

Review

Gender Characteristics of Anxiety: Brief Review

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Abstract: Background: Anxiety and depression are still the most common complaints of patients when visiting a doctor. Methods: The purpose of the study was to identify gender characteristics of the manifestation of anxiety (anxiety disorders). Results: Clinically significant anxiety (anxiety disorders) in women occurs 1-6.-2.5 times more often than in men. Anxiety disorders in women are characterized by a less stable response to treatment, a more unfavorable course, and a tendency to relapse and become chronic. Conclusions: there are gender differences in the development of anxiety and anxiety disorders

Keywords: anxiety, gender, gender, epidemiology, anxiety

1. INTRODUCTION

Anxiety and depression are still the most common complaints of patients when visiting a doctor [1, 2, 3]. This is not only the influence of modern events; anxiety has been described historically for quite a long time. In the writings of Hippocrates one can find a description of social phobia [2]. The term “anxiety” was first introduced into medicine and psychology by the founder of psychoanalysis, S. Freud; he defined this concept as a state of tension, as well as an unpleasant emotional experience, which is a signal of anticipated danger. S. Freud described this condition for adult patients. In the modern world, we are increasingly faced with childhood and adolescent anxiety.

Anxiety is considered as the result of a complex interaction of cognitive, affective and behavioral reactions provoked when a person is exposed to various stressful situations. In the literature, anxiety is considered as a socially determined personality trait, or as a temporary negative emotional state that occurs in difficult, threatening, unusual situations [4, 5]. As for anxiety disorders, the ICD-10 defines them as “disorders in which the manifestation of anxiety is the main symptom and is not limited to any specific external situation. Depressive and obsessive symptoms and even some elements of phobic anxiety may also be present, provided that they are clearly secondary and less severe” (ICD-10, code F41). In this section of ICD-10, panic, generalized, mixed and other anxiety disorders are distinguished. In addition, there is section F40.0 (phobic anxiety disorders), a group of disorders in which the only or predominant symptom is the fear of certain situations that do not pose a real danger [6].

The purpose of the study was to identify gender characteristics of the manifestation of anxiety and anxiety disorders.

2. MATERIAL AND METHODS

The e-library and PubMed databases were analyzed for the period 2013-2023 using multiple versions of keywords and their combinations. Only the articles containing the information about the sample size of the studied patient groups were included in our review.

So, 212 articles were analyzed in the e-library database and 414 articles in the PubMed database. The number of articles underscores the importance of this topic for researchers.

Russian-language articles in 70% of cases are devoted to child and adolescent anxiety, which reflects the social characteristics of the life of adolescents in the Russian Federation: passing the State Exam, socio-economic difficulties that affect the family as a whole, dependence on gadgets, etc. It should be noted that according to the e-library, most of the articles on anxiety in children and adolescents were published by students and young scientists and placed in the proceedings of scientific conferences.

3. RESULTS

Globally, 4.05% of the world's population suffers from an anxiety disorder, which is 301 million people (2019). The number of people suffering from anxiety disorders has increased by more than 55% from 1990 to 2019. Rates of anxiety disorders show a continued increase in prevalence and in DALYs (disability-adjusted life years), a measure of the total burden of illness. So, in the study conducted in 204 countries risk groups that need to be identified for preventive measures are described [7]. According to this study, Portugal has the highest prevalence (8,671 cases per 100,000), followed by Brazil, Iran and New Zealand. Prevalence is higher in high-income areas. Women are 1.66 times more likely to have anxiety disorders than men.

According to the data given in the article by Vasenina E.E. et al. (2023) anxiety disorders affect 374 million people, accounting for 4,802 cases per 100,000 people, and account for about 20% of all psychiatric diagnoses in China [8]. The prevalence of anxiety disorders is obvious and high, however, the literature raises the question that in fact the prevalence of anxiety disorders is much higher. Due to the stigma associated with mental disorders, many patients are reluctant to seek mental health care, which is why all epidemiological data are incomplete [2]. But according to the authors, in any case, epidemiological data indicate a difference in the prevalence of anxiety disorders by gender [2].

Interesting data Bandelow B. et al. (2015) regarding the role of psychosocial factors. Thus, according to the authors, the prevalence of anxiety disorders in women is approximately twice as high as in men. Psychosocial factors (eg, childhood sexual abuse and chronic stressors) are important contributors to higher rates of anxiety among women, and genetic and neurobiological factors have been discussed as possible reasons for the higher prevalence among women [2].

There are two main approaches to explaining differences between the sexes - biological and social [9]. The biological approach explains the differences between women and men associated with genetic and hormonal factors, constitutional features, brain structure, and temperament. The social approach suggests that differences between women and men are developed by society. Gender differences are manifested not only in motor skills, the development of mental processes, the manifestation of emotions, and personal characteristics (motivation, caring, aggressiveness, anxiety). Research on emotions by gender also suggests that women are more emotional and have a high level of anxiety [10]. They worry more about interpersonal relationships and negative life situations happening to loved ones. Women are more likely to experience depression manifestation of negative emotions, while men often hide their negative feelings and emotions. They are often emotionally reserved, even when communicating with loved ones. But still, men can surpass women in their emotionality in the manifestation of such emotions as anger, disgust, contempt. We can highlight emotions that are more common to men (anger) and women (sadness, fear, anxiety). Women have more general anxiety, and men are more susceptible to social anxiety [9].

According to the literature, anxiety is age specific. For each age period, there are situations, objects of reality that can cause anxiety in children and adolescents or adults, regardless of whether they pose a real threat or not. Thus, preschoolers may be afraid of the dark, imaginary creatures, fairy-tale characters, situations of separation from mother, separation from parents, change of environment [11,12].

There is evidence that both boys and girls are prone to anxiety, but the strength of the experience of anxiety in girls and boys is noticeably different, i.e. different level of anxiety, and also a relationship with children's self-esteem was identified [13, 14]

The greatest anxiety in adolescent girls is caused by situations of their assessment, self-esteem, and self-presentation. In adolescent boys, the greatest anxiety is caused by the school situation and the situation of self-esteem associated with changes in their external and internal image. They are also characterized by a fear of self-expression. Self-esteem anxiety among teenage boys is statistically higher than among girls. Boys begin to evaluate their appearance more closely, while girls are focused on the events of school life. Girls perceive themselves as more mature. Girls show significantly higher anxiety associated with relationships and insufficient physiological resistance. In girls and boys in adolescence, types of anxiety are associated with different personality traits. Independence and realism of the individual increase anxiety. Magical anxiety is promoted by alienation, criticality, and rigidity, which leads to the endowment of reality with rational threats. Associated with anxiety are qualities such as subordination and compliance, relaxation and low levels of motivation, which contribute to the emergence of fears associated with relationships with others. In adolescence, girls' self-esteem anxiety increases, and a high assessment of their qualities and capabilities becomes significant for them. Interpersonal anxiety increases. In adolescence, girls still have a strong fear of receiving a negative assessment from others, a fear of self-expression and failure to meet the expectations of others. Girls' anxiety is associated with situational school factors, such as exams. In boys, school anxiety predominates and interpersonal and self-esteem anxiety are the least represented. This indicates that the opinions of others and knowledge of their qualities are not a primary task for young men and, perhaps, do not affect the behavior of young men. School anxiety contributes to the development of self-control. Factors influencing fear of self-esteem and failure to meet expectations are independence and individualism, refusal to support the team, and competition with peers. There has been an increase in the connection between various types of anxiety and personal anxiety. [15]

Interesting features were revealed in the study of social anxiety in adolescents. According to Pavlova T.S. and Kholmogorova A.B. biological sex does not affect the severity of social anxiety: no differences were found in this indicator between boys and girls. The factor influencing the level of social anxiety was gender identity, and the types of gender identity (masculinity, femininity, androgyny) have approximately the same distribution in both boys and girls. The level of social anxiety shows an inverse relationship with the level of masculinity in adolescents of both sexes and a direct connection with the femininity index. The size of the gap between the real and ideal masculinity of the "I" is more pronounced in adolescents with social anxiety disorder [16].

Studies of adults with social anxiety indicate that women are more likely to have social anxiety disorder and report greater clinical severity. Despite this, men with this disorder may be more likely to seek treatment. But in general, data on the prevalence of social anxiety are similar in men and women, and conclusions regarding gender differences in functional impairment and comorbidity are inconclusive [17].

Delving deeper into the topic of social anxiety, Boyko B.P. (2022) characterizes women as feeling anxiety in social evaluation situations, having a motive for achieving success in self-realization, and emotionally experiencing a lack of social skills; experiencing anxiety regarding uncontrollable situations, the participants of which are perceived as negatively evaluating, rejecting, and capable of "dealing a blow" to self-esteem. Men in this sample had high scores on the "Post-situational rumination" and "Restraint of emotions due to fear of rejection" scales, which characterizes them as feeling anxious in social assessment situations, having a motive for achieving success in self-realization, and emotionally experiencing a lack of social skills; as feeling intense anxiety in situations of expressing sympathy and feelings [18]

The study by M. S. Nekhvyadovich (2022), carried out on a fairly large sample, stands out from the general trend towards the predominance of female anxiety. The sample consists of 5368 people (average age - 30.2 years); among them 2377 men and 2991 women. Data collection method: Taylor Anxiety Scale questionnaire. Correlation and comparative analysis showed relatively low significant connections between these men and women with anxiety. This may indicate that gender differences in anxiety are not as significant. According to the author, significant sources of anxiety are factors that are not only biological, but also social in nature. The author sees prospects for studying anxiety in developing problems of the influence of relationships and internal conflicts on the level of anxiety [10]. Perhaps the data turned out to be so different from other researchers due to the fact that the Taylor anxiety scale was taken to assess anxiety, and not the Spielberg-Hanin scale, for example. The question remains about the sensitivity and validity of the Russian version of the Taylor scale.

An interesting approach to the cognitive functions of anxious people and their gender differences.

Research has found that the attentional system of anxious people can be very sensitive to environmental stimuli associated with potential threat and attracting attention in the first place, which contributes to a constant shift of attention [19]. A biased, constant redirection of attention to negative, potentially threatening information can prompt a person to evaluate the environment as a threat, which provokes alienation and anxiety [20]. In addition, information with emotional significance is processed more effectively compared to neutral influence [21]. In the case of a shift of attention to emotionally negative or threatening stimuli, researchers identify several components: a shift of attention to threatening information; attention delay associated with the duration of distraction from the threat; attention associated with the avoidance of threatening information [22, 23].

Almost any information that comes to us has multiple meanings to one degree or another. The ability to recognize and process this ambiguity is an important human cognitive skill that determines his cognitive and social success. However, the mechanisms our brains use to process ambiguous stimuli are not entirely clear. Building even one interpretation often represents a rather complex cognitive task, consisting of synthesizing all available information and forming a consistent semantic representation on its basis. A neural marker of erroneous perception, termed error-related negativity (ERN), has the potential to reflect erroneous judgments of ambiguous inputs as unambiguous. This factor is thought to be related to gender and anxiety. [24]

The bioelectrical activity of the brain is known as error-related negativity (ERN). NSO can be considered a special case of a "predictive error" signal. Errors in our predictions of the future, which are also a key component of the algorithms that help us effectively study the world. A recent study (Strand N, Fang L, Carlson JM, 2021) identified the potential moderating role of gender in the relationship between anxiety and error-related negativity (ERN), a component of error monitoring that is common in individuals with high anxiety. Women generally showed a positive relationship between anxiety/worry and ERN amplitude. But in this study, there was no significant difference in the relationship between indicators of attentional bias and anxiety in women and men. In addition, ERN amplitudes were higher in men compared to women [25].

According to Vasenina E.E. (2023), anxiety disorders in women are characterized by a less favorable course, a tendency to recurrent course and chronicity. The author notes a negative response to anxiety therapy in women. Taking into account gender differences, it can be assumed that sex hormones play a significant role in both the development and formation of the characteristics of affective disorders. The effects of higher estrogen levels in women may influence the risk of developing anxiety, as well as their possible impact on treatment failure. The author notes the importance of the influence of testosterone and estrogens on various structures of the brain, including the limbic brain, the connection between the activity of sex hormones and various neurotransmitter systems, neurogene-

sis, neuroinflammation, etc. Taking into account the higher prevalence of anxiety and depressive disorders in women, it can be assumed that women hormones predispose to disturbances in emotional response, and male hormones correct it to a certain extent.

4. CONCLUSIONS

In general, according to the results of epidemiological studies, there are gender differences in the development of anxiety and anxiety disorders. Thus, clinically significant anxiety in women occurs 1.6 -2.5 times more often than in men. However, there is a lack of reliable understanding of exactly which neurocognitive mechanisms drive these gender differences.

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