# Prevalence of self-injury performed by adolescents aged 16 – 19 years

Beata Pawłowska<sup>1</sup>, Emilia Potembska<sup>2</sup>, Maciej Zygo<sup>3</sup>, Marcin Olajossy<sup>1</sup>, Ewa Dziurzyńska<sup>4</sup>

<sup>1</sup> 2<sup>nd</sup> Department of Psychiatry and Psychiatric Rehabilitation, Medical University of Lublin <sup>2</sup> 2<sup>nd</sup> Department of Psychiatry and Psychiatric Rehabilitation, Clinical Hospital No. 1 in Lublin <sup>3</sup> Mieczysław Kaczyński Neuropsychiatric Hospital in Lublin <sup>4</sup> Department of Psychology, University of Rzeszów

#### Summary

Aim. The aim of the study was to assess the prevalence of self-injury among adolescents aged 16–19 years and to indicate demographic variable, selected environmental variables and risky behaviours coexisting with performing self-injuries by the respondents.

**Material and methods**. The research encompassed 5,685 individuals, aged 16–19 years. During the research the Questionnaire designed by the authors was used.

**Results**. Significant statistical differences were found between the number of adolescents performing self-injury and those who do not perform it, who use psychoactive agents, make suicide attempts, get drunk, run away from home, report conflicts with their parents, experience parental violence and peer violence and report alcohol addictions by family members.

**Conclusions.** 1. Self-injury is performed by 14% of adolescents aged 16–19 years, significantly more girls than boys. 2. Significantly more adolescents who perform self-injury, as compared to those who do not do it, use psychoactive substances, get drunk, report planning suicide, neglect school and more often consume alcohol. 3. Significantly more adolescents who perform self-injury, as compared to those who do not perform it, raised in a single parent family inform about alcohol addiction of a family member, conflicts with parents and the experienced psychological and physical violence experienced from their parents and peers. Significantly more girls who perform self-injury, as compared to those who do not perform it, experienced sexual abuse. 4. Performing self-injury by adolescents coexists with factors motivating to this type of behaviours: sense of helplessness, rejection, loneliness, sense of guilt, anger, impulsiveness, desire for revenge, school problems, conflicts with parents and peers.

Key words: self-injury, adolescents, family

#### Introduction

Non-suicidal self-injury (NSSI) has been defined by the International Society for the Study of Self-Injury as the deliberate, self-inflicted destruction of body tissue without suicidal intent and for purposes not socially sanctioned [1], common methods of non-suicidal self-injury include cutting, carving, burning, and skin picking [2]. Araszkiewicz and Dudzic-Kloc [3] point out that self-injury is characterised by the following: it starts during the adolescence period, continues for years and is more frequent among women, it is characterised by numerous episodes, often using various methods. In the International Statistical Classification of Diseases and Related Health Problems (ICD-10) [4] self-injury should be coded as 'intended self-injury' (X60-X84), which includes both self-injury without suicidal intentions as well as suicide attempts, which according to Warzocha et al. [5] does not allow to differentiate the types of self-destructive behaviours. So far, self-injury has been considered, both in DSM-4-TR and in ICD-10, as one of the diagnostic criteria of the borderline personality. In DSM-5 published in the year 2013, the American Psychiatric Association qualifies self-injury as a separate entity which was presented in Section 3 of the DSM-5 – Disorders Requiring Further Research [6].

The final proposed criteria for DSM-5 included the following [6]:

- A. Intentional self-inflicted injury performed with the expectation of physical harm, but without suicidal intent, on five or more days in the past year;
- B. The behaviour is performed for at least one of the following reasons:
  - 1) To relieve negative thoughts or feelings;
  - 2) To resolve an interpersonal problem;
  - 3) To cause a positive feeling or emotion.
- C. The behaviour is associated with at least one of the following:
  - 1) Negative thoughts or feelings or interpersonal problems that occur immediately prior to engaging in NSSI;
  - 2) Preoccupation with NSSI that is difficult to resist;
  - 3) Frequent urge to engage in NSSI.
- D. The behaviour is not socially sanctioned and is more significant than nail biting or picking at a scab;
- E. The behaviour causes clinically significant distress or impairment;
- F. The behaviour does not occur exclusively in the context of another disorder and cannot be accounted for by another mental or medical disorder.

In order to assess the prevalence of self-injury among adolescents research was conducted in various countries. The obtained results inform that the number of adolescents performing self-injury is: 8% in the USA [7], from 16% to 23.2% in China [8, 9]. In the European countries self-injury is performed by 25.6% of individuals in Germany [10], by 32% in Italy [11]. The research conducted in Sweden involving a group of 1,088 adolescents informs that 35.5% of respondents admitted to at least one self-injury episode over the recent year. Moreover, Zetterqvist et al. [12] observed that 6.7% of these individuals meet the self-injury criteria named in the DSM-5.

The greatest prevalence of self-injury has been observed among 15 year olds (12.7%), whereas among adolescents aged 12 years its prevalence is 4% [7]. Muehlenkamp and Gutierrez [13] claim that the greatest prevalence of self-injury is at the age between 13 and 15 years. These authors [13] inform that self-injury is performed by: 14.5% of 13 year olds, 26.5% of 14 year olds and 16.9% of 15 year olds.

The researchers of self-injury among adolescents point out that significantly more girls as compared to boys perform self-injury [14–16]. The findings of the Child and Adolescent Self-harm in Europe (CASE) study conducted in 2008 which involved a representative group of 30,000 individuals aged 15 and 16 years who did not receive psychiatric treatment demonstrated that the girls performing self-injury made up 13.5% of the examined population, whereas the boys 4.3% [14]. In the opinion of Laye-Gindhu and Schonert-Reichl [15] as well as Nixon et al. [16] the prevalence of self-injury in the group of girls ranges from 20.3% to 24.3%, whereas among boys 8.4–8.5%. Zetterqvist et al. [12] showed that the self-injury criteria according to DSM-5 were met by significantly more girls (11.1%) as compared to the boys (2.3%). Different results were obtained by Gratz et al. [17] and Hilt et al. [18], who did not show statistically significant differences as regards self-injury between the girls and boys.

In Poland there is a scarcity of exact statistics regarding the prevalence of selfinjury by adolescents from the non-clinical population – not undergoing psychiatric treatment. Wycisk [19] points out that the problems to make exact assessments of this phenomenon in the group of adolescents who do not receive psychiatric treatment stem from the fact that the majority of these acts do not require medical intervention and therefore it is not recorded in any way and not included in statistics. Moreover, adolescents frequently conceal the fact of performing self-injury claiming that injury is the result of an accident or accidental injury [19, 20]. Żechowski and Namysłowska [21] demonstrate that the number of individuals performing self-injury increases both in the general and clinical population. Gmitrowicz et al. [22] as well as Warzocha [5] stress the fact that 27% to 47% of adolescents hospitalised in psychiatric departments perform self-injury.

The matter of crucial importance is that researchers get to know the motivation of performing self-injury by adolescents. Steele and Doey [23] point out that self-harm has often impulsive character and its function is to alleviate the tension and to escape from difficult situations. Fox and Hawton [24] inform about using self-harm as a coping mechanism to relieve emotional pain or discomfort or as an attempt to communicate distress. According to Klonsky [25] adolescents engage in self-injurious behaviour to alleviate negative emotions, less frequently they do it to punish themselves, to get attention or to escape a situation or responsibility. Boys and girls performing self-injury, as compared to the individuals who do not self-injure, inform about intensified sense of hopelessness, physical abuse, less parent connectedness and running away from home [26]. Lloyd-Richardson et al. [27] while examining the motives of self-injury performed by adolescents found that the boys, as compared to the girls, significantly more often self-injure to make others angry, whereas the girls do it in order to punish themselves. The adolescents performing self-injury, as compared to the individuals who do not self-injury, as compared to the individuals who do not self-injury, thereas the girls do it in order to punish themselves. The adolescents performing self-injury, as compared to the individuals who do not self-injury, as compared to the individuals who do not self-injury, as compared to the individuals who do not self-injury, as compared to the girls, significantly more often self-injure to make others angry, whereas the girls do it in order to punish themselves. The adolescents performing self-injury, as compared to the individuals who do not self-injure, were more likely to report having smoked cigarettes, taken

drugs, and engaged in maladaptive eating behaviours [18]. According to Klonsky [25] self-injury seldom coexists with suicidal ideation as well as alcohol consumption and taking illegal drugs.

### Aim

The objective of the study was to assess the prevalence of self-injury among adolescents aged 16–19 years and to indicate the demographic variables, selected environment variables and risky behaviours coexisting with performing self-injury by the respondents.

#### Material and methods

The participants were 5,685 individuals, 70% boys and 30% girls, aged 16 to 19 years. They were inhabitants of the Lublin Province and attended upper secondary schools in the cities of Lublin and Zamość. 46% of the surveyed students lived in urban areas and 54% lived in rural areas.

The survey was conducted in all those schools whose headmasters gave their consent to the study. An effort was made to survey the largest group of students possible. The study was approved by the Clinical Research Ethics Committee of the Medical University of Lublin and accepted by the Board of Education. Because participation in the survey was entirely voluntary, not all of the students completed their answer sheets. A total of 6,198 questionnaire forms were distributed, 513 of which were rejected as incomplete

The survey was conducted using a Questionnaire designed by the present authors. The following variables were determined on the basis of the participants' responses to the survey: gender, age, place of residence, level of education, parents' education, structure of the participants families, truancy and running away from home, use of psychoactive agents, frequency of alcohol consumption and frequency of getting drunk, the age of initiation of alcohol use, experiences of emotional, physical and sexual violence from family members and peers, self-injuries and motivation for it, suicidal thoughts and plans, and suicide attempts.

#### Results

In the first stage of the research using the chi-square test a comparison was made of the number of adolescents who perform and who do not perform self-injury as regards their gender, age, place of residence, risky behaviours – use of psychoactive agents, getting drunk, suicidal ideation and tendencies and suicide attempts, truancy, running away from home as well as family circumstances (being raised in a single parent family, alcohol addiction of family members) and experience of abuse from family members and peers.

Afterwards, the values of point-biserial correlation coefficients were calculated showing the relationship between performing self-injury by adolescents and motivation to show these self-destructive behaviours.

The obtained results demonstrate that self-injury was performed by 13.7% of the examined adolescents, significantly more girls ( $\chi^2 = 73.91$ ; p < 0.001) (15.74%) as compared to boys (6.92%). Table 1 presents the age of the respondents.

| Age      | Entire group |       | Gi  | rls   | Boys |       |  |
|----------|--------------|-------|-----|-------|------|-------|--|
|          | N            | %     | Ν   | %     | Ν    | %     |  |
| 16 years | 101          | 15.68 | 76  | 15.26 | 14   | 15.38 |  |
| 17 years | 334          | 51.86 | 265 | 53.21 | 43   | 47.25 |  |
| 18 years | 195          | 30.28 | 147 | 29.52 | 30   | 32.97 |  |
| 19 years | 14           | 2.17  | 10  | 2.01  | 4    | 4.40  |  |

Table 1. Age of adolescents performing self-injury

Most girls, the same as boys, performed self-injury at the age of 17.

The results presented in Table 2 inform about the number of adolescents performing self-injury living in the urban and rural areas.

| Individuale performing colf injury | Urban areas |       | Rural | 2     |                |
|------------------------------------|-------------|-------|-------|-------|----------------|
| Individuals performing self-injury | N           | %     | N     | %     | X <sup>2</sup> |
| Entire group                       | 375         | 14.92 | 332   | 11.48 | 13.98***       |
| Girls                              | 280         | 17.91 | 267   | 13.84 | 10.84***       |
| Boys                               | 58          | 7.93  | 46    | 6.03  | 2.09           |

 Table 2. Comparison of the place of residence of adolescents performing self-injury

\*\*\*p < 0.001

The results obtained in the entire group of the examined adolescents and the group of girls indicate that significantly more individuals performing self-injury live in the urban areas as compared to those living in the rural areas.

The data indicating the number of adolescents who perform and do not perform self-injury informing about suicidal ideation and plans as well as suicide attempts were presented in Table 3.

 Table 3. Comparison of adolescents who perform and do not perform self-injury ho inform about suicide ideation, plans and attempts

| Variables    |                   |     | s who do not<br>self-injury | Adolesco<br>perform s | χ²    |            |
|--------------|-------------------|-----|-----------------------------|-----------------------|-------|------------|
|              |                   | N   | %                           | Ν                     | %     |            |
|              | Suicidal ideation | 829 | 17.04                       | 550                   | 75.45 | 1164.34*** |
| Entire group | Suicide plans     | 447 | 9.22                        | 403                   | 55.28 | 1041.30*** |
|              | Suicide attempts  | 59  | 1.21                        | 189                   | 25.93 | 915.31***  |

table continued on the next page

| Girls | Suicidal ideation | 587 | 19.57 | 427 | 76.25 | 744.34*** |
|-------|-------------------|-----|-------|-----|-------|-----------|
|       | Suicide plans     | 317 | 10.60 | 308 | 55.00 | 640.93*** |
|       | Suicide ideation  | 43  | 1.43  | 145 | 25.85 | 565.31*** |
|       | Suicidal ideation | 168 | 11.69 | 74  | 69.16 | 248.84*** |
| Boys  | Suicide plans     | 90  | 6.28  | 57  | 53.27 | 254.42*** |
|       | Suicide ideation  | 10  | 0.70  | 23  | 21.70 | 207.60*** |

#### \*\*\*p < 0.001

Suicidal ideation, suicide plans and attempts were reported by significantly more individuals (both girls and boys) who performed self-injury as compared to those who did not engage in self-injurious behaviour.

Afterwards, using the Student's t-test a comparison was made of the adolescents performing and not performing self-injury as regards the frequency of alcohol consumption and the age of alcohol initiation (Table 4).

| Table 4. Comparison of frequency of alcohol consumption and the age of alcohol initiation |
|---|
| among adolescents who perform and those who do not perform self-injury                    |

| Variables    |                                  |       | ents who<br>perform<br>njury | Adolesco<br>perf<br>self-i | t    |         |
|--------------|----------------------------------|-------|------------------------------|----------------------------|------|---------|
|              |                                  | М     | SD                           | М                          |      |         |
| Entine anoun | Frequency of alcohol consumption | 3.19  | 3.29                         | 3.33                       | 3.64 | -0.69   |
| Entire group | Age of alcohol initiation        | 14.69 | 1.67                         | 14.10                      | 1.66 | 7.80*** |
|              | Frequency of alcohol consumption | 2.76  | 2.68                         | 3.03                       | 3.15 | -1.53   |
| Girls        | Age of alcohol initiation        | 14.87 | 1.57                         | 14.20                      | 1.62 | 7.94*** |
| Davia        | Frequency of alcohol consumption | 3.80  | 3.65                         | 5.25                       | 5.64 | -1.94*  |
| Boys         | Age of alcohol initiation        | 14.40 | 1.81                         | 13.58                      | 1.64 | 3.98*** |

M - mean; SD - standard deviation; t - Student's t-test; \*p < 0.05; \*\*\*p < 0.001

The adolescents who perform self-injury, as compared to the individuals who do not engage in self-injurious behaviour, drink alcohol for the first time at a younger age. The boys who perform injury, as compared to the ones who do not perform injury, significantly more often report alcohol consumption.

Table 5 presents the results of the chi-square test, where the number of adolescents who perform and do not perform self-injury was compared as regards getting drunk and taking psychoactive substances.

| Use of psychoactive substances |              | Adolescents who do not<br>perform self-injury |       | Adolescents who<br>perform self-injury |       | χ <sup>2</sup> |  |
|--------------------------------|--------------|---|-------|--|-------|----------------|--|
|                                |              | N   | %     | N                                      | %     |                |  |
|                                | Entire group | 1,939   | 40.12 | 480                                    | 66.48 | 177.58***      |  |
| Getting drunk                  | Girls        | 992   | 33.32 | 357                                    | 64.21 | 189.35***      |  |
|                                | Boys         | 744   | 52.03 | 78                                     | 73.58 | 18.43***       |  |
|                                | Entire group | 640   | 18.00 | 250                                    | 42.37 | 178.35***      |  |
| Psychoactive<br>substances     | Girls        | 278   | 12.62 | 172                                    | 38.22 | 173.77***      |  |
| Substances                     | Boys         | 288   | 27.88 | 48                                     | 52.75 | 24.68***       |  |
|                                | Entire group | 593   | 16.62 | 232                                    | 39.26 | 163.37***      |  |
| Marihuana                      | Girls        | 259   | 11.72 | 158                                    | 35.11 | 154.75***      |  |
|                                | Boys         | 268   | 25.87 | 46                                     | 50.55 | 25.35***       |  |
|                                | Entire group | 67  | 1.88  | 45                                     | 7.61  | 63.69***       |  |
| Amphetamine                    | Girls        | 31  | 1.40  | 25                                     | 5.56  | 31.29***       |  |
|                                | Boys         | 24  | 2.32  | 12                                     | 13.19 | 31.96***       |  |
|                                | Entire group | 39  | 1.09  | 19                                     | 3.21  | 16.60***       |  |
| LSD                            | Girls        | 12  | 0.54  | 10                                     | 2.22  | 12.85***       |  |
|                                | Boys         | 21  | 2.03  | 6                                      | 6.59  | 7.46**         |  |
|                                | Entire group | 55  | 1.54  | 33                                     | 5.58  | 40.02***       |  |
| Smart drugs                    | Girls        | 23  | 1.04  | 25                                     | 5.56  | 43.01***       |  |
|                                | Boys         | 27  | 2.60  | 7                                      | 7.69  | 7.41**         |  |

 
 Table 5. Comparison of adolescents who perform and do not perform self-injury and use psychoactive substances

\*\*p < 0.01; \*\*\*p < 0.001

Significantly more students (both girls and boys) who perform self-injury as compared to those who do not perform it, admitted to having got drunk and having got used psychoactive substances, mainly marijuana, as well as amphetamine, LSD and smart drugs.

Table 6 presents the data concerning the adolescents who perform self-injury, playing truant and running away from home.

| Table 6. Comparison of adolescents who perform and do not perform self-injury who miss |
|--|
| school and run away from home  |

| Variables |              | Adolescents who do not<br>perform self-injury |       | Adolesce<br>perform s | χ²    |          |
|-----------|--------------|---|-------|-----------------------|-------|----------|
|           |              | Ν   | %     | N                     | %     |          |
|           | Entire group | 3,432   | 71.06 | 623                   | 85.46 | 66.59*** |
| Truancy   | Girls        | 1,998   | 67.16 | 472                   | 84.14 | 64.59*** |
|           | Boys         | 1,112   | 77.65 | 97                    | 91.51 | 11.27*** |

table continued on the next page

| Running away from home | Entire group | 239 | 4.91 | 157 | 21.54 | 266.60*** |
|------------------------|--------------|-----|------|-----|-------|-----------|
|                        | Girls        | 142 | 4.72 | 106 | 18.86 | 146.32*** |
|                        | Boys         | 71  | 4.95 | 30  | 28.30 | 87.90***  |

\*\*\*p < 0.001

The results obtained in the study indicate that significantly more adolescents (both girls and boys) who perform self-injury, as compared to the ones who do not perform it, play truant and run away from home.

The results of the chi-square test that was used to compare the number of adolescents who perform and do not perform self-injury as regards family circumstances were presented in Table 7.

 
 Table 7. Comparison of family circumstances among adolescents who perform and do not perform self-injury

| Family circumstances               |              | Adolescents who do not<br>perform self-injury |       | Adolescents who<br>perform self-injury |       | χ <sup>2</sup> |  |
|------------------------------------|--------------|---|-------|--|-------|----------------|--|
|                                    |              | N   | %     | N                                      | %     |                |  |
|                                    | Entire group | 577   | 11.96 | 153                                    | 21.25 | 55.21***       |  |
| Single parent family               | Girls        | 369   | 12.37 | 118                                    | 21.22 | 37.74***       |  |
|                                    | Boys         | 147   | 10.33 | 20                                     | 19.23 | 11.56**        |  |
|                                    | Entire group | 25  | 1.53  | 5                                      | 2.62  | 1.26           |  |
| Single mother                      | Girls        | 18  | 1.61  | 3                                      | 1.96  | 0.10           |  |
|                                    | Boys         | 6   | 1.51  | 2                                      | 9.09  | 6.39**         |  |
|                                    | Entire group | 39  | 0.96  | 26                                     | 4.22  | 41.25***       |  |
| Mother addicted to<br>alcohol      | Girls        | 30  | 1.17  | 22                                     | 4.56  | 27.69***       |  |
|                                    | Boys         | 7   | 0.62  | 3                                      | 3.57  | 8.41**         |  |
|                                    | Entire group | 434   | 10.72 | 161                                    | 26.01 | 112.75***      |  |
| Father addicted to alcohol         | Girls        | 297   | 11.62 | 127                                    | 26.24 | 72.47***       |  |
| alconor                            | Boys         | 97  | 8.53  | 19                                     | 22.35 | 17.59***       |  |
|                                    | Entire group | 220   | 5.44  | 66                                     | 10.66 | 25.49***       |  |
| Grandfather<br>addicted to alcohol | Girls        | 140   | 5.48  | 47                                     | 9.69  | 12.54***       |  |
|                                    | Boys         | 55  | 4.84  | 15                                     | 17.86 | 24.54***       |  |
|                                    | Entire group | 40  | 0.99  | 15                                     | 2.42  | 9.49**         |  |
| Siblings addicted to<br>alcohol    | Girls        | 20  | 0.78  | 8                                      | 1.65  | 3.38           |  |
| alconor                            | Boys         | 13  | 1.14  | 6                                      | 7.06  | 18.08***       |  |

p < 0.05 \* \* p < 0.001

Significantly more adolescents (both girls and boys) who perform self-injury, as compared to the ones who do not perform self-injury, were raised in a single parent

family reported alcohol addiction of one family member: mother, father, grandfather or siblings. Significantly more boys performing self-injury, as compared to the ones who do not perform it, were raised by single mothers.

Table 8 presents the results of the chi-square test, which was used to compare the number of adolescents who perform and do not perform self injury and who report abuse from their parents and peers.

| Abuse                     |              | Adolescents who do not<br>perform self-injury |       | Adolescents who<br>perform self-injury |       | χ <sup>2</sup> |  |  |  |
|---------------------------|--------------|---|-------|--|-------|----------------|--|--|--|
|                           |              |   | %     | N                                      | %     |                |  |  |  |
|                           | Entire group | 535   | 24.46 | 232                                    | 48.47 | 112.35***      |  |  |  |
| Psychological abuse       | Girls        | 330   | 24.59 | 177                                    | 49.17 | 81.97***       |  |  |  |
|                           | Boys         | 160   | 24.81 | 35                                     | 46.05 | 15.55***       |  |  |  |
|                           | Entire group | 361   | 16.54 | 151                                    | 31.72 | 57.96***       |  |  |  |
| Physical abuse            | Girls        | 136   | 10.16 | 101                                    | 28.06 | 75.72***       |  |  |  |
|                           | Boys         | 186   | 28.88 | 40                                     | 52.63 | 17.80***       |  |  |  |
|                           | Entire group | 28  | 1.28  | 22                                     | 4.62  | 23.60***       |  |  |  |
| Sexual abuse              | Girls        | 17  | 1.27  | 18                                     | 5.00  | 19.52***       |  |  |  |
|                           | Boys         | 7   | 1.09  | 2                                      | 2.63  | 1.32           |  |  |  |
|                           | Entire group | 251   | 11.49 | 144                                    | 30.32 | 109.29***      |  |  |  |
| Abuse from family members | Girls        | 156   | 11.65 | 114                                    | 31.75 | 85.57***       |  |  |  |
| members                   | Boys         | 75  | 11.63 | 20                                     | 26.32 | 12.82***       |  |  |  |
| Abuse from peers          | Entire group | 764   | 34.97 | 234                                    | 49.26 | 34.02***       |  |  |  |
|                           | Girls        | 373   | 27.84 | 159                                    | 44.29 | 35.64***       |  |  |  |
|                           | Boys         | 312   | 48.37 | 50                                     | 65.79 | 8.25**         |  |  |  |

 
 Table 8. Comparison of adolescents who perform and do not perform self-injury and who experience abuse

\*\*p < 0.01; \*\*\*p < 0.001

The results of statistical analyses show that significantly more girls performing self-injury as compared to the women from the control group report psychological, physical and sexual abuse experience. Significantly more boys performing self-injury as compared to those who do not self-injure experience psychological or physical abuse. Significantly more adolescents (boys and girls) who perform self-injury as compared to those who do not self-injure experienced abuse from family members as well as from their peers.

During the final stage the point-biserial correlation coefficients were calculated between performing self-injury by adolescents and the motivation to perform it (Table 9).

| Motivation                 | Self-injury  |         |         |
|----------------------------|--------------|---------|---------|
|                            | Entire group | Girls   | Boys    |
| Encouragement from friends | 0.08***      | -0.01   | 0.19*** |
| Sense of helplessness      | 0.40***      | 0.40*** | 0.34*** |
| Sense of rejection         | 0.30***      | 0.31*** | 0.24*** |
| Sense of loneliness        | 0.34***      | 0.35*** | 0.24*** |
| Sense of guilt             | 0.24***      | 0.23*** | 0.29*** |
| Impulsive behaviour        | 0.17***      | 0.18*** | 0.14*** |
| Psychoactive substances    | 0.13***      | 0.12*** | 0.12*** |
| Experienced anger          | 0.30***      | 0.28*** | 0.38*** |
| Desire for revenge         | 0.14***      | 0.14*** | 0.14*** |
| Learning problems          | 0.19***      | 0.17*** | 0.29*** |
| Conflicts with parents     | 0.29***      | 0.29*** | 0.22*** |
| Conflicts with peers       | 0.18***      | 0.16*** | 0.22*** |

Table 9. Correlations between performing self-injury and the motivation to perform it

#### \*\*\*p < 0.001

The obtained results indicate that in the entire examined group of students as well as in the boys' group and the girls' group self-injury is accompanied by the following factors motivating to perform these acts: sense of helplessness, rejection, loneliness, sense of guilt, anger, impulsiveness, desire for revenge and learning problems, conflicts with parents and peers as well as taking psychoactive substances. The values of the correlation coefficients inform that the following are the factors motivating the girls most strongly to perform self-injury: sense of helplessness, rejection, loneliness and conflicts with the parents. The boys are most strongly motivated to perform self-injury by the sense of helplessness, sense of guilt, anger and school problems.

# Summary of the results and discussion

The results obtained in the study inform that self-injury is performed by 13.70% adolescents aged 16–19 years – 15.74% girls and 6.92% boys. Self-injury is performed by more girls who live in the city as compared to their peers who live in the rural areas. These results fully correspond with the data obtained by the researchers who point out that the greater prevalence of self-injury is observed among the girls as compared to the boys [12, 14–16]. Barrocas et al. [7] as well as Muehlenkamp and Gutierrez [13] point out that the greatest prevalence of self-injury occurs among adolescents aged 15 years, whereas in the studied group most students performed self-injury at the age of 17. The results obtained in the study informing about the prevalence of the analysed self-destructive behaviours are the closest to the data obtained in the Child and Adolescent Self-harm in Europe (CASE) study conducted in 2008 involving a representative group

of 30,000 adolescents aged 15 and 16 years, who did not receive psychiatric treatment and these results are lower as compared to the results obtained in Germany [10], Italy [11] and Sweden [12]. The increase in prevalence of self-injury among adolescents, pointed out by psychiatrists and psychologists, justifies the need for conducting research concerning the factors motivating young people to engage in self-destructive behaviours as well as risky behaviours which coexist with self-injurious behaviour.

The results obtained in the study demonstrated that significantly more adolescents performing self-injury as compared to the ones who do not perform it, reports suicidal ideation and suicide plans, make suicide attempts as well as get drunk and use psychoactive substances, play truant and run away from home. The adolescents who perform self-injury are characterised by a younger age of alcohol initiation as compared to the students who do not engage in this type of self-destructive behaviours and the boys performing self-injury significantly more often consume alcohol than the control group. Similar results were obtained by Klonsky [25], Hilt et al. [18] and Taliaferro et al. [26], who draw attention to coexistence of self-injurious behaviour with suicidal ideation [25], alcohol consumption and use of other psychoactive substances [18, 25] as well as running away from home in the group of adolescents [26].

The research results allow us to single out factors indicated by the respondents as the factors motivating to engage in self-injurious behaviour such as: sense of helplessness, rejection, loneliness, sense of guilt, anger, impulsiveness, desire for revenge, school problems, and conflicts with parents and peers. The most significant dependencies occurred in the girls' group between performing self-injury and the sense of helplessness, rejection, loneliness and conflicts with parents, whereas in the boys' group – the sense of helplessness, guilt, anger and learning difficulties. The above results fully correspond with the opinion of the researchers who among the factors motivating to engage in self-injurious behaviours name: impulsiveness, desire to escape from difficult situations [23] and alleviate negative emotions [24] such as: sense of helplessness, guilt and anger [27] as well as worse communication with parents [26].

Moreover, the analysis of the environmental variables shows that significantly more adolescents who engage in self-injurious behaviour as compared to the ones who do not engage in this type of behaviours are raised in a single parent family and report alcohol addiction of one family member: mother, father, grandfather or siblings. Significantly more boys who perform self-injury, as compared to their peers who do not perform it, are raised by single mothers. Significantly more adolescents performing self-injury, as compared to their peers who do not perform self-injury, experienced psychological and physical abuse from a family member or peers. Moreover, significantly more girls who engage in self-injurious behaviour experienced also sexual abuse. Taliaferro et al. [26] points out that both boys and girls who perform self-injury report a history of physical abuse and Fox and Hawton [24] claim that individuals perform self-injury to alleviate emotional discomfort and try that way to convey the message of their suffering to the others.

To sum up the results of the conducted research, a hypothesis can be formulated that suggests a significant role that environmental factors can play in the aetiology of self-injurious behaviour in adolescents, these factors being related both to family circumstances (being raised in a single parent family, boys being raised by single mothers, alcohol addiction of a family member, abuse experienced in a family, conflicts with parents) as well as conflicts with peers, psychological and physical abuse from them as well as impaired schoolwork. As the results indicate that significantly more adolescents who perform self-injury, as compared to those who do not engage in self-injurious behaviour, make suicide attempts, use psychoactive substances, get drunk and significantly more frequently consume alcohol, it can be expected that preventive measures focused on the prevention of self-injurious behaviour by adolescents will also add to the prevention of other above-mentioned risky behaviours, which as can be assumed, have the same origin.

It should be stressed that the present study has its limitations. They follow from the fact that the survey only included upper secondary school students from two cities and was conducted only in those schools whose headmasters gave their consent to the study. Another limiting factor was that part of the students did not agree to take part in the survey, and 513 students provided incomplete information in their answer sheets, and, therefore, had to be excluded from the study. Because of these limitations, the results obtained in the study require cautious interpretation, and the epidemiological data on the prevalence of self-mutilation in the group of adolescents described here may be underestimated.

# Conclusions

- 1. Self-injury is performed by 14% of adolescents aged 16–19 years, significantly more girls than boys.
- 2. Significantly more adolescents who perform self-injury as compared to those who do not do it use psychoactive substances, get drunk, report planning suicide, neglect school and more often consume alcohol.
- 3. Significantly more adolescents who perform self-injury as compared to those who do not perform it raised in a single parent family inform about alcohol addiction of a family member, conflicts with parents and the experienced psychological and physical abuse experienced from their parents and peers. Significantly more girls who perform self injury, as compared to those who do not perform it, experienced sexual abuse.
- 4. Performing self-injury by adolescents coexists with factors motivating to this type of behaviours: sense of helplessness, rejection, loneliness, sense of guilt, anger, impulsiveness, desire for revenge, school problems, conflicts with parents and peers.

## References

- 1. International Society for the Study of Self-Injury. *Definition of non-suicidal self injury*. http://www.itriples.org/isss-aboutself-i.html [retrieved: 12.10.2015].
- Andover MS. Non-suicidal self-injury disorder in a community sample of adults. Psychiatry Res. 2014; 219(2): 305–310.

- Araszkiewicz A, Dudzic-Kloc A. Zagrożenia zdrowia psychicznego młodzieży w sytuacjach kryzysowych.http://archiwum.kujawsko-pomorskie.pl/files/sprawy\_spoleczne/20090617\_troska/ araszkiewicz.ppt. [retrieved: 17.06.2009].
- 4. *Międzynarodowa statystyczna klasyfikacja chorób i problemów zdrowotnych (ICD-10)*. Krakow: University Medical Publishing House "Vesalius"; 1998.
- Warzocha D, Gmitrowicz A, Pawełczyk T. Związek samouszkodzeń wśród młodzieży hospitalizowanej psychiatrycznie z rodzajem zaburzeń psychicznych i wybranymi czynnikami środowiskowymi. Psychiatr. Pol. 2008; 42(5): 659–669.
- American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 5<sup>th</sup> ed. Arlington, VA: American Psychiatric Publishing; 2013.
- Barrocas AL, Hankin BL, Young JF, Abela JR. Rates of nonsuicidal self-injury in youth: age, sex, and behavioral methods in a community sample. Pediatrics 2012; 130(1): 39–45.
- 8. Liang S, Yan J, Zhang T, Zhu C, Situ M, Du N. et al. *Differences between non-suicidal self injury and suicide attempt in Chinese adolescents*. Asian J. Psychiatry 2014; 8: 76–83.
- 9. Lam LT, Peng Z, Mai J, Jing J. *The association between internet addiction and self-injurious behaviour among adolescents*. Inj. Prev. 2009; 15(6): 403–408.
- Plener PL, Libal G, Keller F, Fegert JM, Muehlenkamp JJ. An international comparison of non-suicidal self-injury (NSSI) and suicide attempts: Germany and the USA. Psychol. Med. 2009; 39(9): 1549–1558.
- Cerutti R, Manca M, Presaghi F, Gratz KL. Prevalence and clinical correlates of deliberate self-harm among a community sample of Italian adolescents. J. Adolesc. 2011; 34(2): 337–347.
- 12. Zetterqvist M, Lundh LG, Dahlström O, Svedin CG. *Prevalence and function of non-suicidal self-injury (NSSI) in a community sample of adolescents, using suggested DSM-5 criteria for a potential NSSI disorder.* J. Abnorm. Child Psychol. 2013; 41(5): 759–773.
- Muehlenkamp JJ, Gutierrez PM. An investigation of differences between self-injurious behavior and suicide attempts in a sample of adolescents. Suicide Life Threat. Behav. 2004; 34(1): 12–23.
- Madge N, Hewitt A, Hawton K, de Wilde EJ, Corcoran P, Fekete S. et al. *Deliberate selfharm* within an international community sample of young people: comparative findings from the *Child & Adolescent Self-harm in Europe (CASE) Study*. J. Child Psychol. Psychiatry 2008; 49(6): 667–677.
- Laye-Gindhu A, Schonert-Reichl KA. Nonsuicidal self-harm among community adolescents: understanding the "whats" and "whys" of self-harm. J. Youth Adolesc. 2005; 34(5): 447–457.
- Nixon MK, Cloutier P, Jansson M. Nonsuicidal selfharm in youth: a population-based survey. CAMJ 2008; 178(3): 306–312.
- 17. Gratz KL, Conrad SD, Roemer L. *Risk factors for deliberate self-harm among college students*. Am. J. Orthopsychiatry 2002; 72(1): 128–140.
- Hilt LM, Nock MK, Lloyd-Richardson EE, Prinstein MJ. Longitudinal study of nonsuicidal self-injury among young adolescents. Rates, correlates, and preliminary test of an interpersonal model. J. Early Adolesc. 2008; 28(3): 455–469.
- Wycisk J. Samouszkodzenia umiarkowane charakterystyka zjawiska. In: Suchańska A, Wycisk J. ed. Samouszkodzenia: istota, uwarunkowania, terapia. Poznan: Bogucki Scientific Publishing House; 2006. p. 11–18.
- 20. Babiker G, Arnold L. *Autoagresja. Mowa zranionego ciała*. Gdansk: Gdansk Psychology Publisher; 2002.

- Żechowski C, Namysłowska I. Kulturowe i psychologiczne koncepcje samouszkodzeń. Psychiatr. Pol. 2008; 42(5): 647–657.
- Gmitrowicz A. 10 Europejskie Sympozjum nt. Samobójstw i Zachowań Samobójczych. Psychiatr. Psychol. Klin. 2004; 4(4): 249–250.
- 23. Steele MM, Doey T. Suicidal behaviour in children and adolescents. part 1: etiology and risk factors. Can. J. Psychiatry 2007; 52(6 supl. 1): 21S-33S.
- 24. Fox C, Hawton K. Deliberate self-harm in adolescence. London: Jessica Kingsley; 2004.
- 25. Klonsky ED. Non-suicidal self-injury in United States adults: prevalence, sociodemographics, topography and functions. Psychol. Med. 2011; 41(9): 1981–1986.
- Taliaferro LA, Muehlenkamp JJ, Borowsky IW, McMorris BJ, Kugler KC. Factors distinguishing youth who report self-injurious behavior: a population-based sample. Acad. Pediatr. 2012; 12(3): 205–213.
- Lloyd-Richardson EE, Perrine N, Dierker L, Kelley ML. Characteristics and functions of nonsuicidal self-injury in a community sample of adolescents. Psychol. Med. 2007; 37(8): 1183–1192.

Address: Beata Pawłowska 2<sup>nd</sup> Department of Psychiatry and Psychiatric Rehabilitation Medical University of Lublin 20-439 Lublin, Głuska Street 1