Research Paper: The Relationship between Depression with Cognitive Fusion and Defense Mechanisms

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Abstract

Depression is one of the most common mental illnesses in the world, so it is important to know it as well as possible to design interventions to reduce it in society. The present study was conducted with the aim of investigating the relationship between depression with cognitive fusion and defense mechanisms. This research is descriptive-correlation type. The research population was the students of Kashan University in the academic year of 2023-2024, and 350 of them were selected by convenience sampling method. Research tools included Beck Depression Inventory-II (BDI-II), Cognitive Fusion Questionnaire (CFQ) and Defense Mechanisms Questionnaire-40 (DSQ-40). Data analysis was done using SPSS-26 software and Pearson correlation coefficient. The obtained findings showed that depression is positively correlated with cognitive fusion and immature and neurotic defense mechanisms ($P < 0.01$). But the relationship between depression and mature defense mechanisms such as humor and sublimation was negative and significant ($P < 0.01$). These findings show that depression is related to unhealthy thought processes such as cognitive fusion and immature and neurotic defense mechanisms, and therefore attention should be paid to this issue in the field of treatment.

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1. Introduction

Depression is one of the most common mental disorders in the world and is known as the common cold of mental disorders (Kandhakatla et al., 2018). Cai et al. (2023) reported the prevalence of depression as 35.1% in a systematic review and its rate is increasing in young people and every year (Thapar et al., 2022). Depression includes symptoms such as low mood, lack of pleasure, lack of motivation, self-blame, negative thoughts, sleep problems, appetite and weight, and in severe cases, suicidal thoughts (American Psychiatric Association, 2023). The treatment costs of depression are very high (König, 2020) and it causes severe functional decline in affected patients (Kikuchi et al., 2013). One of the fields that play an important role in depression is the cognitive field and the cognitive changes that these patients experience. Therefore, cognitive and cognitive behavioral therapies are proposed as the first line of treatment for depression (Lorenzo-Luaces et al., 2015; Mathiasen et al., 2022). Aaron Beck, as the founder of cognitive therapy and one of the main theorizers in the field of depression, identified negative automatic thoughts and numerous cognitive distortions in depressed patients and showed that these patients have negative thoughts about themselves, others and the future (Beck & Weishaar, 1989).

On the other hand, one of the other fields that emerge with the spread of this disorder is cognitive fusion. Cognitive fusion is a term that comes up especially in Acceptance and Commitment Therapy (Zare, 2017) and the meaning of cognitive fusion is that the person is influenced by his thoughts as if they are completely real and causes the person's behavior and experience to dominate other sources of behavioral regulation and the person becomes less sensitive to the achievements that he gets (Gillanders et al., 2014). This new concept in the field of psychology was first proposed in relation to obsessive-compulsive disorder and then it was used in the context of other mental disorders. Research has shown that there is a relationship between depression and cognitive fusion (Cookson et al., 2020; Fernández Rodríguez et al., 2022; Noureen & Malik, 2021).

Another issue that has been discussed for a long time, especially in the field of psychoanalysis, is to pay attention to the quality of the defense mechanisms that people use. Defense mechanisms are intellectual and sometimes behavioral strategies that people use to reduce anxiety caused by desires, memories and events (Cramer, 2015). So far, hundreds of defense mechanisms have been proposed and various categories have been presented. But one of these categories is the division of defense mechanisms into mature, immature and neurotic mechanisms (Cramer, 2008; Vaillant, 1994). The less defense mechanisms distort reality, the more mature defense mechanisms are considered (Cramer, 2015). For example, denial and projection are among the most immature defense mechanisms, and humor and suppression are among the most mature defense mechanisms. Due to the fact that depression is very prevalent among different populations, especially among students (Ibrahim et al.,

2013), gaining better knowledge about it can provide the possibility of designing more beneficial interventions. Therefore, this research was conducted with the aim of investigating the relationship between depression with cognitive fusion and defense mechanisms.

2. Methods

2.1. Statistical Population, Sample, and Sampling Method

This research is applied in terms of purpose and is descriptive-correlation in terms of method. The research population was the students of Kashan University in the academic year of 2023-2024, and 350 of them were selected by convenience sampling method. First, the consent of the participants was obtained to participate in the research. Then, the questionnaires were administered face-to-face without first and last name and in groups in classes. Questionnaires that were incomplete were excluded from the analysis process. Data analysis was done using SPSS-26 software and Pearson correlation coefficient.

2.2. Instrument

Beck Depression Inventory-II (BDI-II) :BDI-II was developed by Beck et al. (1996). BDI-II is a type of self-report measure and can be completed in five to ten minutes. The inventory items consist of a total of 21 items related to different symptoms, which the subjects must answer on a four-point scale from zero to three. These substances are in areas such as sadness, pessimism, feelings of helplessness and failure, guilt, sleep disturbances, loss of appetite, self-loathing,

etc. Its scores range from a minimum of zero to a maximum of 63 (0 to 13: no or minimal depression, 14 to 19: mild depression, 20 to 28: moderate depression, and 29 to 63: severe depression). Beck et al. (1996) have confirmed the construct validity of this inventory and its internal consistency was reported to be 0.90 in the research of Dozois et al. (1998). Stefan-Dabson et al. (2007) examined the psychometric properties of this inventory in Iran and confirmed its validity and reliability (Cronbach's alpha = 0.87) and showed that it was reliably used to diagnose and measure the severity of depression before and after treatment.

Cognitive Fusion Questionnaire (CFQ): This questionnaire was created by Gillanders et al. (2014). It has 12 items and measures the two factors of cognitive fusion (items 3-8 and 10-12) and defusion (items 1, 2, 9). The scoring of this questionnaire is from never (1) to always (6) and a higher score indicates more cognitive fusion. In the study of Gillanders et al. (2014), its two-factor validity was confirmed and its internal consistency was 0.90. Zare (2014) investigated the psychometric characteristics of this questionnaire in Iran. Exploratory factor analysis led to the discovery of two subscales of cognitive fusion and disfusion. Item 13 was removed from the questionnaire due to having a factor load of less than 0.50 and the number of items was reduced from 13 to 12 items. In the confirmatory factor analysis stage, 9 questions were placed under the structure of cognitive fusion and 3 questions under the structure of cognitive dissonance. The internal consistency of the questionnaire was reported to be 0.76.

Defense Mechanisms Questionnaire-40 (DSQ-40): This questionnaire was created by Andrews et al., (1993). It has 40 items and includes three factors of immature, mature and neurotic defense mechanisms. A total of 20 defense mechanisms are placed in these three classes. The scoring method of this questionnaire is from completely disagree (1) to completely agree (9). A higher score indicates more use of that defense mechanism. Ruuttu et al. (2006) confirmed the factor structure of this scale and reported its internal consistency to be 0.90. Heydari Nesab & Shairi (2012) were investigated the psychometric properties of DSQ-40 in Iran

and were confirmed its three-factor structure. The internal consistency of the 20 defense mechanisms was also reported between 0.32 and 0.91.

3. Results

200 of the sample members were women and 150 were men. The man of age of the sample members was 25.39 with a standard deviation of 3.46. 271 students were in bachelor's degree, 59 were in master's degree and 20 were in doctoral degree. The mean and standard deviation of the research variables are presented in Table 1.

Table 1
The mean and standard deviation of the research variable

Variables	Mean	Standard deviation
Depression	21.45	4.58
Cognitive fusion	38.11	5.06
Mature defense mechanisms	28.17	4.12
Immature defense mechanisms	22.31	3.40
Neurotic defense mechanisms	29.57	4.62

Kolmogorov-Smirnov test was used to check the normal distribution of the data. The non-significance of the Kolmogorov-Smirnov test (depression: $F = 0.48$, $P = 0.33$; cognitive fusion: $F = 0.62$, $P = 0.21$ and defense mechanisms: $F = 0.37$, $P = 0.28$) showed that the data distribution is normal. The correlation matrix of research variables is presented in Table 2.

Table 2
The correlation matrix of research variables

Variables	1	2	3	4	5
Depression	1				
Cognitive fusion	0.31[**]	1			
Mature defense mechanisms	-0.24[**]	-0.21[**]	1		
Immature defense mechanisms	0.27[**]	0.37[**]	-0.22[**]	1	
Neurotic defense mechanisms	0.33[**]	0.24[**]	-0.41[**]	0.46[**]	1

As can be seen in Table 4, the obtained findings showed that depression is positively correlated with cognitive fusion and immature and neurotic defense mechanisms (P < 0.01). But the relationship between depression and mature defense mechanisms was negative (P < 0.01).

4. Discussion

The present study was conducted with the aim of investigating the relationship between depression with cognitive fusion and defense mechanisms. Findings showed that depression is positively correlated with cognitive fusion and immature and neurotic defense mechanisms. But the relationship between depression and mature defense mechanisms was negative and significant.

This finding is in line with the research done in this field (Cookson et al., 2020; Fernández Rodríguez et al., 2022; Kwon & Lemon, 2000; Mullen et al., 1999; Noureen & Malik, 2021). Regarding the obtained findings, it can be said that one of the metacognitive symptoms of depressed patients is cognitive fusion (Noureen &

Malik, 2021). The depressed person does not consider himself as an independent human being who has developed a state of depression (cognitive dissonance), but rather he thinks that he is depressed and believes that "I am depressed". His identity is mixed with his thoughts and he cannot experience an identity independent of his thoughts and feelings. Therefore, in Acceptance and Commitment Therapy, it is tried to reduce the fusion of the patient with his thoughts with exercises based on mindfulness (Bolderston, 2013). On the other hand, patients with depression may show a range of defense mechanisms depending on the severity of their illness. But some mature defense mechanisms such as humor, sublimation, and superstition are seen in people with high mental health (Bowins, 2004). Therefore, it is not surprising that depression is related to immature and neurotic defense mechanisms. In fact, the use of denial, projection, devolution, displacement and rationalization are common defenses in depressed patients (Kwon & Lemon, 2000). In more severe cases of depression where psychotic streaks are observed can also be seen defense

mechanisms of autistic fantasy and omnipotence.

This research was of the correlation type and does not show the causal relationship between the variables. The sampling method was accessible and the research population was students. The measurement tools were self-report questionnaires. All these things can create limitations for the obtained results.

Considering the increasing state of depression, especially in young people, it is recommended that therapists, when dealing with depressed patients, try to reduce their fusion with their thoughts, as well as reduce the use of immature and neurotic defense mechanisms and increase mature defense mechanisms in them.

5. Conclusion

The findings obtained in the present study showed a positive relationship between depression and cognitive fusion and immature and neurotic defense mechanisms and a negative relationship with mature defense mechanisms. It is recommended to use these findings in therapeutic fields.

Acknowledgments

Conflicts of Interest

The author of this article reports no conflict of interest.

References

American Psychiatric Association. (2023). *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision (DSM-5-TR)*. American Psychiatric Pub. https://doi.org/10.1176/appi.books.97808904 25787

Andrews, G., Singh, M., & Bond, M. (1993). The defense style questionnaire. *The Journal of nervous and mental disease*, *181*(4), 246-256. https://doi.org/10.1097/00005053-199304000-00006

Beck, A. T., Steer, R. A., & Brown, G. (1996). Beck depression inventory–II. *Psychological assessment*. https://doi.org/10.1037/t00742-000

Beck, A. T., & Weishaar, M. (1989). *Cognitive therapy* (pp. 21-36). Springer US. https://doi.org/10.1007/978-1-4757-9779-4_2

Bolderston, H. (2013). *Acceptance and commitment therapy: Cognitive fusion and personality functioning* (Doctoral dissertation, University of Southampton). http://eprints.soton.ac.uk/id/eprint/359833

Bowins, B. (2004). Psychological defense mechanisms: A new perspective. *The American Journal of Psychoanalysis*, *64*, 1-26. https://doi.org/10.1023/B:TAJP.0000017989.72521.26

Cai, H., Jin, Y., Liu, R., Zhang, Q., Su, Z., Ungvari, G. S., ... & Xiang, Y. T. (2023). Global prevalence of depression in older adults: A systematic review and meta-analysis

of epidemiological surveys. *Asian journal of psychiatry*, *80*, 103417. https://doi.org/10.1016/j.ajp.2022.103417

Cookson, C., Luzon, O., Newland, J., & Kingston, J. (2020). Examining the role of cognitive fusion and experiential avoidance in predicting anxiety and depression. *Psychology and Psychotherapy: Theory, Research and Practice*, *93*(3), 456-473. https://doi.org/10.1111/papt.12233

Cramer, P. (2008). Seven pillars of defense mechanism theory. *Social and Personality Psychology Compass*, *2*(5), 1963-1981. https://doi.org/10.1111/j.1751-9004.2008.00135.x

Cramer, P. (2015). Understanding defense mechanisms. *Psychodynamic psychiatry*, *43*(4), 523-552. https://doi.org/10.1007/s12144-019-00450-3

Dozois, D. J., Dobson, K. S., & Ahnberg, J. L. (1998). A psychometric evaluation of the Beck Depression Inventory–II. *Psychological assessment*, *10*(2), 83. https://doi.org/10.1037/1040-3590.10.2.83

Fernández Rodríguez, C., Coto Lesmes, R., Martínez Loredo, V., & Cuesta Izquierdo, M. (2022). Psychological inflexibility, anxiety and depression: The moderating role of cognitive fusion, experiential avoidance and activation. *Psicothema*. https://hdl.handle.net/11162/223311

Gillanders, D. T., Bolderston, H., Bond, F. W., Dempster, M., Flaxman, P. E., Campbell, L., ... & Remington, B. (2014). The development and initial validation of the cognitive fusion questionnaire. *Behavior therapy*, *45*(1), 83-101. https://doi.org/10.1016/j.beth.2013.09.001

Heydari Nesab, L., & Shairi, M. R. (2012). Factor structure of Defense Styles Questionnaire (DSQ-40) in Iranian non-clinical samples. New Psychological Research (Tabriz University Psychology), 6(21), 77-97. SID. https://sid.ir/paper/120340/fa

Ibrahim, A. K., Kelly, S. J., Adams, C. E., & Glazebrook, C. (2013). A systematic review of studies of depression prevalence in university students. *Journal of psychiatric research*, *47*(3), 391-400. https://doi.org/10.1016/j.jpsychires.2012.11.015

Kandhakatla, R., Yarra, R., Pallepati, A., & Patra, S. (2018). Depression-A common cold of mental disorders. *Alzheimers Dement. Cogn. Neurol*, *2*, 1-3. https://doi.org/10.15761/ADCN.1000124

Kikuchi, T., Suzuki, T., Uchida, H., Watanabe, K., & Mimura, M. (2013). Association between antidepressant side effects and functional impairment in patients with major depressive disorders. *Psychiatry research*, *210*(1), 127-133. https://doi.org/10.1016/j.psychres.2013.05.007

König, H., König, H. H., & Konnopka, A. (2020). The excess costs of depression: a systematic review and meta-analysis. *Epidemiology and psychiatric sciences*, *29*, e30. https://doi.org/10.1017/S2045796019000180

Kwon, P., & Lemon, K. E. (2000). Attributional style and defense mechanisms: A synthesis of cognitive and psychodynamic factors in depression. *Journal of clinical psychology*, *56*(6), 723-735. https://doi.org/10.1002/(SICI)1097-4679(200006)56:6<723::AID-JCLP3>3.0.CO;2-3

Lorenzo-Luaces, L., German, R. E., & DeRubeis, R. J. (2015). It's complicated: The relation between cognitive change procedures, cognitive change, and symptom change in cognitive therapy for depression. *Clinical psychology review*, *41*, 3-15. https://doi.org/10.1016/j.cpr.2014.12.003

Mathiasen, K., Andersen, T. E., Lichtenstein, M. B., Ehlers, L. H., Riper, H., Kleiboer, A., & Roessler, K. K. (2022). The clinical effectiveness of blended cognitive behavioral therapy compared with face-to-face cognitive behavioral therapy for adult depression: randomized controlled noninferiority trial. *Journal of medical Internet research*, *24*(9), e36577. https://doi.org/10.2196/36577

Mullen, L. S., Blanco, C., Vaughan, S. C., Vaughan, R., & Roose, S. P. (1999). Defense mechanisms and personality in depression. *Depression and Anxiety*, *10*(4), 168-174. https://doi.org/10.1002/(SICI)1520-6394(1999)10:4<168::AID-DA5>3.0.CO;2-5

Noureen, S., & Malik, S. (2021). Conceptualized-self and depression symptoms among university students: Mediating role of cognitive fusion. *Current psychology*, *40*, 5106-5114. https://doi.org/10.1007/s12144-019-00450-3

Ruuttu, T., Pelkonen, M., Holi, M., Karlsson, L., Kiviruusu, O., Heilä, H., ... & Marttunen, M. (2006). Psychometric properties of the Defense Style Questionnaire (DSQ-40) in adolescents. *The Journal of nervous and mental disease*, *194*(2), 98-105. https://doi.org/ 10.1097/01.nmd.0000198141.88926.2e

Stefan-Dabson, K., Mohammadkhani, P., & Massah-Choulabi, O. (2007). Psychometrics characteristic of Beck Depression Inventory-II in patients with magor depressive disorder. *Archives of Rehabilitation*, *8*, 82-0. http://rehabilitationj.uswr.ac.ir/article-1-135-en.html

Thapar, A., Eyre, O., Patel, V., & Brent, D. (2022). Depression in young people. *The Lancet*, *400*(10352), 617-631.https://doi.org/10.1016/S0140-6736(22)01012-1

Vaillant, G. E. (1994). Ego mechanisms of defense and personality psychopathology. *Journal of abnormal psychology*, *103*(1), 44. https://doi.org/ 10.1097/NMD.0000000000000559

Zare, H. (2017). Effectiveness of acceptance and commitment therapy (ACT) on improving the flexibility and cognitive fusion. *Social Cognition*, *6*(1), 125-134. https://journals.pnu.ac.ir/pdf_3880_128107ec c5af8f8ddde02f0e648f7e34.html

Zare, H. (2014). Normization of Gillanders cognitive fusion social scale based on Bohrenstatt model. *Social Psychology Research Quarterly, 15th row*. https://elmnet.ir/doc/1429540-18613