

A STUDY TO ASSESS THE COGNITIVE-CLINICAL PROFILE OF DEMENTIA PATIENTS ATTENDING PSYCHIATRY OPD IN A SELECTED TERTIARY CARE HOSPITAL, WESTERN U.P

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ABSTRACT

Introduction: Dementia is a progressive neurocognitive disorder characterized by deterioration in memory, thinking, behavior and the ability to perform daily activities. It is a major public health concern, especially among the elderly population., 57 million peoples suffered with dementia world widely in 2021 (WHO), Around 60% of people living with dementia reside in low- and middle-income countries, in India, dementia prevalence among aged 60 years and above is estimated 7.4% affecting nearly 8.8 million older adults and Forgetfulness is one of the initial symptoms in most types of dementia. Dementia is listed by WHO as the 7th leading cause of global death and major contributor towards disability and dependency among older people, early identification and comprehensive assessment of cognitive impairment and cognitive domains are essential for effective management. Psychiatry outpatient department (OPD) serve as the first point of contact for diagnosis and care, making them an important setting for cognitive-clinical evaluation.

Objective: To assess the cognitive-clinical profile of dementia patients attending psychiatry OPD in a selected tertiary care hospital, Western U.P.

Methodology: The study adopted a quantitative descriptive cross-sectional research design. a total of 116 dementia patients attending psychiatry OPD were selected using a non-probability consecutive sampling technique. Data were collected using a structured demographic sheet and the Mini-Mental State examination (MMSE) tool to assess cognitive clinical profile domains such as orientation, attention & calculation, registration, recall and language. Descriptive and inferential statistics were used for data analysis.

Results: The finding reveals that the majority of participants on the basis of level of cognitive-clinical profile 58.62% mild to moderate, 29.32 % severe cognitive impairment and 12.06% normal cognitive-clinical profile. Among the cognitive domains Attention & Calculation (39.14%), indicating that are most affected cognitive- clinical profile domain among the dementia patients where as Repeated measures ANOVA was conducted to compare MMSE cognitive domain scores among 116 dementia patients, the multivariate test using Pillai's trace showed statistically significant result with $F(4,112) = 1976.89, p < 0.001$. This indicates that there was a highly significant difference among the measured domains across the repeated observations. Statistical analysis showed a significant association between the level of cognitive-clinical profile and demographic variables such as Age, Marital Status, Education, Place of Residence, and Timing of First Medical Visit. showed with the level of ($p < 0.05$). Other variables such as Gender, Family History, Handedness, Employment Status, Socio-economic Status, and Co-morbid illnesses were not significantly associated.

Conclusion: The study concludes that dementia patients attending Psychiatry OPD predominantly exhibited mild to moderate cognitive impairment, attention & calculation being the most affected cognitive domains. Repeated measures ANOVA demonstrated a highly significant difference among MMSE cognitive domain scores ($p < 0.001$), indicating variations in the pattern of cognitive impairment across domains. Furthermore, cognitive-clinical profile was significantly associated with selected demographic variables, underscoring the need for early cognitive assessment and evidence-based interventions to improve dementia care outcomes.

KEYWORDS: Dementia, cognitive-clinical profile, MMSE, psychiatry OPD, Assess

INTRODUCTION

Dementia is a progressive neurocognitive disorder characterized by deterioration in memory, thinking, behavior, and the ability to perform daily activities. It affects multiple cognitive domains, including memory, attention, orientation, language, and executive functioning, leading to increased dependence and reduced quality of life. As one of the leading

causes of disability and dependency among older adults, dementia has become a major global public health concern. Cognitive-clinical profiling involves the systematic assessment of multiple cognitive domains to identify the pattern and severity of cognitive impairment in dementia. Overall, hypertension and diabetes were the most common comorbidity in dementia patients and contribute to the progression of cognitive impairment.

According to the World Health Organization, Dementia is a rapidly growing global public health concern, affecting approximately 57 million people worldwide in 2021, with nearly 10 million new cases reported annually. It is currently the seventh leading cause of death globally and a major contributor to disability and dependence among older adults. Around 60% of people living with dementia reside in low- and middle-income countries, and this proportion is expected to increase to 71% by 2050. In India, dementia prevalence among adults aged 60 years and above is estimated at 7.4%, affecting nearly 8.8 million older adults, with the burden projected to rise substantially in the coming decades.

Cognitive-clinical profiling using standardized tools such as the Mini-Mental State Examination (MMSE) plays a vital role in assessing the severity and pattern of cognitive impairment. Psychiatry OPDs serve as important settings for the early detection and management of dementia; however, limited data are available from semi-urban regions such as Western Uttar Pradesh. Therefore, the present study was undertaken to assess the cognitive-clinical profile of dementia patients attending Psychiatry OPD and generate evidence to improve nursing care and dementia management.

Objectives of the study were

1. To assess the level of cognitive-clinical profile among dementia patients.
2. To identify the most affected cognitive-clinical profile domain among dementia patients.
3. To find the association between the level of cognitive-clinical profile among dementia patients and their selected demographic variables.

Inclusion criteria

Patients are diagnosed dementia cases attending psychiatry OPD.

Patients or their primary caregivers are willing to participate.

Exclusion criteria

Patients with severe sensory deficits or acute illness preventing assessment.

Uncooperative patients or those with severe psychiatric comorbidity.

METHODOLOGY

The present study adopted a quantitative research approach with a descriptive cross-sectional research design to assess the cognitive-clinical profile of dementia patients attending the Psychiatry Outpatient Department (OPD). The study was conducted in the Psychiatry OPD of S.V.B.P Hospital Meerut among diagnosed dementia patients who fulfilled the inclusion criteria. A total of 116 participants were selected using a consecutive sampling technique. Data were collected after obtaining formal permission from SIC of SVBP hospital Meerut with informed written consent from the participants or their caregivers. The study tool consisted of a demographic data sheet and the Mini-Mental State Examination (MMSE), a standardized instrument used to assess various cognitive domains, including orientation, registration, attention and calculation, recall, language. The data collection for the study was carried out over a period from 01-12-2025 to 15-02-2026 through face-to-face interviews and review of clinical records. The collected data were coded and analysed using descriptive and inferential statistics. Frequency, percentage, mean, and mean percentage were used to describe the sample characteristics and cognitive-clinical profile. Repeated Measures Analysis of Variance (ANOVA) was applied to compare MMSE cognitive domain scores, while Chi-square test was used to determine the association between cognitive-clinical profile and selected demographic variables. The findings were interpreted to draw conclusions and provide implications for nursing practice, education, administration, and research.

RESULTS

The finding of the study is presented according to the objectives of the study. The data is prepared under the subsequent sections: -

SECTION I: - Description of Demographic characteristics of Dementia patients

Table 1- Distribution of frequency and percentage of dementia patients with their selected demographic variables
N=116

S.no	Demographic Profile	Frequency (f)	Percentage%
1	Age in year		
A.	61-65	40	34.48
B.	66-70	49	42.24
C.	71-75	23	19.82
D.	>75	4	3.44
2	Gender		
A.	Male	82	71
B.	Female	34	29
3	Family History of Dementia		
A.	Yes	7	6

B.	No	109	94
4	Handedness		
A.	Left-Handed	41	35.35
B.	Right-Handed	75	64.65
5	Marital Status		
A.	Married	92	79.31
B.	Unmarried	4	3.44
C.	Divorced	9	7.77
D.	Widowed	11	9.48
6	Education		
A.	No Formal	47	40.50
B.	Primary	47	40.50
C.	Secondary	20	17
D.	Senior Secondary	1	1
E.	Graduate & Post Graduate	1	1
7	Place of Residence		
A.	Urban	31	26.72
B.	Rural	85	73.28
8	Employment status (current)		
A.	Employed	14	12.06
B.	Unemployed	86	74.15
C.	Retired	16	13.79
9	Socio Economic Status		
A.	Upper class above 50,000	0	0
B.	Middle class 20,000- 50,000	39	34
C.	Lower class 20,000	77	66
10	1st medical visit		
A.	Within year	37	32
B.	Above 1 Year	79	68
11	Co-morbid medical illness		
A.	Yes	67	57.75
B.	No	49	42.25
12	Co-morbid psychiatric illness		
A.	Yes	31	26.72
B.	No	85	73.28

Section II: - Assessment of level of cognitive-clinical profile of dementia patients attending psychiatry OPD in a tertiary care hospital western U.P.

Table 2 Distribution of Frequency and Percentage of the level of cognitive-clinical profile of dementia patients.
N=116

S.no.	MMSE Scoring	Frequency	Percentage%
A	25-30 Normal cognitive clinical profile	14	12.06
B	18-24 Mild to Moderate impairment of cognitive functioning	68	58.62
C	Scores under 17 severe cognitive impairment	34	29.32
	Total	116	100

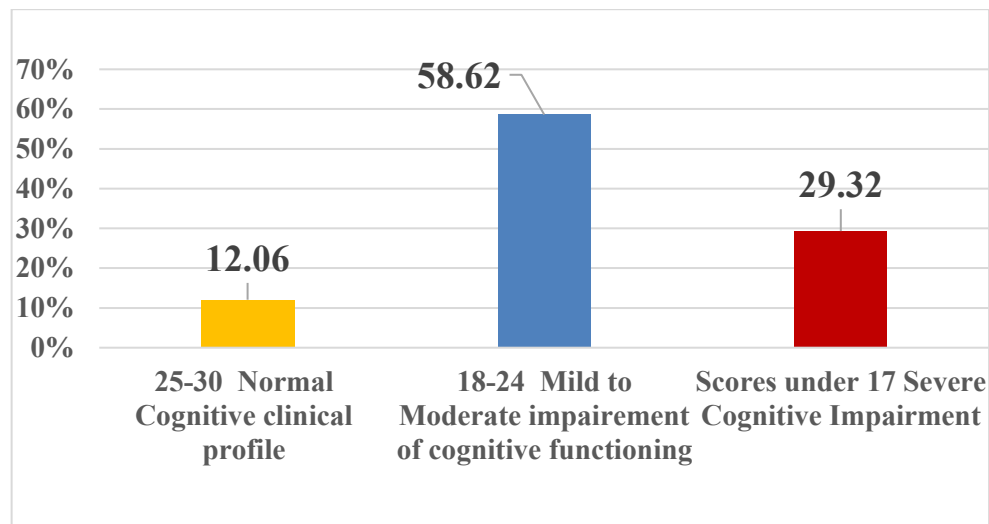


Figure 1: Percentage distribution according to level of cognitive-clinical profile of dementia patients

Section III: - Finding showing the most affected cognitive-clinical profile domain of dementia patients attending psychiatry OPD in a tertiary care hospital western U.P.

Table 3. Finding showing the most affected cognitive-clinical profile domain of dementia patients. Mean and Mean Percentage Distribution of MMSE Domain scores.

MMSE Component	Maximum Score	Mean	Mean %
1.Orientation	10	8.28	82.84
2.Attention & Calculation	5	1.95	39.14
3.Registration	3	2.37	79.02
4.Recall	3	1.94	64.94
5.Language	9	4.75	52.87

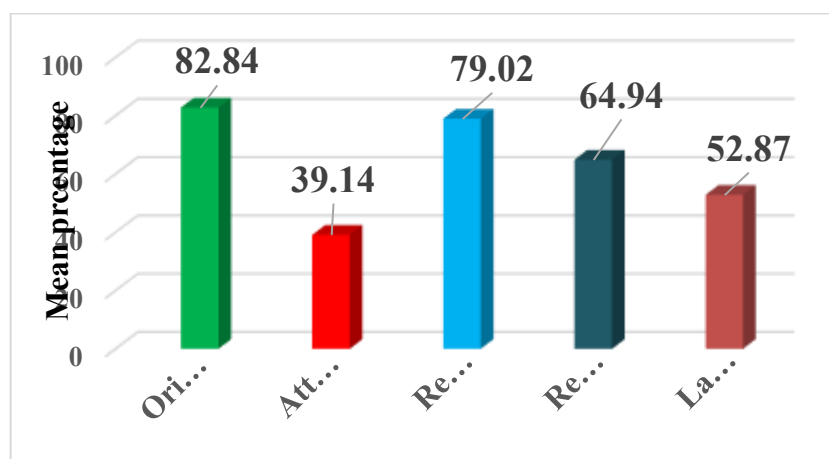


Figure 2 Represent percentage of MMSE domain mean percentage

Table 3.2 Repeated Measures ANOVA on MMSE Cognitive Domian among Dementia patients. N=116

Variables	Df	F value	p value
Repeated ANOVA Multivariate Analysis (Pillai's Trace)	4,112		<0.001*

		1976.89	
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p<0.05 level of significance

Section IV: - Association between level of cognitive-clinical profile among dementia patients and their demographic variables of dementia patients attending psychiatry OPD in a tertiary care hospital western U.P

Table 4 Association between level of cognitive-clinical profile among dementia patients and their demographic variables of dementia patients attending psychiatry OPD in a tertiary care hospital western U.P

N=116

S. No.	Demographic Variable	χ^2 (Chi-Square)	Df	p-value	Significance
1	Age in year	15.682	6	0.015	S*
2	Gender	4.313	2	0.116	NS
3	Family history of dementia	3.147	2	0.207	NS
4	Handedness	0.341	2	0.843	NS
5	Marital Status	19.958	6	0.003	S*
6.	Education	20.717	8	0.008	S*
7	Place of Residence	6.164	2	0.046	S*
8	Employment Status (Current)	8.375	4	0.079	NS
9.	Socio-economic status	3.32	2	0.190	NS
10	1st Medical Visit (within 1 year /above 1 Year)	20.314	2	<0.001	S*
11	Co-morbid Medical Illness	1.712	2	0.425	NS
12	Co-morbid Psychiatric Illness	3.117	2	0.21	NS

Significant at p < 0.05 (Significant / NS: Not Significant)

Total of 116 dementia patients attending the Psychiatry OPD were assessed using the Mini-Mental State Examination (MMSE). The findings revealed that 58.62% (n=68) of participants had mild-to-moderate cognitive impairment (MMSE score 18–24), while 29.32% (n=34) demonstrated severe cognitive impairment (MMSE score <17). Only 12.06% (n=14) of participants had normal cognitive functioning (MMSE score 25–30). Domain-wise analysis of MMSE scores showed that Orientation had the highest mean percentage score (82.84%), followed by Registration (79.02%), Recall (64.94%), and Language (52.87%). Attention and Calculation was the most affected cognitive domain, with the lowest mean percentage score (39.14%). Repeated Measures ANOVA demonstrated a statistically significant difference among MMSE cognitive domains (Pillai's Trace: F=1976.89, df=4,112, p<0.001), indicating differential impairment across cognitive functions. Furthermore, significant associations were observed between cognitive-clinical profile and age ($\chi^2=15.682$, p=0.015), marital status ($\chi^2=19.958$, p=0.003), educational status ($\chi^2=20.717$, p=0.008), place of residence ($\chi^2=6.164$, p=0.046), and timing of first medical visit ($\chi^2=20.314$, p<0.001). However, no significant associations were found with gender (p=0.116), family history of dementia (p=0.207), handedness (p=0.843), employment status (p=0.079), socioeconomic status (p=0.190), co-morbid medical illness (p=0.425), or co-morbid psychiatric illness (p=0.210). These findings suggest that cognitive impairment among dementia patients is predominantly mild to moderate in severity, with attention and calculation being the most affected cognitive domain, and that several demographic factors significantly influence cognitive status.

DISCUSSION

The present study found that 58.62% of dementia patients had mild-to-moderate cognitive impairment and 29.32% had severe cognitive impairment, indicating that the majority of participants experienced significant cognitive decline. These findings are comparable with the study conducted by Shrestha, Phuyal, and Rawal (2024), which reported that 50.0% of older adults had mild cognitive impairment and 18.9% had severe cognitive impairment, with an overall prevalence of cognitive impairment of 68.9%. Although both studies demonstrated a high burden of cognitive impairment, the present study reported a higher proportion of severe cognitive impairment, possibly due to the inclusion of clinically diagnosed

dementia patients. he presents study found that 58.62% of dementia patients had mild-to-moderate cognitive impairment and 29.32% had severe cognitive impairment, indicating a substantial burden of cognitive decline. Similar findings were reported by Rakesh Kempaiah, Holla Vikram, and Bhattacharya Amitabh (2023) in their study on dementia with Lewy bodies, where the mean MMSE score was 16.97 ± 5.96 , reflecting significant cognitive impairment. The authors also reported deficits in attention, working memory, verbal fluency, learning, memory, and visuospatial functions, suggesting involvement of multiple cognitive domains. Likewise, the present study identified significant impairment across MMSE domains, particularly in Attention and Calculation. This comparison highlights the progressive nature of cognitive decline among dementia patients and underscores the importance of early screening and timely intervention to prevent further deterioration in cognitive functioning.

NURSING IMPLICATION

Nursing practice

Routine cognitive screening should be incorporated into nursing assessments for early detection of cognitive decline. Nurses should implement individualized, domain-specific interventions to improve cognitive functioning and ensure patient safety. Care plans should be tailored according to the severity of impairment to enhance quality of life and functional independence. Additionally, caregiver psychoeducation should be provided to support effective dementia management and reduce caregiver burden.

Nursing Education

Nursing curricula should strengthen dementia-related education by emphasizing cognitive assessment, geriatric mental health nursing, and the use of standardized screening tools such as MMSE. Greater focus should be placed on case-based learning, simulation training, communication skills, and non-pharmacological management of dementia. Continuing nursing education programs are also essential to update nurses' knowledge and competencies in dementia assessment and care, ensuring evidence-based and high-quality practice.

Nursing Administration

Nursing administrators should establish policies and protocols for routine cognitive screening in Psychiatry OPDs and ensure the availability of standardized assessment tools. Regular training programs should be conducted to enhance nurses' competencies in dementia care. Administrators should promote multidisciplinary collaboration, maintain effective documentation systems, and support the development of specialized dementia care services to ensure early diagnosis, timely intervention, and quality patient care.

Nursing Research

The study provides valuable evidence on the cognitive-clinical profile of dementia patients and highlights the need for further research in diverse populations. Future studies should focus on longitudinal assessment of cognitive decline, evaluation of nursing interventions, development of culturally appropriate assessment tools, and exploration of caregiver burden and other factors influencing dementia progression. These findings contribute to strengthening the evidence base for effective dementia care in nursing practice.

RECOMMENDATION

- Promote interventional studies to evaluate strategies for cognitive improvement and better patient outcomes.
- Conduct longitudinal studies to assess progression of cognitive decline and the effectiveness of interventions over time.
- Encourage comparative and large-scale studies, including rural and urban populations, to improve generalizability of findings.
- Focus research on behavioral and psychological symptoms, caregiver burden, coping strategies, and the development of culturally appropriate, education-adjusted cognitive assessment tools.

LIMITATIONS

- The study was conducted in a single Psychiatry OPD of a tertiary care hospital, which limits the generalization of findings to other settings.
- The sample size was limited and based on available patients during the data collection period.
- The study used a cross-sectional design, so progression of cognitive decline could not be assessed.
- Only one standardized tool (MMSE) was used detailed neuropsychological assessment was not included.
- The study focused mainly on cognitive domains and did not extensively assess behavioral and psychological symptoms.

CONCLUSION

The present study was conducted to assess the cognitive-clinical profile of dementia patients attending the Psychiatry OPD of a tertiary care hospital in Western Uttar Pradesh. The findings revealed that the majority of dementia patients had mild-to-moderate cognitive impairment. Among the different cognitive domains assessed through the MMSE, Attention & Calculation is the most affected domains, indicating greater impairment in these cognitive functions. Repeated Measures ANOVA demonstrated a statistically significant difference among the MMSE cognitive domains ($F=1976.89$, $p<0.001$), suggesting that cognitive decline was not uniform across domains and that some cognitive functions were more severely affected than others. The study also identified significant associations between cognitive-clinical profile and selected demographic variables such as age, marital status, education, place of residence, and timing of first medical visit. Elderly

patients, widowed individuals, illiterate patients, rural residents, and those with delayed medical consultation exhibited comparatively higher levels of severe cognitive impairment

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