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## Early Diagnostics of Mental and Behavioral Disorders of Children and Adolescents who use Psychoactive Substances

Ранняя диагностика психических и поведенческих расстройств у детей и подростков, которые употребляют психоактивные вещества

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### Abstract

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**Purpose.** On the base of the multidisciplinary systemic approach we have the aim to develop and implement the system for screening and diagnosis of psychiatric and behavioral disorders in teenagers who use psychoactive substances.

**Methods:** clinical and anamnestic, social-demographic, pathopsychological, clinical psychopathological, psychodiagnostic, statistical.

**Results.** A comprehensive study was organized with participation of 76 undergraduate students of the secondary schools from the town Mykolayiv (2019), who used psychoactive substances, compared with the control group (80 people). The character of the development of addictive behavior with determination of psychological, clinical and psychopathological features of these persons was revealed. The basics of early diagnostics of the use of surfactants in childhood were developed on the base of the system of AUDIT-test and a number of other psychodiagnostic methods.

**Conclusion.** On the base of a comprehensive study of teenagers who used surfactants, the predictors of chemical addiction in these individuals were identified. The typical features of the socio-demographic status of the respondents were studied. The psychological, clinical and psychopathological characteristics of persons who use PS were determined. The system of stage diagnostics of the use of PS in childhood was created. This system was based on the AUDIT-test and a number of other psychodiagnostic methods. The obtained results emphasize the need to

continue further studies for development of the system of psycho-hygiene, psychoprophylaxis, and psycho-correction of adolescents who use PS.

**Keywords:** chemical additions, childhood, early diagnosis.

### Резюме

**Цель.** На основании междисциплинарного комплексного подхода разработать и внедрить систему ранней диагностики психических и поведенческих нарушений у несовершеннолетних, употребляющих психоактивные вещества.

**Методы** – клиничко-анамнестический, социально-демографический, патопсихологический, клиничко-психопатологический, психодиагностический, статистический.

**Результаты.** Проведено комплексное исследование 76 несовершеннолетних учащихся средних школ г. Николаева (2019 г.), которые употребляют психоактивные вещества, в сравнении с контрольной группой (80 человек). Выявлен характер формирования аддиктивного поведения с определением психологических и клиничко-психопатологических особенностей данных лиц. Разработаны основы ранней диагностики употребления ПАВ в детском возрасте на основе системы AUDIT-теста и ряда параллельных психодиагностических методик.

**Выводы.** На основе комплексного исследования несовершеннолетних, которые употребляли ПАВ, обнаружены предикторы формирования химической зависимости у данных лиц. Исследованы характерные особенности социально-демографического состояния респондентов. Определены психологические и клиничко-психопатологические характеристики лиц, употребляющих ПАВ. Создана система ступенчатой диагностики употребления ПАВ в детском возрасте на основе системы AUDIT-теста и ряда параллельных психодиагностических методик. Полученные исследования подчеркивают необходимость продолжения дальнейших исследований для разработки системы психогигиены, психопрофилактики и психокоррекции подростков, использующих ПАВ.

**Ключевые слова:** химические аддикции, детский возраст, ранняя диагностика.

## ■ INTRODUCTION

Addiction from psychoactive substances (hereinafter PS) is a complex problem of contemporary society which has social, economic, legal, medical and other aspects. According to epidemiological studies, the prevalence of this addictive behavior is steadily increasing and spreading in the most countries [1–5]. This is especially dangerous because of the increased consumption of surfactants among children and adolescents, leading to early psychophysical decompensation and desocialization of the younger generation. According to WHO (World Health Organization), Ukraine belongs to a number of countries with a high rate of use of PS by teenagers [6–9].

In the connection with all this information, the need for the development and implementation of early diagnosis of mental and behavioral disorders, as well as the establishment of a system of prevention and psycho-correction of children and adolescents who use PS, is certainly actual [10–13].

Scientific direction: the research will be carried out in accordance with paragraph 2 (the development of new methods of diagnosis, treatment and prevention of the most common human diseases) of section 5

«Introduction of new technologies and equipment for great quality of health care, treatment, pharmaceuticals», having been approved by the Cabinet of Ministers of Ukraine of 18.10.2017 № 980 “Some Issues of Defining Medium-Term Priority Areas of Innovation Activity of the Sectoral Level for 2017–2021”.

Particularly important is the study of mental and behavioral disorders of adolescents when individual dependence from PS has not been formed yet. It should be noted that early diagnosis and therapy of disorders of the psyche and behavior of the person is a rather complex problem, closely linked to the destigmatization of psychiatric care, the success of psychosocial projects at the microsocial (family) and macrosocial (staff of educational institutions, social services, general practitioners) levels.

Early diagnosis and assistance in the vast majority of cases determine the prognosis of mental illnesses and social consequences.

## ■ THE AIM OF THE RESEARCH

Based on the multidisciplinary systemic approach we have the aim to develop and implement a system for screening and diagnosis of psychiatric and behavioral disorders of teenagers who use psychoactive substances. Objectives: 1. To find out the predictors of the formation of the usage of PS of children in the age of adolescence. 2. To investigate the characteristics of the socio-demographic status of these persons. 3. To determine the psychological, clinical and psychopathological characteristics of persons who use PS. 4. To form the basis of psycho-hygiene, psycho-correction and prevention in a complex of interdisciplinary medical care for teenagers who use PS.

## ■ MATERIALS AND METHODS

During 2019, we surveyed 156 students (from 5–11 forms) and formed 2 groups: addictive behavior group (ABG) – 76 people (boys – 42 (55.2%), girls – 34 (44.8%); control group – 80 people (boys – 44 (55%), girls – 36 (45%)). These respondents were selected for the usage of PS of different types and severity of the dependence. The research was organized voluntarily, anonymously, with the consent of the parents. Research methods: clinical and anamnestic, social-demographic, pathopsychological, clinical psychopathological, psychodiagnostic, statistical.

## ■ RESULTS AND DISCUSSION

According to the purpose of the research, a category of persons with addictive behavior by nature of the usage of surfactants of different toxicity groups, most commonly used by adolescence, was surveyed at the first stage.

It was determined the analysis of the use of PS using the Alcohol Use Disorders Identification Test (AUDIT-test).

In this research it was analyzed the use of PS by teenagers: alcohol, tobacco, psychostimulants, cannabinoids, opioids (table 1).

As we can see from table 2 (based on 100% for each type of PS individually), the majority of chemical abuse for teenagers (given the average age of teenagers) is smoking – 80%; a considerable part of pupils

**Table 1**

**The results of the research of use of psychoactive substances in the examined groups of teenagers with addictive behavior**

№	Types of PS	n=76	%
	Tobacco	61	80
	Alcohol	56	74
	Psychostimulants	25	33
	Cannabinoids	14	18
	Toxic inhalants and others like these	2	3
	Opioids (opiates)	0	0
	Combined use of PS	55	72

**Таблица 1**

**Результаты исследования употребления психоактивных веществ у обследованных групп подростков с зависимым поведением**

№	Виды психоактивных веществ	n=76	%
	Табак	61	80
	Алкоголь	56	74
	Психостимуляторы	25	33
	Канабиноиды	14	18
	Токсичные ингалянты и тому подобное	2	3
	Опиоиды (опиаты)	0	0
	Комбинированное употребление психоактивных веществ	55	72

has alcohol consumption – 74%; significant number of teenagers prefer psychostimulants – 32%; cannabinoids were used slightly less – 18%; insignificant number of teenagers are characterized by substance abuse – 3%; opioid use has been also detected. At the same time, a large number of respondents combined the use of different types of PS, more often alcohol with tobacco or with the periodic addition of some other chemical. The combined use of different surfactants is certainly more threatening in consequence of the pathogenic process. A great interest is for the onset and dynamics of the use of PS according to the age of teenagers. In such a way we can divide all persons into 3 indicative groups: up to 12 years old; 13–14; 15–17 years old. We had such results. Primary use of alcohol occurs at a fairly early age: by 12 years old 60.4% of boys and 73.2% of girls have such experience; by 13 years old, have used alcohol 71.5% of boys and 79.2% of girls; in the age of 14 years old the situation is vice versa – 89.2% of boys and 83.4% of girls; and by the age of 15–16 most boys and girls have no practical difference between the gender of alcohol consumption – 96.3% of boys and 95.2% of girls. Noteworthy is the earlier involvement of girls in drinking compared to the same age of boys, which can be explained by their earlier sexual development and, consequently, their personal growth in the micro-society. In the control group the respondents (both boys and girls) were initially involved in drinking an average of one and a half years later, but statistically this proved to be unreliable. It should be noted that the beginning of the formation of PS group was mainly at the age of 12 among adolescents who had tried various toxic substances; in the dynamics the formation of PS group was stabilized somewhere by the age of 16, while the girls at the beginning of the dependence state (up to 14 years old)

were significantly inferior to the boys in number, then (16–17 years old) the percentage difference was almost offset.

Socio-demographic study of the respondents according to the predictors of the use of PS was revealed the following. Among the studied contingent of people, the number of boys at schools was 80.2% (in the main group of pupils who have dependence from PS); there were 76.4% of girls; in the control group there were 90.2% of boys and 81.4% of girls. In the categories of persons who studied at secondary schools in the main group of dependent pupils from PS, there were 14.1% of boys and 18.2% of girls; in such a way such results were in the control group: 6.1% of boys and 12.2% of girls. A higher percentage of teenagers were students in colleges – 76.8%, at secondary schools there were 24% of respondents. When comparing the nature of the use of PS among respondents in colleges and secondary schools, the following indicators were obtained. The main group at colleges (ABG): boys made up 44.2%; girls – 29.3%; at secondary schools the figures were significantly higher – 67.4% of boys and 40.5% of girls. Based on the results obtained, it can be stated that in colleges the state of use of PS by pupils is much worse than at schools. And the explanation of this may be the elder age of students, some other social microenvironment, less psychological connection with the families, etc.

Analyzing the nature of the development of different options for the use of PS among teenagers with the help of our developed professional tools, we found the following. A large part of the respondents (about 20.8% in ABG) were brought up in dysfunctional families (20.9%): single families, divorced parents, or civil relations among them (52.3%), difficult financial status in the family (36.8%); unskilled or non-professional work of parents, conflict relations between relatives and children; alcohol abuse (more often by the father), imbalance of character with emotional fluctuations in the mother, difficulties in different orders at the place of studying, absence in a large part of the examined positive perception of reality and rational behavior. More often the motivation for the use of PS among the surveyed category was the influence of friends, the company, the negative microenvironment, the desire for pleasure, the desire to have unusual feelings (when disturbed consciousness), to become «their» in the company, the influence of modern fashion, the simplification of sexual relations, the desire to get rid of unpleasant experiences, increased activity, bad mood and more others. These aspects have the unconditional age fluctuations, they are greatly enhanced during the period of sexual growth and social activity. These factors can be predictors of maladaptive behavior of teenagers, forming from their side a gradually passive or negative attitude to reality, a desire to go into the virtual «dream world». Most people, however, do not have the understanding of difficult consequences of the use of PS, both in psychological, somatic, social and legal sense.

In the behavior of persons who have used PS we can see a special character of psychological protection, which at the initial period of ABG has been unconscious. This form of behavior was present at the younger category of respondents and looked like a more primitive position of defense in the form of «objection». However, later with the dynamics of the surfactant action, the actualization of the pathological process in these individuals forms the role of «rationalization», stereotyping of addictive institutions and

desocialization. Certainly, in the process of forming maladaptive behavior (especially in the initial period (the personal traits of the individual, the level of intelligence, the situation, the environment, relationships with parents, etc.) are significant, however, the stereotypical behavior of the individual, characteristics of the person, which is characteristics of PS dependent people, were gradually formed. In dynamics, the process is such as: broken relationships in the family, then with peers at the place of study with the spread of maladaptive deviant behavior in the society to the level of generalizations. Among the most important predictors of ABG formation, there was abuse of PS (more often – alcohol) by parents, traumatic brain injury in anamnesis, provoking pathogenic traits of the person. In this case, the use of surfactants was mainly in the period of the disharmonious pubertal period, with characteristic psychological institutions in the form of reactions of protest, opposition, emancipation, excess of self-esteem and others. The study of self-esteem for the presence of personality accentuation revealed the following. A significant number of persons with these traits in the ABG was 54%. Taking 100% in a whole, we have the following distribution: hyperthymics were 29%, unstable people – 33%, demonstrative ones – 21%, anxiety people – 13%, cyclothymics and others – 4%. That is, the majority fell into the category of unstable, hyperthymic and demonstrative persons, less – to anxious ones. When comparing the groups surveyed it was found in the category of ABG teenagers – the significance of number of girls of hypertensive or demonstrative type; unstable persons were prevailed among boys. Characterizing the psychological attitude of pupils with accentuations of character (different types) who use PS, it can be noted that unstable persons are mostly influenced by the environment and lacking personal initiative, low self-esteem, tendency to frustration, lack of mood – such pupils do not have mood for realizing their (even possible positive potential), they are forced to look for some alternative behaviors, which more often leads to the most primitive form of pleasure – the use of PS especially with appropriate provocative environment. In the future, these individuals very often progressively move into the category of dependency states. Persons with features of hypertension due to their activity, often – with a high mood, self-esteem, are inclined in general to various active actions and, of course, to new ones, which can bring mental and physical pleasure. However, in the future, these individuals can and rebuild their negative behavior by switching to some other interesting things in their life by stopping the use of PS. At the same time, given the gradual mental and somatic addictions (with severe withdrawal symptoms to the appropriate degree), such a positive exit from the disease is quite complicated and less optimistic. In hysterical type of accentuation (with the traits of infantile, demonstrative, self-centeredness, a significant increase in self-esteem of the individual, the desire to be special and in the enjoyment of life at the same time with the lack of volitional traits). These individuals very often refer to different abnormal environments in social terms, including those ones who are united by non-standard behavior, in particular, the use of PS in the age of teens.

The study of self-assessment of respondents we'll show in table 2.

The results obtained showed the significant nature of the pathogenic perception of their general condition by the respondents with significant

**Table 2**  
**Characteristics of well-being, activity, mood of respondents**

Control group	ABG
Well-being	
5.1	2.7
Activity	
5.4	3.0
Mood	
5.3	2.3

**Таблица 2**  
**Характеристика самочувствия, активности, настроения респондентов**

Контрольная группа	Группа с аддиктивным поведением
Самочувствие	
5,1	2,7
Активность	
5,4	3,0
Настроение	
5,3	2,3

deficits across all categories of our research (state of health, activity, mood) in the control group, where the mood and the state of health of teens were more affected.

Based on the personal position of mental disharmony (different degree) of persons who use PS, it was obtained as a result the toxic effect of using PS (disorders in a cognitive, emotional, behavioral, social spheres of the person) we had a great interest of studying the nature of behavior of these people in special, unfavorable situations. In this case, we used the COPE Stress Reduction Questionnaire (COPE) (table 3) for our research. Using this technique, which characterizes the appropriate mental mood and behavior of a person, we proceeded from the opportunity to obtain specific traits of respondents, who are, first and foremost, passionate about the use of PS. This technique determines options for coping the behavior of individuals in adverse (sometimes frustrating) situations. The most significant for these patients was the F12 «use of sedatives» aspect. This method of subjective mental compensation these individuals considered the most important, favorable and effective. However, such a feature of the respondents, who appeared in the research, in a general conversation with them, was hidden as much as possible or «mediated». The respondents were characterized by «objections» – F16 (15.4 points) of the use of PS (especially narcotics). As for alcohol or smoking, the researchers mostly did not recognize it as a painful passion, saying that when consuming these substances, they behave like most others. This mental conditionality of patients coincided with the thoughts of «escaping from the problem» (F2 – 14.3 points and in parallel with the behavioral departure from the problem (F9 – 12.5 points). The consequences of this approach to their problems: both personal and social, and specifically associated with the use of PS, becomes a behavior formed on the «concentration of emotions and their active expression» (F3 – 13.2 points).

That is, copying behavior of these patients based on their mental mood, has a negative-passive nature. Mostly they are not prone to positive

processes of communication, they tried to find a factor of their discomfort in micro or macro society, they are set to blame their relatives, family, etc. Therefore, the essence of the active professional role of a doctor in a positive intervention for a mental state of psychiatric condition has become conditioned in a whole.

The results of the behavior of the studied contingent of patients indicate that the most significant is the «use of sedatives» (F12), which was 16.0 points; at the second place there were respondents – the nature of the «objection» (problems) – F6 (15.4 points); the next group was «thinking away from the problem», etc. That is characterized the specific behavior of patients who receive PS and have different stages of the pathogenic process – from general addictive behavior to addiction.

**Table 3**  
**The results of the COPE Questionnaire**

Nº of scale	The name of the scale	Scores
F1	Positive interpretation and personal future	–
F2	Mentally get away from the problem	14.3
F3	Concentration on the emotions and their active expression	13.2
F4	Using the instruments of social support	–
F5	Active coping	–
F6	Denial	15.4
F7	An appeal to religion	–
F8	Humor	–
F9	Behavioral avoidance of the problem	12.5
F10	Maintenance	–
F11	Use of emotional social support	–
F12	Use of sedatives	16.0
F13	Acceptance	–
F14	Suppression of competitive activity	–
F15	Planning	–

**Таблица 3**  
**Результаты анкеты COPE по снижению стресса**

№ шкалы	Название шкалы	Результаты
F1	Позитивная интерпретация и персональное будущее	–
F2	Мысленное освобождение от проблем	14,3
F3	Концентрация на эмоциях и их активное выражение	13,2
F4	Использование инструментов социальной поддержки	–
F5	Активное совладание	–
F6	Отрицание	15,4
F7	Обращение к религии	–
F8	Юмор	–
F9	Поведенческий уход от проблемы	12,5
F10	Поддержка	–
F11	Использование эмоциональной социальной поддержки	–
F12	Употребление седативных веществ	16,0
F13	Принятие	–
F14	Подавление конкурирующих действий	–
F15	Планирование	–



**Table 4**  
**The research of the use of psychoactive substances by respondents with the CAGE-AID method**

Quantitative-percent characteristics							
A control group				ABG			
n=80				n=76			
Positive response to the use of PS							
<2 questions		>2 questions		<2 questions		>2 questions	
n	%	n	%	n	%	n	%
6	1.08	0	0	76	100	0	0

**Таблица 4**  
**Исследование употребления психоактивных веществ респондентами методом CAGE-AID**

Количественно-процентные характеристики							
Контрольная группа				Группа с аддитивным поведением			
n=80				n=76			
Положительные ответы об употреблении психоактивных веществ							
<2 вопросов		>2 вопросов		<2 вопросов		>2 вопросов	
n	%	n	%	n	%	n	%
6	1,08	0	0	76	100	0	0

The differentiation of the nature of the use of PS was carried out by two tests: CAGE questions Adapted to Include Drugs (CAGE-AID) (table 4) and AUDIT-test (table 5) (modified version of I.V. Linskyi, O.I. Minko).

As it was turned out, this technique almost for 100% distributes the surveyed main ABG and the respondents of a control group, in which 1.08% of people had episodic circumstances associated with the using of PS.

**Table 5**  
**The results of use of psychoactive substances by respondents, according to the AUDIT**

A control group		ABG	
n=80	%	n=76	%
"A" degree			
n=75	98.3	n=0	0
"B" degree			
n=9	1.7	n=23	29
"C" degree			
n=0	0	n=53	71
"D" degree			
n=0	0	n=0	0

**Таблица 5**  
**Результаты употребления респондентами психоактивных веществ согласно тесту AUDIT**

Контрольная группа		Группа с аддитивным поведением	
n=80	%	n=76	%
«А» степень			
n=75	98,3	n=0	0
«В» степень			
n=9	1,7	n=23	29
«С» степень			
n=0	0	n=53	71
«D» степень			
n=0	0	n=0	0

The data obtained is characterized a fairly clear distribution of respondents of ABG. In the absence of respondents in categories «A» and «D», the majority of people prevailed in stage «C» – 53 (71%) persons, while in stage «B» there were 23 persons, which was 29%. In the control group, «A» (safe use of PS) it was 98.3% of people; in group «B» (dangerous use of PS) – 1.7%. Thus, the study of the nature of use of PS by two different methods showed the medical reliability of the results of two categories of respondents: ABG and a control group.

According to expedient of investigating the step characteristic of the use of PS of different types of people in the surveyed groups, we took the most common surfactant – it was alcohol (table 6).

The obtained results were revealed in the main ABG with the actual prevalence of the respondents on «C» degree (adverse effects) – 94%; a small number of other persons (6%) were on “B” degree (dangerous use of PS), and only some persons to the appropriate extent may exhibit addictive behavior. That is, according to the results of our previous research, there was a clear difference between the respondents of the surveyed groups (we mean ABG and the control group). In accordance to the addictive behavior of each group most patients were cumulated on “C” degree (adverse effects), but in the control group the most people were characterized as practically healthy – 95% of respondents were on «A» degree (safe surfactant use), and only 5% were on «B» degree (dangerous use of PS).

Thus, the study on the use of PS by two different methods («CAGE-AID» and AUDIT) showed generally similar results.

**Table 6**  
**The results of the study of alcohol consumption by respondents of all groups**

A control group		ABG	
n=80	%	n=76	%
“A» degree			
n=76	95	n=0	0
“B» degree			
n=4	5	n=6	6
“C» degree			
n=0	0	n=70	94
“D” degree			
n=0	0	n=0	0

**Таблица 6**  
**Результаты исследования употребления алкоголя респондентами всех групп**

Контрольная группа		Группа с аддиктивным поведением	
n=80	%	n=76	%
«А» степень			
n=76	95	n=0	0
«В» степень			
n=4	5	n=6	6
«С» степень			
n=0	0	n=70	94
«D» степень			
n=0	0	n=0	0

**Table 7**  
Levels of anxiety and depression in the group of respondents with addictive behavior according to the HADS

Overall score of anxiety and depression, n=76											
The level of anxiety						The level of depression					
Normal range (<8 points)		Borderline abnormal (borderline case) (8–10 points)		Abnormal (case) (>10 points)		Normal range (<8 points)		Borderline abnormal (borderline case) (8–10 points)		Abnormal (case) (>10 points)	
n	%	n	%	n	%	n	%	n	%	n	%
10	12.6	50	66.0	16	21.4	20	27.0	49	64.0	7	9.0

**Таблица 7**  
Уровни тревоги и депрессии в группе респондентов с зависимым поведением согласно HADS

Общий балл тревоги и депрессии, n=76											
Уровень тревоги						Уровень депрессии					
Норма (<8 баллов)		Граничные состояния (8–10 баллов)		Патологические состояния (>10 баллов)		Норма (<8 баллов)		Граничные состояния (8–10 баллов)		Патологические состояния (>10 баллов)	
n	%	n	%	n	%	n	%	n	%	n	%
10	12,6	50	66,0	16	21,4	20	27,0	49	64,0	7	9,0

In terms of characteristics of all possible psychopathological features of persons who use PS, we conducted our research on the identification of anxiety and depressive components in the respondents according to the Hospital Anxiety and Depression Scale (HADS) (table 7).

Describing the data received by the level of anxiety, we can say about a high level of borderline case – 66.0%; 21.4% of patients were characterized by abnormal case; the normal range is due to 12.6% of respondents. That is, the most patients have varying degrees of anxiety in one way or another one, but the most of them have borderline case. In the state of depression, borderline case were also prevailed – for 64% of respondents, thought

**Table 8**  
Levels of anxiety and depression determined in the control group according to the HADS

Overall score of anxiety and depression, n=80											
The level of anxiety						The level of depression					
Normal range (<8 points)		Borderline abnormal (borderline case) (8–10 points)		Abnormal (case) (>10 points)		Normal range (<8 points)		Borderline abnormal (borderline case) (8–10 points)		Abnormal (case) (>10 points)	
n	%	n	%	n	%	n	%	n	%	n	%
78	99.6	2	0.4	0	0	80	100	0	0	0	0

**Таблица 8**  
Уровни тревоги и депрессии в контрольной группе согласно HADS

Общий балл тревоги и депрессии, n=80											
Уровень тревоги						Уровень депрессии					
Норма (<8 баллов)		Граничные состояния (8–10 баллов)		Патологические состояния (>10 баллов)		Норма (<8 баллов)		Граничные состояния (8–10 баллов)		Патологические состояния (>10 баллов)	
n	%	n	%	n	%	n	%	n	%	n	%
78	99,6	2	0,4	0	0	80	100	0	0	0	0

abnormal case were almost twice less than the level of anxiety – 9.0%; the indicator of the normal range is, on the contrary, slightly higher – 27%. In general, the respondents were characterized by increased anxiety and depression, but anxiety and mostly borderline case were prevailed.

The research organized in the control group by HADS showed a practical normal range in the condition of the respondents both according to indicators of anxiety and depression (table 8).

That is, we can conclude that respondents who use PS have significant mental characteristics with corresponding negative dynamics for both anxiety and depression with significant deterioration of these indicators in dynamics.

Thus, a comprehensive study of children and adolescents who used PS of different toxicity and severity groups demonstrated the evidence of the assessment of the nature of a multilevel professional approach to provide early diagnostics of drug use in childhood.

## ■ CONCLUSIONS

1. Based on a comprehensive study of teenagers who have used surfactants, predictors of chemical dependence in these individuals have been identified.
2. The characteristic features of the socio-demographic status of the respondents were investigated.
3. The psychological, clinical and psychopathological characteristics of persons who use PS have been determined.
4. A system of stage diagnostics of the use of PS in childhood was created. This system was based on the AUDIT and a number of other psychodiagnostic methods.
5. The obtained researches emphasize the need to continue further studies and to provide the development of a system of psycho-hygiene, psychoprophylaxis and psycho-correction of adolescents who use PS.

**Authors' contribution:** conceived the study and were in charge of overall direction and planning – S.I. Tabachnikov and V.D. Mishiev; developed the theory and performed the computations – E.N. Kharchenko; developed the theoretical framework – E.S. Osukhovskaya; took the lead in writing the manuscript – N.A. Mykhalchuk; to the analysis of the results and to the co-writing the paper, editing – I.F. Zdoryk; verified the analytical methods – I.A. Komplienko; co-writing the paper, editing – V.I. Salden.

**The authors declare that there is no conflict of interest.**

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