

Analysis of Correlation between Environmental Factors and Anxiety

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Abstract— According to the World Health Organization (WHO) the worldwide prevalence of anxiety disorder (AT) is 3.6%. It was estimated that by 2015, 246 million individuals lived with these disorders, which indicates an increase of 14.9% since 2005. Brazil, the country with the highest number of cases of anxiety, with 9.3% of indexes that surpass the neighboring countries. The aim of this study is to analyze the correlation between environmental factors and anxiety among adults aged 20 to 59 years, of both sexes. By means of an analytical and transversal research of descriptive character, with quantitative approach that will be carried out in the city of Vitória da Conquista / BA, in which the sample number was composed of 980 anxious or not. Regarding anxiety and gender, 81.8% of the women said they were anxious, when asked about work 64.1% worked and had anxiety, when asked about tobacco, 11% smoked and are anxious about BMI, 18.4% had low weight, 56.4% were Eutrophic, 19.6% were overweight and 5.6% were obese, and finally, when interviewed about the schooling of those who had anxiety 65.8 % of individuals had incomplete higher education. Checking that anxiety is more prevalent in women and working individuals are more anxious, the variables BMI, smoking, schooling, age, social class, are not significant for the study.

Keywords— Anxiety. Environmental Factors. Adults.

I. INTRODUCTION

In the context of modern society, medical offices have increased the number of care of individuals with anxiety disorder (1). According to the World Health Organization (WHO), the worldwide prevalence of anxiety

disorder (AT) is 3.6%. Estimate that by 2015, 246 million individuals lived with these disorders, which indicates an increase of 14.9% since 2005 (2). Brazil is the country with the highest number of cases of anxiety, with 9.3% of Brazilians, which surpasses the neighboring countries (3).

Anxiety is an emotion considered normal, in response to an adaptive, positive / negative response of the organism against threats or dangers associated with environmental contexts related to reinforcing events (4). Thus, it is a set of physiological, biological, behavioral and cognitive changes that activate brain systems related to the escape / fight system or the cerebral defense system (5).

On the other hand, anxiety becomes pathological only when it ceases to be adaptive, that is, when it is not real or when the period of duration and activation does not match the picture that triggers it, exhibiting a freezing action and the behavior of fight / flight (5,6). From the physiological point of view, activation of the hypothalamic-pituitary-adrenal (HPA) axis is necessary to trigger anxiety (7).

One of the mechanisms for the appearance of anxious symptoms is the amygdala, through the stimuli of punishment or frustration; on the other hand, the activity of the prefrontal cortex is related to the decrease of the anxious symptom, besides, it controls the functionality of the amygdala and acts regulating the anxiety (8). Serotonin, in turn, acts to increase anxiety by regulating defense behavior, where threat warnings would stimulate this system through the amygdala and activate serotonergic neurons and also act as anxiolytic in dorsal periaqueductal gray matter (MCPD) having an adaptive action (5).

Cortisol is released by the adrenal glands through an adrenocorticotrophic hormone (ACTH) stimulus against a threatening situation, and will help promote the mobilization of energy sources of the body to cope with the threatening situation; if the stress is temporary, the hormonal and physiological processes return to normal, otherwise, these will remain increased, which will favor the appearance of anxiety (9). And the inhibition of the GABA receptor (Gamma AminoButyric Acid) helps in the control of neuronal excitability, that is, it acts to reduce excitability and consequently decreases the symptoms related to anxiety (10).

Mental disorders are consequences of exposing the causes of risks, which are established by specific neural systems, including environmental factors (work, gender, studies) and genetically inherited (8). The International Labor Organization (ILO) and the WHO in the early 2000s predicted an increase in the occurrence of mental health problems and warned of their influence on the working population as a result of the work situation (11).

In this way, the adequate functioning of these systems is important mainly in modern society due to the need of social interactions. Therefore, considering the relevance of research on anxiety correlating them with environmental factors, the need for the study is mainly observed for health professionals.

II. METHODOLOGY

This is a cross-sectional epidemiological and descriptive study, with a quantitative approach that was carried out in the city of Vitória da Conquista / BA ("latitude: 14° 51' 58" S; "longitude: 40° 50' 22" W) between 2016 and 2018. This study aims to analyze the correlation between environmental factors and anxiety of adults between 20 and 59 years of age, of both sexes. This being a subproject entitled "Epidemiological Profile of Chronic Diseases in the Municipality of Vitória da Conquista / BA".

The sample consisted of 980 individuals in the age group, residents of the city of Vitória da Conquista-BA and / or region. The inclusion criteria were: individuals between 20 and 59 years of age, in which the technique used was the systematic random sampling of individuals with and without anxiety in this municipality and / or region.

This criterion was determined by the Beck Anxiety Inventory (BAI), composed of 21 questions, which measures the intensity of the anxiety symptoms presented in the last weeks (12). They should be evaluated

by the subject on a scale of 0 to 3 points, since the sum of the evaluations in the items allows the overall score up to 0-63 points (13).

In addition to this, we used the Elder Abuse questionnaire: A Multinational Prevalence Survey -Abuel on smoking in which the following questions were selected: "Do you smoke? Yes or no; how often? Quit smoking for how long?" (14). Another questionnaire was the socioeconomic one, in which it describes the personal variables of the individuals (age, gender, income, employment, marital status) following the standards of the Brazilian Institute of Geography and Statistics (IBGE) (15).

In relation to the analysis of the nutritional status, it was performed through anthropometric measurements, calculated by the body mass index (BMI) classified according to the World Health Organization (WHO-1995) for adults, which recommends BMI <16 to 18,49 (Low Weight) from 18.5 to 24.99 (Eutrophy) 25.0 to 29.99 (Overweight) of > 30.0 (Obesity) (16).

Participants received clarification on the study and signed the Informed Consent Form (TCLE), which contained data pertinent to the ethical and current aspects of the National Health Council (CNS). Statistical analysis was performed using the SPSS (Statistical Package for Social Sciences) version 25.0 using the chi-square test of Pearson. The level of significance was set at <0.05. It should be noted that the project was approved by the Research Ethics Committee of the Faculdade Independente do Nordeste (Opinion No. 1,859,545).

III. RESULTS

The sample consisted of 980 anxious and non-anxious adults of both sexes. According to table 1, it was observed that 81.8% of the women are anxious and 30.9% of the men do not have anxiety, finding a significance of $p < 0.000$ between the genders. When asked about the work, 64.1% of the individuals worked and suffered from anxiety, compared to 71.5% who worked but did not suffer, demonstrating a significance of $p < 0.053$. Regarding smoking, 11% of people said they were smoking and anxiety, while 20% smoked and had no anxiety ($p < 0.840$).

When analyzing the BMI, it was noticed among the anxious that 18.4% are underweight, 56.4% are eutrophic, 19.6% are overweight and 5.6% are obese. These findings were not significant ($p < 0.263$). Finally, when interviewed about the schooling of those with anxiety, 65.8% of the subjects had incomplete higher education, and 34.2% had already completed higher education ($p < 0.062$).

Table.1: Correlation of anxiety with environmental factors:

Variables		Anxiety				p-value
		Without		With		
		n	%	n	%	
Genre	Male	177	30,9	38	18,2	0,000
	Female	396	69,1	171	81,8	
works	Yes	409	71,5	134	64,1	0,053
	Not	163	28,5	75	35,9	
Smoking	Yes	26	20,8	11	22,0	0,840
	Not	99	79,2	39	78,0	
BM	Low weight	74	15,0	33	18,4	0,263
	Eutrophic	257	52,1	101	56,4	
	Overweight	124	25,2	35	19,6	
	Obese	38	7,7	10	5,6	
Schooling	Incomplete Supplement	178	56,0	79	65,8	0,062
	Sup. Complete	140	44,0	41	34,2	

Source of Research, 2019

IV. DISCUSSION

It can be seen in Table 1 that the gender that was a significant predictor of anxiety was female, with 81.2%. According to the Diagnostic and Statistical Manual of Mental Disorders (2014), about 55 to 60% of women are diagnosed with anxiety, more frequently than men (17). This result can be explained through biological factors, such as female sex hormones and the overload of demands for women, besides the female being able to express their feelings (18).

The greater motivation for anxiety in women may be due to changes in the endocrine system that occur in the premenstrual period, postpartum and menopause, in addition to other factors such as: high rates of violence, economic situation, lifestyle, etc). In a study by Zancan and Habigzang (2018), a very relevant question about anxiety was raised, in which 78% of the women classified as anxious suffered domestic violence; also analyzed the psychopathological symptoms in 17 women in this situation, 94% presented symptoms of anxiety (20).

The present study is ratified by Hiany (2016), Murcho (2016), Souza (2017) who confirmed this prevalence of anxiety versus gender by social and psychological factors (21-23). In addition, women have the mission of educating and providing conditions for the development of their child, which generates concerns and, consequently, anxious symptoms (24).

According to table 1, it was found that the working individuals were more anxious ($p < 0.053$). Competitiveness in the labor market in the face of fear of unemployment are frequent problems that interfere with the mental health of the individual, such as anxiety;

Brazilian studies have reported anxiety disorders as one of the prevalent causes of work leave (1). Other studies show that psychological problems in 2008 were the third most common cause of work-related withdrawal, with 10.7% referring to sickness claims and 8.5% to work-related problems (25).

On the other hand, for Araújo (2018) the most unemployed individuals are in a worrisome condition and, therefore, anxious (26). This can be explained by the lack of self-realizations and dissatisfactions due to the absence of leisure activities (27). The development of anxiety disorder has a higher prevalence in health workers, as they undergo stressful events, face fear, conflicts, coexistence with death, and long working hours (28).

Smoking is an aggregate practice that not only worsens health status, but also interferes with the psychological health of smokers, since there is already a corroborating evidence of the direct relationship between smoking and mental disorders, which include anxiety (29). However, the present article does not agree with these findings, since according to table 1 there was no relation between smoking and anxiety, not showing any significance ($p < 0.840$).

In addition, there is evidence that depressed smokers are more stimulated to smoke in order to ameliorate negative feelings such as anxiety (30). And other studies prove that nicotine present in tobacco can act stimulatingly when at a low level of activation, and also as a tranquilizer when at high levels of activation, for example, when they are anxious. This relationship occurs through the activation of acetylcholine-nicpnic receptors

in brain cells that are capable of producing relaxation sensation (31).

When it came to the body mass index (BMI), it was verified that there is no correlation between obesity and anxiety, and therefore, it does not present any significance ($p < 0.263$), ie, anxiety does not induce the individual to eat more (Table 1). However, according to Hamdan (2017), obesity has been related to anxiety, which can be determined as a body state marked by psychological symptoms, since they influence people to eat even without hunger (32).

Obesity and overweight are classified as an abnormal or excessive accumulation of fat that can lead to health complications, in which psychopathological factors may be the cause of these problems; some evidence shows that anxiety along with depression is more frequent in obese people (29). This study corroborates with Correa (2018), reporting that obesity is associated with mental disorders, and one of the reasons for this is the pattern of beauty imposed by society, causing a fall in the self-esteem of the overweight individual and psychological stress (33).

Finally, according to table 1, schooling was also not relevant to the study ($p < 0.062$), that is, whether or not it is university does not induce the individual to be anxious. However, according to Wahed et al. (2016), psychological health issues are constantly growing in universities, where 60% of university students are unable to complete their studies due to psychological problems such as anxiety and depression (34).

Some studies report that university students, especially in the health area, are more anxious and stressed, which causes damage to quality of life and professional performance (35). Therefore, these findings do not correspond to the results of this research.

V. FINAL CONSIDERATIONS

Considering the findings of the research, it is possible to verify that anxiety is more prevalent in women compared to men. This can be attributed to the ease of women to demonstrate their feelings, as well as to face the social roles through society. Another factor that has been shown to influence anxiety is work, that is, working individuals are more anxious than the unemployed, this can be due to the concerns, obligations and activities that must be fulfilled.

Regarding the Nutritional Status that was evaluated by BMI, there was no significance, showing that anxiety has no influence on obesity, the anxious individual does not tend to eat more. And the variables smoking and schooling were not related to anxiety, which did not corroborate with the majority of the studies surveyed. Thus, it is necessary to emphasize the importance of this

study to the health areas, so that professionals can diagnose anxiety and treat it correctly.

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