, 31; anti-suicide, items 6, 19, 32; sensation seeking, items 7, 20, 33; peer bonding, items 8, 21, 34; interpersonal influence, items 9, 22, 35; toughness, items 10, 23, 36; marking distress, items 11, 24, 37; revenge, items 12, 25, 38; autonomy, items 13, 26, 39.

After examining the psychometric properties of individual subscales and using factor analysis, two main factors were identified and they categorized the functions of self-mutilating acts. The first factor embraces interpersonal functions, and the following are included in this group: establishing interpersonal boundaries, self-care, sensation-seeking, establishing peer relations, exerting interpersonal influence, testing the limits of one's toughness, revengement, regaining a sense of autonomy. The second factor gathers intrapersonal functions, such as: affect regulation, self-punishment, breaking out of dissociation, preventing suicide and emphasizing one's suffering. The alpha coefficients were: 0.88 for the interpersonal factor, and 0.80 for the intrapersonal factor, which indicates high consistency in both subgroups.

Results

The statistical analysis included in our own research uses all clinical variables (the severity of depressive symptoms, feelings towards the body, dissociation, number and type of traumatic events) described in the previous article. To answer the research question about possible mutual relationships between the included clinical variables

* Radziwiłłowicz W, Lewandowska M. From traumatic events and dissociation to body image and depression symptoms – in search of self-destruction syndrome in adolescents who engage in nonsuicidal self-injury. Psychiatr. Pol. 2017; 51(2): 283–301

and self-injury functions, correlation analysis using Pearson's r coefficients was performed (Tables 1–4).

Table 1. **Relationships between feelings towards the body and self-injury functions**

Feelings towards the body	Self-injury functions			
	Affect regulation	Interpersonal	Self-punishment boundaries	Anti – dissociation
My body makes me happy	-0.346**	-0.298*	-0.341**	-0.289*
My body feels alien to me	0.224	0.265*	0.212	0.359**
My body scares me	0.294*	0.414**	0.429**	0.412**
I like my body	-0.370**	-0.314*	-0.441**	-0.463**
I feel emotionally attached to my body	-0.233	-0.218	-0.359**	-0.334**
I detest my body	0.237	0.318*	0.388**	0.391**
My body worries me	0.249	0.398**	0.259*	0.459**
My body shames me	0.206	0.316*	0.344**	0.318*
Total	0.332**	0.376**	0.394**	0.415**

* $p < 0.05$; ** $p < 0.01$

Relationships between feelings towards the body and self-injury functions are described by weak or moderate correlations. Higher levels of negative emotions towards the body, particularly we mean here a sense of dissatisfaction with one's physicality, and feelings of dread, hatred, aversion, anxiety and shame, are associated with the following functions of self-mutilations: establishing interpersonal boundaries, self-punishment, breaking out of dissociative states. Greater frequency of engaging in self-injuring because of its affect-regulating function goes together with more intense emotions of hatred, aversion and dread towards one's physical aspects. More intense feelings of one's body alienness are associated with increased importance of the following self-injury functions: regulating interpersonal boundaries, breaking out of dissociative states. Together with decreasing emotional attachment to and a sense of integrity with one's body, we can observe an increase in self-punishing and anti-dissociation behaviors.

Table 2. **Relationships between the severity of depressive symptoms and self-injury functions**

Depression	Self-injury functions				
	Affect regulation	Interpersonal boundaries	Self-punishment	Anti – dissociation	Marking distress
Dysphoria	0.248	0.357**	0.343**	0.253	0.316**
Self-depreciation	0.319*	0.417**	0.399**	0.495**	0.224
Social problems	0.348**	0.175	0.293*	0.171	0.142

table continued on the next page

Biological dysregulation	0.410**	0.306*	0.343*	0.326*	0.09
Total	0.353**	0.375**	0.381**	0.394**	0.198

* $p < 0.05$; ** $p < 0.01$

The correlations between the severity of depression and self-injury functions are low or moderate. The severity of depressive symptoms (including self-depreciation and biological dysregulation) correlates with greater importance of the following self-injury functions: affect regulation, establishing interpersonal boundaries, self-punishment, breaking out of dissociative states. More intense dysphoria is associated with more frequent engaging in self-mutilation in order to establish interpersonal boundaries, punish oneself and emphasize one's suffering. Depression manifested in social problems is, in turn, significantly linked only with affect regulation and self-punishment.

Table 3. **Relationships between dissociation and self-injury functions**

Dissociation	Self-injury functions				
	Affect regulation	Interpersonal boundaries	Anti – dissociation	Peer bonding	Toughness
Vitality	0.332**	0.379**	0.347**	-0.292*	-0.272*
Activity	0.327*	0.118	0.291*	-0.23	-0.091
Consistency	0.386**	0.322*	0.23	-0.330**	-0.283*
Demarcation	0.353**	0.416**	0.364**	-0.295*	-0.131
Identity	0.219	0.388**	0.221	-0.183	-0.121
Total	0.387**	0.381**	0.340**	-0.320*	-0.227

* $p < 0.05$; ** $p < 0.01$

Dissociation and self-injury functions are weakly or moderately correlated. More intense dissociation, generally, but also particularly in demarcation and vitality of the Self, are associated with using self-destructive behavior in order to regulate one's affect, emphasize interpersonal boundaries and break out of dissociative states. Self-mutilation among individuals suffering from stronger disturbances in the integrity of the Self is more often aimed at establishing and regulating interpersonal borders, and less often done to emphasize one's toughness or to tighten peer relations. When vitality and demarcation of the Self are dysfunctional, a negative correlation is observed with the peer bonding function of self-injuries. Lowered vitality of the Self is also linked with reduced need to emphasize one's toughness through self-mutilation. Next, affect regulation and breaking out of dissociative states become more important functions of self-injuries when experiencing the activity of the Self is distorted. When disturbances within one's identity intensify, an individual is more likely to use self-mutilation to separate him – or herself from others.

Table 4. **Relationships between self-injury functions and negative life events**

Self-injury functions	Negative life events			
	Suicide attempt in the family	Loss (death) of a close person	Sexual abuse	Sexual violence
Affect regulation	-0.260*	-0.257*	-0.034	0.082
Self-punishment	0.022	-0.380**	0.01	0.122
Anti-dissociation	0.134	-0.305*	-0.132	-0.012
Sensation seeking	0.09	0.059	-0.238	-0.258*
Peer relations	0.104	0.036	-0.325*	-0.247

* $p < 0.05$; ** $p < 0.01$

Significant correlation values between self-injury functions and several negative life events are low or moderate. The higher the frequency of suicide attempts in the family, the less likely an individual is to undertake self-injuring behavior in order to regulate one's affect. When the number of experiences of losing a close person increases, the following self-injury functions are less likely to occur: breaking out of dissociative states, self-punishing, affect regulation. Among individuals suffering from sexual abuse, self-injuries done in order to establish peer relations are less frequent. Among those who experienced sexual violence, the sensation seeking function of self-inflicted injuries is less important.

Cluster analysis – data grouped by self-injury functions

In order to answers the second research question, Ward's hierarchical cluster analysis was carried out, using the Euclidean distance. Three clusters were identified as a result. They summarize the characteristics of three different groups of self-destructive persons who vary in terms of how important particular self-injury functions are (Table 5).

Table 5. **Descriptive statistics for clusters of self-injury functions**

Self-injury functions	Clusters	N	X	SD	F	p
1. Affect regulation	1	35	4.54	1.50	8.997	0.0001
	2	13	2.46	1.51		
	3	12	3.58	1.68		
	Total	60	3.90	1.73		
2. Interpersonal boundaries	1	35	1.77	1.82	8.256	0.0001
	2	13	0.15	0.38		
	3	12	2.67	1.67		
	Total	60	1.60	1.78		

table continued on the next page

3. Self-punishment	1	35	3.80	1.982	9.755	0.0001
	2	13	1.23	1.013		
	3	12	3.08	1.832		
	Total	60	3.10	2.039		
4. Self-care	1	35	2.69	1.022	25.192	0.0001
	2	13	0.69	0.751		
	3	12	3.75	1.603		
	Total	60	2.47	1.501		
5. Anti-dissociation	1	35	3.34	1.662	8.158	0.0001
	2	13	1.38	1.502		
	3	12	3.92	2.065		
	Total	60	3.03	1.913		
6. Anti-suicide	1	35	3.57	1.883	4.963	0.01
	2	13	1.69	1.797		
	3	12	2.75	1.865		
	Total	60	3.00	1.983		
7. Sensation seeking	1	35	1.00	1.260	4.388	0.02
	2	13	0.54	0.967		
	3	12	2.08	1.881		
	Total	60	1.12	1.427		
8. Peer bonding	1	35	0.40	0.775	27.86	0.0001
	2	13	0.77	1.536		
	3	12	3.50	1.931		
	Total	60	1.20	1.734		
9. Interpersonal influence	1	35	1.57	1.501	12.942	0.0001
	2	13	1.23	1.691		
	3	12	4.08	1.782		
	Total	60	2.00	1.896		
10. Toughness	1	35	1.40	1.397	34.29	0.0001
	2	13	1.08	1.115		
	3	12	5.00	1.595		
	Total	60	2.05	2.020		
11. Marking distress	1	35	3.29	1.856	10.462	0.0001
	2	13	1.31	1.251		
	3	12	4.33	1.670		
	Total	60	3.07	1.965		

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12. Revenge	1	35	0.49	0.951	34.475	0.0001
	2	13	0.38	0.650		
	3	12	3.75	2.137		
	Total	60	1.12	1.795		
13. Autonomy	1	35	1.23	1.592	23.784	0.0001
	2	13	0.15	0.376		
	3	12	3.75	1.215		
	Total	60	1.50	1.799		

After comparing the means using Tukey's b test, it was possible to clearly define the qualities of clusters previously singled out. The following table compiles the means for various self-injury functions broken down by the clusters (Table 6).

Table 6. **Comparison of the means for self-injury functions, by three clusters**

Self-injury functions	Means for groups in homogeneous subsets		
	Cluster 1	Cluster 2	Cluster 3
Affect regulation	↑	↓	–
Interpersonal boundaries	–	↓	↑
Self-punishment	↑	↓	–
Self-care	–	↓	↑
Anti-dissociation	–	↓	↑
Anti-suicide	↑	↓	–
Sensation seeking	–	↓	↑
Peer bonding	↓	–	↑
Interpersonal influence	–	↓	↑
Toughness	–	↓	↑
Revenge	–	↓	↑
Autonomy	–	↓	↑

↑ the mean is higher than for the other two clusters; ↓ the mean is lower than for the other two clusters; (–) the mean is on an average level

The results show that individuals falling into the first cluster ($N = 35$) most often indicated affect regulation, self-punishment and preventing suicide as the reasons behind their engaging in self-destructive behaviors. On the other hand, the peer bonding function was less often mentioned as important. Those falling into the second category ($N = 13$) are distinct in that all the functions, save for peer bonding, were equally unimportant. Those in the third cluster ($N = 12$) deemed almost all of the functions important – with the exceptions of affect regulation, self-punishment and preventing suicide.

Analysis of clusters in terms of clinical variables

In order to characterize individual clusters in terms of clinical variables, i.e., emotions towards the body, the severity of depressive symptoms, dissociation and negative life events, a one-way ANOVA was performed. As revealed by the analysis, the intensity of some of the clinical variables is significantly different ($p < 0.05$) between the three clusters. The table below presents the results in detail (Table 7).

Table 7. **Comparing means for clinical variables, by three clusters**

Variables		Cluster 1 (X, SD)	Cluster 2 (X, SD)	Cluster 3 (X, SD)
Feelings towards the body	Negative feelings towards the body (general score)	26.89 (10.91) ↑	16.00 (9.87) ↓	21.92 (11.22) –
Depression	Dysphoria	4.97 (2.57) ↑	2.23 (1.92) ↓	3.83 (3.27) –
	Self-depreciation	8.14 (3.35) ↑	4.62 (2.84) ↓	7.17 (4.02) –
	Social problems	3.23 (2.00) ↑	1.00 (0.97) ↓	1.42 (1.24) –
	Biological dysregulation	3.66 (1.63) ↑	1.69 (1.24) ↓	2.17 (1.94) –
	Severity of depression (general score)	23.51 (8.41) ↑	11.92 (6.89) ↓	17.00 (10.82) –
Dissociation	Vitality of the Self	10.89 (6.38) ↑	4.85 (4.24) ↓	6.50 (6.32) –
	Activity of the Self	7.09 (5.29) ↑	2.23 (1.52) ↓	3.33 (3.23) –
	Consistency of the Self	10.83 (7.20) ↑	4.77 (4.51) ↓	5.50 (5.10) –
	Demarcation of the Self	6.43 (5.07) ↑	2.31 (2.56) ↓	3.92 (3.18) –
	Severity of dissociation (general score)	42.57 (24.49) ↑	19.46 (16.17) ↓	24.75 (18.76) –

↑ the mean is higher than for the other two clusters; ↓ the mean is lower than for the other two clusters; (–) the mean is on an average level

To sum up, after the analysis was carried out to examine the differences between clinical variables in three separate clusters, we concluded that the participants falling into various clusters differ among themselves in terms of clinical variables and dominant functions of self-mutilations. In patients from the first cluster prevail intrapersonal

functions, very high levels of depression, dissociation and negative emotions towards the body. Persons falling into the second cluster declare that they find neither intrapersonal nor interpersonal functions important, and do not mention them as motives behind their self-destructive behaviors. At the same time they demonstrate the lowest levels of depression, dissociation and negative emotions towards the body. Finally, the patients from the third cluster regard intra – and interpersonal functions equally important for their self-destructive regulation, and they manifest average levels of depressive symptoms, dissociation and negative body attitudes (which ranks them in between the two other groups).

In order to answer the second part of the third research question, an analysis using a χ^2 test was carried out. This was done to obtain descriptive data for individual clusters in terms of socio-demographic variables. The results indicate no differences between the clusters in this respect.

Discussion

The purpose of this research was to examine whether there are significant differences in the severity of depressive symptoms, dissociation, perceiving one's physicality and the experienced traumas between adolescent inpatients divided according to the dominant functions of self-mutilation. The figure below illustrates the strongest links between self-injury functions (the middle row) and examined clinical variables (Figure 1).

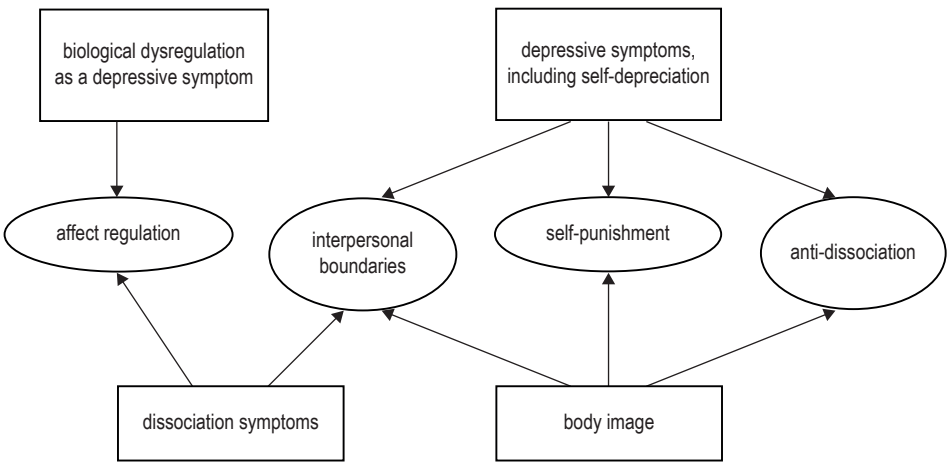

Figure 1. **The strongest links between self-injury functions and examined clinical variables**

Relationships between how intense negative emotions towards one's body are and how important specific functions of self-mutilations appear to be indicate that mainly these functions of self-mutilations that we called intrapersonal (breaking out of dissociative states and self-punishment) are associated with negative body attitudes. Because of dissociative states, an individual feels detached from his or her feelings and sensations – this can lead to undertaking self-aggressive behaviors in order to satisfy the need to generate emotions, and to escape the feeling of psychological lifelessness [16]. This specific numbness can also refer to (or be transferred to) how one's bodily aspects are experienced, thus causing a feeling of the body alienness, which consequently can induce feelings of anxiety or even dread. The very same feelings can arise when a sense of being one with the body is loosened, and receiving sensations from the body is limited (no longer providing a means of contact with the world around it). The fact that the self-punishing function strongly correlates with aversion and dread towards the body can be explained in the following way: an individual regards him – or herself as deserving of condemnation and punishment (the nagging "guilty Self"), therefore harming own body feels like something well-earned [2]. In the process of long-term reinforcing these behaviors and destructive thoughts about oneself, the attacked body also becomes an unwanted, hostile object, and mistreating it seems perfectly justified.

Also the function we called establishing interpersonal boundaries is associated with a greater intensity of negative feelings towards the body, particularly anxiety and dread. Whoever engages in self-injuring behaviors because of poor sense of separateness and the need to create borders between oneself and the others, may do so due to profound disorders in experiencing one's own individual identity [10]. If this is the case, and if the body feels more like a part of the reality rather than a coherent element of an individual's identity, the feelings of anxiety or terror in relation to the body suddenly become most real phenomena.

The study also revealed strong links between self-injury functions and the severity of depressive symptoms among the participants [17–21]. The symptoms co-exist with an increased importance of intrapersonal functions of self-destructive behaviors. Particularly severe depression was observed in persons for whom the dominant functions of self-mutilations were: affect regulation, self-punishment, and breaking out of dissociative states. More intense self-depreciation also makes an individual more likely to engage in self-punishing (the need to punish oneself because of self-hate and deserved lack of love), and in breaking out of dissociative states (separating oneself from unpleasant thoughts about oneself and focusing on action makes the pain easier to endure) [7]. To a lesser degree self-depreciation is associated with destructive affect regulation (willingness to get rid of inner tension and anxiety associated with malicious thoughts about oneself).

Even weaker links were found between marking distress and the intensity of dysphoric mood. An individual struggling to ease psychological discomfort uses self-mutilation to transform it into physical suffering – this concentrated mark of

inner torment is easier to bring under control [2]. Therefore it can be argued that a self-injuring adolescent whose depression manifests as dysphoria tries to suppress it through exchanging unpleasant feelings (of weepiness, oversensitivity, loneliness) for physical pain.

As for the relationships between dissociation and self-injury functions, we concluded that the greater derealization, the more likely an individual is to self-mutilate in order to regulate his or her affect and to establish interpersonal boundaries (to a lesser extent – in order to form peer relations and restore the capacity to feel emotions). Self-inflicted injuries whose goal is to regulate emotions may cause dissociative states within experiencing one's vitality, consistency and identity, but also the opposite may be true – self-mutilations can be an effective way to break out of these states. This is evidenced by research studies that report higher levels of dissociation in self-mutilating women [22]. Self-injuring acts interrupt the state of depersonalization, and at the same time one's perception of reality and sensations coming from the body become clear again [2]. We can therefore argue that more intense dissociative states within all five dimensions (vitality, activity, consistency, demarcation and identity) occur more often in persons using the mechanism of destructive affect regulation to single-handedly take control over unpleasant feelings of inner emptiness.

Higher levels of dissociation are also associated with a lower importance of the peer bonding function and a greater importance of the establishing interpersonal boundaries function. It can mean that individuals experiencing feelings of separateness, numbness and weakened vitality do not inflict injuries upon themselves in order to create bonds with their peers, since they are focused on emphasizing their own integrity. This is why the establishing interpersonal boundaries function goes together with greater disturbances in one's sense of identity. Patients for whom this function seems essential to their destructive self-regulation must create well-defined boundaries between themselves and other people in order to fortify the already weakened sense the identity.

Moving on to discussing relationships between biological dysregulation (sleeping disorders, appetite disorders, chronic fatigue etc.) as a depressive symptom and self-injuries done for the sake of affect regulation, let us consider how the three systems that become disrupted in depression interact: one's nervous, immune and endocrine system. They form a functional entity and play an integrating role in the process of maintaining homeostasis of the organism. The activation of one's immune system is the mechanism responsible for releasing cytokines which have been produced by the immune system cells [23]. In depression, the released cytokines alter brain functions, affecting sleep patterns, appetite, cognitive functions and the activity of the LHPA axis (limbic – hypothalamic – pituitary – adrenal axis). In explaining depressive dysregulation, contemporary pathogenic models rely on two interpretations: the monoamine hypothesis, which emphasizes dysfunctional neurotransmission (both serotonergic and noradrenergic); and the related psychoneuroendocrine hypothesis, which describes the malfunction of the LHPA axis. Yet another mechanism is the

secretion of opioid peptides (beta-endorphines), which is directly involved in the process of self-injuring. This peptide acts as a painkiller and a mood enhancer (by reducing negative affect) [6, 10]. Therefore, it is not unlikely that depressive symptoms (including biological dysregulation) as well as self-injuries share a part of their neurobiochemical basis – self-mutilations would use this common mechanism to regulate affect, and at the same time this regulating function would reinforce self-mutilation. The goal here is to protect an individual from negative emotions, similarly to the mechanism used to cope with depression or to relieve the frustration arising from biological dysregulation.

The analysis also revealed links between particular negative life events and other clinical variables. Experiencing sexual violence lessens the need to involve in self-damaging behaviors with a view to sensation seeking. It can be theorized that the memories of sexual violence were pushed down into unconsciousness. Strong experiences that these traumatic events involve had to become unavailable to the psyche, or else an individual's life would become disrupted. For this reason a person may not wish to harm him – or herself for the purpose of generating emotions: together with positive feelings, the unpleasant ones could be brought to the fore – the emotions associated with traumatic experiences and difficult to withstand. Past experiences of sexual abuse co-occur, on the other hand, with smaller importance of the establishing relationships with others function of self-injuries. This may indicate that a self-mutilating adolescent wants to focus on inner, intrapsychical needs, not on regulating his or her relations with the environment. Next, the more frequent episodes of losing a close person, the lower the tendency to engage in self-aggressive behavior in order to break out of dissociative states. It may be that experiencing dissociation becomes a strong need, even a necessity, as is it used to detach from traumatic events.

Dissociation is the very mechanism that becomes useful to a person who needs to survive the confrontation with traumatic experiences. Oftentimes is becomes impossible for the trauma to be psychologically processed by the fully conscious Self [24]. And when the original possibility to consciously evaluate the situation becomes impossible or partly blocked, an individual often relives it again and again later in life under the guise of self-inflicted injuries [25]. Reinforcing expressions of self-destructive impulses (an unconscious need to give vent to psychological suffering) as a part of an individual's behavioral repertoire, makes it easier to apply the mechanism of dissociation.

It was surprising to find the relationships between self-injury functions and negative life events. Suffering from a loss of a close person is associated with a decreased tendency to self-mutilate in order to self-punish, interrupt dissociative states or regulate affect. A suicide attempt in the family is also associated with a smaller tendency to use affect-regulating mechanisms in a destructive way. It would seem that with such traumatic experiences, the role of self-mutilation as a means of regulating affect and breaking out of dissociative states (which, after all accompany traumas), should be significant. However, it is possible that such losses can underlie depression, chronic anxiety, self-destructive tendencies etc. mainly among adults, for whom physical

and psychological pain is a factor connecting them with deceased friends and family members [26].

Apart from the above-mentioned relationships, three distinct groups of self-mutilating individuals were identified as a result of the cluster analysis. The groups differ among themselves in terms of which self-injury functions are most important, and the intensity of particular clinical variables.

Among those constituting the first and most numerous group, the most important functions of self-mutilation include: affect regulation, self-punishment and preventing suicide. The least important function is one associated with establishing peer relations. To all the other functions, average importance is attached. Such a constellation of functions indicates that patients from this subgroup look for whatever allows them to take control over their emotional states. For this reason, we say that they self-mutilate for the sake of intrapersonal regulation.

When it comes to clinical variables, these participants reported the highest intensity of negative feelings towards the body, depressive symptoms and disassociation (compared with the other two subgroups). It can be argued, albeit with a healthy dose of caution, that this is the case because intrapersonal self-injury functions are in a dominant position here. Being fully aware of one's mental world, experienced emotional states and how to regulate them may cause the clinical variables to take on higher values. Because of acute self-awareness and intense focus on their own experiences, these individuals are prone to severe mental suffering. Consequently, they employ self-injury functions that allow them to fix their attention on themselves and the processes of self-regulation, thereby temporarily reducing discomfort.

Persons belonging to the second subgroup are entirely different. Practically every self-injury function in this group was considered unimportant. The only moderately significant one was the peer bonding function. That almost all of the functions are deemed irrelevant to one's behavior may suggest that these individuals experience dissociative states so intensive that the true meaning of self-inflicted injuries is far beyond their realization. When compared with persons from other subgroups, they manifested the lowest levels of clinical variables; they experienced the lowest severity of depressive symptoms, dissociation and negative feelings towards the body. One hypothetical explanation is that these individuals display alexithymic features. Alexithymia (an overall inability to recognize and describe one's own feelings) is a phenomenon similar to dissociation, and these two often occur together. It may also be the only working defense mechanism, i.e., a means to cope with difficult, traumatic experiences. Alexithymic persons have problems with identifying and naming their own emotions, and with distinguishing emotional experiences from bodily sensations [27].

Assuming hypothetically that this subgroup can be characterized as having alexithymic traits, we can also argue that what follows is the tendency to treat mental life in a concrete and task-specific manner, and a lack of capacity to use symbolization or to reflectively comprehend sensations, feelings, behaviors, and events. With no self-injury

function being really important, negative emotions and other unpleasant mental states are eased through action. A combination of little insight into oneself, and focusing on external phenomena rather than on inner emotional states leads to acting-out behaviors.

Patients who make up the third subgroup declare that all self-injury functions, excluding affect regulation, self-punishment and preventing suicide, are equally important as aspects of self-destructive regulation. We can therefore assume that among these prevail persons interpersonal functions. Despite the fact that patients in this subgroup ascribe importance to so many functions of self-harming behaviors, their scores in clinical variables are average (when compared with the other two subgroups). We can say with caution that high levels of interpersonal and lower levels of intrapersonal regulation indicate a fairly robust awareness of one's mental states. The average levels of clinical variables may be due to this peculiar constellation of considerable insight coupled with releasing self-destructive impulses, experiencing depressive states, dissociative states and negative feelings towards the body.

To sum up, future research should continue to examine the interactive or bi-directional influences of intrapersonal and interpersonal deliberate self-injury functions. It is likely that this functions may operate simultaneously to influence the occurrence and repetition of self-injury. This holds special importance for both prevention and intervention programs.

Conclusions

1. The examined group of psychiatric adolescent inpatients is internally diverse in terms of dominant functions of self-injuries, which can be categorized into intra – and interpersonal.
2. Intrapersonal functions are associated with severe depression, dissociative symptoms, and negative feelings towards the body.
3. In cases of moderate intensity of depression, dissociative symptoms and negative feelings towards the body, both intrapersonal and interpersonal functions of self-mutilation are similarly important.
4. Further research is required to explain the fact that the lowest severity of depressive symptoms, dissociative symptoms and negative feelings towards the body co-occurs with no awareness of intra – or interpersonal functions of self-injuries.

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Appendix

Inventory of Statements About Self-Injury

This inventory was written to help us better understand the experience of non-suicidal self-harm. Below is a list of statements that may or may not be relevant to your experience of self-harm. Please identify the statements that are most relevant for you:

- Circle **0** if the statement is **not relevant** for you at all,
- Circle **1** if the statement is **somewhat relevant** for you,
- Circle **2** if the statement is **very relevant** for you.

When I self-harm, I am …	Response
... calming myself down	0 1 2
... creating a boundary between myself and others	0 1 2
... punishing myself	0 1 2
... giving myself a way to care for myself	0 1 2
... causing pain so I will stop feeling numb	0 1 2
... avoiding the impulse to attempt suicide	0 1 2
... doing something to generate excitement or exhilaration	0 1 2
... bonding with peers	0 1 2
... letting others know the extent of my emotional pain	0 1 2
... seeing if I can stand the pain	0 1 2
... creating a physical sign that I feel awful	0 1 2
... getting back at someone	0 1 2
... ensuring that I am self-sufficient	0 1 2
... releasing emotional pressure that has built up inside of me	0 1 2
... demonstrating that I am separate from other people	0 1 2
... expressing anger towards myself for being worthless or stupid	0 1 2
... creating a physical injury that is easier to care for than my emotional distress	0 1 2
... trying to feel something (as opposed to nothing) even if it is physical pain	0 1 2
... responding to suicidal thoughts without actually attempting suicide	0 1 2
... entertaining myself or others by doing something extreme	0 1 2
... fitting in with others	0 1 2
... seeking care or help from others	0 1 2
... demonstrating I am tough or strong	0 1 2
... proving to myself that my emotional pain is real	0 1 2
... getting revenge against others	0 1 2

... demonstrating that I do not need to rely on others for help	0 1 2
... reducing anxiety, frustration, anger, or other overwhelming emotions	0 1 2
... establishing a barrier between myself and others	0 1 2
... reacting to feeling unhappy with myself or disgusted with myself	0 1 2
... allowing myself to focus on treating the injury, which can be gratifying or satisfying	0 1 2
... making sure I am still alive when I don't feel real	0 1 2
... putting a stop to suicidal thoughts	0 1 2
... pushing my limits in a manner akin to skydiving or other extreme activities	0 1 2
... creating a sign of friendship or kinship with friends or loved ones	0 1 2
... keeping a loved one from leaving or abandoning me	0 1 2
... proving I can take the physical pain	0 1 2
... signifying the emotional distress I'm experiencing	0 1 2
... trying to hurt someone close to me	0 1 2
... establishing that I am autonomous/independent	0 1 2

Optional

In the space below, please list any statements that you feel would be more accurate for you than the ones listed above:

……
……..……..……
……..…...……

In the space below, please list any statements you feel should be added to the above list, even if they do not necessarily apply to you:

……
……..……..……
……..……