Anxiety and depressive disorders in children of early adolescence

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The purpose of the work is to investigate the screening frequency of anxiety and depressive disorders and their manifestations in young adolescents to determine risk factors and develop measures for their prevention. Anxiety testing was conducted for 313 students of educational institutions of the Khmelnytsky region aged 10-14 years: 156 (49.8 %) boys and 157 (50.2 %) girls. 258 people were tested for the spectrum of depressive disorders, of which 51.9 % (134) were boys and 48.1 % (124) girls. Spielberger State-Trait Anxiety Inventory (STAI) was used to study anxiety, and Children’s Depression Inventory (CDI) by M. Kovacs, was used to diagnose depression. The probability was evaluated using Student’s t-test with the construction of a 95 % confidence interval (CI) for the difference in means. Quantitative traits are given as M±σ. A high level of personal anxiety was determined in 20 (6.4 %), and situational anxiety in 17 (5.4 %) people. The average level of personal anxiety was determined in 38 (12.1 %), and situational anxiety - in 142 (45.3 %) people. A low level of personal anxiety was identified in 255 (81.5 %), and situational anxiety - in 154 (49.3 %) people. That is, most students of early adolescence had a low level of both personal and situational anxiety. Signs of depressive disorders were detected in 50.0 % of the examined children of early adolescence who completed the questionnaires, in particular, mild manifestations of depression were found in 70 (27.2 %) people, moderate in 46 (17.2 %) people, severe depression in 13 (5.0 %) people. The level of depressive symptoms in girls was higher (53.32±12.54 points) compared with boys (50.01±9.94 points), respectively (95 % CI, 0.5 - 6.0; p<0.019). The level of depressive symptoms among students in the city was higher (50.45±8.93 points) compared with students in rural schools (46.74±10.81 points), respectively (95% CI, 0.5 - 6.9, p<0.023). When comparing the severity of depressive symptoms in children from a boarding school (59.64±15.03 points) with students of other secondary schools (52.02±8.74 points), its predominance was significant precisely in children who study at a boarding school (95% CI, 2.5 - 16.3; p<0.008). So, in children of early adolescence, most have a low level of anxiety. At the same time, depressive disorders of varying degrees were revealed in 50.0 % of the examined children, which manifested themselves mainly in the form of low mood and anhedonia. Female sex, urban living, and having an incomplete family or orphanhood are some of the key risk factors for depression in young children.

Keywords: depression, anxiety, adolescents.

Introduction
The problem of prevalence and chronicity of psychogenic diseases is becoming one of the most important in modern medicine given the economic losses associated with compensation for the treatment of this pathology and its consequences [10, 11, 16]. The work of Tsarkov A. and Petlovanyi P. (2017) shows that anxiety is one of the most common mental disorders in children and adolescents, especially among girls [13]. It increases the risk of developing psychopathological disorders in adulthood, in particular in the development of depression [4]. Depressive disorders in children aged 5-12 years, which are often manifested at this age by somatized manifestations, are a serious mental illness that has significant consequences for the psychosocial development of the child and remains an underestimated and often undiagnosed condition [5]. Depression in children and adolescents is not just a “bad mood.” This is a serious emotional disorder that affects their quality of life. Typical manifestations of
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depression in children and adolescents are mood depression, motor retardation, slow cognitive processes. Most parents notice that something is going on with their child, but do not suspect that it may be depression. At different ages of childhood, depression can look different and often hide behind the symptoms of somatic pathologies or behavioral disorders [13, 16].

In the period of 9-12 years, depression is often manifested by low self-esteem, guilt, hopelessness, fear of death. At the age of 13-18 - increased irritability, impulsivity and behavior change, decreased school performance, sleep disturbances [9].

The most common comorbid disorders with depression at this age are headache, back and limb pain, dizziness, loss of appetite, behavioral disorders [10].

The main risk factors for depression are female sex, childhood stress, the presence of relatives in the family with emotional disorders, substance abuse [14].

Without treatment, depression in children and adolescents may increase the risk of drug abuse, poor learning, social functioning, and suicidal behavior [9].

Given the above, anxiety and depressive disorders in children and adolescents need to be detected and treated in a timely manner, as measures taken can reduce the development of comorbid pathologies in adult life, improve social functioning and quality of life, which will be important socially.

The aim is to screen for the presence of anxiety and depressive disorders and their manifestations in young adolescents to identify risk factors and develop measures for their prevention.

Materials and methods

The total number of children tested for anxiety was 313 schoolchildren of educational institutions of Khmelnytsky region aged 10 to 14 years (early adolescence), of which 156 boys and 157 girls. Among them, 33 children attended a boarding school, 33 - in a lyceum with intensive education, 98 - in a secondary school, 86 - in a school with healthy teaching methods and 63 children are students in rural schools.

The total number of children tested for the presence of a range of depressive disorders was 258, of whom 51.9 % (134) were boys and 48.1 % (124) were girls. Among them, 18.2 % (47) studied in a boarding school, 9.7 % (25) - in a lyceum with intensive education, 54.3 % (140) - in a regular secondary school, 17.1 % (44) - in rural schools.

Prior to the examination, all children and their parents were given informed consent to participate in the study.

For the study used: STAI, modified by Andreeva AD (1988) and CDI by Kovacs M. (1992). The generally accepted STAI, modified by Andreeva A. D., allows to identify the level of cognitive activity, anxiety and anger as an existing state and as a personality trait. The scale consists of two parts. The minimum score on each scale is 10 points, the maximum is 40 points [1].

CDI, developed by M. Kovacs (1992) and adapted by the staff of the Laboratory of Clinical Psychology and Psychiatry. The method is designed to study children and adolescents aged 6-17 years and allows you to assess the affective and cognitive symptoms of depression, somatic complaints, social problems and behavioral problems. The overall normal CDI rate can range from 0 to 54, where 50 is the critical value, after which the depth of symptoms increases [8]. Separately, the values of the subscales were investigated: subscale A shows mood depression, subscale D - loss of pleasure - anhedonia, as two key symptoms of depression, according to ICD-10.

The study was conducted in accordance with the principles of the Declaration of Helsinki. The study protocol was approved by the Local Ethics Committee for all participants.

Statistical analysis was performed using the package of Statistica 8.0.360 and Excel (2007). Quantitative features are given in the form M±σ. Probability was assessed using Student's t-test with the construction of a 95 % confidence interval (CI) for the difference between the means. Valid values were considered at p<0.05.

Results

Our screening study for the presence of anxiety in adolescents, both in general and in individual groups, showed the presence of anxiety symptoms in children.

Anxiety levels in adolescents according to the STAI are shown in Figure 1.

A high level of personal anxiety was found in 20 (6.4 %) and situational anxiety - in 17 (5.4%) people, which is quite high for this category of children. The average level of personal anxiety was found in 38 (12.1 %) and situational anxiety in 142 (45.3 %) people. The low level of personal anxiety was found in 255 (81.5%) and situational anxiety in 154 (49.3 %), which was the vast majority of adolescents.

Thus, early adolescent schoolchildren in most cases showed a low level of situational anxiety. At the same time, in almost half of the cases, moderate reactive anxiety is detected.

There were no significant differences in the presence and severity of anxiety depending on sex, place of residence and place of study and social status.

Our screening study for the presence of depressive symptoms included children in whom the total score on the questionnaire exceeded the upper limit of the average of 50 points, their number was 129 (50.0 %) people (Fig. 2), i.e., every second schoolchild of a young adolescent depressive disorder were of varying severity, of which 5.0 % had severe depression, 17.5 % had moderate depression and 27.2 % had mild depression.

In a study of the sex difference in the frequency and severity of depressive disorders, it was found that the level of depressive symptoms in girls in early adolescence was higher (53.3±12.54 points) compared to boys (50.0±9.94 points, respectively 95 % CI; 0.5 - 6.0; p<0.019). According to
According to the CDI (Kovacs M., 1992), depressive disorders in young adolescents enrolled in high schools, compared with children from rural schools, where development of anhedonia in children who studied in urban schools achieved by the subscale D (52.02±9.74 points, respectively, 95 % CI; 2.5 - 16.3; p<0.008).

According to subscale A, which characterizes the decline in mood, in general, boarding school schoolchildren had a moderate decrease in mood (57.94±15.61 points) compared with schoolchildren of other schools (50.12±11.65 points, respectively, 95 % CI; 0.8 - 14.8; p<0.030). Significant differences in the comparison of boarding school children with children from other schools were achieved by the subscale D (57.42±13.93 and 50.44±8.52 points, respectively), which indicated the presence of significant anhedonia in children enrolled in boarding school (95 % CI; 0.9 - 13.0; p<0.024).

**Discussion**

Anxiety is an individual psychological feature, which is an increased tendency to feel anxious in a variety of life situations. There are two types of anxiety - situational or reactive and personal. Reactive anxiety is an indicator of the intensity of experiences that occur in relation to typical events. Reactive or situational anxiety is characterized by tension, anxiety, nervousness. Personal anxiety is a person's readiness (attitude) to experience fear and anxiety about a wide range of subjectively significant phenomena. Personal anxiety is a persistent condition. It characterizes a person's tendency to perceive a wide range of situations as threatening, to respond to such situations with a state of anxiety [7].

The results obtained by us show that situational anxiety in children of the studied age is low. However, reactive anxiety of moderate severity is detected in almost half of the studied cases. This may indicate an emotional response to the learning process and interpersonal relationships in the learning and communication process and their importance in the child's life. Although high levels of both personal and situational anxiety were found in a small number of children, they are at risk for developing emotional disturbances and comorbid depression in adolescence and adulthood. Such children should be identified and provided with psychological assistance in a timely manner to eliminate possible factors of anxiety, which will have important social significance in the prevention of mental disorders in the future, especially such as panic, obsessive-compulsive, somatoform disorders and others.

Not less often in adolescents there are various manifestations of the spectrum of depressive disorders [10]. Preclinical manifestations of depression can accompany a child or adolescent for months and sometimes years, causing devastating effects on peer communication, learning, and other areas of life. Therefore, high rates of depression, even at the pre-clinical level,
deserve careful attention. The CDI technique, developed by M. Kovacs, is most often used worldwide for the diagnosis of depression in children and adolescents who are not diagnosed with depression (actually aimed at studying subclinical manifestations of depression) [2].

Our findings indicate that every second schoolchild in early adolescence had varying degrees of depressive disorder. Among schoolchildren of early adolescence with signs of depressive disorders in 10.1 % of persons the indicators reached 70 and higher points, which corresponded to a pronounced degree of disorder. Such children need appropriate attention, because they are the greatest risk of developing suicidal behavior [10].

In the course of the study, we found a sex difference in both the frequency and severity of depressive disorders. It was found that the level of depressive symptoms in girls in early adolescence was significantly higher than in boys, which indicates a greater predisposition of women to depression and may be one of the key risk factors for its development in this period of life [12]. At the same time, according to subscale A, which characterizes the decline in mood, no sex differences were found. Similar data were obtained by analyzing the results of subscale D, which indicated the presence of anhedonia, which was more pronounced in girls, but without significant differences from boys. Anhedonia is characterized by a decrease or loss of the ability to have fun, and therefore is an important manifestation of depression [15].

A significant predominance of depressive disorders in girls over boys was found in other studies, which identified female sex as a risk factor for the development of depression [3].

The results of comparing the frequency of development of these affective disorders in schoolchildren of this age in urban and rural schools showed that the level of depressive symptoms in urban schoolchildren was higher compared to rural schoolchildren. The findings suggest a greater predisposition to depression in children studying in the city, and the "city" may be one of the key risk factors for its development. According to the indicator of "mood drop" subscale A in children of the city was observed significantly lower its value (57.91±6.74 points) compared with schoolchildren in villages (46.42±9.31 points, respectively, 95 % CI; 9.0 - 14.0; p<0.001). Significant differences in the comparison of urban schoolchildren with rural children were achieved by indicators on subscale D, which indicated a more frequent development of anhedonia in children who attended urban schools, compared with children from rural schools, where it was not observed. Probably, the predisposition to depression and its significant predominance in children of educational institutions of the city is due to the learning process itself (more complex programs and learning process, overloading schoolchildren with additional classes) and extracurricular factors (additional classes with tutors, classes in various clubs, lack of significant rest after school, low physical activity), which leads to rapid both physical and emotional exhaustion of children, and, accordingly, to the development of affective states.

Our screening study of adolescents did not show the dependence of the presence of depressive disorders on such forms of education as lyceum and general secondary school in the city, although more often they occurred in schoolchildren enrolled in schools with intensive curricula.

Special mention should be made of the formation of depressive disorders in children enrolled in boarding schools, compared with their peers enrolled in regular schools and institutions with intensive education. It was found that the severity of depressive symptoms in children of boarding schools was significantly higher compared to schoolchildren of other schools. Both in terms of mood decline (subscale A) and in the manifestations of anhedonia, the performance of boarding school children compared to those of children in other schools reached a significant difference.

Predisposition to depression and its significant predominance in boarding school children is primarily due not to the educational process, but to the presence of low social status and disadvantaged families, and in most cases - partial or complete orphanhood, which can be considered one of the main and significant risk factors for depression and suicidal behavior.

Property stratification, social inequality, poverty, breakdown of family and group ties are such deep preconditions for the formation of inadequate family relations that provoke a lack of attention to the adolescent, a tense family atmosphere, deviant behavior of parents, etc. These factors disrupt the social adaptation of adolescents and become the basis of depression and suicidal behavior [6].

According to Consoli A. and others (2013) 16.2 % of adolescents with depression reported suicidal ideation in the last 12 months, and 8.2 % reported suicide attempts. Family factors and intrafamily relationships were key factors associated with these conditions in adolescents [3].

Thus, the problem of single-parent or socially disadvantaged family has a very important social significance and requires both comprehensive research and social impact and education among the adult population as a guarantee of prevention and prevention of possible development of mental disorders and their consequences in children, formation such children in society, the formation of stereotypes of behavior in adult life and their attitude to family values.

Conclusions
1. In young adolescents, in most cases there is a low level of anxiety.
2. Manifestations of both personal and situational anxiety are not related to the place of residence and social status of schoolchild.
3. 50.0 % of children showed varying degrees of
депресивних порушень, які виявлено у 50,0 % обстежених дітей раннього підліткового віку, які заповнили анкети, зокрема, легкі прояви депресії зустрічались у 70 (27,2 %) осіб, помірної - у 46 (17,8 %) осіб, вираженої депресії - у 13 (5,0 %) осіб. Рівень депресивної симптоматики у дітей становив 5,0 - 6,9 балів; p<0.023), учнів усіх навчальних закладів Хмельницької області віком 10-14 років: 156 (49,8 %) хлопчикам і 157 (50,2 %) дівчаткам. Тестування на тривогу проведено 313 учням

4. Identified differences in the development of depression depending on individual factors. The overall level of depressive symptoms was significantly higher in girls compared to boys (95 % CI; 0.5 - 6.0 points; p<0.019), urban schoolchildren - compared to rural schoolchildren (95 % CI; 0.5 - 6.9 points; p<0.023), schoolchildren of boarding schools - compared with children enrolled in regular schools (95 % CI; 2.5 - 16.3 points; p<0.008).

5. It was found that female sex, living in the city and social status, which was indirectly indicated by the form of the educational institution, are among the key risk factors for the development of depression in young adolescents.

References


виявлялось значне її переважання саме у дітей, які навчаються в інтернаті (95 % ДІ; 2,5 - 16,3; р<0,008). Отже, у дітей раннього підліткового віку в більшості випадків зустрічається низький рівень тривожності. Разом з тим, у 50,0 % обстежених дітей виявлялись різного ступеня депресивні порушення, які проявлялись переважно у вигляді зниженого настрою і ангедонії. Жіноча стать, проживання в місті і наявність неповної сім'ї чи сирітства є одними з ключових факторів ризiku розвитку депресії у дітей раннього підліткового віку.

Ключові слова: депресія, тревога, підлітки.

ТРЕВОЖНІ І ДЕПРЕССИВНІ РАССТРОЙСТВА У ШКОЛЬНИКОВ РАННЕГО ПОДРОСТКОВОГО ВОЗРАСТА

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Цель работы - исследовать скринингово частоту тревожных и депрессивных нарушений и их проявления у детей раннего подросткового возраста для определения факторов риска и разработки мер их профилактики. Тестирование на тревогу проведено 313 ученикам учебных заведений Хмельницкой области в возрасте 10-14 лет: 156 (49,8 %) мальчикам и 157 (50,2 %) девочкам. Тестирование на наличие спектра депрессивных расстройств прошли 258 человек, из которых 51,9 % (134) составили мальчики и 48,1 % (124) девочки. Для исследования тревоги использовали тест Спилбергера, для диагностики депрессии опросник детской депрессии M. Kovacs. Вероятность оценивали с помощью t-критерия Стьюдента с построением 95 % доверительного интервала (ДИ) для разницы средних. Количественные признаки приведены в виде M±σ. Высокий уровень личностной тревоги определялся у 20 (6,4 %), а ситуативной тревоги - у 17 (5,4 %) школьников. Средний уровень личностной тревоги определялся у 38 (12,1 %), а ситуативной тревоги - у 142 (45,3 %) человек. Низкий уровень личностной тревоги определялся у 255 (81,5 %), а ситуативной тревоги - у 154 (49,3 %) человек. То есть, у большинства школьников раннего подросткового возраста имел место низкий уровень как личностной, так и ситуативной тревожности. Признак депрессивных расстройств включены у 50,0 % обследованных детей раннего подросткового возраста, заполненных анкеты, в частности, легкие проявления депрессии встречались у 70 (27,2 %) человек, умеренной - у 46 (17,8 %) человек, выраженной депрессии - у 13 (5,0 %) человек. Уровень депрессивной симптоматики у девочек был выше (53,3±12,54 баллов) по сравнению с мальчиками (50,0±9,94 баллов) соответственно (95 % ДИ, 0,5 - 6,0; р<0,019). Уровень депрессивной симптоматики среди школьников городских школ был выше (50,4±8,93 балла) по сравнению с учениками сельских школ (46,7±10,81 балла) соответственно (95 % ДИ, 0,5 - 6,9; р<0,023). При сравнении выраженности депрессивной симптоматики у детей из школы-интернат (59,6±15,03 баллов) с учениками других средних школ (52,0±9,74 баллов) имело место значительное преобладание именно у детей, которые учатся в школе-интернат (95 % ДИ, 2,5 - 16,3; р<0,008). Итак, у детей раннего подросткового возраста в большинстве случаев встречается низкий уровень тревожности. Вместе с тем, у 50,0 % обследованных детей имеют место разной степени депрессивные нарушения, которые проявлялись преимущественно в виде сниженного настроения и ангедонии. Женский пол, проживание в городе и наличие неполной семьи или сиротство являются одними из ключевых факторов риска развития депрессии у детей раннего подросткового возраста.

Ключевые слова: депрессия, тревога, подростки.