

PSYCHOLOGY AND PSYCHIATRY

ALEXITHYMIA AND PSYCHOSOMATIC DISEASES IN ADOLESCENTS: PRIMARY HEADACHES

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ABSTRACT

Background. Alexithymia is traditionally regarded as a factor which influences the development of psychosomatic diseases and contribute to a more severe and prolonged course of somatic diseases. The high level of alexithymia indicates the deficit in cognitive processes associated with awareness, exteriorization and regulation of feelings and emotions. In recent years, a lot of research has been conducted on the comorbidity of alexithymia and psychosomatic diseases in adults, but there are very few studies in relation to children and adolescents.

The aim. To analyze psychosomatic diseases associated with the high level of alexithymia; in adolescents, to study the correspondence of alexithymia and central sensitization (CS) in adolescents with primary headaches (migraine and tension-type headache).

Materials and methods. The diagnosis of headache was based on the criteria for the International Classification of Headache, 3rd edition. The study group included 84 adolescents, average age – 14 [13; 16] (51 females, 33 males). CS was assessed using the Russian version of “Central Sensitization Inventory” (2020) for adolescents. Alexithymia was assessed using the Russian version of “Alexithymia questionnaire for children” (2019). Headache intensity was measured using the Visual Analogue Scale. There were also assessed the number of months and days per month with headaches; duration of night sleep; age of phrasal speech start.

Results and discussion. The results showed the direct correlation between levels of alexithymia and central sensitization ($rS = 0.49$; $p = 0.00001$), the number of days with headaches per month and central sensitization severity ($rS = 0.24$; $p = 0.027$). There was no significant correlation between alexithymia severity and headaches duration ($rS = 0.06$; $p = 0.5$), no reliable results on the correspondence of alexithymia severity, age of phrasal speech start and nocturnal sleep.

Conclusion. A high level of alexithymia is observed in adolescents with various somatic diseases. Primary headaches are associated with a high level of alexithymia and the severity of central sensitization. Pediatricians and neurologists should be advised to assess the level of alexithymia and central sensitization in adolescents with headaches.

Key words: alexithymia, adolescents, central sensitization, psychosomatics, comorbidity, Central sensitization inventory, Alexithymia questionnaire for children, primary headache

Received: 18.07.2022
Accepted: 23.01.2023
Published: 02.03.2023

For citation: Gorobets E.A., Esin O.R. Alexithymia and psychosomatic diseases in adolescents: Primary headaches. *Acta biomedica scientifica*. 2023; 8(1): 140-147. doi: 10.29413/ABS.2023-8.1.16

АЛЕКСИТИМИЯ И ПСИХОСОМАТИЧЕСКИЕ ЗАБОЛЕВАНИЯ У ПОДРОСТКОВ: ПЕРВИЧНЫЕ ГОЛОВНЫЕ БОЛИ

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РЕЗЮМЕ

Алекситимия традиционно рассматривается как фактор, предполагающий развитие психосоматических заболеваний, способствующий более тяжёлому течению соматических заболеваний. Высокий уровень алекситимии свидетельствует о дефиците когнитивных процессов, связанных с осознанием, экстернизацией и регуляцией чувств и эмоций. Наблюдено много данных в области коморбидности алекситимии и психосоматических заболеваний у взрослых, но при этом недостаточно исследований, посвящённых детям и подросткам.

Цель исследования – анализ психосоматических заболеваний, связываемых с высоким уровнем алекситимии у подростков; изучение корреляции уровня алекситимии и центральной сенситизации у подростков с первичными головными болями (мигрень и головная боль напряжения).

Материалы и методы. Диагноз головной боли устанавливался на основании критериев Международной классификации головной боли 3-го издания. Группа исследования: 84 подростка, средний возраст – 14 [13; 16] лет (51 девушка, 33 юноши). Центральная сенситизация оценивалась с помощью русскоязычной версии «Опросника центральной сенситизации» (Central Sensitization Inventory). Уровень алекситимии оценивался с помощью русскоязычной версии «Опросника алекситимии для детей» (Alexithymia Questionnaire for Children). Интенсивность головной боли измерялась с помощью Визуальной аналоговой шкалы. Учитывались также количество месяцев и дней в месяц с головной болью; продолжительность ночного сна; возраст формирования фразовой речи.

Результаты и обсуждение. Результаты показали прямую корреляционную связь между уровнем алекситимии и центральной сенситизации ($r_s = 0,49$; $p = 0,00001$), количеством дней с головными болями в месяц и выраженностью центральной сенситизации ($r_s = 0,24$; $p = 0,027$). Статистически значимой связи между выраженностью алекситимии, длительностью головных болей, дебютом фразовой речи и продолжительностью ночного сна не выявлено.

Заключение. Высокий уровень алекситимии наблюдается у подростков с различными соматическими заболеваниями. Первичные головные боли сопряжены с высоким уровнем алекситимии и выраженностью центральной сенситизации. Врачам-педиатрам и неврологам целесообразно рекомендовать проводить оценку уровня алекситимии и центральной сенситизации у подростков с головными болями.

Ключевые слова: алекситимия, подростки, центральная сенситизация, психосоматика, коморбидность, Опросник центральной сенситизации, Опросник алекситимии для детей, первичная головная боль

Статья получена: 18.07.2022
Статья принята: 23.01.2023
Статья опубликована: 02.03.2023

Для цитирования: Горобец Е.А., Есин О.Р. Алекситимия и психосоматические заболевания у подростков: первичные головные боли. *Acta biomedica scientifica*. 2023; 8(1): 140-147. doi: 10.29413/ABS.2023-8.1.16

INTRODUCTION

Functional somatic symptoms (i.e., symptoms without a sufficient organic explanation) often manifest in childhood and adolescence and are very characteristic for this period of development. Their genesis is actively studied in modern literature. Alexithymia is considered one of the conditions that provoke the development of such symptoms. There is currently a sufficient number of studies on the correlation between a high level of alexithymia and the development of various psychosomatic diseases in adults. Specialists of different profiles describe the problem in an interdisciplinary way and receive more and more evidence that the deficit of exteriorization (including verbal) of emotions, sensations and feelings, which is observed at a high level of alexithymia, is associated with a higher probability of development and severe course of a variety of neurological, psychiatric, cardiovascular, bronchopulmonary, endocrine, etc. diseases, which can also be explained by the reduced ability of the alexithymic personality to develop coping strategies [1]. There is a lack of such data in relation to children and adolescents, while psychosomatic diseases often manifest themselves in these groups. The literature reports that the level of alexithymia is generally the highest in adolescence. According to O.S. Yutkina, only a third of adolescents aged 15–18 have a low level of alexithymia; almost 70 % of children belong to the borderline group or to the group with a high level of alexithymia. Moreover, girls aged 15–18 have a statistically significantly higher risk of alexithymia [2]. Difficulties in verbalizing sensations in adolescents are associated with a whole complex of both psychological and somatic factors. At a high level of alexithymia, these difficulties are noticeably aggravated, which affects the quality of diagnosis of diseases that require reliance on the verbal report of the patient (dizziness, pain, anxiety, depression). Alexithymic personalities tend to have problems at the level of choosing "inner words" by meaning and choosing the words themselves. Alexithymic patients either note that they do not even understand "inside themselves, without words" what exactly is happening, what sensations they experience, or assure that "inside themselves, without words" they distinguish one sensation from another, but it is too difficult to describe it. The feasibility of introducing visual support into the process of diagnosing diseases requiring a verbal report of the patient for alexithymic personalities is discussed. However, not all the subtleties of sensations, feelings and emotions can be adequately depicted paraverbally. In addition, the results of experiments on the mimic scale for pain determination in adults suggest that they are not suitable for alexithymic patients [3]. Studies on the assimilation of nonverbal communication show that it is difficult for people with a high level of alexithymia to adequately classify negative emotions expressed by nonverbal communication means, especially sadness, sorrow, despondency [4].

LITERATURE REVIEW

Russian research in the field of the study of alexithymia in children and adolescents is mainly concentrated around

the following problems: alexithymia and emotional disorders, emotional intelligence problems [5]; diagnosis of alexithymia in children, including those with sensory disorders [6], prevention of alexithymia by psychological [7] and pedagogical methods: through the development of emotional intelligence [8], the application of art-therapeutic technologies [9]; psychological correction of alexithymia, including in adolescents with disabilities [10]; family alexithymia problems [11]. Part of the research is associated with the study of the correlation between alexithymia and bronchopulmonary diseases. In particular, N.L. Potapova et al. report that 76.6 % of children with bronchial asthma have a high level of alexithymia [12]. The correlation between the quality of life and the level of alexithymia in children with nephropathy was studied. It was revealed that children with nephropathy and a high level of alexithymia have statistically significantly lower level of quality of life than children with nephropathy and a low level of alexithymia [13]. However, it should be noted that 20-Item Toronto Alexithymia Scale (TAS-20; the Russian-language version for adults passed psychometric validation) [14] or 26-Item Toronto Alexithymia Scale (TAS-26; the Russian-language version for adults did not pass psychometric validation) [15] were mainly used in order to determine the level of alexithymia in most Russian studies, especially those conducted before 2015. These scales are not adapted for children and adolescents. Respectively, the main limitations of studies in which these tools were used are directly related to the alexithymia detection method itself, which may affect the reliability of the results.

Most foreign studies on child and adolescent alexithymia focus on child-parent relationships, parenting styles and features (overwhelming behavior of parents, emotional coldness, etc.); the correlation between a childhood trauma (emotional abuse or neglect), the level of alexithymia and the tendency for E-cigarettes use in adolescents is indicated [16]; the correlation between functional somatic symptoms in children with a high level of alexithymia and somatization in their parents [17] with low implicit self-esteem in children [18] is emphasized. However, a correlation between a school environment and the development of alexithymia in children has also been noted recently [19]. There is an increasing number of studies reflecting the connection between autistic traits and a high level of alexithymia not only in adults, but also in children and adolescents [20]. A combination of synesthesia, anxiety disorders and alexithymia in children has been reported [21]. A group of studies is devoted to the correlation of eating disorders and a high level of alexithymia [22]: it is revealed that obese and overweight adolescents have a higher level of alexithymia than adolescents with normal weight. A high level of alexithymia is noted in adolescents with epileptic seizures, psychogenic non-epileptic seizures and their combination [23].

Self-injurious behavior in children and adolescents with a high level of alexithymia is studied. It was revealed that alexithymia is a risk factor for non-suicidal self-injury (NSSI) in adolescents with depression [24], as well as with suicidal thoughts (but not attempts). Teenagers resort to self-injury because they cannot otherwise exteriorize their feel-

ings. Changes in the perception of somatic activation in children with a high level of alexithymia who have been subjected to abuse [25], the correlation between a high level of alexithymia and autoimmune diseases in children with experience of psychoemotional trauma [26] are also studied.

At the same time, it must be recognized that publications on the correlation of alexithymia and pain syndromes in children and adolescents are sporadic: possible correlations between alexithymia and fibromyalgia, alexithymia and headaches are revealed [27]. Again, the emphasis shifts more to the child-parent relationship (for example, it is revealed that alexithymic parents, as a rule, themselves have difficulties with coping strategies for overcoming pain, and, as a result, they cannot teach their children suffering from chronic headaches the correct coping mechanisms [28]).

Pain syndromes tend to become chronic, and it should be emphasized that alexithymia and central sensitization not only in adults, but also in adolescents, are the factors contributing to this chronicity, including in relation to headaches. Central sensitization (CS) is a phenomenon manifested by an increase in the responses of nociceptive neurons of the central nervous system in response to normal or sub-threshold stimuli. As a result of the development of hypersensitivity of neurons of the central nervous system, a person begins to perceive various types of stimuli (pain, tactile, vestibular, etc.) more acutely, which in turn worsens the course of the underlying disease. Central sensitization can also manifest itself as sleep disturbance, unexplained muscle tension, soreness throughout the body and many other symptoms.

The aim of the study was to analyze psychosomatic diseases associated with a high level of alexithymia in adolescents, followed by the study of the correlation of the level of alexithymia and central sensitization in adolescents with primary headaches (migraine and tension-type headache).

MATERIALS AND METHODS

Alexithymia and central sensitization (CS) were assessed in adolescents with primary headaches (migraine

and tension-type headache). The diagnosis of headache was based on the criteria for the International Classification of Headache, 3rd edition [29]. The inclusion criteria: age 13–18 years, presence of headaches (migraines or tension-type headaches), lack of treatment until the moment of treatment. The exclusion criteria: age under 13 and over 18 years, the presence of organic brain pathologies, cognitive and speech disorders. The study group included 84 adolescents, the average age was 14 [13; 16] years (51 girls, 33 boys). All participants of the study signed a voluntary informed consent. The study was approved at the meeting of the Local Ethics Committee of Kazan Federal University dated 28.03.2019.

The assessment of central sensitization was carried out using "Central Sensitization Inventory" (CSI) [30] for adolescents aged 14–17 years, which was translated from English and validated in Russian with the permission of one of the authors, Randy Neblett [31].

The assessment of alexithymia in adolescents was carried out using the Russian version of the "Alexithymia Questionnaire for Children" (AQC) [32], which is a simplified version of TAS-20. Translation into Russian and validation are carried out with the permission of the authors.

The intensity of the headache was measured using the Visual Analog Scale (VAS). The number of months with headache, the number of days with headache per month, the duration of night sleep, age of phrasal speech start were also taken into account (this factor must be taken into account due to the difficulty of verbalization of sensations in alexithymic personalities).

RESULTS AND DISCUSSION

The following parameters were evaluated in the study group (Table 1).

The results showed that there is a direct correlation between the level of alexithymia (the score on AQC) and the severity of central sensitization (the score on CSI) ($rS = 0.49$; $p = 0.00001$) (Fig. 1) in adolescents with primary headaches.

TABLE 1
AVERAGE VALUES OF STUDY PARAMETERS

| Estimated parameters | Average value |
|---|---------------|
| Age | 14 [13; 16] |
| Number of months with headaches | 36 [12; 60] |
| Number of days per month with headaches | 12 [6; 20] |
| Headache intensity (according to VAS) | 60 [55; 80] |
| Score of alexithymia (according to AQC) | 13 [8; 19] |
| Score of severity of central sensitization for adolescents (according to the CSI) | 31 [24,5; 43] |
| Age of phrasal speech start (months) | 18 [12; 24] |
| Duration of night sleep in hours | 7 [6; 8] |

It was revealed that there is no statistically significant correlation between headaches duration in months and alexithymia severity ($rS = 0.06$; $p = 0.5$). At the same time, there was a direct relationship between the number of days with headache per month and the severity of CS ($rS = 0.24$; $p = 0.027$) (Fig. 2).

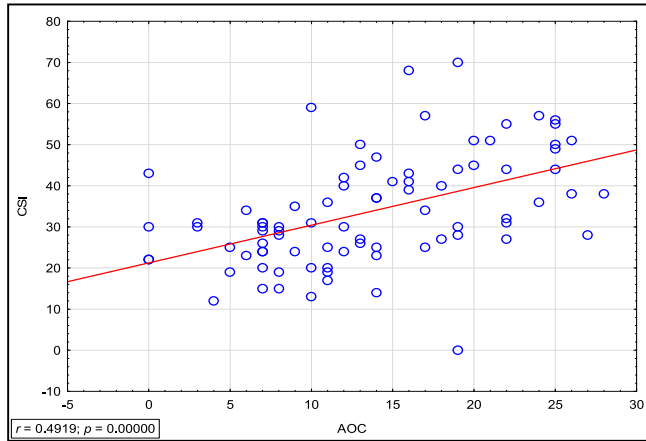


FIG. 1.
Correlation of "Alexithymia questionnaire for children" and "Central Sensitization Inventory" results

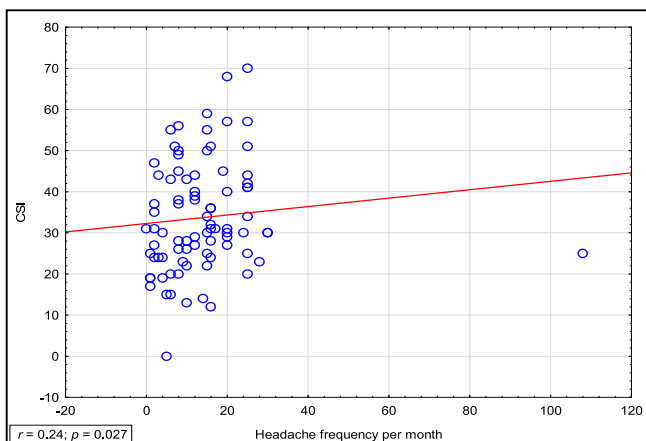


FIG. 2.
Correlation of the number of days with headache and the severity of central sensitization

There were also no statistically significant results of the correlation between alexithymia severity, level of central sensitization and headache intensity, as well as duration of night sleep and age of phrasal speech start. Data in the field of the correlation between sleep and alexithymia in foreign literature are contradictory; for example, there are: a) publications confirming that night sleep disorders occur because of a high level of alexithymia [33]; b) the hypothesis that alexithymia is a mediator between a decrease in sleep quality and child abuse (alexithymia occurs and then the quality of sleep decreases) [34]; c) data indicating that the formation of insomnia is influenced not by alexithymia, but by concomitant mental disorders [35].

In the course of further studies, it is necessary to assess the dynamics of the treatment in order to identify how high the level of alexithymia and central sensitization are prognostic factors for a more severe course and lower effectiveness of treatment of primary headaches.

CONCLUSION

Adolescence is multidimensional, transitional, complex period provoking both somatic diseases and behavioral characteristics. During adolescence, the risk of developing alexithymia sharply increases. Against its background, various somatic diseases (neurological, bronchopulmonary, etc.), as well as addictions, self-injurious behavior can occur. At the same time, somatic diseases and mental disorders themselves are risk factors for the development of secondary alexithymia, and a teenager may fall into a "vicious circle". It is indicative, in particular, that modern studies have begun to pay special attention to the prevention of the development of clinical conditions associated with difficulties in recognizing, expressing and regulating emotions, including alexithymia, which indicates the importance and prevalence of the problem.

Headaches in children and adolescents are one of the leading reasons to see a pediatrician or a neurologist. The results of the study show that primary headaches (migraine, tension-type headache) in adolescents are significantly associated with a high level of alexithymia and the severity of central sensitization. Thus, it is advisable to recommend assessing the level of alexithymia and central sensitization in adolescents with headaches during initial treatment, as well as during the therapy, in case of negative dynamics, to involve clinical psychologists in the management of the patient.

Financing

This work was supported by the Kazan Federal University Strategic Academic Leadership Program (PRIORITY-2030)

Conflict of interest

The authors of this article declare the absence of a conflict of interest.

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