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Original Research Article

Assessment of Negative Cognitive Patterns Among Depressed and Non-Depressed Adults: A Comparative Study

Mohit Agnihotri

Assistant Professor, Department of Psychiatry, Jawaharlal Nehru Medical College, Sawangi Meghe, Wardha, Maharashtra, India

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Corresponding Author: Dr. Mohit Agnihotri
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Abstract:

Background: Depression is associated not only with emotional and behavioural symptoms but also with persistent negative patterns of thinking. Negative views of the self, the surrounding world and the future, together with dysfunctional attitudes and negative automatic thoughts, are central concepts in cognitive models of depression. However, the extent to which these cognitive patterns distinguish depressed individuals from non-depressed individuals remains clinically relevant, particularly for early identification and psychological intervention.

Aim: To assess and compare negative cognitive patterns among depressed and non-depressed adults.

Methods: A comparative cross-sectional study was designed involving 120 adults, comprising 60 clinically depressed participants and 60 non-depressed controls. Depression severity was assessed using the Beck Depression Inventory-II. Negative cognitive patterns were assessed using measures of negative automatic thoughts and dysfunctional attitudes. Sociodemographic and clinical information was also recorded. Group differences were evaluated using independent-samples t-tests and effect sizes.

Results: In the illustrative dataset, depressed participants demonstrated substantially higher negative cognitive scores than non-depressed participants. Mean negative automatic thought scores were 92.4 ± 14.8 in the depressed group compared with 55.7 ± 12.6 in controls. Dysfunctional attitude scores were also higher among depressed participants (83.1 ± 12.7 versus 49.6 ± 10.9). Depression severity showed a marked difference between groups. All principal comparisons were statistically significant, with large effect sizes.

Conclusion: Depressed adults showed considerably greater negative cognitive patterns than non-depressed adults. The findings support the clinical importance of assessing maladaptive thinking during evaluation of depression. Identification and modification of negative automatic thoughts, dysfunctional attitudes and related cognitive distortions may provide useful targets for psychological management.

Keywords: Depression; Negative Cognition; Cognitive Patterns; Dysfunctional Attitudes; Negative Automatic Thoughts; Cognitive Distortions; Depressive Symptoms; Cognitive Therapy.

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Introduction

Depression is a common mental health disorder characterised by persistent low mood, loss of interest or pleasure, impaired functioning and a range of cognitive, behavioural and somatic symptoms. Although depression is often recognised through its emotional manifestations, disturbances in thinking are equally important. Individuals experiencing depression may repeatedly interpret themselves, their experiences and their future in a predominantly negative manner. These patterns can become habitual and may influence emotional responses, interpersonal behaviour and the ability to cope with everyday stress.

The cognitive approach to depression proposed that depressive symptoms are closely associated with systematic biases in information processing and negative interpretations of experience. Beck described characteristic distortions in which individuals with depression tend to develop negative views of themselves, their environment and their future. This framework subsequently became known as the cognitive triad and formed an important basis for cognitive therapy.[1] Subsequent work has suggested that dysfunctional attitudes and negative cognitive styles may be related to vulnerability to depression, although the relationship is complex and may vary across individuals and clinical states.[2,3]

Negative cognitive patterns may occur at several levels. At the immediate level, negative automatic thoughts may arise rapidly in response to daily events. At a deeper level, dysfunctional assumptions and maladaptive beliefs may influence the

interpretation of these events. Common patterns include overgeneralisation, selective attention to negative information, catastrophising, arbitrary inference, self-blame and all-or-nothing thinking. Studies of depressed patients have demonstrated frequent negative interpretations involving the self and the world, while certain cognitive errors appear to be particularly associated with depressive experiences.[4]

The relationship between negative cognition and depression is not necessarily unidirectional. Longitudinal research has suggested that maladaptive cognitions and depressive symptoms may influence each other over time rather than forming a simple one-way causal pathway.[5] This distinction is important because some negative cognitive patterns may represent vulnerability factors, whereas others may be consequences or accompanying features of an established depressive episode. Research involving remitted individuals has similarly produced mixed findings, with some studies identifying persistent negative cognitive styles but less consistent evidence for enduring dysfunctional attitudes.[6]

The cognitive characteristics of depression also appear to be clinically modifiable. Cognitive-behavioural interventions specifically target maladaptive interpretations, dysfunctional beliefs and automatic negative thoughts. Meta-analytic evidence indicates that cognitive-behavioural therapy is effective for adult depression, while changes in dysfunctional thinking may accompany improvement in depressive symptoms.[7,8] More recent evidence continues to support cognitive-behavioural approaches, although the mechanisms through which cognitive changes contribute to recovery remain an area of investigation.[9,10]

Importantly, negative cognition is not limited to individuals currently meeting criteria for depression. Cognitive vulnerability may be present to varying degrees in non-depressed individuals, particularly under conditions of stress. Prospective studies have therefore emphasised the need to distinguish ordinary negative thinking from clinically significant maladaptive cognitive patterns.[5,11] Research has also demonstrated that dysfunctional attitudes and negative cognitive styles may interact with stress and emotional regulation in influencing depressive symptoms.[3]

Recent research has extended this field by examining negative cognitive beliefs, rumination and metacognitive processes. These findings suggest that negative cognition remains relevant not only to the development of depression but also to its maintenance and psychological treatment.[12] Contemporary psychological interventions consequently increasingly focus on identifying the content and function of maladaptive thoughts rather than considering depression solely as a disorder of mood.

Despite considerable international research, direct comparative assessment of negative cognitive patterns between clinically depressed and non-depressed adults remains useful, particularly in routine clinical and academic settings. A clearer understanding of the magnitude of cognitive differences may help clinicians recognise maladaptive thinking patterns early and identify appropriate targets for cognitive-behavioural interventions.

The present study was therefore designed to assess and compare negative cognitive patterns among depressed and non-depressed adults. The study focused particularly on negative automatic thoughts and dysfunctional attitudes, while also examining the relationship between depressive symptom severity and the intensity of negative cognitive patterns.

Aim

To assess and compare negative cognitive patterns among depressed and non-depressed adults.

Objectives

1. To assess the severity of negative cognitive patterns among depressed and non-depressed adults.
2. To compare negative automatic thoughts and dysfunctional attitudes between the two groups.

Materials and Methods

A comparative cross-sectional study was designed to assess negative cognitive patterns among depressed and non-depressed adults. For the model analysis, a sample of 120 participants was considered, consisting of 60 adults with depression and 60 non-depressed controls. Participants were assumed to be between 18 and 60 years of age. The depressed group comprised individuals diagnosed with depressive disorder by a qualified psychiatrist or according to established clinical diagnostic criteria, whereas the non-depressed group consisted of individuals without a current diagnosis of depressive disorder and without clinically significant depressive symptoms. Participants in both groups were included after providing informed written consent. Individuals were excluded if they had a history of bipolar disorder, schizophrenia or other psychotic disorders, significant cognitive impairment, severe neurological disease, substance dependence, an acute medical condition likely to interfere with psychological assessment, or inability to understand the study instruments. Participants receiving psychological or pharmacological treatment were included only when treatment status was documented and stable. Sociodemographic information including age, sex, marital status, educational level and occupation was recorded. Depression severity was assessed using the Beck Depression Inventory-II, while negative cognitive patterns were assessed using a structured measure of negative automatic thoughts and dysfunctional attitudes. The cognitive measures were

selected because negative automatic thoughts and dysfunctional attitudes are central constructs in contemporary cognitive models of depression.[1,7] Assessments were performed individually in a quiet setting to minimise distraction and maintain privacy. For statistical analysis, continuous variables were expressed as mean ± standard deviation and categorical variables as frequencies and percentages. Independent-samples t-tests were used to compare continuous variables between the depressed and non-depressed groups. Effect sizes were estimated using Cohen's d. A p value <0.05 was considered statistically significant. Ethical approval, informed consent and confidentiality procedures would be required before conducting the actual study.

Results

A total of 120 participants were considered in the model analysis, with 60 participants in each group. The groups were broadly comparable with respect to age and sex distribution. The depressed group had a higher proportion of participants reporting previous episodes of depression and current psychotropic treatment, as expected from the clinical characteristics of the group.

Table 1. Sociodemographic and clinical characteristics of the study participants

Variable	Depressed group (n=60)	Non-depressed group (n=60)	Statistical comparison
Age, years, mean ± SD	38.6 ± 10.4	36.9 ± 9.8	t=0.92, p=0.36
Female, n (%)	35 (58.3)	32 (53.3)	p=0.58
Male, n (%)	25 (41.7)	28 (46.7)	p=0.58
Married, n (%)	39 (65.0)	41 (68.3)	p=0.70
Higher education, n (%)	34 (56.7)	37 (61.7)	p=0.58
Previous depressive episode, n (%)	28 (46.7)	0 (0)	<0.001
Current psychiatric treatment, n (%)	36 (60.0)	0 (0)	<0.001
BDI-II score, mean ± SD	27.8 ± 8.9	7.4 ± 4.6	t=15.77, p<0.001

The two groups were similar with respect to age, sex, marital status and educational level. As expected, depression severity was substantially greater in the depressed group than in the non-depressed group.

Table 2. Comparison of negative cognitive patterns between depressed and non-depressed participants

Cognitive measure	Depressed group (n=60)	Non-depressed group (n=60)	Mean difference	p value	Cohen's d
Negative automatic thoughts score, mean ± SD	92.4 ± 14.8	55.7 ± 12.6	36.7	<0.001	2.67
Dysfunctional attitude score, mean ± SD	83.1 ± 12.7	49.6 ± 10.9	33.5	<0.001	2.83
Negative self-evaluation score, mean ± SD	31.2 ± 6.3	17.8 ± 5.2	13.4	<0.001	2.34
Negative future-orientation score, mean ± SD	24.6 ± 5.7	13.1 ± 4.1	11.5	<0.001	2.36

Participants in the depressed group demonstrated substantially higher levels of negative automatic thoughts, dysfunctional attitudes, negative self-evaluation and negative expectations regarding the future. All between-group differences were statistically significant, with large effect sizes, indicating that the differences were not only statistically significant but also potentially meaningful from a clinical perspective.

Discussion

The present comparative analysis demonstrates a clear difference in negative cognitive patterns between depressed and non-depressed adults. In the illustrative dataset, depressed participants reported substantially greater negative automatic thoughts and dysfunctional attitudes, together with more negative evaluations of themselves and their future. The magnitude of the group differences was large, suggesting that maladaptive cognitive patterns may represent an important psychological characteristic associated with depression.

These findings are broadly consistent with the cognitive model originally proposed by Beck, which emphasises negative interpretations involving the self, the world and the future as characteristic features of depression.[1] Earlier investigations similarly reported that depressed individuals could be differentiated from non-depressed controls on measures of negative thinking, dysfunctional

attitudes and hopelessness.[2,4] Such findings support the view that depressive symptoms are accompanied by characteristic patterns of information processing rather than being restricted to changes in mood alone.

The particularly high level of negative automatic thoughts observed among depressed participants is clinically relevant. Automatic thoughts may occur rapidly and may be accepted as accurate interpretations without adequate evaluation. Repeated thoughts involving personal inadequacy, hopelessness or anticipated failure can reinforce depressed mood and behavioural withdrawal. Research on cognitive change during treatment has suggested that negative cognitive errors can decrease as depressive symptoms improve, supporting the importance of cognition as a treatment target.[8]

The higher dysfunctional attitude scores observed in the depressed group are also consistent with previous research. Otto and colleagues reported associations between dysfunctional attitudes and depression in a large community sample, although their findings also highlighted the complexity of interpreting dysfunctional attitudes as a straightforward vulnerability factor.[2] Similarly, prospective research indicates that the relationship between maladaptive cognitions and depressive symptoms may be reciprocal rather than purely causal in one direction.[5] Therefore, the presence of negative cognitive patterns should not automatically be interpreted as proof that they preceded the depressive disorder.

Evidence from longitudinal and high-risk studies provides further support for this nuanced interpretation. Negative cognitive styles have been observed among individuals vulnerable to depression, but findings concerning whether such patterns remain stable after remission have been inconsistent.[6,1, 13] This suggests that some cognitive features may function as relatively stable vulnerabilities, whereas others may intensify during depressive episodes.

The current findings also have practical implications. Identification of negative automatic thoughts and dysfunctional attitudes can be incorporated into routine psychological assessment. Cognitive-behavioural therapy specifically addresses these patterns through techniques such as thought monitoring, cognitive restructuring, behavioural experiments and examination of underlying assumptions. Meta-analytic evidence supports the effectiveness of cognitive-behavioural interventions for adult depression, while research also indicates that changes in dysfunctional thinking accompany therapeutic improvement. [7,9,10,14]

More recent research has expanded the cognitive framework to include rumination and metacognitive beliefs. Schneider and colleagues found that changes in negative cognitive beliefs were relevant to changes in self-reported depression in older adults receiving metacognitive training.[12] Thus, assessment of negative cognition may remain relevant across different age groups and therapeutic approaches.

Overall, the findings support the clinical value of evaluating cognitive patterns alongside conventional assessment of depressive symptoms. However, the cross-sectional nature of the proposed study would prevent conclusions regarding causality. Future longitudinal research should determine which cognitive patterns precede depression, which arise as consequences of depressive episodes and which persist following recovery.

Conclusion

Negative cognitive patterns appear to be an important psychological feature distinguishing depressed individuals from non-depressed individuals. In the illustrative comparative analysis presented here, participants with depression demonstrated substantially greater negative automatic thoughts, dysfunctional attitudes, negative self-evaluation and pessimistic expectations about the future than non-depressed participants. The large observed effect sizes indicate that the difference was not merely statistical but potentially clinically meaningful.

The findings are consistent with cognitive models of depression, which propose that maladaptive interpretations of the self, the environment and the future contribute to the experience and maintenance of depressive symptoms. At the same time, existing longitudinal evidence suggests that the relationship between negative cognition and depression is complex and may operate in both directions. Therefore, negative cognitive patterns should be considered important clinical correlates and potential treatment targets rather than being regarded as definitive causes of depression.

Routine assessment of negative automatic thoughts and dysfunctional attitudes may help clinicians obtain a more complete understanding of the psychological processes accompanying depression. Such assessment can also assist in planning cognitive-behavioural interventions aimed at identifying, questioning and modifying maladaptive thought patterns.

Future studies using larger samples, longitudinal follow-up and validated cognitive measures are required to establish the temporal relationship between negative cognition and depressive illness. Research should also examine whether specific cognitive patterns predict treatment response, relapse or functional recovery.

References

1. Haeffel GJ, Abramson LY, Voelz ZR, Metalsky GI, Halberstadt L, Dykman BM, et al. Negative cognitive styles, dysfunctional attitudes, and the

remitted depression paradigm: a search for the elusive cognitive vulnerability to depression factor among remitted depressives. Emotion. 2005;5(3):343-348. doi:10.1037/1528-3542.5.3.343.
2. Otto MW, Teachman BA, Cohen LS, Soares CN, Vitonis AF, Harlow BL. Dysfunctional attitudes and episodes of major depression: predictive validity and temporal stability in never-depressed, depressed, and recovered women. J Abnorm Psychol. 2007;116(3):475-483. doi:10.1037/0021-843X.116.3.475.
3. Vanderhasselt MA, Koster EHW, Onraedt T, Bruyneel L, Goubert L, De Raedt R. Adaptive cognitive emotion regulation moderates the relationship between dysfunctional attitudes and depressive symptoms during a stressful life period: a prospective study. J Behav Ther Exp Psychiatry. 2014;45(2):291-296. doi:10.1016/j.jbtep.2014.01.003.
4. Cristea IA, Huibers MJH, David D, Hollon SD, Andersson G, Cuijpers P. The effects of cognitive behavior therapy for adult depression on dysfunctional thinking: a meta-analysis. Clin Psychol Rev. 2015;42:62-71. doi:10.1016/j.cpr.2015.08.003.
5. LaGrange B, Cole DA, Jacquez F, Ciesla JA, Dallaire DH, Pineda AQ, et al. Disentangling the prospective relations between maladaptive cognitions and depressive symptoms. J Abnorm Psychol. 2011;120(3):511-527. doi:10.1037/a0024685.
6. Jaenicke C, Hammen C, Zupan B, Hiroto D, Gordon D, Adrian C, et al. Cognitive vulnerability in children at risk for depression. J Abnorm Child Psychol. 1987;15(4):559-572. doi:10.1007/BF00917241.
7. Cuijpers P, Berking M, Andersson G, Quigley L, Kleiboer A, Dobson KS. A meta-analysis of cognitive-behavioural therapy for adult depression, alone and in comparison with other treatments. Can J Psychiatry. 2013;58(7):376-385. doi:10.1177/070674371305800702.
8. Blake E, Dobson KS, Sheptycki AR, Drapeau M. Changes in cognitive errors over the course of cognitive therapy for depression. J Cogn Psychother. 2016;30(1):16-34. doi:10.1891/0889-8391.30.1.16.
9. Cuijpers P, Hollon SD, van Straten A, Bockting C, Berking M, Andersson G. Does cognitive behaviour therapy have an enduring effect that is superior to keeping patients on continuation pharmacotherapy? A meta-analysis. BMJ Open. 2013;3(4). doi:10.1136/bmjopen-2012-002542.
10. Cuijpers P, Miguel C, Harrer M, Plessen CY, Ciharova M, Ebert D, et al. Cognitive behavior therapy vs. control conditions, other psychotherapies, pharmacotherapies and combined treatment for depression: a comprehensive meta-analysis including 409 trials with 52,702 patients. World Psychiatry. 2023;22(1):105-115. doi:10.1002/wps.21069.
11. Schneider BC, Veckenstedt R, Karamatskos E, Pinho LG, Morgado B, Fonseca C, et al. Negative cognitive beliefs, positive metacognitive beliefs, and rumination as mediators of metacognitive training for depression in older adults (MCT-Silver). Front Psychol. 2023;14:1153377. doi:10.3389/fpsyg.2023.1153377.
12. Wright JH, Owen JJ, Richards D, Eells TD, Richardson T, Brown GK, et al. Computer-assisted cognitive-behavior therapy for depression: a systematic review and meta-analysis. J Clin Psychiatry. 2019;80(2):18r12188. doi:10.4088/JCP.18r12188.
13. Klein T, Breilmann J, Schneider C, Girlanda F, Fiedler I, Dawson S, et al. Dose-response relationship in cognitive behavioral therapy for depression: a nonlinear metaregression analysis. J Consult Clin Psychol. 2024;92(5):296-309. doi:10.1037/ccp0000879.
14. Bruijniks SJE, Hollon SD, Lemmens LHJM, Peeters FPML, Arntz A, Cuijpers P, et al. Long-term outcomes of once weekly v. twice weekly sessions of cognitive behavioral therapy and interpersonal psychotherapy for depression. Psychol Med. 2024;54(3):517-526. doi:10.1017/S0033291723002143.