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A Comparative Study Of Cognitive Dysfunctioning Among Tribal And Non-Tribal Patients In Jharkhand

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Abstract:

While cognitive impairment is a recognized feature of schizophrenia, its presence in bipolar affective disorder is currently an area of investigation. The individual who are suffering from the bipolar affective disorder they exhibit a wide range of cognitive deficit including neuropsychological and cognitive deficit. The prime objective was to find out the cognitive dysfunction among tribal patients of depression. Total 100 patients of Depression were constituted the sample for the study, in which 50 were tribal and rest 50 were non tribal. Sample were collected from the Psychiatric Unit of Sadar Hospital (PMCH) Medininagar, Jharkhand through judgmental sampling. Tools used for the study were Socio demographic and clinical data sheet, Beck Depression Inventory (Hindi version), PGI Battery for Brain Dysfunction. On socio demographic variable religious affiliation emerge as the sole factor showing significant differences between the study groups. On clinical characteristics of the sample no factor reveals any notable discrepancies between the tribal and non-tribal group. Tribal and non-tribal depressive patients are significantly differed on the Brain dysfunction sub - scale such as memory scale ($t = 4.71$ $p > .01$), verbal intelligence quotient ($t = 5.15$, $p > .01$), Bender Gestalt test ($t = 3.8$, $p > .01$) and dysfunction rating score ($t = 2.10$, $p > .01$). It showed that tribal patient showed more dysfunction in the area of memory functioning, verbal intellectual functioning task, visuo- motor coordination task and total dysfunction.

Key words: Depression, Tribal, Cognitive dysfunction

Introduction:

Depressive disorder research has grown as a primary area of focus among Indian scientific experts since the 1950s. Research has produced a substantial number of publications which examine different dimensions of the most common mood disorder. The majority of these scientific investigations have focused on depression epidemiology together with population profiles and social factors that influence the disorder. Minimal research exists which examines cognitive abilities in patients diagnosed with depressive disorders in Indian populations. Schizophrenia demonstrates established cognitive deficits while researchers increasingly focus on similar mental processing issues in bipolar affective disorder (BPAD). People with BPAD experience numerous cognitive deficiencies that impair their daily functioning and emotional stability according to a study by Awasthi et al. (2020).

Multiple research studies have revealed how frequent cognitive deficits occur in people with depression yet the scientific community has yet to address this crucial issue.

The evidence from Indian researchers shows that patients who suffer from depression face substantial deficits in various cognitive functions.

"The PGI Memory Scale along with the Wechsler Adult Intelligence Scale (WAIS) and the Wisconsin Card Sorting Test (WCST) show that depression patients experience poor memory task performance alongside cognitive flexibility and intelligence test results (Chandra et al., 1984; Sharma et al., 1984; Tandon et al., 2002)."

"The scientific studies conducted by Chandra (1984), Sharma (1984), and Tandon (2002) found that individuals diagnosed with depression perform poorly in tests assessing prefrontal cortex function and executive control abilities."

Research from these studies shows that the severity of cognitive impairment in patients depends on their level of depressive symptoms which represents a significant discovery.

Higher levels of symptom severity are associated with more pronounced deficits in cognitive functioning (Tandon et al., 2002). The acute phase of the illness appears to exert a particularly detrimental impact on cognitive performance.

"Beck (1967, 1976), Beck and Young (1985), and Young, Beck, and Weinberger (1993) all looked at how depression is caused by ingrained negative thinking. The findings indicate that they believe negative thinking is normal." Clients are taught that depression can be directly caused by cognitive mistakes.

A treatment process consists of two essential elements which focus on addressing cognitive errors while moving past their traditional boundaries through practical and less troubling perspectives. When individuals experience sadness, their mental functions decline in their capability to prevent negative thoughts from matching their emotional state which affects their ability to access broad information resources.

"Cognitive deficits in depression are thought to be primarily caused by increased elaboration of negative information and difficulty disengaging from unpleasant content (Mathews & Macleod, 2005; Rusting & DeHart, 2000). It's thought that these cognitive deficits might lead to the long-term processing of harmful, unnecessary information." According to Moritz (2014), intrusive sensory aspects of cognitions have been reported by one in two patients with mild forms of depression and three out of four patients with obsessive compulsive disorder (OCD) (Moritz, Claussen, Hauschildt, & Kellner, 2014; Moritz, Hormann, Schroder, Berger, Jacob, Meyer, & Rose, 2014)."

Despite these findings, there is a noticeable lack of research focusing on cognitive dysfunction in depressed individuals from marginalized populations, particularly among tribal communities in India. The absence of sufficient research became the main reason for this study which investigates cognitive impairments in tribal patients diagnosed with depression. The research paper contributes to current knowledge by presenting information which aligns with cultural and situational requirements for healthcare and policy development.

Objective: The primary study goal was outlined as follows for the investigation.

1. To understand and compare the nature of cognitive functioning in tribal patients of depression

Hypotheses: The subsequent hypothesis was developed regarding cognitive functioning of tribal patients. This hypothesis was compared to the other group of non-tribal depressive patients to look at the variations between them. For the aims of this investigation, null hypotheses were formulated.

Hypotheses:

H01- There is no significant difference in cognitive functioning between the Tribal and Non-Tribal Depressive patients.

Method:

Research design:

In the current investigation cross sectional, comparative and correlational design was used. The aforementioned is a hospital-based study.

Sample:

The study's sample included of 100 depressed individuals, 50 of them were tribal and the remaining 50 were non tribal. Using judgemental sampling, a sample was taken from the psychiatric unit of Sadar Hospital (PMCH) in Medininagar, Jharkhand. The table below presents the sample distribution in each group.

Inclusion Criteria for the Tribal Patients with Depression:

- Individual within age range of 20-40 yrs.
- Individual of either sex
- Individual must be belonged to tribal community
- Individual need to be identified with "Major Depressive Disorder as ICD-10 Criteria" by the Psychiatrist
- The sickness should persist for over a year.
- Individual must be scored within mild range while considering the administration of the test or stable
- Individual must be educated at least 10^{th} standard

Inclusion Criteria for the Non -Tribal Patients with Depression:

- Individual within age range of 20-40 yrs.
- Individual of either sex
- Individual not belongs to tribal community
- Individual need to be identified with "Major Depressive Disorder as ICD-10 Criteria" by the Psychiatrist
- The sickness should persist for over a year.
- Individual must be scored within mild range while considering the administration of the test or stable
- Individual must be educated at least 10^{th} standard

Exclusion Criteria:

Individual not cooperative for the investigation.

Those who might not be capable of comprehend and reply properly on the test.

Tools used for data collection:

1. **"Socio demographic and clinical data sheet":** intended specifically to gather pertinent data on sociodemographic and clinical parameters, such as age, sex, education level, place of residence, marital status, age of onset, duration of sickness, family history of illness, etc. The study's sample was chosen according on inclusion and exclusion criteria after the stalk holder of Sadar Hospital in Medininagar gave their prior approval. The subjects or their parents, if relevant, gave their informed permission.

2. **"Beck Depression Inventory" (Hindi version):** Numerous psychiatrists and hospitals in India employ the Hindi-language Indian version of the BDI. It is a ranking system used to gauge how severe depression is. It consists of 21-item. People are asked to assess the severity of the symptom during the last two weeks using a 4-point rating system (0 being the least, 3 being the most), with a score range of 0 to 63. The classification of range is delineated as follows: the minimum range is identified as 0–13, minor depression as 14–19, moderate depression as 20–28, and profound depression as 29–63. Higher scores signify more severe depression

symptoms, and each statement group correlates to a certain behavioural manifestation.

3. **3. PGI battery of brain dysfunction:**

In 1985, D. Prasad and S.K. Verma created PGI- BBD. It was administered individually to all subject.

It includes the following 19 variables and 5 subtests:

1. PGI-Memory Scale 10 variables
2. Battery Of Performance Tests of Intelligence 2 variables
3. Verbal Adult Intelligence Scale (VAIS) 5 Variables
4. Nahor-Benson Test (NBT) 1 Variable
5. Bender Visual Motor Gestalt Test 1 Variable

The well-known cognitive functions of the brain-behavior are evaluated by this battery of tests, which includes verbal and performance intelligence, memory, perceptual acuity, and hemisphere-to-hemisphere transference. As a result, it is founded upon the execution, reception, and consolidation (search) of stimuli.

Procedure of the data collection:

The subjects or their parents, if relevant, gave their informed permission. They were given an explanation of the purpose and scope of the study, and any queries they had were addressed. According to the handbook instructions, follow-up meetings involved the application of particular instruments which were standard practice.

Data analysis: The research data underwent evaluation through SPSS version 22. The research groups underwent comparison through t test and chi-square testing. Using correlation technique, the link between the variables was established. The approach of using mean, SD, N, and frequency depended on different situations.

Result and discussion:

Sociodemographic characteristics of the sample. (Table 1)

Variable	Category	Group Tribal pt.	Group Non -Tribal pt.	X^2/t
Age	18-25	23 (46%)	21 (42%)	.38
	26-35	22 (44%)	25 (50%)	
	36-44	05 (10%)	04 (8%)	
Education	Upto10th	33 (66%)	35 (70%)	1.44
	Graduation	10 (20%)	12 (24%)	
	Above graduation	7 (14%)	3 (6%)	
Marital status	Married	24 (48%)	27 (54%)	.34
	Unmarried/ Single	26 (52%)	23 (46%)	
Religion	Hindu	0	45 (90%)	9.32
	Islam	0	05 (10%)	
	Christian	19 (38%)	0	
	Sarna	31 (62%)	0	
Monthly income	Below10000	20 (40%)	21 (42%)	2.12
	10k-20k	16 (32%)	10 (20%)	
	More than 20k	14 (28%)	19 (38%)	
Occupation	Unemployed	21 (42%)	25 (50%)	.98
	Farmer	25 (50%)	20 (40%)	
	Other	04 (8%)	05 (10%)	
Residence	Urban	20 (40%)	15 (30%)	2.44
	Rural	29 (58%)	20 (40%)	
	Semi urban	01 (2%)	15 (30%)	

Researchers analyse different social features of individuals from tribal and non-tribal backgrounds through their age distribution, educational background, marital status, religious practices, monthly earnings, work situation and residential area. The research conducted group comparison using chi-square tests to generate results.

Both study groups contained a similar age structure because 90% of respondents in the two groups were aged between 18 and 35 years. A chi-square test based on the data found no significant age differences between tribal and non-tribal participants ($\varphi^2 = 0.38$). The evidence demonstrates that tribal respondents show a slightly higher number of people who completed college but the educational achievement distributions do not show

any statistical difference between the two groups ($\varphi^2 = 1.44$). The findings produced statistically insignificant results regarding marital status differences between groups.

The research identified religious affiliation as a statistically meaningful factor which registered a 9.32 value. When survey participants identified their religious affiliations, non-tribal members were 90% Hindu and 10% Muslim while tribal respondents indicated 62% Sarna and 38% Christianity. The monthly income levels display significant variations in the data but these differences are not statistically significant ($\varphi^2 = 2.12$). The employment data shows no significant difference between the two groups who consist mainly of agricultural workers and unemployed people ($\varphi^2 = 0.98$). Non-tribal survey participants live in rural, semi-urban and urban areas while 58% of tribal respondents choose to reside in rural locations. The analysis reveals a moderate difference among various residential settings ($\varphi^2 = 2.44$). The research uncovered extensive parallels between tribal and non-tribal populations regarding their age, educational background, marital status, income levels and work situations. The analysis identified religious affiliation as the sole factor showing significant differences between the study groups. The research findings reveal essential sociocultural elements that shape the growth paths and resource availability and everyday realities of tribal and non-tribal groups.

Table 2 - Clinical characteristics of the sample showing Means, SDs, $t/^{x2}$ values.

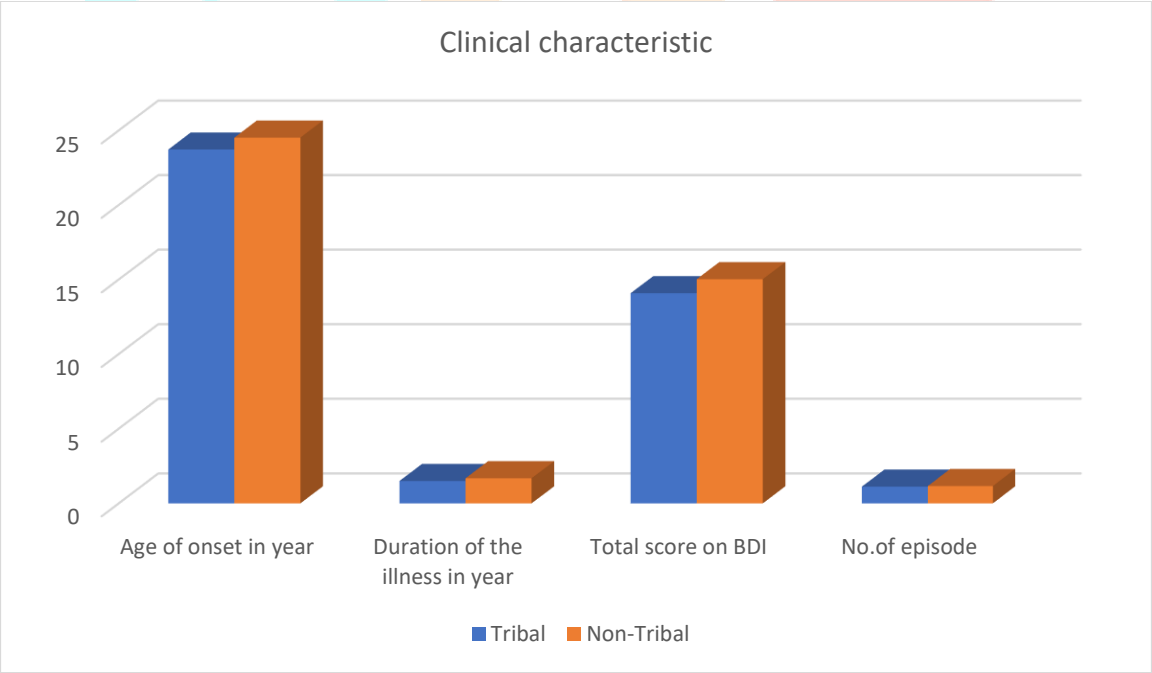
Variable		Tribal M ± SD	Non-tribal M ± SD	$t/^{x2}$
Age of onset in years		23.72 ± 5.24	24.52 ± 4.23	.84
Duration of the illness in years		1.5 ± .72	1.68 ± .34	1.80
Total score on BDI		14.08 ± 3.12	15.02 ± 2.75	1.68
No. of episode		1.12 ± .78	1.16 ± .74	.82
Presence of psychotic symptoms	Yes	27	23	1.06
	No	23	27	
Family history of illness	Yes	21	19	.16
	No	29	31	

The initial episode data analysis did not reveal any notable discrepancies between the tribal and non-tribal samples regarding BDI score, age of initial illness presentation, disease duration, depression episode count, psychotic symptom presence or familial mental illness history. The statistical analysis combined T-tests for numerical data with chi-square tests for categorial data. The study used T-tests to compare numerical variables while applying chi-square tests to analyse connections in categorial data.

The average onset age for non-tribal participants reached 24.52 years with a standard deviation of 4.23 years and tribal participants reached onset at 23.72 years with a standard deviation of 5.24 years (t = 0.84). The information reveals that non-tribal and tribal participants in their early adult phase both experienced a similar starting period. The duration of the disease was comparable among other than tribal (1.68 ± 0.34 years) and indigenous (1.5 ± 0.72 years) respondents (t = 1.80), indicating similar pathophysiological patterns. BDI scores show a high level of depression in both groups, with an average of 14.08 ± 3.12 (t = 1.68) among tribal and 15.02 ± 2.75 among nontribal respondents. It indicates that there are subthreshold as well as many possibly mild or moderate depressive cases in both groups, underscoring the importance of mental health assistance and intervention.

There were no significant differences in the prevalence of psychotic symptoms ($\chi^2 = 1.06$) and family history of any mental illness ($\chi^2 = 0.16$). Such findings would also underscore the overall clinical homogeneity of depression.

Fig.1: "Showing the mean comparison of tribal and non-tribal patients on variables of clinical characteristics



1.H01- "There is no substantial distinction in cognitive functioning between Tribal and Non-Tribal Depressive Patients."

Table 3: "PGI Battery of Brain dysfunction / cognitive functioning among Tribal and Non-tribal depressive patients."

Sub scale	Tribal (Mean &SD)	Non-tribal (Mean &SD)	t
Memory scale	64.38 ± 12.65	73.90 ± 6.81	4.71
Performance quotients (PQ)	94.2 ± 6.35	96.12 ± 7.10	1.5
Verbal quotient	97.3 ± 12.46	108.12 ± 5.52	5.15
Bender Gestalt test	10.30 ± 5.71	3.10 ± 1.99	3.8
Nahor-Benson test	1.90 ± 1.13	1.78 ± 1.12	.5
Dysfunction rating score (DRS)	19.60 ± 8.85	16.10 ± 7.72	2.10

The PGI Battery of Brain Dysfunction was used to differentiate mental ability between tribal and non-tribal people with depression based on these data. The evaluation process measures various cognitive abilities which include linguistic abilities and memory performance along with performance quotients and neuropsychological impairment. The statistical comparison between the two groups is indicated through the presentation of mean values and standard deviations alongside t-values. The tribal group scored an average of 64.38 with a standard deviation of 12.65 on memory tests which was 9.52 points lower than the non-tribal group who scored 73.90 with a standard deviation of 6.81. The difference in memory function between the tribal group and the non-tribal group can be explained through disparities in access to educational resources and cognitive training programs and learning opportunities.

A comparison of the results revealed both groups showed identical Performance Quotient (PQ) scores because the non-tribal group scored 96.12 with a standard deviation of 7.10 and the tribal group received 94.2 with a standard deviation of 6.35. The performance on problem-solving and cognitive flexibility tests yielded equal results for both groups according to the t-value (1.5) which shows no significant differences.

With a t-value of 3.8, Tribal patients' dysfunction scores on the Bender Gestalt Test were considerably higher (10.30 ± 5.71) than those of non-Tribal people (3.10 ± 1.99), suggesting which they possessed more trouble with visual-motor coordination. This may be a consequence of variations in early childhood learning experiences or brain development.

Next on Nahor-Benson Test the minimum changes were detected between the groups, with tribal patients scoring 1.90 ± 1.13 and non-tribal patients 1.78 ± 1.12 (t = 0.5), showing no significant variance in perceptual impairment.

More about the DRS (Dysfunction Rating Score): With a t-value of 2.10, the tribal group showed statistically significant cognitive impairment among tribal depressed patients, with more cognitive dysfunction (19.60 ± 8.85) than the non-tribal group (16.10 ± 7.72).

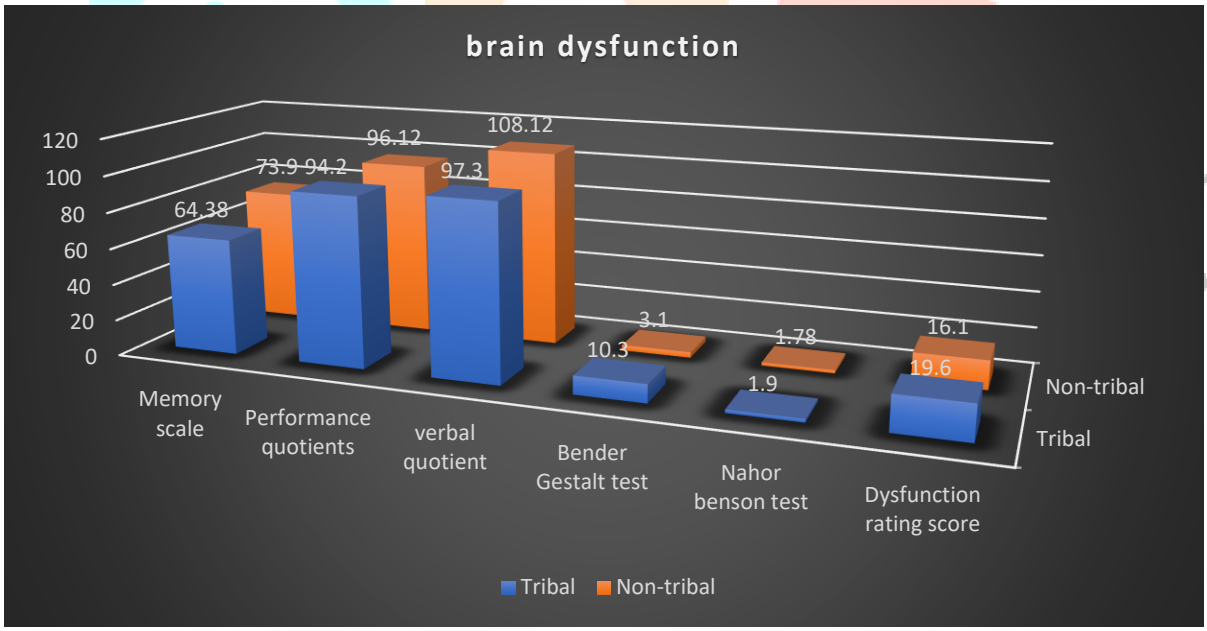
Consequently, hypothesis (1), which asserts that "Tribal and Non-Tribal Depressive Patients do not significantly differ in their cognitive functioning," is mildly accepted.

With the exception of Performance Quotients (PQ) and the Nahor-Benson test, the hypothesis is strongly rejected for the other factors owing to t-values for the Verbal Quotient, Memory Scale, Bender Gestalt test, and Dysfunction Rating Score (DRS) are not significant, even at the.05 level of confidence.

In accordance with the results, there exist higher cognitive deficits in tribal depressed individuals, especially in linguistic abilities, memory, and visual-motor integration. These discrepancies might be caused due to limited availability to healthcare, socioeconomic circumstances, cultural influences, and education. The findings emphasize the necessity of focused treatments, such as educational assistance, culturally sensitive mental health treatment, and cognitive rehabilitation programs for indigenous populations.

"The findings are supported by the findings of Torrent et al,(2016), who studied cognitive dysfunction in bipolar disorder and found significant memory deficits. Patnayak (2003) also found that there is a decline in the cognitive function of patients with bipolar affective disorder."

Fig.2: "Showing the mean comparison of tribal and non-tribal patients on brain dysfunction.



Conclusion: Research demonstrates that tribal patients with depression exhibit more pronounced brain damage compared to non-tribal patients during an examination of their cognitive abilities with the PGI Battery of Brain Dysfunction. The research discovered that non-tribal patients demonstrated superior Memory Scale and Verbal Quotient performance than tribal patients. The research indicated that non-tribal participants exhibited fewer errors on the Bender Gestalt Test and obtained lower Dysfunction Rating Scores.

Research findings showed that non-tribal patients did not achieve significant changes in their Performance Quotient and Nahor-Benson Test scores. The research demonstrated that tribal patients experienced greater cognitive decline in all evaluated areas.

References:

Awasthi, A., Koolwal, A., Dhaka, N., Koolwal, G. D., & Gehlot, S. (2020). Cognitive dysfunctions in patients with bipolar disorder: A comparative study from Western Rajasthan. *Asian Journal of Medical Research*, 9(2), 1–6. https://doi.org/10.47009/ajmr.2020.9.2.PY1Academia+2

Beck, A.T. (1967). Depression: Clinical, Experimental, and Theoretical Aspects. New York. Harper and Row.

Beck, A.T. (1976). Cognitive therapy and the Emotional Disorders. New York: International Universities Press.

Beck, A.T., and Young, J.E. (1985). Depression. In D.H. Barlow (Ed.), Clinical handbook of psychological disorders. New York: Cinnilford Press.

Chandra S, Agarwal AK. Memory in depression (1984). *Indian J Psychiatry*.24:338-45.

John S, Kuruvilla K. (1995). Cognitive dysfunction in Depression. *Indian J Psychiatry*.34:30–3.

Mathews, A., & MacLeod, C. (2005). Cognitive vulnerability to emotional disorders. Annual Review of Clinical Psychology., 1, 167-195.

Moritz, S., Claussen, M., Hauschildt, M., & Kellner, M. (2014). Perceptual properties of obsessive thoughts are associated with low insight in obsessive-compulsive disorder. The Journal of Nervous and Mental Disease, 202(7), 562-565.

Moritz, S., Hörmann, C. C., Schröder, J., Berger, T., Jacob, G. A., Meyer, B., & Rose, M. (2014). Beyond words: Sensory properties of depressive thoughts. Cognition and Emotion, 28(6), 1047-1056.

Patnayak. M, Kapur S, Mehra S, Dube U, Sharad S, Sidhu S. (2003). Genetic variation in D7S1875 repeat polymorphism of leptin gene is associated with increased risk for depression: A case-control study from India. *Depress Anxiety*. 26:791–5

Rusting, C. L., & DeHart, T. (2000). Retrieving positive memories to regulate negative mood: Consequences for mood-congruent memory. Journal of Personality and Social Psychology, 78(4), 737-752.

Sharma I, Singh P, Agnihotri SS(1984). Cognitive dysfunction in depression. *Indian J Psychiatry*.26:51–4.

Tandon R, Singh AP, Sinha PK, Trivedi JK(2002). Executive functions in depression: A clinical report. *Indian J Psychiatry*. 44:343–7.

Torennet MA, Mushtaq D, Murtza I, Mushtaq H, Ali A (2016). Serotonin transporter gene polymorphism and treatment response to serotonin reuptake inhibitor (escitalopram) in depression: An open pilot study. *Indian J Psychiatry*. 50:47–50.

Young, J. E., Beck, A. T., & Weinberger, A. D. (1993). Cognitive therapy for depression. https://www.researchgate.net/publication/232555892