RESEARCH
UDC 616.89-008.48
https://doi.org/10.30629/2618-6667-2021-19-4-7-14

Non-Suicidal Self-Injury in Personality Disorder Decompensation in Adolescent Patients During the Coronavirus Infection COVID-19 pandemic in 2020–2021

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Summary

The aim of the study was to determine the clinical and psychopathological characteristics of non-suicidal self-injury (NSSI) in personality disorder (PD) in the comparative age-related aspect during the coronavirus infection (COVID-19) pandemic. **Material and methods:** a total of 230 patients (177 males and 53 females) aged 16–25, diagnosed with PD and NSSI behavior manifestations, were studied retrospectively in mental hospital and outpatient clinic by using clinical-psychopathological method. All patients were divided into two equal groups of 115 people each. Group I was examined in 2017–2019, Group II — in 2020–2021 during the coronavirus infection (COVID-19) pandemic. **Results:** common features established in both groups were as follows: affective instability, alexithymia, conflict relations with significant others, and current traumatic experience. For a comparative assessment of NSSI in patients of both groups, we used the NSSI typology in adolescent PD, previously developed by the authors. Impulsive, demonstrative, addictive, depersonalizing and self-destructive types of NSSI were recognized as significant for the diagnostic assessment. In the second group of patients, that is, during the period of the COVID-19 pandemic, a change in the selected variants of NSSI was found, that is, in borderline and narcissistic PD the impulsive type was replaced by a demonstrative type, and in schizoid and anxious PD it turned into an addictive one. When assessing suicidality in group II, it was revealed that in most types of PD, with a decrease in the number of suicidal attempts, there was a noticeable increase in the incidence of NSSI with demonstrative suicidality, which correlated with the trajectories of the identified variants of NSSI. **Conclusions:** the study underlined the role of personality pathology in in adolescence in the development of psychopathological disorders with NSSI and their high association with suicidal activity. The modification of various NSSI variants in the context of a coronavirus infection (COVID-19) pandemic may be due to the unique characteristics of the psychotraumatic factor. With the same strength of impact, the multidirectional influence on various personality types and comorbid psychopathological disorders in adolescence should be taken into account, when creating new models of therapeutic and socio-rehabilitation interventions for the adolescent contingent of patients.

Keywords: adolescence, personality disorder, non-suicidal self-injury (NSSI), suicidality, coronavirus infection (COVID-19)

For citation: Krylova E.S., Kuleshov A.A., Beburishvili A.A., Kaleda V.G. Non-Suicidal Self-Injury in the Decompensation of Personality Disorder in Adolescents During the COVID-19 Pandemic in 2020–2021. *Psychiatry (Moscow) (Psikhiatriya)*. 2021;19(4):7–14. https://doi.org/10.30629/2618-6667-2021-19-4-7-14

INTRODUCTION

Adolescence is a key stage in maturation, the forming of a worldview and social self-identification. Along with biological factors, social influences during this period directly affect the forming of the personality. The global pandemic caused by the coronavirus infection (COVID-19) and the epidemiological measures to combat it have undoubtedly affected the manifestations and course of all mental disorders in the population, including personality disorders (PD) [1, 2]. Young patients with PD with their inherent difficulties in the regulation of emotions and interpersonal interactions, finding themselves in isolation, have become one of the most vulnerable groups. Their contacts with significant people decreased, some were separated from sick parents, schools and universities were closed. Many patients were left without social, professional, psychological and medical support [3]. From separate empirical studies published to date, it follows that during the pandemic, these patients were more likely to abuse psychoactive substances, as well as committed suicidal attempts and inflicted non-suicidal self-harm (NSSI), experiencing loneliness and isolation [4, 5]. The influence of the economic recession on the incidence of PD and associated comorbid psychopathological disorders, on suicidal risk and increased pathological personality manifestations in adolescence after various world catastrophes has been convincingly shown in various studies [6, 7]. Thus, an increase in the incidence of NSSI in general and in PD at a young age during the coronavirus infection (COVID-19) pandemic is expected [8,

9] and dictates the need to identify their clinical and psychopathological markers and build a prognosis.

The phenomenon of non-suicidal self-injury in PD is most common at a young age [10, 11], being for such patients "maladaptive coping", that is, one of the ways to regulate the emotional background [12]. The highest prevalence of NSSI was observed in PD of the demonstrative cluster. In borderline personality disorder (BPD), the application of non-suicidal self-injury is included in the diagnostic criteria, and their appearance in adolescence is considered as a key prodrome to the forming of pathological personality traits and determines the further unfavorable dynamics of the disorders [13]. It is with BPD that the highest incidence of NSSI is noted up to 60–80% [14]. As for the other types of PD, there are indications in the world scientific literature of the presence of NSSI in the framework of asocial, dependent and schizoid variants of PD [15], but the data on the prevalence of such behavior are insufficiently indicative. In a study on the relationship of NSSI with suicidal attempts, R. García-Nieto [16] found their combination in 46.7% of cases with hysterical PD and 33.3% with narcissistic PD, which is comparable with the data obtained by Dawood [17] — 35.78% with narcissistic PD. Although most researchers consider NSSI as an integral part of predominantly BPD, there is an increasing number of studies demonstrating NSSI in other types of personality disorder, as well as against the background of such disorders as depression, substance abuse, and post-traumatic stress disorder [18, 19]. Other authors point out that NSSIs in PD are comorbid with almost the entire spectrum of mental disorders. There are data on 22–42% of NSSIs in the context of affective disorders, 11–89% of these manifestations are directly associated with anxiety disorders, and 22–61% — with eating disorders [20]. These data determine the importance of continuing the study of the psychopathological foundations of NSSI in the framework of adolescent PD. NSSI is associated not only with psychopathological disorders and emerging PD, but is also a predictor of suicidal behavior in the future [21] and the second cause of mortality among young people [22]. The conditions of the global pandemic have reduced the frequency of seeking help among adolescents with NSSI, often even depriving them of such an opportunity, which could lead to the forming of even more persistent pathological personal patterns of "hopelessness" and increase the already high suicidal risk for this age group [23]. In this connection, the continuation of the study of their relationship is of high significance for the prevention of both recurrence of NSSI and suicidal behavior.

The aim of the study was to determine the clinical and psychopathological characteristics of non-suicidal self-injury (NSSI) in personality disorder (PD) decompensation in the comparative age-related aspect during the coronavirus infection (COVID-19) pandemic.

PATIENTS AND METHODS

This study was carried out in the Department of Youth Psychiatry of the Mental Health Research Centre in accordance with the provisions of the 1964 Declaration of Helsinki on Medical Ethics, revised in 2013, and was carried out with respect for the rights, interests and personal dignity of the participants. The research plan was approved by the Local Ethics Committee of the Mental Health Research Centre (Protocol No. 397 of November 23, 2017). All subjects gave written informed consent to participate in the study. The main methods were retrospective clinical-psychopathological and psychometric assessment.

Inclusion criteria

1. Non-suicidal self-injury at the time of the initial psychiatric examination in adolescence (16–25 years).
2. Diagnosis of "Personality disorder" (F60.x, F61.x).
3. Informed consent of the patient to participate in the study.

Exclusion criteria

1. A history of schizophrenic spectrum disorders (F20.x, F21.x, F25.x).
2. Concomitant somatic, neurological or mental pathology that complicates the study.
3. History of acute infectious disease during 2020–2021, including COVID-19.

The analysis includes data on examination of 230 patients (177 males and 53 females) aged 16–25 years with a diagnosis of PD (F60.x, F61.x). Patients were admitted to a psychiatric hospital and/or received outpatient treatment for various psychopathological conditions with manifestations of NSSI in behavior (F30.x-F39.x, F40.x-F49.x, F50.x-F59.x). The study of gender characteristics and differences was not part of the objectives of this study.

Self-injury was considered as one of the variants of auto-aggressive behavior without the intention of suicide and was represented by a wide range of actions — from minor scuffs and scratches to systematically inflicted monotonous cuts/burns, punches with fists on hard objects. The manifestations of NSSI were irregular, in some cases varied in frequency, size of damage, location and way of their infliction.

Patients with PD and NSSI were divided into two equal groups of 115 people each. In accordance with the objectives of the study, Group I was examined in the period from 2017 to 2019, Group II was surveyed in the period from 2020 to 2021 during a coronavirus infection (COVID-19) pandemic.

The assessment of clinical types of PD was carried out in accordance with ICD-10 and DSM-5, as well as the analysis of personal characteristics and their differentiation, taking into account their pubertal distortion and mosaicity, the Structured Clinical Interview for DSM-5 Personality Disorders; SCID-5-PD) [24], based on DSM-5

Table 1. Age distribution of patients with PD at the moment of NSSI manifestation

Distribution patients with PD at the moment of NSSI manifestation										
Total amount of patients	13–15		16–18		19–21		22–25		Total	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
The 1st group (2017–2019)	39	33.9	56	48.7	12	10.4	8	7.0	115	100
The 2nd group (2020–2021)	17	14.8	41	35.7	34	29.5	23	20.0	115	100

was made use of. Additionally, suicidal behavior was assessed in comparison with the NSSI. The average age of the surveyed was 18 ± 2.4 years. Among the examined patients, students of higher and secondary educational institutions predominated.

Statistical processing of the obtained data was carried out using the STATISTICA 10.0 software package for WINDOWS (StatSoft, USA). To determine the statistical significance of the differences, we used Pearson's χ^2 test, Student›s t-test. The critical level of statistical significance is $p \leqslant 0.05$.

RESULTS AND DISCUSSION

Based on the analysis of two studies carried out in 2017–2019 and during the coronavirus infection (COVID-19) pandemic in 2020–2021 common features were established that contribute to behavioral manifestations with the infliction with NSSI in PD in adolescence. These include affective instability, the phenomenon of alexithymia, conflict relations with a subjectively significant subject, and the presence of a psycho-traumatic situation. Experiences in connection with the coronavirus infection (COVID-19) pandemic have had a global impact both on the age of manifestation and on the psychopathological basis of NSSI.

When analyzing the age distribution of NSSI manifestation in PD dynamics, as can be seen from Table 1, it was revealed that in the 1st group the predominating age was 16–18 years old (56 patients; 48.7%) and 13–15 years old (39 patients; 33.9%). In 2nd group, with the distribution by age, there was an increase in the proportion of patients in the group of 19–21 years old (34 patients; 29.6%) and 22–25 years old (23 patients; 20.0%). The change in this ratio in favor of people, who have reached late adolescence in 2nd group, was possibly related to the nature of the psycho-traumatic situation in which patients with a constant spectrum of previous mental pathology found themselves.

During further study, the most important changes were identified in the characteristics of the psychotraumatic factor. If in the 1st group, the manifestation of NSSI in PD was associated with a subjectively significant situation for each individual patient, but often insignificant for others, then in the 2nd group the psychotraumatic factors associated with the pandemic and the restrictions in life caused by it were common in the intensity/significance of the impact. For adolescent patients with PD, the following changes were most significant during the coronavirus infection (COVID-19) pandemic:

- Mass closure of educational institutions.
- Disruption of communication. Limiting peer contacts has led to a global replacement for online communication.
- Increased "interpersonal tensions", especially in families with conflicting relationships before the isolation caused by the pandemic.
- Transition to a new format of online education as an additional maladjusting factor.
- Negative impact on vital and circadian rhythms. Change in sleep-wakefulness due to decreased physical activity, insufficient insolation and poor sleep hygiene.
- Disruption of planning. Uncertainty about passing final exams and mastering the chosen specialty.
- Isolation from subjectively significant persons, separation from them, and in some cases their loss.
- An increase in the frequency of comorbid anxiety disorders with a general content complex — fear for the safety of one's own and those of loved ones, general material well-being. That is, the content of the anxiety here is directly related to the coronavirus infection (COVID-19) [25].

All the patients, who sought psychiatric care during the coronavirus infection (COVID-19) pandemic, were exposed to negative environmental factors. Those conditions, in which patients with PD were treated at the onset or NSSI resumption, could be assessed in accordance with ICD-10 as a comorbid "response to severe stress and impaired adaptation" (F43) in one, or another variant.

In adolescence the variety of psychopathological manifestations, that contribute to the forming of auto-aggressive behavior, is primarily due to the age factor at the stage of PD dynamics. For their comparative assessment, we used the NSSI typology of previously developed by the authors for PD in adolescents [26] (Table 2).

1. Impulsive variant (in 1st group, *n* = 32, or 27.8%; in 2nd group, *n* = 14, or 12.2%). Autoaggressive actions occur as an "affective outburst" in the form of a short-term anxiety-depressive reaction at the crucial point of an extremely pronounced and are performed to alleviate the condition or as a way out of the "dead-end situation."

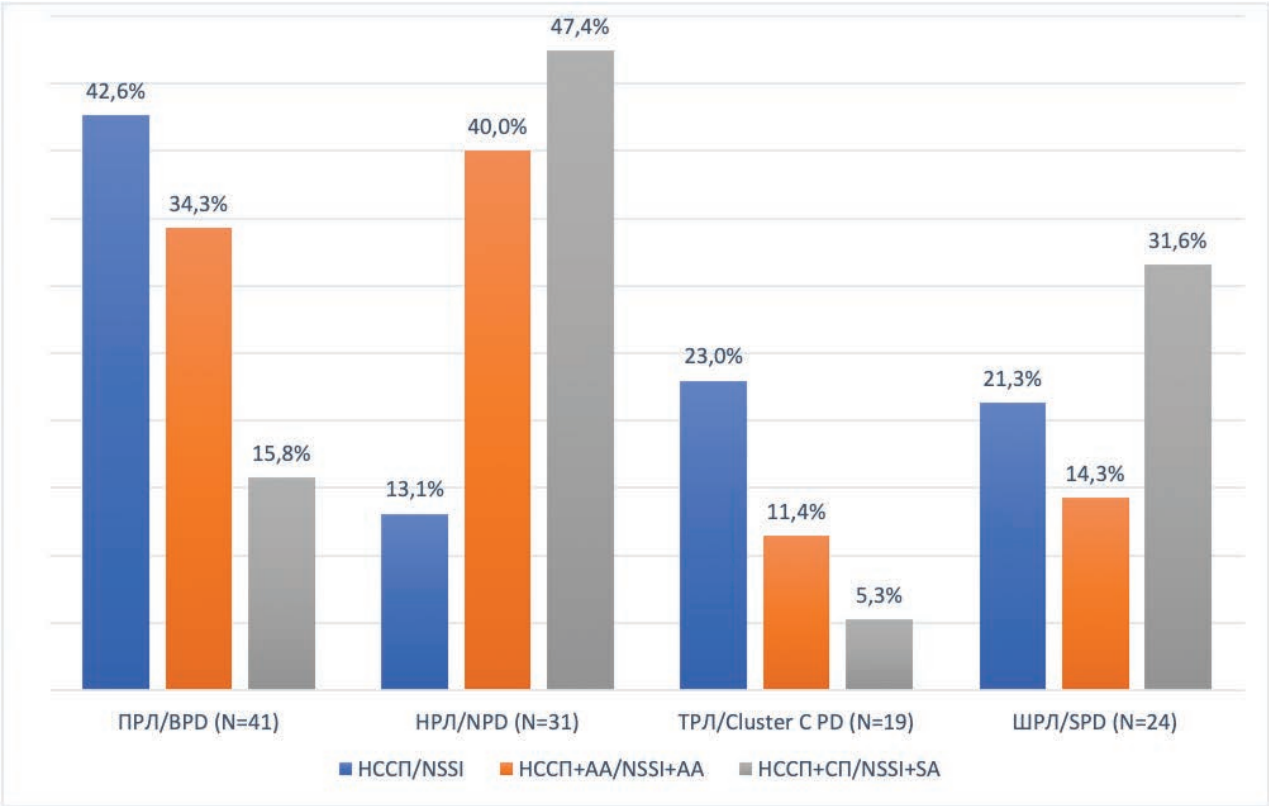
2. Demonstrative variant (in 1st group, *n* = 22, or 19.1%; in 2nd group, *n* = 37, or 32.2%). Autoaggressive actions are performed when a conflict situation arises, in order to attract the attention of someone around, "prove" the strength of their suffering, as well as to reduce "internal tension" and to weaken the affect.

3. Addictive variant (in 1st group *n* = 16, or 13.9%; in 2nd group, *n* = 20, or 17.4%). Autoaggressive actions correspond to the generally accepted criteria of impulsive drives with the appearance of a desire to implement the impulse, followed by dominance in consciousness, an increase in affective tension with a sense of satisfaction during implementation.

4. Depersonalization variant (in the 1st group *n* = 32, or 27.8%; in the 2nd group, *n* = 35, or 30.4%). Self-injure is associated with disorders in the sphere of self-awareness and the phenomena of anhedonia. Inflicting with painful sensations, or passing away are accomplished with the aim of "receiving" emotions and "returning sensations", "feeling at least something".

5. Self-torturing variant (in the 1st group, *n* = 13, or 11.3%; in 2nd group, *n* = 9, or 7.8%). Autoaggressive actions are a consequence of the ideas of self-accusation, a kind of act of self-punishment and are conditioned by the feeling of "incompleteness and imperfection", ideas of one's own failure with the focus of the guilt vector on one's own "Self", thus acquiring an obsessive coloration.

The conducted complex psychopathological analysis showed (Table 2), that in 1st group with borderline PD impulsive (13 patients; 31.7%) and addictive (12 patients; 29.3%) variants were most often observed, while in narcissistic RL demonstrative (11 patients; 35.5%), depersonalization (10 patients; 32.3%) and impulsive (9 patients; 29.0%) NSSI variants were most often revealed. In patients with anxious PD the most preferable were impulsive (8 patients; 42.1%) and self-torturing (6 patients; 25.0%) variants, with schizoid PD the most preferable were depersonalization (13 patients; 54.2%) and, to a lesser extent, self-torturing (6 patients; 25.0%) NSSI types. In 2nd group the following replacement of certain NSSI types was found: impulsive and demonstrative in borderline (15–34.1% versus 8–19.5% of patients) and in narcissistic PD (17–43.6% versus 11–35.5% of patients), addictive in schizoid (7–38.5% versus 2–8.3% of patients) and anxiety (1–5.3% versus 7–30.4% of patients) PD. When assessing the level of statistical significance of the results, their reliable differences were determined in general in the two compared groups ($\chi 2 = 8.2$; $p = 0.042$). At the same time, when paired comparison of groups of patients by types of PD with the selected variants of NSSI was carried out, the level of

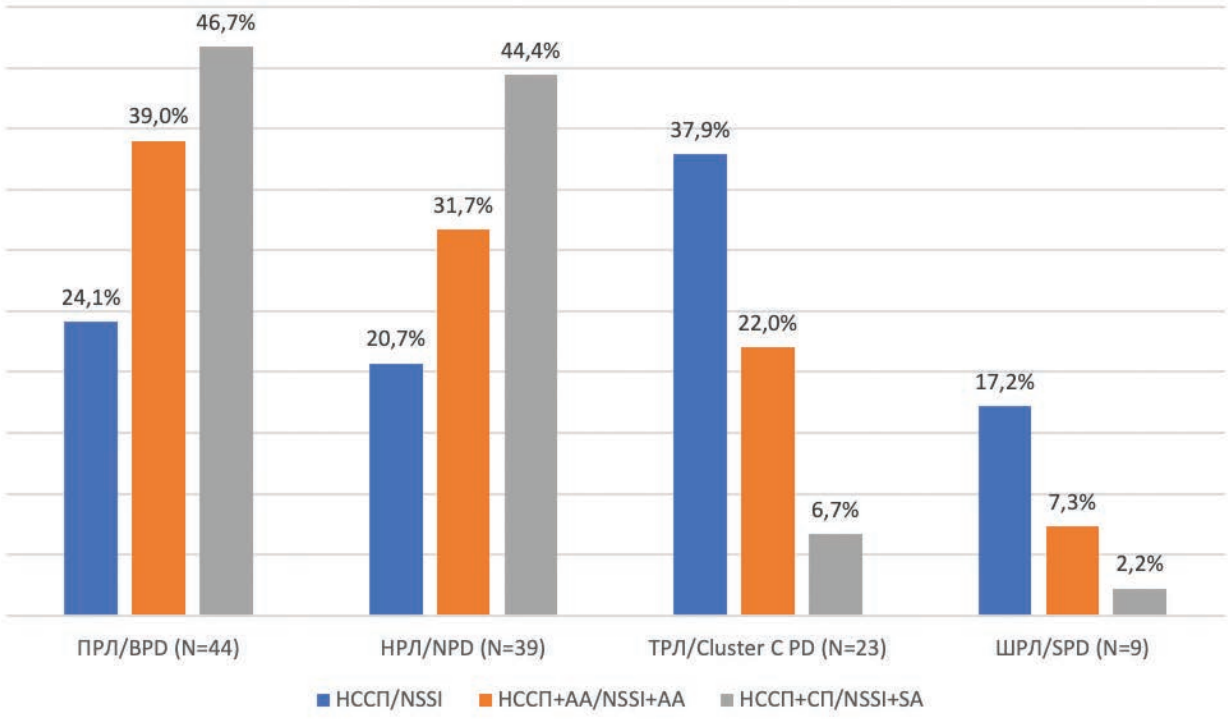


NSSI — nonsuicidal self-injury; AA — antivital activity; SA — suicidal attempts

Fig. 1. Distribution of patients with PD according to NSSI and suicidality ratio observed in years 2017–2019 yy

Table 2. Distribution of NSSI types in adolescent patients with PD

Distribution of patients with PD by the NSSI psychopathological types, $\chi^2 = 8.2$; $p = 0.042$												
Personality disorder	NSSI Types											
	Impulsive		Demonstrative		Addictive		Depersonalization		Self-torturing		Total	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
The 1st group (2017–2019 yy)												
Borderline PD (BPD) (F60.31)	13	31.7	8	19.5	12	29.3	7	17.1	1	2.4	41	100
Narcissistic PD (NPD) (F61.0)	9	29.0	11	35.5	1	3.2	10	32.3	0	0.0	31	100
Anxiety PD (F60.6)	8	42.1	2	10.5	1	5.3	2	10.5	6	31.6	19	100
Schizoid PD (SPD) (F60.1)	2	8.3	1	4.2	2	8.3	13	54.2	6	25.0	24	100
The 2nd group (2020–2021 yy)												
Borderline PD (BPD) (F60.31)	8	18.2	15	34.1	6	13.6	10	22.7	5	11.4	44	100
Narcissistic PD (NPD) (F61.0)	3	7.7	17	43.6	4	10.2	15	38.5	0	0.0	39	100
Anxiety PD (F60.6)	2	8.7	5	21.7	7	30.4	6	26.1	3	13.1	23	100
Schizoid PD (SPD) (F60.1)	1	11.1	0	0.0	3	33.3	4	44.5	1	11.1	9	100



NSSI — nonsuicidal self-injury; AA — antivital activity; SA — suicidal attempts

Fig. 2. Distribution of young patients with PD according to NSSI and suicidality ratio observed in years 2020–2021 yy

significance decreased.The highest statistically reliable indicators were found in the groups with anxious PD ($\chi 2 = 13.3$; $p = 0.0097$). In the groups of patients with borderline and narcissistic PD, the results were assessed at the level of a statistical trend ($\chi 2 = 8.42$; $p = 0.077$ and $\chi 2 = 6.25$; $p = 0.018$, respectively). In groups with schizoid PD, no statistic differences were found ($\chi 2 = 3.85$; $p = 0.427$), which is possibly due to the small size of this group as a whole and requires further study.

In a comparative assessment of suicidal contingency with NSSI in PD in adolescence (Fig. 1, 2), it was revealed, that in the 1st group of observations for 2017–2019 NSSI without suicidal activity were found in 61 (53.0%) of 115 patients, and in 2nd group only in 29 (25.2%) of 115 patients. When distributed by the RD types, the NNSI indices without intent to commit suicide in 2nd group increased in narcissistic PD (20.7% vs. 13.1% of patients) and anxious PD (37.9% vs. 23.0% of patients). Suicidal activity was distributed as follows: NSSI with suicidal thoughts and intentions in 2nd group increased with anxious RL (37.9% vs. 23.0%). Suicidal attempts and NSSP in 2nd group were more often found with borderline PD (46.7% vs. 15.8%). At the same time, a general decrease in the number of patients with schizoid PD in 2nd group was noticed with a distinct change in the profile of antivital activity towards the prevalence of NSSIs over suicidal attempts.

The overall suicidality rate in 2nd group in patients with schizoid PD decreased threefold compared with 1st group, and the number of suicide attempts and NSSI decreased six fold (2.2% vs. 31.6%).

That is, with a slight decrease in the frequency of suicidal attempts with the dynamics of schizoid PD, for other personality types, an increase in the frequency of NSSP with antivital activity, including thoughts, intentions and actions, was noted. Suicidality more often acquired a demonstrative and blackmail character, which correlates with the trajectory of the identified variants of NSSI.

CONCLUSION

The study underlined the role of personality pathology in adolescence in the development of psychopathological disorders, based on behavior, with the non-suicidal self-injury, as well as their high association with suicidal activity. The modification of various NSSI variants under condition of a coronavirus infection (COVID-19) pandemic is apparently due to the unique characteristics of the psycho-traumatic factor. The fact that, with the same strength of influence, this factor has a multidirectional effect on various types of personality disorder and comorbid psychopathological disorders in adolescence, should be taken into account, when creating new models of therapeutic and socio-rehabilitation interventions for the adolescent contingent of patients.

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There is no conflict of interests.

Received 23.04.2021	Revised 02.08.2021	Accepted for publication 14.09.2021