

## Associations between deliberate self-harm episodes in psychiatrically hospitalised youth and the type of mental disorders and selected environmental factors

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### SUMMARY

**Aim.** The objective of the study was to assess possible relationships between the occurrence of deliberate self-harm (DSH) in young patients during their psychiatric treatment and the presence of specific mental disorders, or the history of suicide attempts, the exposure to abuse and their family situation.

**Material.** The studied group consisted of 187 in-patients, aged 13-19 years, hospitalised at the Adolescent Ward of the Central Teaching Hospital, Medical University of Łódź, during 2 quarters: on the turn of 2005 and at the beginning of 2006.

**Method.** All patients were psychiatrically examined and, on discharge, they were assessed with the "Questionnaire for the Assessment of Self-Harm" designed for the purpose of this study.

**Results.** Forty-seven percent of the psychiatrically treated in-patients had performed DSH acts. A strong relationship ( $p < 0.001$ ) was found between the occurrence of DSH and the previous history of suicidal attempts, the presence of an alcoholic problem in the family, exposure to sexual and physical abuse and the lack of support from close family members.

**Conclusions.** There was no relationship between the occurrence of deliberate self-harm in young in-patients and the presence of a specific psychiatric disorders.

deliberate self-harm/ adolescents/ mental disorders

### INTRODUCTION

During the recent years, the incidence of deliberate self-harm in youth has been demonstrating a clearly growing tendency. A simultaneous occurrence of different views and opinions on the issue becomes fairly apparent already at the

level of deliberate self-harm (DSH) definition, approaching this phenomenon either as "voluntary body injury or tissue damage without conscious suicidal intention" [1] or without being explicit as to possible consequences – "deliberate self-harm is any initiated behaviour, with a non-fatal outcome in which an individual deliberately did one or more body surface injuries, e.g., by striking, burning, cutting, wounding, jumping from a height, or ingested a non-ingestible substance or object or drug intake in doses exceeding therapeutic levels" [2].

CASE (Child and Adolescent Self-harm in Europe – CASE study), multi-centre questionnaire studies, regarding DSH prevalence among children and psychiatrically untreated youth have demonstrated that, depending on the country, students with DSH amounted to 2.7% up to

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12.9% of the studied population (N=30,000) [3]. The highest percent of DSH (40%) was found among teenagers in institutions [4]. The majority of authors are of the opinion that it is the girls who prevail among the subjects, demonstrating self-harming behaviours [2, 5, 6]. It can be explained by girls' different emotional experiencing of their bodily entity. DSH prevalence among psychiatrically-treated adolescents has been estimated to be within the range from 40% to 61% [7, 8]. When tracing the issue back through the medical records of the Department of Adolescent Psychiatry, Central Teaching Hospital of the Medical University of Łódź, for the year of 2004, it becomes evident that 27% of the hospitalised patients were victims of DSH attempted in various ways [3].

Deliberate self-harms may occur as a symptom, which accompanies many psychic disorders, being described in subjects with diagnosed borderline personality. The associations between self-destructiveness and the above-mentioned personality disorders are so significant that repeated threats of suicide and self-harm have become recognised diagnostic criteria, see both DSM-IV [9] and ICD-10 [10]. It is estimated that 52% to 78% of these patients undertake autodestructive activities. Situations when DSH coincides with alimentary disorders are also important. Strong [11] draws our attention to the significance of psychic and physical traumas, in particular, of sexual abuse, for the initial framing of both these disorders. Moreover, it is assumed that, at the base, they have the same psychological mechanisms, allowing the affected subjects for a sort of repeated experiencing of the primary trauma, this time, in a more controlled way [12]. In ICD-10 [10], DSH are symptoms of hyperkinetic disorders with mental impairment and stereotype movements.

The attempts to estimate the incidence of psychic disorders among the subjects, undertaking the acts of self-harm, indicate that DSH episodes concern a significant percent of this population, varying from 25% up to 90%, depending on the available sources [13]. Most often, in subjects with SH, affective disorders, psychoactive substance abuse and morbid fears (phobias) are identified [14]. It is assumed that an effective treatment of psychic disorders may significantly

reduce the prevalence of autoaggressive behaviours in this age group [15].

In 1990, Favazza and Rosenthal [16] suggested the "recurrent self-harm syndrome" to be assigned a separate diagnostic category in the American DSM classification, within the range of unspecific impulse control disorders. Following the ICD-10 classification [10], self-harms should be coded acc. to the entries in Chapter XX - "Deliberate self-harm" (X60-X84). It covers both self-harms without suicidal intentions and suicidal attempts, thus impeding the distinction of particular autodestructive behaviours.

The aetiology of DSH is multifactorial. According to a view, prevailing in the current literature, DSH is a sort of interaction, occurring between biological predisposition (susceptibility) and traumatic experiences from childhood [17]. Autoaggressive behaviours accompany many genetically determined syndromes with mental impairment [18].

A number of reports indicate a relationship between family situation in childhood and later undertaking of autoaggressive behaviours [19, 20]. Growing up in dysfunctional families, with acts of domestic violence or with long-term feeling of being neglected may trigger negative emotions [21] and self-harms may be a simple attempt of abreaction. Among the adolescents with DSH in history, treated at the Department of Adolescent Psychiatry, Central Teaching Hospital of the Medical University of Łódź in 2004, 11% had experienced sexual abuse, while 18% had been victims of physical violence [3]. The probability of DSH is also higher in youth, brought up in incomplete families [2]. According to the results of studies by Lewandowska et al. [22], it appears that 50% of young people with self-harming behaviours have been raised without one parent. The effects of contact loss with important persons on the incidence of DSH have, among others, been confirmed by studies, performed among psychiatrically treated youth, revealing that 47% of DSH undertaking patients lost contact with their father in childhood [3]. Similarly, a loss of contact with a tutor in institutions became a factor of increased risk for later SH occurrence [23].

Despite many studies, the effect of certain psychic disorders on self-harm incidence in youth is

still unsolved, especially in the context of family and traumatic factors.

## GOAL

The goal of the study was an evaluation of the relationships between the occurrence of deliberate self-harm in hospitalised youth and: the diagnosis of certain mental disorders, undertaking of suicidal attempts in the past, sustaining sexual and physical abuse and family situations (divorce of parents, lack of support from family members, the alcoholic problem in family, psychic diseases in family history, a traumatic experience of a parent's death).

## MATERIAL

The study population included 187 patients (age: 13-19 years), hospitalised at the Department of Adolescent Psychiatry, Central Teaching Hospital of the Medical University of Łódź during the 4th quarter 2005 and the first quarter of 2006. The patients were recruited to the study in sequence of their admission to the hospital. The study population included 58 boys (their mean age: 16.81 years; SD = 1.25 years) and 129 girls (their mean age: 16.5 years, SD = 1.38 years). The mean age for the entire study population was 16.59 years (SD = 1.35 years).

Patients with identified mental impairment were excluded from the study for the difficulty in their understanding of questions in the study questionnaires.

## METHOD

All the qualified patients were psychiatrically examined by the same researcher and diagnosed according to the ICD-10 [10] classification; additionally they were evaluated by means of a specially designed "Deliberate self-harm evaluation questionnaire", taking into consideration selected independent variables.

On discharge, the patients were classified into two subgroups in consequence of, at least, one DSH episode, i.e., dependent variable, recorded in the course of hospitalisation. The common-

ly quoted definition of DSH has been accepted in the study, approaching such an act as: "deprived of suicidal intentions, deliberate infliction of pain and/or body harm" [12].

Statistical analyses were performed by means of the SPSS 12 for Windows PL statistical software package. The conformity of the distribution of variables with normal distribution was evaluated by the Shapiro-Wilk test. The relationships of qualitative variables were evaluated by assessing the prevalence of particular categories in contingency tables, followed by a mutual comparison of the categories by the Chi2 independence test. The maximal, allowed probability of type I error at  $\alpha=0.05$  was accepted for all the analyses. Accurate test probabilities (p) were calculated for the applied statistics. In order to be able to perform statistical calculations by the Chi2 independence test, rare categories of the "Diagnosis" variable (each category occurring in less than 10% of the patients) were combined together, resulting in a new variable of "Diagnosis" with 4 categories. Goodman and Kruskal's lambda ( $\lambda$ ) was accepted as the measure of association.

## RESULTS

At least one act of deliberate self-harm without suicidal intentions occurred in 47% of the examined youth, hospitalised for psychic disorders (N=88, including 76% of girls and 24% of boys).

The results of one-dimensional analyses, presented in Tab. 1 (*next page*), indicate that the following factors were, in fact, the variables, significantly associated with undertaking the acts of self-harm among all the inpatients, included in the reported study (the factors have been arranged in decreasing order, depending on the lambda coefficient values: "suicidal attempt", "alcoholic problem in family", "sustained physical abuse", "sustained sexual abuse" and "lack of support in family").

No association was shown between the undertaken acts of self-performance and: the appointed four categories of diagnosis and certain family factors - parents' divorce, death and psychic diseases in family history.

**Table 1.** The relationship between incidence of self-harm episodes and certain specific clinical and environmental variables in the psychiatrically hospitalised youth

Variable	Level	SH		$\chi^2$	df	P	$\Lambda^{\S}$
		No (%)	Yes N(%)				
Gender	Female	62 (62.6)	67 (76.1)	3.974	1	0.057	0.057
	Male	37 (37.4)	21 (23.9)				
Diagnosis - 4 categories	F 20, F21, F22	33 (33.3)	36 (40.9)	1.802	3	0.624	0.034
	Affective disorders	22 (22.2)	18 (20.5)				
	Neurotic disorders	26 (26.3)	17 (19.3)				
	Other disorders	18 (18.2)	17 (19.3)				
Suicidal attempts in history	No	78 (78.8)	32 (36.4)	34.618	1	<u>&lt;0.001</u>	0.398
	Yes	21 (21.2)	56 (72.7)				
Parents' divorce	No	89 (89.2)	75 (85.2)	0.943	1	0.377	0.034
	Yes	10 (10.1)	13 (14.8)				
Lack of support in the family	No	88 (88.9)	67 (76.1)	5.342	1	<u>0.031</u>	0.114
	Yes	11 (11.1)	21 (23.9)				
Alcoholic problem in the family	No	89 (89.9)	49 (55.7)	28.208	1	<u>&lt;0.001</u>	0.330
	Yes	10 (10.1)	39 (44.3)				
Psychic diseases in the family	No	86 (86.9)	82 (93.2)	2.034	1	0.225	0.011
	Yes	13 (13.1)	6 (6.8)				
Death in the family	No	91 (91.9)	76 (86.4)	1.505	1	0.244	0.045
	Yes	8 (8.1)	12 (13.6)				
Physical violence experiencing	No	90 (90.9)	59 (67.0)	16.386	1	<u>&lt;0.001</u>	0.227
	Yes	9 (9.1)	29 (33.0)				
Sexual abuse in the family	No	98 (99.0)	70 (79.5)	19.297	1	<u>&lt;0.001</u>	0.193
	Yes	1 (1.0)	18 (20.5)				

X<sup>2</sup> – the value of Chi<sup>2</sup> independence test; df – the number of freedom degrees ; p – the value of bilateral accurate test probability;  $\lambda$  – the value of Goodman & Kruskal's lambda;  $\S$  – dependent variable: self-harm; significant dependencies have been underlined

## DISCUSSION

The prevalence of deliberate self-harms (DSH) among examined patients at the age between 13 and 19 years, treated for various psychic disorders at the Department of Adolescent Psychiatry, Central Teaching Hospital of the Medical University of Łódź on the turn of 2005 and at the beginning of 2006, was almost twice as high

as that for the year 2004, namely 47% vs. 27% [3]. The data correspond to the mean values of DSH prevalence in youth – 40% to 61% - presented in the English language literature [7, 24]. It should be underlined here that no DSH episodes are recorded in psychiatric patients in Poland. The available data concern, first of all selected populations of school students, not psychiatrically treated. Regarding the students of second-

ary schools in Poland, DSH prevalence was 15% [22]. Moreover, a more than three times lower prevalence of DSH was shown among school students in the Region of Łódź vs. the hospitalised youth population [22]. It would suggest an association between DSH and mental disorders, which is questioned by single authors [3]. It appears from the distribution of genders in the studied population of patients that girls had undertaken the acts of self-harm almost twice as often as boys, the difference, however, not attaining statistical significance. The authors [25] of one of the scarce studies, in which no statistically significant gender differences were demonstrated among the self-harm committing subjects (the boys even slightly outnumbered the girls), assume that the lesser participation of the male gender may be the result of specially defined inclusion criteria, by which mainly patients with drug intoxications or superficial self-harms are recruited to studies, while ignoring more drastic self-harm methods, more often practiced by boys.

In the presented analysis of data, the methods of self-harm have been omitted, first, because of the specific research target and second, because the patients - regardless of their gender - used most often the same method, i.e., skin cutting.

The performed studies did not confirm the hypothesis about a higher DSH prevalence in case of specific subgroups of psychic disorders: psychotic, depressive, neurotic. The obtained results should be interpreted with some care, due to the small numerical force of particular diagnostic subgroups. Similar results were obtained by Nock et al. [26]. They took into account the acts of self-harm recorded during the two months before psychiatric hospitalisation, what provides a certain basis to approaching DSH as coexisting with psychic disorders. The lack of association between DSH committing and any specific psychiatric diagnosis may justify approaching self-harms as behaviours, which play certain roles, rather than symptoms of psychic disorders. At the same time, the fact should be noted of diagnosing different psychic disorders in a considerable percent of subjects, demonstrating autoregressive behaviours [27]. A different - intentional selection of study participants, taking into consideration the presence of DSH already at the

very beginning of the enrolment process, enables - on one hand - to create larger, more uniform groups, while giving a possibility of their comparison with randomly selected control groups on the other. Following this approach, the observation of a higher prevalence of psychic disturbances in self-harming subjects may be more strongly correlated with non-specific psychopathology, such as, for example, feeling sadness, than with a specific psychiatric diagnosis. It is known that depressive disorders, which do not fulfil the criteria of depressive episode, coexist in many other diagnostic categories of ICD [10]. The hypothesis that the depression degree may differentiate the groups with and without SH has not yet gained unequivocal verification. Among the patients, undertaking the acts of self-harm, their majority (more than 2/3rds) achieved results in the Beck scale, which could have indicated severe depression, while the diagnosis of mood disturbances was obtained in only 20-30% of the patients [28, 29]. A high, subjective evaluation of depression may indicate a suffering status in self-harming subjects.

The sense of considering suicidal behaviours in self-harming youth results, among others, from an imprecise distinction by the authors of the intentions, associated with each of the two phenomena, and from a proven strong relationship between depression and suicidal behaviours [3]. In the performed studies, the patients, committing self-harm without suicidal intentions, statistically significantly more frequently undertook explicit suicidal attempts in the past. This observation demonstrates a strong association between self-harm with suicidal intention and those without such intention. The risk of suicide after previous acts of self-harm is several hundred times higher than that in the general population [30]. Nock et al. [26] think that multiple and repeated self-harms are particularly dangerous because they familiarise with fears of self-harming and accustom to pain, thus making the subject less afraid of attempted suicide. The view about the differences between suicidal attempts and DSH, as presented in literature, has been based on the data, concerning, among others, the use of different methods, as well as a different motivation [1, 4].

Many authors [24, 31] emphasise the effects of experienced violence on DSH in youth. It has

been demonstrated that young persons with episodes of deliberate self-harm experienced sexual abuse in childhood twice more often than physical abuse [12]. In turn, the role of physical ill-treatment in the development of autoregressive behaviours has been emphasised by Green [32]. In the group of ill-treated children, studied by her, 40% committed self-harm, while in the group of neglected children, DSH was identified in 17.2%, falling to 6.7% in children from non-pathological families.

Lack of proper bonds in the family may be at the base of DSH fixing [17], while proper family relations are perceived as protective factors in autoregressive behaviours [33].

In the presented studies, both sexual and physical violence turned out to be variables with statistically significant associations with DSH prevalence. According to Wycisk [34], the relationship between SH and violence experiencing may, among others, be explained by the mechanism of: internalisation of the aggressor's hostility, disturbed pleasure and pain sensations, dissociations within bodily sensations. Violence experiencing may also disturb the ability to modulate affectation, therefore, self-harms – when attempted by violation victims – may be a pathological way of affect control [35].

Numerous reports indicate a relationship between certain family situations and self-harm attempts, including disturbed communications in the family [20, 36], a loss of contact with relatives [23], the occurrence of depression in mothers [37]. In the last case, an association of mother's psychic disease with DSH was identified only in those patients, who evaluated their relations with mothers as unsatisfactory, while the depression itself of the patients' mothers, without any reference to family relations, did not increase the risk of DSH. Similar results were obtained in the reported study. Out of the five analysed family factors (parents' divorce, lack of support in the family, an association with DSH was demonstrated only in cases of experienced lack of support from relatives and the alcoholic problem in the family, which – as it is commonly known – strongly disturbs relations in the affected family. In the study by Hawton et al. [38], conflicts in the family turned out to be a significant risk factor for DSH only in girls. In the reported study, a separate analysis of risk

factors for girls and boys was given up because of the rather small number identified patients with self-harms. Evans et al. [33] indicate a possible, protective effect of family situation on self-harms, assuming that a complete, properly functioning and supportive family may effectively compensate for the consequences of numerous stresses.

## CONCLUSIONS

During the last 3 years, a double increase of deliberate self-harm (DSH) prevalence was recorded among psychiatrically treated inpatients of the Department of Adolescent Psychiatry, Central Teaching Hospital of the Medical University of Łódź.

No significant relationship was found between DSH and the type of diagnosed mental disorders in the studied group of youth.

A significant association was demonstrated between current acts of DSH and history of suicide attempts in the past.

The alcoholic problem in the family, an experienced lack of support from relatives and sustained sexual abuse and/or physical violence may be the contributing factors, which trigger autoregressive behaviours of youth.

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# PSYCHIATRIA POLSKA

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## CONTENT

- Deep brain stimulation – the newest physical method of treatment of depression**  
Tomasz Zyss, Andrzej Zięba, Robert T. Hese, Dominika Dudek, Bartosz Grabski ..... 301
- Differences in the course of depressive disorders among women and men measured by MMPI-2**  
Monika Talarowska, Antoni Florkowski, Krzysztof Zboralski, Piotr Gałęcki ..... 319
- Psychological femininity and masculinity, self-appeal, attachment styles, coping styles and strategies of self-presentation among women with suicide attempts**  
Eugenia Mandal, Karolina Zalewska ..... 329
- Tactoral Structure of the General Health Questionnaire (GHQ-30)**  
Dorota Frydecka, Krzysztof Małyszczak, Angelika Chachaj, Andrzej Kiejna ..... 341
- Neuropsychological examination among patients suffering from transient global amnesia**  
Monika Talarowska, Antoni Florkowski, Krzysztof Zboralski, Piotr Gałęcki ..... 361
- Posttraumatic Klüver–Bucy syndrome – description and comparison of two clinical cases**  
Stanisław Kwiatkowski, Anna Starowicz, Olga Milczarek, Agnieszka Kułaga ..... 371
- The prospective assessment of the influence of duration of untreated psychosis (DUP on the course of schizophrenia)**  
Andrzej Cechnicki, Igor Hanuszkiewicz, Romuald Polczyk, Anna Bielańska ..... 381
- Could we use a serum level of glycine as a prognostic factor of its efficacy in schizophrenic patient?**  
Dominik Strzelecki, Jolanta Rabe-Jabłońska ..... 395
- Family based association study of DRD1, DRD2, DRD3, DRD4, DAT, COMT gene polymorphism in schizophrenia**  
Paweł Kapelski, Joanna Hauser, Maria Skibińska, Aleksandra Szczepankiewicz, Monika Dmitrzak-Węglarz, Karolina Gorzkowska, Joanna Pawlak, Piotr M. Czerski ..... 405
- The influence of atypical antipsychotics on brain functioning in schizophrenia. A proton magnetic resonance study**  
Agata Szulc, Beata Galińska, Eugeniusz Tarasów, Wojciech Dzieńis, Bożena Kubas, Beata Konarzewska, Napoleon Waszkiewicz, Regina Popławska ..... 415
- Perazine in the treatment of psychotic disorders – research review**  
Andrzej Kiejna ..... 427
- Depression and pain: Polish epidemiologic study**  
Dariusz Wasilewski, Marcin Wojnar, Joanna Chatizow ..... 435