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EXPERIMENTAL PSYCHOLOGICAL

STUDY OF THE EFFECT OF OBSESSIVE-COMPULSIVE DISORDER ON STUDENTS' COGNITIVE ACTIVITY

ESTUDIO PSICOLÓGICO EXPERIMENTAL DEL EFECTO DEL TRASTORNO OBSESIVO-COMPULSIVO EN LA ACTIVIDAD COGNITIVA DE LOS ESTUDIANTES

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ABSTRACT

Individuals afflicted by OCD frequently contend with persistent obsessions and compulsions, which can detrimentally affect their ability to maintain focus, accomplish academic assignments, and engage wholeheartedly in educational pursuits. Taking this into account, the objective of this research is to analyze the effect of obsessive-compulsive disorder on the cognitive activity of students. The article classifies the psychological nature of obsessive-compulsive disorder and discusses concepts related to this condition. It was noted that although there are different views among authors about OCD and its effect on cognitive activity, most researchers believe that OCD affects cognitive activity and academic achievements. To verify this, an experimental study was carried out where it was concluded that there is a relationship between "cognitive activity" and obsessions, being significant at the 0.01 level. At the same time, considering that the correlation coefficient is -0.378, it can be said that there is an inverse correlation between these two variables.

Keywords: Obsessive-compulsive disorder, cognitive activity, academic activity.

RESUMEN

Las personas que padecen TOC con frecuencia se enfrentan a obsesiones y compulsiones persistentes, que pueden afectar negativamente su capacidad para mantener la concentración, realizar tareas académicas y participar de todo corazón en actividades educativas. Tomando esto en cuenta, el objetivo de esta investigación es analizar el efecto del trastorno obsesivo-compulsivo en la actividad cognitiva de los estudiantes. En el artículo se clasifica la naturaleza psicológica del trastorno obsesivo-compulsivo y se discuten conceptos relacionados a este padecimiento. Se observó que, aunque existen diferentes puntos de vista entre los autores sobre el TOC y su efecto sobre la actividad cognitiva, la mayoría de los investigadores cree que el TOC afecta la actividad cognitiva y sus logros académicos. Para comprobar esto se realizó un estudio experimental donde se concluyó que existe una relación entre la actividad cognitiva y las obsesiones, siendo significativa en el nivel del 0,01. Al mismo tiempo, considerando que el coeficiente de correlación es -0,378, se puede decir que existe una correlación inversa entre estas dos variables.

Palabras clave: Trastorno obsesivo-compulsivo, actividad cognitiva, actividad académica.

INTRODUCTION

In modern times, improving the knowledge and skills of students attracts attention as one of the important issues against the background of the rapid development of society. Along with a number of factors, cognitive activity also plays an important role in intellectual development (Lokalova & Dregnina, 2014). Conducted studies and observations show that the increase in cognitive activity is manifested in the ability of young students to cope with the difficulties that appear in new conditions, and in the fact that young people correctly analyze reality and what is happening around them. Cognitive activity has a significant impact on the learning activity of young people by including intensive attention and readiness for action (Gauvain, 1998).

It should be noted that the studies about increasing the potential opportunities of students have been conducted in the direction of studying the factors influencing the formation of cognitive activity. Intellectual disability in action can manifest itself both in solving complex logical problems and in the creative field that requires deep imagination processes (Wu et al., 2017). Against the backdrop of rapid development, the presence of such obstacles for human intelligence does not allow it to adapt to rapidly changing situations in the social, public, and economic spheres. However, overcoming intellectual obstacles is possible by activation of cognition and improving problem situations solving in a rational manner.

Forming a self-realized and developing personality in front of the university today, as well as spontaneous development in the educational process, self-awareness, building one's own actions not only with stereotypes, but according to the situation, adapting to changing conditions, etc., such tasks have become one of the main demands of society. In addition, the development of cognitive activity in young students in the right direction and achieving success in the learning process not only eliminates intrapersonal contradictions, but also promotes its dynamic development.

Considering this, in modern age due to the proliferation of information requires radical changes in the training process as well as in other areas. In this regard, cognitive activity plays an important role as one of the most relevant issues in this process, and it is known that one of the factors that affects cognitive activity is obsessive-compulsive disorder (OCD). About this, obsessive-compulsive disorder represents a mental health condition distinguished by the presence of obsessions and/or compulsions. Obsessions encompass repetitive, distressing, and persistent thoughts, images, impulses, or urges that intrude upon an individual's consciousness, are unwanted, and frequently elicit anxiety. In contrast, compulsions entail repetitive behaviors or mental acts that an affected individual feels compelled to engage in, either in response to an obsession or in adherence to stringent, self-imposed regulations, with the aim of attaining a perceived state of 'completeness'. Obsessive-compulsive disorder usually manifests itself more often between the ages of 20 and 25. This disorder often manifests itself in boys before puberty, and in girls more often in their 20s and older. It is important to note that OCD is emblematic of a broader category of disorders referred to as obsessive-compulsive and related disorders (OCRDs) (Lochner & Stein, 2010; Stein et al., 2019).

The following clinical variants of obsessive-compulsive disorder are noted:

- One-sided: symptoms of neurosis persist for months or even years at the same level of intensity (or disappear with age).
- Remission: symptoms of neurosis worsen or disappear.
- Progressive: symptoms worsen, and anxiety and fear "grow", i.e., the patient feels more and more new fears and follows new rituals to protect himself from them.

Obsessive-compulsive disorder is characterized by obsessive thoughts and actions, nevertheless, every healthy person can experience a strong emotion when thinking about a topic that constantly excites him, and against this background, cyclical movements can be observed in him (walking in circles around the room, arranging rosary beads, twisting buttons, straightening sliders on the edge of the table, etc.) (Bleicher & Crook, 1995). However, unlike neurosis, a healthy person in a state of anxiety can control his actions quite easily (with thoughts, of course, it is more difficult), and at the end of the situation, these manifestations completely disappear (Kazimova & Valiyeva, 2019).

Considering what has been said, the objective of this research is to analyze the effect of obsessive-compulsive disorder on student's cognitive activity. Our hypothesis is that there is an inverse correlation between OCD and students' cognitive activity.

MATERIALS AND METHODS

Various research methods were employed in the execution of this study. To delve into the characteristics of obsessive-compulsive disorder, the method of literature analysis was initially utilized. The literature analysis approach carries several notable advantages, as it permits the juxtaposition of preexisting information culled from books,

scientific journals, reports, and other relevant documents. This mode of inquiry proves particularly advantageous in intricate or specialized subjects, facilitating the attainment of a comprehensive and overarching perspective within a specific domain of study. Moreover, the review of extant literature equips researchers with the capacity to discern lacunae in the existing body of knowledge and provides direction for prospective investigations. Additionally, through the comparative analysis of findings from distinct studies, the methodology of literature analysis aids in the validation of outcomes and the formulation of more robust and well-founded conclusions.

In literature analysis, it is not necessary to carry out primary research, such as surveys or experiments, which saves time and resources. However, as part of our study, an experimental analysis was carried out with the purpose of testing our hypothesis. The study was conducted on students of the Faculty of Social Sciences and Psychology (Psychology major) of Baku State University (Azerbaijan). The sample consisted in 180 respondents. Maudsley test (Hodgson & Rachman, 1977), and Yale-Brown (Yale-Brown scale of obsessive-compulsive symptoms (Y-BOCS)) (Goodman, Price, Rasmussen, Mazure, Delgado, et al., 1989; Goodman, Price, Rasmussen, Mazure, Fleischmann, et al., 1989), were used.

For processing results SPSS software was used. Before checking the inter-variable relationship, the distribution form of the data collected was studied by means of the normality test. As we know, the distribution can be said to be non-normal when $\sigma < 0.005 \sigma < 0.005$. Unlike other analyzes in normality test correlation analysis should be given with reference to non-parametric indicators (Spearman correlation should be referred to instead of Pearson correlation). The results of the normality test show that the distribution of the collected points for all 4 studied variables is non-normal and $\sigma < 0.005 \sigma < 0.005$ for all variables. Therefore, Spearman's coefficient was used in the correlation analysis.

DISCUSSION OF RESULTS

On obsessive-compulsive disorder

The obsessive-compulsive disorder causes obsessions (obsessive thoughts) and compulsions (obsessive actions) in almost all cases, but in 20% the neurosis is limited to obsessive thoughts. Obsessive-compulsive disorder (obsessive-compulsive disorder) symptoms manifest themselves in two forms in a person. We can systematize them in the following way: 1) obsessions - are obsessive thoughts, images, or urges that occur stereotypically to the patient and 2) compulsions are actions that help to temporarily eliminate obsessive thoughts and reduce anxiety.

In the scientific literature, several factors that lead to the development of obsessive-compulsive disorder are distinguished (Lochner & Stein, 2010; Stein et al., 2019). We can systematize them as follows.

- Biological factors.
  - Heredity. Obsessive-compulsive disorders are also found in about 50% of patients among their close relatives.
  - Chemical imbalance in brain cells - lack of a neurotransmitters.
  - Organic changes in the brain.
- Psychological factors. Acute psychotrauma or long-term stress can lead to the development of neurosis. However, this is an obsessive-compulsive disorder that will only develop in a person who is biologically predisposed to it. Without such a tendency, the psyche will react in a different way.

A patient with obsessive-compulsive disorder understands that obsessive thoughts are alien to him, actions are meaningless, but he cannot overcome them. The main symptoms of OCD are as follows:

1. Doubts and fears. Usually, neurosis begins with the patient's loss of self-confidence, seeing everything that is needed and how it is needed. Common cases are to double check that the door is closed, the water/light/stove is off, recalculate his calculations or reread the typed text, etc. (Cuceloglu, 1991).
2. Obsessive thoughts. Often these are exciting memories or fantasies on an interesting topic. More often - humming obsessive songs, saying expressions, poems, prayers, and this already has a ritual character.
3. Phobias. One of the main symptoms of the disorder is obsessive (but unfounded) fears. Some of the most common phobias are:

- mysophobia (fear of contamination, leads to constant washing of hands, up to wiping the skin).
- carcinophobia (fear of getting cancer).
- social phobia and erythrophobia (fear of society, public speaking, blushing in front of everyone).
- agoraphobia (fear of large open spaces and large crowds, such as markets, fairs, outdoor performances).
- claustrophobia (fear of small, enclosed spaces).
- hypsophobia and acrophobia (fear of heights).
- xenophobia (fear of everything new and unknown), etc.

1. The patient may experience irrational fears and desires. For example, while standing on the road the patient may be afraid of throwing himself under the wheels, standing at a height - falling down, having a knife in his hand - harming someone or himself.
2. Obsessive calculation. The patient begins to literally count everything: poles on the road, the number of passing red / white / any other color cars, matches in a box, etc.
3. Compulsions (compulsive actions). Some compulsions could be sorting the rosary, tapping the fingers on the table, tapping the feet, smelling, and/or cleaning dust particles. Some common compulsions are:

- onychophagia - eating nails.
- dermatollomania - peeling the smallest bumps on the skin, squeezing the smallest pimples, removing wounds, etc.
- trichotillomania - hair pulling (usually from the head but can be from other parts of the body).
- Inadequate excellence (symmetry OCD). The patient tries to always hang all towels at the same level, arrange glasses in a patterned direction, sort clothes by color, etc. Moreover, it is not just a desire for order, but when the patient is unable to control himself, for example, at a party the patient may begin to arrange things since the anxiety of "messiness" can be great.

Various studies have been conducted on the effect of obsessive-compulsive disorder on cognitive ability and academic achievement. For example, Rickelt et al., (2016) found that there is a significant association between the severity of depressive symptoms at baseline and obsessive-compulsive symptoms one year later, while the relation between the severity of obsessive-compulsive symptoms at baseline and depressive symptoms at follow-up was not significant. This effect was observed in all groups analyzed, irrespective of a comorbid MDD or whether the MDD preceded or succeeded the OCD. The relationship with cognitive activity is not direct, but it is known that a depressed student will lower their academic performance.

Students with OCD may have difficulty concentrating on their studies due to their obsessive thoughts and compulsive behaviors. Compulsive behaviors can be time-consuming, which can interfere with students' ability to complete assignments and study for exams (Li, 2022). In addition, OCD can cause anxiety and stress, which can make it difficult for students to focus on their studies and perform well academically (Malik et al., 2022)

In our opinion, an interesting study was conducted by Purdon & Clark (2005). This study was conducted between students of the Faculty of Education of Çukurova University. To determine the prevalence of OCD, representativeness was calculated from 800 people. After collecting sociodemographic information, students with OCD were interviewed. General Health Questionnaire-12 (GHS) and International Diagnostic Interview (CIDI, Section K) identified psychiatric factors. In the study, compared to the prevalence of OCD in Turkish society, a higher prevalence of OCD was observed among university students. Furthermore, the findings suggest a high correlation between OCD and sociodemographic factors, as well as other environmental stressors. They demonstrated specific cognitive deficits in visual memory function and task performance in OCD patients. These patients performed poorly on the same tests as people with frontal lobe amputations and subcortical pathology. It can be assumed then that the underlying pathophysiology of the disorder can be conceptualized as a dysfunctional reflection of frontal incisive systems.

Experimental results of the study

This study is based on to the hypothesis that there is an inverse correlation between OCD and students' cognitive activity. Thus, as the level of obsessive-compulsive disorder increases, their level of cognitive activity decreases. The composition of respondents by course year is shown in Table I. The age range of the respondents ranged between 17-28, and the average age was 19. The frequency analysis of this variable is shown in Table 2.

Table 1: Distribution of respondents by course.

Course	Frequency	Relative frequency	Cumulative Frequency
I	69	38.3	38.3
II	41	22.8	61.1
III	40	22.2	83.3
IV	30	16.7	100.0
Total	180	100.0	

Source: Own elaboration

Table 2: Distribution of respondents by age.

Age	Frequency	Relative frequency	Cumulative Frequency
17	34	18.9	18.9
18	45	25.0	43.9
19	32	17.8	61.7
20	35	19.4	81.1
21	24	13.3	94.4
22	9	5.0	99.4
28	1	0.6	100.0
Total	180	100.0	

Source: Own elaboration

Among the respondents, 163 were girls and 17 were boys. All respondents completed the Maudsley OCD test, and when analyzing the results, it was clear that 139 of the 180 respondents had OCD symptoms. No signs of OCD were observed in 41 people. In terms of the observation of OCD symptoms in the respondents, the percentage ratio was as follows: in 22.8 percent did not observe OCD symptoms, in 77.2 percent did. This is shown in Table 3.

Table 3: Observational status of OCD symptoms according to the Maudsley OCD test.

OCD symptoms	Frequency	Relative frequency	Cumulative Frequency
Not observed	41	22.8	22.8
Observed	139	77.2	100.0
Total	180	100.0	

Source: Own elaboration.

In order to determine the level of obsession and compulsion in the respondents with OCD symptoms, the Y-BOCS (Yale-Brown obsessive-compulsive symptoms table) methodology was presented to them. 87.77 percent of the respondents with OCD symptoms participated in the next stage comprising 122 out of 139 people. The results are shown in Table 4. Subclinical level of obsession and compulsion was observed in 32.8 percent of respondents with OCD symptoms, mild level in 37.7 percent, moderate level in 26.2 percent, and severe level in 3.3 percent.

Table 4: Yale-Brown scale in respondents with OCD symptoms.

	Frequency	Relative frequency	Cumulative Frequency
Subclinical	40	32.8	32.8
Middle degree	46	37.7	70.5
Medium heavy	32	26.2	96.7
Severe degree	4	3.3	100.0
Total	122	100.0	

Source: Own elaboration

The relationship between obsession and compulsion (Y-BOCS) level and cognitive activity was examined in respondents with OCD symptoms (Table 5). Since the observed inverse relationship between the two variables is $p = 0.023 p = 0.023$, it is statistically significant at the level of 0.05. This is an indication that the elevated level of obsession and compulsion has a negative effect on the cognitive activity of the respondents. It was expected that respondents with high obsessions were high on other related factors (compulsion and Y-BOCS methodology) and to check this, the question of whether there is a relationship between obsession, compulsion and cognitive activity based on Y-BOCS methodology was checked. Based on the obtained results, there is a relationship between these three variables, and since $\sigma \leq 0.005 \sigma \leq 0.005$ here, the relationship between the variables is significant at the 0.05 level.

Table 5: Relationship between Yale-Brown level and cognitive functioning.

Correlations			
		Grade on the Maud Sley OKP tests	Cognitive activity
Grade on the Maudsley OCT tests	Pearson Correlation	1	-.210*
	Sig. (2-tailed)		.023
	N	180	122
Cognitive activity	Pearson Correlation	-.210*	1
	Sig. (2-tailed)	.023	
	N	122	122
*. Correlation is significant at the 0.05 level (2-tailed).			

Source: Own elaboration.

Cognitive activity was assessed based on the answers of 122 respondents who answered the cognitive activity test. According to the cognitive activity test, different levels of cognitive activity of respondents with OCD symptoms were determined. Among the respondents, 14 had relative cognitive activity, 11 people were receptive-active, 47 were executive-active, 29 were reflexive, and 21 were creative (Table 6).

Table 6: Level of cognitive activity.

	Frequency	Relative frequency	Cumulative Frequency
Relatively active	14	11.5	11.5
Reception is active	11	9.0	20.5
Owner active	47	38.5	59.0
Reflexive Active	29	23.8	82.8
Creative	21	17.2	100.0
Total	122	100.0	

Source: Own elaboration.

It can be concluded from the general remarks that the main hypothesis of the study, that is, the inverse correlation between OCD and cognitive activity, has been confirmed in the conducted study. However, we believed that with appropriate support and attention to the needs of students with OCD, it is possible to mitigate these negative effects. Accommodation strategies, therapy, and psychological support can help students with OCD manage their symptoms and reach their maximum academic potential. Considering this, universities and colleges should prioritize the recognition of the impact of OCD on students

and institute efficacious educational strategies aimed at assisting these individuals in managing their symptoms and achieving academic success.

CONCLUSIONS

Obsessive-compulsive disorder (OCD) mainly affects the academic, behavioral and social functions of students and can lead to additional problems such as depression. Teachers should be aware of the signs of this disorder so that they can coordinate with individuals who provide appropriate support for students with OCD. This article focused on identifying typical manifestations of OCD and we hope that the knowledge discussed here can be relevant for the future use of teachers in the classroom. We noted that the results of our research coincided with the results of some studies conducted in this field, although in some of them, different results also arose for which it is important to continue conducting research on the topic.

Finally, it can be said that the cognitive activity of students with obsessive-compulsive disorder is lower than that of other students. For this reason, students with OCD should seek psychiatric and psychological help by contacting psychologists or other mental health professionals at their institution of higher education. Proper treatment can help students with OCD, but overcoming it is not a quick or straightforward process. Students with OCD usually need to work with a therapist for several months or longer and some of them may need to take medication to manage their anxiety.

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