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APPLICATION OF THE COGNITIVE FUSION QUESTIONNAIRE IN PATIENTS OF THE ANXIETY, SERIOUS DEPRESSION, MOOD DISORDERS OUTPATIENT OF ``CONJUNTO HOSPITALAR DE SOROCABA``

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Abstract: Cognitive fusion is the phenomenon whereby individuals believe in the literal sense of their thoughts, experiencing them as reality, generating suffering. The cognitive fusion construct is part of the tradition of transdiagnostic approaches, which are based on the idea that common factors permeate different psychiatric disorders and represent common targets in the treatment of different pathologies, such as bipolar affective disorder (BAD). The objective of the present study is to verify the existence of an association between cognitive fusion and age, disease duration, number of psychiatric hospitalizations, suicide attempts and depression in patients suffering from BAD, from the outpatient clinic of ``Conjunto Hospitalar de Sorocaba`` (CHS). This is a cross-sectional and observational study, with a non-probabilistic and convenience sample. A non-parametric analysis of the variables was carried out using Spearman's rho coefficient.

Keywords: Cognitive Fusion. Bipolar Affective Disorder. Transdiagnosis. Depression. Cognitive Fusion Questionnaire.

INTRODUCTION

In antiquity, the Greek philosopher Aristotle said: "*It is the sign of an educated mind to entertain a thought without accepting it.*" Nowadays, mental health professionals of all theoretical approaches work with patients whose lives are impaired by negative and critical thoughts that they regard as absolute truths (HAYES; HOFMANN, 2020a).

A capacity similar to that referred to in Aristotelian thought is studied in the psychological field under the generic name of "decentering", which is the capacity to change an individual's experiential perspective - from the interior of the subjective experience to the observation of the experience itself (BERNSTEIN et al. al., 2015). Within the scope of "decentering", cognitive fusion stands out, a phenomenon by which thought becomes equivalent to the experience it expresses (BARDEEN; FERGUS, 2016a).

When people overidentify, or merge, with dysfunctional thoughts, their behavioral repertoire decreases and they lose direct contact with the consequences of their actions (HAYES; PISTORELLO; LEVIN, 2012a). This process prevents adaptation or change from occurring when the present strategy is not working.

The consequences of cognitive fusion for an individual's life range from the thought "I am alone" corresponding to the psychological experience of loneliness (GRECO; LAMBERT; BAER, 2008), to favoring the control of behavior by rules expressed in thoughts, such as a person who thinks "I am a bad person and therefore I must distance myself from others" and starts to isolate himself by identifying with the thought expressed in the rule (BLACKLEDGE, 2015).

The cognitive fusion mechanism, associated with psychological inflexibility, limits the repertoire of responses to life situations and is related to lower quality of life (SILVA, 2015).

The relationship between the cognitive fusion process and psychiatric pathologies has been explored recently and associations with anxiety and depression have been found (GILLANDERS et al., 2014a); body dissatisfaction and eating disorders (TRINDADE; FERREIRA, 2014); post-traumatic stress disorder (BARDEEN; FERGUS, 2016a) and hypochondriasis (FERGUS, 2015). However, the number of publications relating the process of cognitive fusion and bipolar affective disorder is still scarce.

In addition, its importance as a predictor of mental health in students was observed (KRAFFT; HAEGER; LEVIN, 2019a).

The presence of cognitive fusion associated with behavioral inflexibility may be associated

with greater severity and longer time since the diagnosis of psychiatric disorders, since with a long duration of illness, patients would behave according to dysfunctional thoughts and could confuse the disease with the own self, worsening their prognosis and functional recovery.

Among the various mental disorders, anxiety and mood disorders (depressive and bipolar), in addition to being the most prevalent, have a chronic course.

Depressive symptoms are a frequent condition in the psychiatric clinic, which negatively affects mood, thinking and behavior, reducing the functionality of its sufferers. Its presentation is varied, and may appear as a sad mood, reduced ability to feel pleasure, guilt, feelings of worthlessness and uselessness, alteration in reasoning, concentration and memorization, reduction in the ability to make decisions and plan, combined with changes in sleep, appetite and motricity (TORRES, 2020).

Bipolar affective disorder (BAD) presents extreme changes in mood, energy and behavior. There is an alternation between episodes of depression and episodes characterized by increased energy and mood polarity, which may be abnormally happy or irritable. These episodes are usually interspersed with periods of normal mood. The episodes cause disruption in the functioning of individuals (HOWLAND; EL SEHAMY, 2021).

Taking into consideration, the theory of cognitive fusion and the chronicity of these disorders, there could be an incorporation of the diagnosis into their personality, increasing prejudice and incapacitation to these diseases. In addition, the Beck Depression Inventory (BDI-II) was incorporated, an instrument often used to track depressive symptoms (VON GLISCHINSKI; VON BRACHEL; HIRSCHFELD, 2019). It is essential to observe the relationship between the degree of cognitive fusion and depression, since, if there is a relationship between the two, the patient's condition may be more serious.

Increased knowledge of cognitive fusion in patients with mental disorders allows the development of therapeutic strategies aimed at these thoughts and consequent dysfunctional behaviors. Thus, we aimed to study the presence of cognitive fusion in patients with depressive and bipolar disorders treated at the psychiatry clinic of FCMS-PUCSP, Sorocaba campus.

PART I - ACTIVITIES DEVELOPED

SYSTEM ADOPTED BY THE ADVISOR

After a meeting with the advisor in August 2021, the schedule for carrying out the first activities of this work was modified. It was agreed that the application of the tests would wait for a more opportune moment, due to the increase in cases of COVID-19 and waiting for the vaccination to advance. Instead of carrying out the practical part, we opted to review the bibliography related to the topic, finishing the theoretical part of the project first. The application of the tests will be carried out at an opportune time in the coming months.

In the period that followed the delivery of the partial report and the easing of the sanitary restrictions, meetings were held with the advisor in order to organize the application of the tests in the psychiatry clinic. In addition, there were meetings aimed at learning and performing data tabulation and relevant statistical analyses.

OBJECTIVES ACHIEVED, DIFFICULTIES ENCOUNTERED AND STRATEGIES USED TO OVERCOME THEM

In the present study, the existence of associations between cognitive fusion and age, disease duration and depression in patients suffering from bipolar affective disorder (BAD) at ``Conjunto Hospitalar de Sorocaba`` (CHS) outpatient clinic were verified. As for the difficulties faced, the COVID-19 pandemic was one of the obstacles identified for carrying out the application of the scales in the outpatient clinics.

For this, the schedule had to be inverted: the theoretical part was carried out at first, then the practical part, which involved the application of tests and statistical analysis. In addition, another obstacle faced was the question of the schedule of classes at the boarding school in the 4th year. This is because the workload intensifies and classes start to take place during outpatient clinic hours. Thus, to overcome this difficulty, the scales were applied during free time, taking advantage of the absence of teachers and classes that ended before the time provided by the schedule.

CHANGES IN RELATION TO THE ORIGINAL PROJECT AND JUSTIFICATIONS

In the original work, it was planned to verify the existence of an association between cognitive fusion and anxiety, depressive and bipolar disorders. However, in response to the difficulties imposed by the health restrictions of the pandemic and considering the restricted sample size obtained with patients with depressive and anxiety disorders, it was decided to carry out the statistical analysis on the most robust sample, consisting of patients with bipolar affective disorder.

Thus, an exchange was made: although the number of participants with anxiety and depressive disorders was lower than initially predicted, the group of patients with bipolar disorder exceeded the initial forecast.

Furthermore, a new variable was added to the study, the presence of depression, assessed by the Beck Depression Inventory (BDI-II). The new proposal came about as a more reliable way of representing the patients' symptoms when applying the QFC. In addition, the incorporation of the new inventory made it possible to assess the existence of an association between cognitive fusion and depression.

Considering the above, it is reinforced: the main objective and the specific objectives, initially proposed, were achieved, the modification occurred only in the number of disorders evaluated.

COMPLEMENTARY ACTIVITIES RELATED TO RESEARCH

There was no participation in any activity outside the research, as there were no opportunities to do so.

PART II – SCIENTIFIC REPORT

METHODOLOGY

This is a cross-sectional and observational study, with a non-probabilistic and convenience sample.

The study consisted of applying the Cognitive Fusion Questionnaire (QFC) and the Beck Depression Inventory (BDI-II) to patients at the psychiatry outpatient clinic of ``Conjunto Hospitalar de Sorocaba`` (CHS), based on bipolar affective disorder (TAB). In addition to cognitive fusion and depression, age, diagnosis, number of hospitalizations, suicide attempts and disease duration were studied. Patients who agreed to participate received the research instruments on paper.

Statistical analysis was performed using the

SPSS software, which is an easy-to-use tool with a friendly interface. In the program, the analysis of the study sample was carried out, which showed that it did not obey the normal distribution. From this data, it was decided to perform the non-parametric analysis of the variables, based on Spearman's rho coefficient.

RESULTS

CHARACTERISTICS OF THE POPULATION

The final study sample consisted of 32 participants (N = 32). The mean age was 38 ± 11 years (Table 1). Of this population (Table 2), 75% were female (24/32) and 25% male (8/32), all aged over 18 years. The mean age was 38 ± 11 years. The mean time since diagnosis was 9 ± 7 years.

Regarding psychiatric hospitalizations and suicide attempts, 50% (16/32) and 43% (14/32) of the sample had at least one occurrence of these situations, respectively. Furthermore, the mean time since diagnosis was 9 ± 7 years.

Regarding the applied scales, the BDI-II presented an average of 19 ± 14 points, with a minimum score of 0 and a maximum of 51. The QFC had an average of 28 ± 14 points, with a minimum score of 7 and maximum of 49.

	N	Average	Standard deviation	Mini-mum	Maxi-mum
Age	32	38,2187	11,88584	22,00	74,00
Diagnosis Time	32	9,8125	7,33281	1,00	28,00
IDB-II	32	19,4375	13,92361	,00	51,00
QFC	32	28,5938	13,81411	7,00	49,00

Table 1: Descriptive Characteristics of the Population (age, time since diagnosis, BDI-II and QFC)

psychiatric hospitalization	Frequency	Percentage
Yes	16	50,0
No	14	43,8
Not available	2	6,3
Total	32	100,0
Suicide attempt	Frequency	Percentage
Yes	14	43,8
No	16	50,0
Not available	2	6,3
Total	32	100,0
Gender	Frequency	Percentage
Masculine	8	25,0
Feminine	24	75,0
Total	32	100,0

Table 2: Descriptive characteristics of the population (psychiatric hospitalization, suicide attempt and gender)

TESTING INTERACTIONS BETWEEN VARIABLES

Table 3 shows the bivariate correlation between the study variables. The following findings stand out: both depression and cognitive fusion were positively associated with female gender (.387 and.466; p<0.05). Time since diagnosis had a significant association with psychiatric hospitalization and suicide attempt (p<0.05), which, in the present study, means that the longer the time since diagnosis, the greater the chance of psychiatric hospitalization and suicide attempt. There was also an association between the time of diagnosis and the age of the research participants (.414; p<0.05).

The strongest association occurred between cognitive fusion and depression (.744; p<0.01), indicating a strong interaction between the variables.

The other variables did not show significant associations according to the statistical analysis used.

Variables	1	2	3	4	5	6	7
1.Gender	1,000	,200	-,114	,299	,105	,446*	,387*
2. Age	,200	1,000	,414*	-,021	-,020	,157	,176
3. Diagnosis Time	-,114	,414*	1,000	-,361*	-,390*	-,095	-,096
4. Psychiatric hospitalization	,290	-,021	-,361*	1,000	486**	,226	,365*
5. Suicide attempt	,105	-,020	-,390*	,486**	1,000	-,123	-,093
6.QFC	,446*	,157	-,095	,226	-,123	1,000	,744**
7. IDB-II	,387*	,176	-,096	,365*	-,093	,744**	1,000

Table 3: Bivariate correlation (Spearman rho)

*. The correlation is significant at the 0.05 level (bilateral).

**. The correlation is significant at the 0.01 level (bilateral). Other values above p > 0.05.

CRITICAL DISCUSSION

The present study found a direct and significant association between cognitive fusion and depression in patients with bipolar affective disorder, in such a way that higher degrees of cognitive fusion were associated with higher rates of depression. On the other hand, no associations were found between cognitive fusion and the other addressed variables. Our results corroborate the fact that high degrees of cognitive fusion compete with BAD and depressive disorder (GILLANDERS et al., 2014b; KRAFFT; HAEGER; LEVIN, 2019b; PINTO-GOUVEIA et al., 2020). This way, the degree of cognitive fusion determines how involved the individual is in their specific content of cognitions (BARNEY et al., 2021; GILLANDERS et al., 2014b). As a result, in those with higher degrees of cognitive fusion, such contents are seen as absolute truths and can interfere with their behavior. For example, individuals who merge in a thought like "I am stupid" and accept that as absolute truths (BARNEY et al., 2021), may experience a decrease in self-esteem, which could worsen depression.

Furthermore, the deficit in cognitive flexibility in patients with bipolar disorder – both type I and type II – has been shown to be associated with the presence of depressive symptoms and suicidal ideation

(MACPHERSON et al., 2022). This conclusion is supported by the present study, in which a significant association was found between cognitive fusion and depression.

We found no association between the degree of cognitive fusion and the age of the patients, inconsistent with the data they show. This finding is in line with what the literature indicates. This is because studies show that the greater the age, the greater the decline in memory (verbal and working memory), which leads to worse cognitive flexibility performance (BOONE et al., 1999; BORA; YUCEL; PANTELIS, 2009; MEJIA et al., 1998). That is, cognitive inflexibility predicts a greater degree of cognitive fusion.

In summary, older age seemed to correspond to greater degrees of cognitive fusion, which we did not find. However, this finding can be partially explained by the fact that the sample of the present study does not present age-related memory alterations. In future studies, it is possible to assume that the application of a memory score, such as the Mini Mental State Examination, offers a reliable way to control for the effects of memory loss related to cognitive fusion. Still, the results obtained point to the possibility that the increase in the state of cognitive fusion is more linked to memory loss than to advancing age.

6

Furthermore, the time of diagnosis appears to compete with the decline in cognitive flexibility and, therefore, with an increase in cognitive fusion (O'DONNELL et al., 2017). It must be noted: cognitive fusion was tested from the execution of a task. This finding was not reproduced in the present study, in which no associations were found between cognitive fusion and time since diagnosis. We can assume that the difference in the method used accounts for the result.

As for the number of hospitalizations and suicide attempts, it was not possible to find an association between these data and the degree of cognitive fusion. The scarcity of studies on the subject does not allow us to compare the findings.

Regarding Bipolar Disorder, the rigid response pattern to the stimulus, characteristic of cognitive inflexibility, has been suggested for over 10 years (NELSON et al., 2007). This initial hypothesis was supported by an experiment that compared cognitive flexibility in bipolar patients compared to controls (RADOEVA et al., 2020).

In line with these findings, the present study found high levels of cognitive fusion in patients diagnosed with BAD. It is interesting to point out that, although the aforementioned studies have such different methods of assessing cognitive fusion – task execution, functional neuroimaging and application of scales -, all studies converge to the presence of cognitive fusion in patients with BAD.

Finally, the method used in the present study was based on the application of validated, highly reliable scales with patients from the bipolar disorder outpatient clinic of ``Conjunto Hospitalar de Sorocaba``. However, the reduced number of patients and the convenience sample, exclusively of patients with BAD, do not allow us to extrapolate our results to other mental disorders.

CONCLUSION

Cognitive fusion is an important parameter in the assessment of symptoms in patients with bipolar affective disorder. Furthermore, the cognitive fusion questionnaire proved to be a quick and effective way of measuring the degree of cognitive fusion in the present study population. Such a tool can guide the establishment of non-pharmacological strategies in the treatment of patients with bipolar disorder.

Finally, the authors encourage and recommend further studies on the subject, as a way to continue advancing knowledge about this important cognitive process.

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