Understanding the Psychological Profiles of Dementia Patients through Rorschach Inkblot Analysis

Project submitted for partial fulfilment of the degree of

MASTERS OF ARTS IN PSYCHOLOGY

SUBMITTED BY:

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UNDER THE SUPERVISION AND GUIDANCE OF

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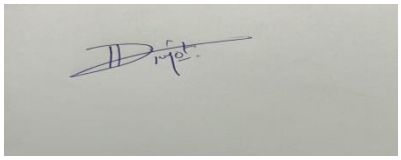
CERTIFICATE

This is to certify that the thesis entitled, 'Understanding the Psychological Profiles of Dementia Patients through Rorschach Inkblot Analysis' is being submitted in partial fulfilment of requirements for the award of the degree of Master of Arts in Psychology, presented in the Thapar School of Liberal Arts & Sciences, Thapar Institute of Engineering and Technology, Patiala. This work has been carried out under the supervision of Dr. Sarika alreja, Assistant Professor, Thapar School of Liberal Arts & Sciences, Thapar Institute of Engineering and Technology, Patiala and no part of this project has been submitted for the award of any other degree.



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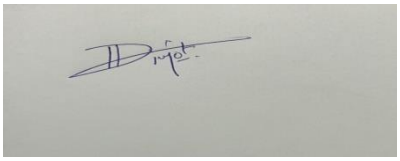
CANDIDATE'S DECLARATION

I hereby declare that the work presented in this thesis entitled, "Understanding the Psychological Profiles of Dementia Patients through Rorschach Inkblot Analysis'' submitted in partial fulfilment of requirements for the award of the degree of Masters of Arts in Psychology, presented in the Thapar School of Liberal Arts & Sciences, Thapar Institute of Engineering and Technology, Patiala is an authentic record of my work carried out under the supervision and guidance of Dr. Sarika alreja, Assistant Professor, Thapar School of Liberal Arts & Sciences, Thapar Institute of Engineering and Technology, Patiala. Further due credit has been given to other researchers by citing them and their works are duly listed in the reference section. The matter embodied in this thesis has not formed the basis for awarding any other degree at this or any other university.



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DECLARATION

I, Divjot kaur Sandhu (862302019), a student of M.A. Psychology (2023-2025), Thapar School of Liberal Arts & Sciences, Thapar Institute of Engineering and Technology, Patiala, have completed the project entitled, 'Understanding the Psychological Profiles of Dementia Patients through Rorschach Inkblot Analysis'

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ABSTRACT

Dementia is a long-term neurodegenerative disorder accompanied with cognitive, linguistic and behavioral impairment. Hence, the objective of this study was to explore the psychological and cognitive profiles of dementia patients with the help of a battery of tests, including the Rorschach inkblot test, dementia severity rating scale (DSRS), mini-mental state examination (MMSE), and clock drawing test. A total of 40 subjects were enrolled, with 20 being diagnosed with dementia and the other 20 matched as controls without dementia.

It was found that the responses in Rorschach were different in the dementia group, significant linguistic errors such as reduced verbal fluency and semantic distortions, and figurative inaccuracies denoting visuospatial and cognitive deficits. The DSRS scores correlated strongly with the severity of impairment in the results of MMSE. Compared to the controls, dementia patients had marked deficits in all assessments, including memory, executive function, and visuospatial abilities.

The present research advocates for the addition of Rorschach in the classical cognitive battery towards a better understanding of dementia's multifaceted impact. Findings here bear significant relevance to improving the diagnosis and tailoring interventions toward the needs of dementia patients.

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CHAPTER 1

INTRODUCTION

Background and significance

Dementia involves loss in cognitive functions, that incorporates memory, thinking, and reasoning, which is severe enough to effect your daily life functions. It is a collection of symptoms linked to underlying illnesses such Lewy body dementia, Alzheimer's disease, front temporal dementia, and vascular dementia rather than a single disease. In addition to memory loss, dementia patients may also have trouble speaking and communicating, have poor judgment, exhibit behavioural and emotional abnormalities, and have a decrease in their capacity to carry out daily chores. Individual's quality of life and independence gets effected by these symptoms which gets adverse with time.

Any age can be affected by dementia. Dementia is more prevalent in people with over 60 and its risk increases with age. Dementia risk is also increased by other variables, including genes, high blood pressure, smoking, diabetes, and obesity. Other variables like genes, smoking, obesity, high blood pressure and diabetes also escalate the risk of dementia.

Alzheimer's dementia represents a prevalent type of dementia. It is believed to result from the build up of unusual protein deposits in the brain which can interfere regular communication among brain cells. Signs of Alzheimer's disease usually begin with slight memory impairment and challenges in cognitive functions, like solving problems and retrieving words. Vascular Dementia is a common form of dementia caused by reduced blood flow to the brain as a result of damaged, narrowed, or blocked blood vessels, which strip the brain of vital nutrients and oxygen.

Lewy Body Dementia arise from the buildup of protein deposits called as Lewy bodies in the brain leads to lewy body dementia. These deposits interfere with the regular operation of brain cells, resulting in diminished cognitive abilities, issues with movement, and alterations in behaviour and mood. Lewy Body Dementia is occasionally mistaken for Parkinson's disease due to its potentially similar symptoms. Frontotemporal Dementia is an uncommon type of dementia caused by the gradual deterioration of nerve cells in the brain's frontal and temporal lobes. Frontotemporal dementia is marked by alterations in behavior, personality, and language skills. There are certain indicators you can watch for that distinguish typical aging from dementia. An individual experiencing dementia typically struggles with completing basic everyday activities, Struggles to remember recent occurrences, Struggles to make logical choices and/or behaves inappropriately, Struggles with conveying messages and comprehending details. They easily lose their train of thought, leading them to unintentionally repeat phrases and questions during discussions, Seems confused even when in known environments.

This contrasts with individuals who are aging typically, as they can still make sound decisions and remember recent events, though it may take them longer. Although elderly individuals might sometimes struggle to find the appropriate words, they can still engage in a reasonable conversation. The primary distinction lies in the effect the aforementioned symptoms have on an individual's autonomy. In dementia, memory decline and cognitive issues disrupt a patient's ability to be independent

According to the DSM-5-TR, dementia is classified under the broader term "Major Neurocognitive Disorder" (Major NCD), characterized by a significant decline from a previous level of cognitive functioning in one or more domains, including complex attention, executive

function, learning and memory, language, perceptual-motor, or social cognition. This decline must be evident through concern from the individual, informant, or clinician and supported by objective assessment or neuropsychological testing. They should experience interference in everyday life which cannot be solely attributed to delirium or another mental disorder. The DSM-5-TR further specifies various subtypes of Major NCD based on etiology, such as Alzheimer's disease, vascular disease, Lewy body disease, frontotemporal lobar degeneration, and others, each with additional clinical features that guide diagnosis. Understanding the psychological profiles of individuals with dementia can help us develop more effective therapeutic interventions. For understanding such dimensions of dementia involves incorporating tools that can help us understand their both cognitive and emotional functioning better. Among such tools, the Rorschach Inkblot Test, a projective psychological assessment, stands out for its ability to reveal underlying thought patterns, emotional states, and perceptual processes.

The Rorschach inkblot test (Rorschach, 1921) is a prominent psychological assessment tool that has undergone years of misclassification but is now recognized as a stimulus-attribution task. This test provides insight into psychological processes that typically do not surface in self-report assessments and has been extensively utilized in clinical psychology and psychiatry. The administration of the test involves two stages: (1) the generation of spontaneous responses and (2) the examiner's clarification. After gathering and analyzing all responses, the examiner categorizes and interprets them based on aspects such as the response's theme (for instance, aggressive or cooperative content), the location where the examinee reported seeing something, and which part of the inkblot triggered that response. Additional factors influencing the interpretation include the perceptual determinants of the responses and any remarks the participants make about specific inkblots during the clarification phase.

Hermann Rorschach published his sole book, Psychodiagnostics, in 1921 (Rorschach, 1921), just one year before his death, following a decade of investigation into creativity, various intelligence types, mental illnesses, and projects fueled by his interest in art and drawing. His initial experiments seem to have started with a study involving inkblots shown to adolescents aged 12 to 16, students of a friend and teacher, focusing on what they perceived and the parts of the inkblots they referenced. He utilized those early findings to explore perception and apperception in both healthy individuals and those with mental health issues, unexpectedly discovering that his empirical results could serve as a diagnostic assessment tool, measure intelligence, and characterize different types of psychological disorders, beginning with schizophrenia (Keddy et al., 2021). The clinical importance of interpreting ink blots was initially examined in 1911 by Dr. Hermann Rorschach, a young Swiss psychiatrist. He experimented with a range of ink blots, both black and colorful, before releasing his standard set. His primary findings, derived from testing 117 normal individuals and 288 various mental health patients, along with a comprehensive explanation of the test and scoring techniques, are included in a monograph titled Psychodiagnostik, published in 1921. He passed away unexpectedly the following year, but additional advancements in the method were presented in a posthumous article by his successor, Dr. Oberholzer. The ten inkblots are centered on white sheets that measure 9% by 7 inches. They should remain uncut but can be affixed to sturdy cards for easier handling. Blots I, IV, V, VI, and VII consist of black and grey, while Blots II and III feature some red splotches as well; Blots VIII, IX, and X are composed of multiple colors.

A series of 10 inkblot cards are presented to the patient in order, one by one, and their spontaneous responses are recorded. This test is very useful in assessing personality characteristics, emotional functioning, and cognitive processes. With dementia, Rorschach

responses may give insights into the cognitive abilities of patients, including how they process and organize information, identify patterns, and construct meaning of their environments. language related impairments,such as facing difficulty word-finding problems, making semantic mistakes, and show decreased verbal fluency, are frequently observed in these answers. Rorschach testing may help in providing improved insights, particularly in distinguishing between different forms of dementia. For example, patients with dementia with Lewy bodies show distinct response patterns compared to those with Alzheimer's disease, especially in areas related to visuoperceptual impairments. it can help Clinicians understand better by analyzing Rorschach responses of dementia patients and searching for characteristics which are more prone to dementia. Understanding this is very important for modifying interventions to the unique challenges presented by different dementia subtypes.

In a study *Rorschach Assessment of Senior Adults* done by Weiner, Appel, and Tibon-Czopp (2019), highlight the effectiveness of Rorschach test in evaluating cognitive functioning, affective experience, interpersonal relatedness, and self-perception in older populations. Their research underscores the Rorschach's relevance in gerontopsychology, particularly for assessing developmental personality changes and premorbid psychological history in senior adults. Incorporating these insights allows for a comprehensive assessment that considers both the current and historical psychological profiles of dementia patients. Weiner et al. (2019) emphasize that the Rorschach test can effectively assess different aspects of processing in senior adults, making it a valuable instrument for identifying psychological profiles in individuals with dementia. Furthermore, the authors highlight the importance of considering developmental changes in personality when assessing older adults. They discuss how the Rorschach can be utilized to evaluate developmental personality changes, which is particularly relevant when

examining individuals with a history of psychological conditions. By integrating the Rorschach Inkblot Test into research, we can obtain a comprehensive understanding of the psychological profiles of dementia patients, considering both current cognitive and emotional functioning and premorbid psychological history. This approach addresses the complexities and multidimensional nature of psychological assessment in dementia, as highlighted by Weiner et al. (2019).

In addition to the Rorschach, the Mini-Mental State Examination (MMSE) is routinely employed to evaluate cognitive functioning in dementia patients. As the MMSE focuses on general cognitive abilities, including orientation, memory, and language. Together, these tools offer a multidimensional perspective on cognitive dysfunction, complementing the deeper psychological insights obtained from Rorschach testing.

To build upon these established methods, In this researcha combination of assessments—including the Rorschach Inkblot Test, Dementia Severity Rating Scale (DSRS), MMSE,—across two groups: individuals diagnosed with dementia and a control group without dementia. Through this research, we aimed to explore the unique cognitive and psychological profiles of dementia patients, with a particular focus on how their responses to these tests could differentiate between dementia subtypes and levels of severity. Additionally, the study sought to uncover patterns of linguistic and perceptual errors in the Rorschach responses, correlating them with cognitive impairments identified through the DSRS and MMSE. By combining these tools, the research aimed to provide a more holistic understanding of the interplay between cognitive deficits, emotional functioning, and linguistic abilities in dementia, ultimately contributing to more precise diagnostic and therapeutic strategies.

Significance of the Study

Dementia is a multidimensional and progressive neurodegenerative disease, although its significant effects are on an individual's cognitive and language and emotional capabilities, eventually reducing the overall quality of life. Understanding the different aspects of dementia becomes crucial since its prevalence continues to grow across the globe. This, however, pushes for the development of effective diagnostic tools or treatment intervention for dementia. This study is significantly important since it brings a modernized traditional cognitive assessment method such that it uses the Rorschach Inkblot Tests to balance the evaluation of how dementia affects cognitive, linguistic, and perceptual functioning.

One major importance the research holds is the fact that it uses the Rorschach Inkblot Test to examine linguistic and perceptual deficits among dementia patients. Tools like the Mini-Mental State Examination (MMSE) mostly focus their applications on evaluation of cognitive impairments, while ignoring the deeper psychological or emotional dimensions involved. Through considering the Rorschach responses, this study thus sheds light on how dementia patients process, interpret, and organize information, and reveals patterns of linguistic errors and perceptual distortions, which define the understanding of cognitive decline with this type of disorder. Diagnostic procedures thus become more intense by adding this approach to the current methods of analyzing dementia.

This integration highlights the interplay between cognitive deficits, and executive dysfunction in dementia patients. Such correlations not only validate the use of the Rorschach test as a complementary diagnostic tool but also enhance its applicability in clinical settings, where comprehensive evaluations are essential for accurate diagnosis and personalized care planning.

Lastly, the significance of this research extends to its potential implications for caregiver support and education. Understanding the specific cognitive and emotional challenges faced by dementia patients equips caregivers with better tools to manage and communicate effectively with their loved ones. This knowledge also informs training programs for healthcare professionals, fostering a more empathetic and effective approach to dementia care.

CHAPTER 2

LITERATURE REVIEW

2.1 Dementia: Cognitive and Psychological Impacts

Dementia refers to a broad spectrum of neurodegenerative disorders that cause a decline in cognitive function, impacting memory, language, problem-solving, and other mental abilities to the extent that it interferes with an individual's daily life and functioning. The most common form of dementia is Alzheimer's disease (AD), followed by vascular dementia, Lewy body dementia, and frontotemporal dementia. While the cognitive impacts of dementia are widely studied, the psychological effects are equally important, as they significantly influence the quality of life and the overall care and management of patients. The following sections explore the cognitive and psychological impacts of dementia, emphasizing findings from recent research.

Cognitive Impacts of Dementia

Cognitive impairments in dementia show itself in various ways, and they grow as the disease develop. Early-stage dementia typically affects memory and executive functions, with patients experiencing difficulties in recalling recent events and learning new information. Research has shown that the hippocampus, a brain region crucial for memory formation and storage, is one of the first areas to be affected in Alzheimer's disease (Jack et al., 2010). In addition to memory loss, patients often experience a decline in executive functions, which include planning, problem-solving, and attention. These deficits are primarily linked to damage in the prefrontal cortex, a region responsible for higher-order cognitive processes (Gazzaley & D'Esposito, 2007).

As dementia progresses, language impairments become more evident. In Alzheimer's disease, patients experience word-finding difficulties and semantic errors, and they may struggle with sentence construction and comprehension (Henry et al., 2016). Similar language deficits are observed in other forms of dementia, though the specific patterns vary depending on the underlying pathology. For instance, individuals with frontotemporal dementia exhibit profound language impairments, particularly in expressive language, which may include difficulty with word retrieval and grammar (Mendez, 2016).

Visuospatial impairments are another hallmark of dementia. These impairments can manifest as difficulties in navigating environments, recognizing faces, and interpreting visual information. Research by Mendez and colleagues (2005) found that individuals with Alzheimer's disease show pronounced difficulties in spatial memory, and these deficits often result in disorientation and challenges with activities of daily living (ADLs). In vascular dementia, these impairments may be more pronounced due to the multifocal nature of brain lesions in areas such as the parietal lobe, which is critical for visuospatial processing (O'Brien et al., 2003).

Psychological Impacts of Dementia

In addition to cognitive decline, dementia often leads to various psychological changes that significantly affect patients and their caregivers. These changes include mood disturbances, personality alterations, and behavioral problems. Anxiety and depression are common in dementia patients, with studies reporting prevalence rates ranging from 30% to 50% in individuals with Alzheimer's disease (Aalten et al., 2005). These mood disorders may be exacerbated by the loss of cognitive function and the awareness of deteriorating abilities.

Depression in particular has been shown to correlate with increased caregiver burden and a faster rate of cognitive decline (Teri et al., 1997).

Psychotic symptoms, such as hallucinations and delusions, are also frequently observed in dementia, particularly in Lewy body dementia and Alzheimer's disease (Ballard et al., 2001). These symptoms can significantly disrupt patients' lives, leading to agitation, confusion, and behavioral problems, which often require pharmacological intervention. The presence of psychosis is associated with a more rapid decline in cognitive function and increased care needs, adding further challenges for both patients and caregivers.

Personality changes are another psychological impact that occurs in dementia, especially in frontotemporal dementia, where early changes in behavior and personality often precede cognitive symptoms. Individuals with frontotemporal dementia may exhibit socially inappropriate behaviors, impulsivity, and a lack of empathy (Seeley et al., 2007). These behavioral changes are related to atrophy in the frontal and temporal lobes, which are responsible for regulating social and emotional behavior. In Alzheimer's disease, while personality changes may not be as pronounced, some patients may become more withdrawn, anxious, or irritable as a result of their cognitive decline.

The psychological impact of dementia also extends to the caregivers, who often experience significant emotional strain due to the ongoing care needs of their loved ones. Research has highlighted the emotional toll on caregivers, including increased levels of stress, depression, and anxiety. The caregiving experience can be particularly challenging when dementia patients exhibit aggression, confusion, and emotional outbursts (Zarit et al., 1986). Studies also suggest that caregiver well-being is closely linked to the progression of dementia symptoms in patients,

as more severe cognitive decline often results in more demanding care responsibilities (Pinquart&Sörensen, 2003).

Implications for Diagnosis and Treatment

Understanding both the cognitive and psychological impacts of dementia is crucial for developing effective diagnostic tools and therapeutic interventions. Cognitive assessments, such as the MMSE and the Clock Drawing Test, are essential in identifying the severity and progression of cognitive impairments in dementia. However, psychological assessments, such as those evaluating mood disorders and behavioral changes, are equally important in providing a comprehensive evaluation of the patient's condition. The Rorschach Inkblot Test, for example, has been increasingly recognized for its ability to provide insights into the emotional and psychological functioning of dementia patients (Weiner et al., 2019).

Effective treatment approaches must address both cognitive decline and psychological symptoms. Pharmacological treatments, such as acetylcholinesterase inhibitors and NMDA receptor antagonists, are commonly used to manage cognitive symptoms in Alzheimer's disease. However, behavioral and psychological symptoms often require additional interventions, such as cognitive-behavioral therapy (CBT), caregiver training, and environmental modifications (Teri et al., 2005). These interventions can help reduce anxiety, depression, and behavioral issues, enhancing the overall well-being of patients and their families.

Dementia is a complex condition that affects both cognitive and psychological functioning. While significant advances have been made in understanding the cognitive impairments associated with dementia, the psychological impacts remain a critical area for further

exploration. The integration of cognitive assessments with psychological evaluations is essential for providing a comprehensive picture of the condition and developing effective treatment strategies. Research into the cognitive and psychological effects of dementia not only improves our understanding of the disease but also enhances clinical care and supports better outcomes for both patients and caregivers.

2.2 Rorschach Inkblot Test: Applications in Neuropsychology

The Rorschach Inkblot Test, created by Hermann Rorschach in 1921, is a widely known projective psychological assessment tool that involves showing individuals a series of inkblots and asking them what each inkblot resembles or makes them think of. It has been a cornerstone in clinical psychology for evaluating personality, emotional functioning, and cognitive processes. The Rorschach test is unique in that it relies on ambiguous stimuli, where responses are influenced by the individual's internal cognitive processes, perceptions, and emotional state. In neuropsychology, particularly in the study of neurodegenerative diseases like dementia, the Rorschach test provides valuable insights into a patient’s cognitive and emotional state, which may not be as easily detectable through traditional cognitive tests alone.

The Rorschach Test in Neuropsychological Assessment

In neuropsychology, the Rorschach Inkblot Test is used to examine how individuals process and interpret complex visual information, which is often affected in various neurological and psychiatric conditions. For dementia patients, this test has been applied as a diagnostic tool to identify cognitive impairments and emotional dysfunctions that may be missed in other assessments. Since the Rorschach is a projective test, it offers a deeper understanding of the

individual's cognitive distortions, emotional regulation, and coping mechanisms. This makes it especially useful in detecting subtle cognitive deficits that may arise early in dementia or other neurodegenerative conditions.

In patients with Alzheimer's disease, for example, the Rorschach test has been found to highlight cognitive deficits related to visuospatial processing, perception, and executive functioning. Alzheimer's disease primarily impacts the hippocampus and the entorhinal cortex, which are involved in memory formation and spatial navigation. These areas of the brain also play crucial roles in interpreting visual stimuli, which is why patients with Alzheimer's often exhibit difficulties when engaging with the ambiguous inkblot images. Studies have shown that these patients may struggle with abstract thinking and conceptualization, often offering responses that reflect difficulties in making connections between the inkblot and meaningful objects or scenarios (Weiner et al., 2019).

Understanding Cognitive and Perceptual Distortions in Dementia

The Rorschach test's capacity to reveal perceptual distortions and cognitive biases makes it especially useful for understanding how dementia patients perceive the world around them. According to research by Mendez (2016), Alzheimer's patients often demonstrate impairments in abstract thinking, which affects how they interpret the ambiguous inkblots. They may focus on irrelevant details or respond in overly simplistic terms, lacking the ability to form more elaborate or abstract interpretations. Furthermore, the loss of executive function—linked to deterioration in the frontal lobes—affects an individual’s ability to plan, organize, and abstract from the details of the inkblot, leading to responses that may appear fragmented or disconnected.

In patients with frontotemporal dementia (FTD), the Rorschach test can be instrumental in identifying personality changes and emotion regulation issues. FTD primarily impacts the frontal and temporal lobes, which are associated with decision-making, social behavior, and emotional regulation. As FTD progresses, patients may demonstrate poor impulse control, inappropriate responses, and a reduced ability to understand social cues, all of which can be observed in Rorschach responses. They might provide more impulsive, eccentric, or emotionally intense answers, reflecting the diminished regulation of affect and social behavior, a hallmark of this form of dementia (Seeley et al., 2007).

In Lewy body dementia (LBD), which is characterized by both cognitive decline and motor symptoms such as tremors, the Rorschach test can be particularly useful in identifying visual hallucinations and perceptual distortions. Patients with LBD often report seeing things that are not present, and their Rorschach responses may reveal difficulties in distinguishing between real and imagined stimuli. This test can help clinicians identify such visual misperceptions, which are often linked to damage in brain regions responsible for processing visual stimuli, such as the occipital lobe and the parietal cortex (Ballard et al., 2001).

2.2 Rorschach as a Supplementary Diagnostic Tool

One of the major strengths of the Rorschach test in neuropsychology is its ability to supplement traditional cognitive assessments by providing insights into cognitive distortions and emotional functioning that other tests, like the MMSE or Clock Drawing Test, may not capture. Standard cognitive tests, such as the Mini-Mental State Examination (MMSE), assess global cognitive function through structured tasks such as orientation, memory recall, and language. However, these tests do not provide in-depth insights into how patients process information or handle

emotional distress. The Rorschach Inkblot Test complements these tools by revealing how dementia patients perceive and react to abstract stimuli, shedding light on their emotional state and providing a richer, more nuanced view of their cognitive function (Weiner et al., 2019).

Research Supporting the Rorschach Test in Dementia

Research has increasingly supported the utility of the Rorschach test in dementia diagnosis and evaluation. Weiner et al. (2019) demonstrated that the Rorschach test is effective in assessing neurocognitive decline in elderly adults, including those with dementia. Their study showed that dementia patients had significantly different Rorschach responses compared to non-demented individuals, particularly in areas related to visuoperceptual processing and cognitive complexity. These differences were found to be especially pronounced in individuals with Alzheimer's disease and frontotemporal dementia, further confirming the value of the test as a diagnostic tool.

Furthermore, research has explored the relationship between Rorschach test results and specific dementia subtypes. For example, Vakkur et al. (2010) found that patients with Alzheimer's disease exhibited less cognitive flexibility in their responses, typically focusing on concrete details rather than abstract meanings. In contrast, patients with vascular dementia showed more significant disruptions in emotional regulation, as reflected in their Rorschach responses, which often highlighted anxiety and depression. Such findings underscore the ability of the Rorschach test to differentiate between dementia subtypes and provide more detailed information about cognitive and emotional functioning.

The Rorschach Inkblot Test continues to be a valuable tool in neuropsychological assessments of dementia. By providing insight into cognitive distortions, perceptual impairments, and emotional

functioning, the Rorschach test offers clinicians a deeper understanding of the psychological and cognitive changes associated with various types of dementia. Its ability to capture the complexity of human perception and emotional response makes it a powerful supplement to traditional cognitive tests, helping to identify cognitive decline and guide treatment strategies. Despite its limitations, the Rorschach test remains an essential component of comprehensive dementia assessments, contributing to better diagnostic accuracy and more tailored therapeutic interventions.

2.3 Integration of Cognitive Assessments in Dementia Research

The integration of multiple cognitive assessments has been a critical approach in dementia research to gain a comprehensive understanding of the diverse cognitive and psychological impairments associated with the condition. Previous studies have highlighted the importance of using a variety of diagnostic tools to capture different aspects of cognitive dysfunction, as dementia affects multiple domains of mental functioning, including memory, attention, executive function, and visuospatial abilities.

Traditionally, tools like the Mini-Mental State Examination (MMSE) have been widely employed to assess global cognitive functioning in dementia patients. The MMSE is particularly effective in detecting early cognitive decline, especially in Alzheimer's disease, and is used to track disease progression over time (Folstein et al., 1975). However, studies such as those by McKhann et al. (2011) emphasize that the MMSE alone is limited in assessing the full spectrum of cognitive impairments in dementia, as it primarily focuses on orientation, memory, and language skills, leaving other critical domains like executive function and visuospatial abilities underexplored.

To address these limitations, researchers have incorporated additional assessments, such as the Clock Drawing Test (CDT), which specifically evaluates executive function, visuospatial abilities, and planning (Shulman et al., 1993). The CDT has been shown to be a sensitive tool for identifying early cognitive impairments in various forms of dementia, particularly in distinguishing between Alzheimer's disease and other types, such as vascular dementia (Bucks et al., 2006). By adding such tests, researchers can build a more nuanced understanding of cognitive decline, as the CDT captures impairments that may not be evident in the MMSE.

The integration of projective tests, such as the Rorschach Inkblot Test, with more traditional cognitive assessments has also been explored, though to a lesser extent. Research by Weiner et al. (2019) suggests that the Rorschach can offer valuable insights into cognitive and emotional functioning, particularly in older adults with dementia. The test's ability to reveal perceptual distortions, emotional functioning, and cognitive processing patterns provides a deeper understanding of how dementia affects thought processes beyond what is captured by standard cognitive tests. For example, the Rorschach test can reveal difficulties in processing ambiguous stimuli, a common challenge in dementia patients, which is not typically assessed through tools like the MMSE or CDT.

Furthermore, the integration of the Dementia Severity Rating Scale (DSRS) has become an important measure in assessing the severity of cognitive decline across various dementia subtypes. Research by Cummings et al. (2005) demonstrated that the DSRS is a useful tool for quantifying the severity of dementia symptoms and is often employed alongside other cognitive assessments to track disease progression and predict outcomes. This scale complements

traditional cognitive measures by offering a detailed look at the overall impact of dementia on a patient's daily functioning and behavior.

Incorporating these diverse cognitive assessments in dementia research enables a more holistic view of the cognitive, emotional, and perceptual disturbances associated with the disorder. This integrative approach not only enhances diagnostic accuracy but also provides a stronger foundation for developing individualized therapeutic interventions. By capturing a broader spectrum of cognitive impairments, researchers and clinicians are better equipped to understand the complexity of dementia and tailor their approaches to meet the specific needs of patients at different stages of the disease. Particularly in early-stage dementia, projective tests like the Rorschach can detect disruptions in cognitive organization, problem-solving abilities, and reality testing. These insights are invaluable for differential diagnosis, treatment planning, and understanding the subjective experience of individuals with dementia. The integration of the Rorschach test into comprehensive dementia evaluations underscores its potential to contribute to holistic patient care, bridging the gap between cognitive and emotional assessment.This dual role of the Rorschach test—in both understanding personality and aiding in dementia diagnosis—highlights its versatility and enduring relevance in psychological and clinical research. By illuminating the interplay between cognition and emotion, the test serves as a powerful tool for unraveling the complexities of neurocognitive disorders like dementia. While some studies have focused on verbal fluency tasks to assess language impairments in dementia, the Rorschach test offers additional insight into how cognitive processes are affected, providing a unique window into how patients with dementia process abstract concepts

The Rorschach Inkblot Test has long been utilized to assess cognitive and emotional functioning in various populations, including the elderly. A study by Insua and Loza (1986) compared Rorschach responses between healthy elderly individuals and those in the early stages of suspected dementia. Both groups were matched for education, IQ, and age, ensuring comparability. The analysis revealed significant differences in psychometric patterns, particularly in movement responses, which were notably lower in the dementia group. This finding aligns with other research indicating that reduced movement scores are characteristic of various organic diseases. The study suggests that diminished energy levels projected in movement responses may serve as a promising indicator in diagnosing suspected dementia.

Incorporating these insights into your research underscores the utility of the Rorschach test in identifying psychological profiles in dementia patients. By focusing on specific variables such as movement responses, your study can contribute to a more nuanced understanding of the cognitive and emotional alterations associated with dementia, thereby enhancing diagnostic accuracy and informing targeted interventions.

CHAPTER 3

3.1 RESEARCH GAP

While cognitive impairment in dementia patients has been widely studied, little attention has been paid on comparative analysis psychological profiles with those of normal subjects. Many types of traditional cognitive assessment like Mini-Mental State Examination (MMSE) have used for research on cognitive functions of dementia patients; however, most of those work did not compare these results with age-matched healthy individuals, which leads towards an incomplete understanding of the specific cognitive deficits mainly associated with dementia. While these tools are effective for basic cognitive assessments, they often do not capture the nuanced aspects of cognitive decline, especially in relation to the linguistic and emotional domains of dementia (Kempler & Goral, 2011).

For example, according to O'Sullivan et al. (2018), dementia caregivers had differences in global cognition comparative to the healthy controls, which underline the importance of these types of comparisons. Furthermore, a similar study done by Pignatti et al. (2005) proved that Alzheimer's disease patients have disabilities in visual selective attention compared to the healthy elderly controls, which indicates the need for comparative studies in identifying certain cognitive deficits.

This study would help in filling such gaps by using a comprehensive battery of assessment, such as the Rorschach Inkblot Test, Dementia Severity Rating Scale (DSRS), MMSE, and Clock Drawing Test, to compare profiles of dementia patients with normal individuals. By bringing all these together, the study aims toward a more thorough and refined knowledge on the cognitive

and perceptual deficits that characterize dementia, which can be very helpful in improving diagnostic accuracy and informing targeted interventions.

3.2 OBJECTIVES

The objective of this study is to identify and analyze qualitative signs in dementia group on Rorschach test. Secondly, the goal is to understand the differences on Rorschach test between dementia and control group in terms of content, location, determinant, ego strength and group conformity.

3.3 HYPOTHESIS

H_0: There is no significant difference in Rorschach profile of dementia patients and normal group in terms of location.

H_0: There is no significant difference in Rorschach profile of dementia patients and normal group in terms of determinant.

H_0: There is no significant difference in Rorschach profile of dementia patients and normal group in terms of content.

H_0: There is no significant difference in Rorschach profile of dementia patients and normal group in terms of ego strength and group conformity.

H_0: There is no significant difference in Rorschach profile of dementia patients and normal group in terms of qualitative signs.

CHAPTER 4

Methodology

4.1Participants

The study included 40 elderly individuals aged 65 years and above, recruited from convenience settings. The participants were divided into two groups: 20 individuals diagnosed with dementia and 20 cognitively healthy controls. The inclusion criteria for the dementia group were a formal diagnosis of dementia confirmed by a neurologist, while the healthy control group was selected based on normal cognitive function with no history of neurological or psychiatric disorders. All participants provided informed consent prior to their inclusion in the study, ensuring ethical standards were maintained. Demographic information, such as age and gender, was also recorded for each participant to ensure the groups were comparable in terms of basic characteristics.

4.2 Assessment Tools

In this study, a variety of standardized assessment tools were used to evaluate the cognitive and psychological functioning of both the Dementia Group and the Control Group. These tools allowed for a comprehensive analysis of the participants' cognitive abilities, emotional regulation, and perceptual processes.

4.2.1 Rorschach Inkblot Test

The Rorschach Inkblot Test is a projective psychological tool designed to assess an individual’s cognitive, emotional, and perceptual functioning. In this study, participants were shown a series of 10 inkblots (five black-and-white, five in color) and asked to describe what each inkblot resembled or made them think of. The test is used to explore the underlying thought processes,

emotional states, and perceptual distortions that may arise from the individual's cognitive and psychological condition. In patients with dementia, this test can provide insights into how they process ambiguous stimuli, offering clues about cognitive impairments such as abstract thinking, executive functioning, and emotional regulation.

Responses to the inkblots were analyzed based on standard scoring systems, including the Exner Comprehensive System, which categorizes responses according to their content (e.g., animal, human), location (e.g., whole image, detail), and form quality (e.g., how well the individual's interpretation matches the actual shape of the inkblot). The Rorschach test is particularly useful for identifying cognitive distortions and emotional responses that might not be captured through more structured assessments.

4.2.2 Dementia Severity Rating Scale (DSRS)

The Dementia Severity Rating Scale (DSRS) is a tool used to assess the severity of dementia in patients across different cognitive domains. The scale evaluates a range of functions, including memory, orientation, language, executive function, and activities of daily living. It was specifically used in this study to quantify the level of dementia-related impairment in participants. The DSRS assigns scores on a scale from 0 (no impairment) to 5 (severe impairment) across various domains. This assessment allows clinicians to categorize the degree of cognitive decline in each participant, providing a quantitative measure to complement other diagnostic tools.

In this study, the DSRS helped differentiate between mild and moderate stages of dementia, providing insight into the cognitive severity of participants in the Dementia Group.

4.2.3 Mini-Mental State Examination (MMSE)

The Mini-Mental State Examination (MMSE) is a widely used tool for assessing cognitive function, particularly for identifying global cognitive impairments. The MMSE assesses areas including orientation, memory, attention, calculation, language, and visual-spatial skills, providing a score ranging from 0 to 30. A score of 24 or above generally indicates no cognitive impairment, 18-23 suggests mild cognitive impairment, and scores below 18 typically indicate moderate to severe cognitive impairment.

In this study, the MMSE was used as a screening tool to assess the overall cognitive function of participants. It helped confirm the dementia diagnosis in the Dementia Group and served as a benchmark for the Control Group, ensuring that participants had no significant cognitive impairment.

4.2.4 General Health Questionnaire (GHQ)

In this study, the General Health Questionnaire (GHQ) was administered to a sample of 20 individuals from the normal population to screen for general mental well-being and detect any signs of psychological distress. The GHQ is a widely used self-report tool designed to assess short-term changes in mental health, including symptoms such as anxiety, depression, social dysfunction, and loss of confidence. The purpose of including this measure was to ensure that the control group did not exhibit significant psychological issues that could influence their cognitive responses or mimic early signs of dementia. The results helped confirm that the individuals in the control group were mentally healthy, making them a suitable baseline for comparison with the

dementia group. This step was crucial in maintaining the validity of the study by reducing the risk of confounding factors related to mental health conditions.

4.3 Data Collection Procedure

Data collection for this study followed a structured, step-by-step procedure to ensure consistency and accuracy across all assessments:

1. **Informed Consent**: All participants, or their legal guardians in the case of individuals with severe cognitive impairment, provided written informed consent prior to participation. The consent process ensured that participants understood the purpose of the study, the procedures involved, and any potential risks.
2. **Initial Screening**: Participants were initially screened for eligibility using the MMSE to confirm they met the criteria for either the Dementia Group (mild to moderate cognitive impairment) or the Control Group (normal cognitive function)and age between 65-85 years. Individuals with education of 5^{th} standard or above were considered. Other disorders were ruled out using assessment tool.
3. **Individual Assessments**: Each participant then completed the following assessments in a quiet, controlled environment:
    - The **Rorschach Inkblot Test** was administered first, with each participant responding to 10 inkblot images. Responses were recorded verbatim and later analyzed according to the Exner Comprehensive System.
    - The **Dementia Severity Rating Scale (DSRS)** was administered to assess the severity of cognitive impairment across multiple domains.

- The **MMSE** was then re-administered as a confirmation of participants' cognitive status.

4.4 Statistical Analysis

Descriptive statistics were used to summarize the demographic and clinical characteristics of both the Dementia Group and the Control Group, including means, standard deviations, and percentages for variables such as age, gender, and education level. For the Rorschach Inkblot Test, a Mann-Whitney U test was applied to compare the groups' responses, as the data did not meet the assumptions for parametric testing. This non-parametric test assessed differences in Rorschach scores, including content, form quality, and the structure of interpretations between the two groups. The significance level for all statistical tests was set at $p < 0.05$, ensuring that any differences observed between the groups were statistically significant. This comprehensive analysis allowed for the identification of meaningful cognitive and psychological differences between dementia patients and healthy controls across various assessment tools.

CHAPTER 5

5.1 RESULT

The study accessed the differences between dementia group and control group on Rorschach test in many areas like location, content and determinants. There were significant differences seen in qualitative signs between two groups. As per the results hypothesis are rejected stating there will be no difference found in different areas on the Rorschach test. For analyzing the results both descriptive statistics and non- parametric inferential testing were used. In descriptive statistics mean, standard deviations and number of participants are included for all major Rorschach variables summarizing results of both groups. Considering that data did not meet the assumption of normality and equal variances required for parametric testing, the Mann-Whitney U test was employed to compare two independent groups. This non-parametric test is appropriate for small sample sizes and ordinal or non-normally distributed data, and it helped determine whether there were statistically significant differences in Rorschach variables between the two groups.

Table 1: Showing Descriptive statistics

	GROUP 1	N	Mean	Std. Deviation
Total responses	dementia	20	20.20	4.26
	normal	20	29.10	7.35
1st RT (m)	dementia	20	12.99	10.22
	normal	20	7.35	3.52
TRT	dementia	20	47.91	25.67
	normal	20	44.03	16.38
W	dementia	20	2.50	1.00
	normal	20	2.85	1.26
D	dementia	20	15.45	3.77
	normal	20	22.30	5.36
Dd	dementia	20	2.25	1.68
	normal	20	3.35	2.20

Dds	dementia	20	.00	.00
	normal	20	.30	.92
Ds	dementia	20	.00	.00
	normal	20	.30	.92
F+	dementia	20	12.70	3.19
	normal	20	22.20	5.42
F-	dementia	20	7.25	1.65
	normal	20	6.55	2.70
F	dementia	20	.20	.41
	normal	20	.30	.73
M	dementia	20	1.55	1.43
	normal	20	4.85	2.99
CF	dementia	20	.40	.68
	normal	20	1.60	1.84
FC	dementia	20	.65	1.04
	normal	20	1.20	1.64
FY	dementia	20	.55	.82
	normal	20	3.50	2.18
C	dementia	20	.15	.36
	normal	20	.15	.48
H	dementia	20	3.00	1.68
	normal	20	3.60	3.03
A	dementia	20	9.95	3.00
	normal	20	11.35	4.69
An	dementia	20	.50	1.35
	normal	20	.75	1.37
BT	dementia	20	.55	.82
	normal	20	1.65	2.39
CLOTH	dementia	20	.10	.30
	normal	20	.30	.80
BLOOD	dementia	20	.20	.52
	normal	20	.10	.30
Hd	dementia	20	1.15	1.66
	normal	20	2.50	2.56
Obj	dementia	20	.45	.75
	normal	20	2.00	1.71
Ad	dementia	20	3.15	1.98
	normal	20	3.05	1.63
N	dementia	20	.45	.60
	normal	20	1.55	1.23

Art	dementia	20	.25	.44
	normal	20	.20	.41
Ar	dementia	20	.15	.36
	normal	20	.65	1.18
myth	dementia	20	.00	.00
	normal	20	.10	.30
symmetry	dementia	20	.00	.00
	normal	20	.10	.30
Geo	dementia	20	.05	.22
	normal	20	.25	.44
fire	dementia	20	.05	.22
	normal	20	.00	.00
Ab	dementia	20	.00	.00
	normal	20	.15	.36
Hh	dementia	20	.00	.00
	normal	20	.10	.30
Aq	dementia	20	.00	.00
	normal	20	.05	.22
food	dementia	20	.00	.00
	normal	20	.05	.22
wpn	dementia	20	.00	.00
	normal	20	.05	.22
Sy	dementia	20	.00	.00
	normal	20	.15	.36
F+%	dementia	20	63.34	5.06
	normal	20	77.69	6.15
A%	dementia	20	65.89	13.17
	normal	20	49.33	11.03
Afr	dementia	20	.50	.29
	normal	20	.52	.14
P	dementia	20	3.60	1.09
	normal	20	4.65	1.18
Cg	dementia	20	.00	.00
	normal	20	.05	.22
DSRS	dementia	20	19.45	4.17
	normal	20	.00	.00
MMSE	dementia	20	15.75	4.47
	normal	20	25.75	2.75

Table 2: Rorschach Profile of dementia Patients and Normal Control Subjects in terms of Location

Subjects Rorschach Variables	Dementia patients (N=20) Mean+SD	Normal Control Mean + SD Subjects (N=20)	U value	Z value
Number of Responses (R)	20.20±4.26	29.10±7.35	46.00	4.17***
1st Reaction Time (RT)	12.99±10.22	7.35±3.52	169.00	.83
Whole Responses (W)	2.50±1.00	2.85±1.26	173.00	.76
Common Detail Responses (D)	15.45±3.77	22.30±5.36	58.00	3.85**
Minor Detail Responses (Dd)	2.25±1.68	3.35±2.20	136.50	1.74
Detailed space response (Dds)	.00±.00	.30±.92	170.00	1.77
Space Responses (Ds)	.00±.00	.30±.92	180.00	1.43

(**p<.01), (***p< .001)

Table 1 showed that there was significant difference between the two groups in context of number of responses, 1st reaction time, whole responses, common detail responses, minor detail responses, detailed space responses and space responses. It can be seen from the table that dementia patients produced fewer total responses (M = 20.20, SD = 4.26) compared to normal controls (M = 29.10, SD = 7.35), indicating decline in cognitive functions, including ttention, memory, and executive functioning (p = .001). First reaction time was longer in the dementia group (M = 12.99, SD = 10.22) than in controls (M = 7.35, SD = 3.52), although this difference was not statistically significant (p = .402). Delayed response indicates difficulty initiating thought, impaired executive functions in dementia like planning and organizing responses and

takes longer time to focus on and process the inkblot due to reduced attentional capacity. Whole responses were slightly fewer among dementia patients (M = 2.50, SD = 1.00) than controls (M = 2.85, SD = 1.26), but this difference was not significant (p = .446). However, common detail responses (D) were significantly lower in dementia patients (M = 15.45, SD = 3.77) compared to controls (M = 22.30, SD = 5.36), with a highly significant difference (p = .001). Decline in D responses reflects reduced perceptual discrimination and conceptual focus in dementia patients. Minor detail (Dd), detailed space (Dds), and space responses (Ds) were also lower in the dementia group, but these differences did not reach statistical significance, their consistently lower means in the dementia group hint at a restricted scanning ability and decreased spatial exploration. These findings collectively support the notion of generalized cognitive and perceptual slowing in dementia, consistent with deficits in attention, processing speed, and stimulus integration.

Table 3: Rorschach Profile of dementia Patients and Normal Control Subjects in terms of Determinants

Subjects Rorschach Variables	Dementia patients (N=20) Mean+SD	Normal Control Mean + SD Subjects (N=20)	U value	Z value
Good form (F+)	12.70±3.19	22.20±5.42	14.50	5.02**
Poor form (F-)	7.25±1.65	6.55±2.70	156.50	1.19
Movement (M)	1.55±1.43	4.85±2.99	56.00	3.94***
Color form (CF)	.40±.681	1.60±1.84	122.00	2.32*
Color response (C)	.15±.36	.15±.489	191.50	.40
Form color (FC)	.65±1.04	1.20±1.64	154.00	.17
Form shading (FY)	.55±.82	3.50±2.18	42.00	4.41***

(*p<..05), (**p<.01), (***p< .001)

Good form responses (F+) were markedly fewer in dementia patients (M = 12.70, SD = 3.19) than in normal controls (M = 22.20, SD = 5.42), showing a significant difference (p = .001). Less F+ responses in dementia indicate impaired reality testing, deterioration in perceptual and cognitive integration and weekend ego bouandaries. Movement responses (M), which are typically associated with cognitive sophistication and inner mental life, were substantially lower in dementia patients (M = 1.55, SD = 1.43) compared to controls (M = 4.85, SD = 2.99), with a significant difference (p = .001). Fewer M responses reflect a decline in higher order cognitive functions and it is associated with imagination, empathy, and complex cognitive processing. Reductions in these areas are commonly observed in dementia patients. Color-form responses (CF) were also less in dementia (M = 0.40, SD = 0.68) than in controls (M = 1.60, SD = 1.84),

significantly so (p = .020) indicates emotional flattening, reduced spontaneity and blunted effect. Form-color (FC) responses were lower in dementia (M = 0.65, SD = 1.04) versus controls (M = 1.20, SD = 1.64), though not significantly (p = .157). Form-shading (FY) responses were significantly fewer in the dementia group (M = 0.55, SD = 0.82) compared to controls (M = 3.50, SD = 2.18) with p = .001. Color-only (C) responses were equal across groups (M = 0.15), with no significance.

Table 4: Rorschach Profile of dementia Patients and Normal Control Subjects in terms of content

Subjects Rorschach Variables	Dementia patients (N=20) Mean+SD	Normal Control Mean + SD Subjects (N=20)	U value	Z value
Whole Human (H)	3.00±1.68	3.60±3.03	187.00	.35
Whole Animal (A)	9.95±3.00	11.35±4.69	163.50	.99
Animal detail (Ad)	3.15±1.98	3.05±1.63	186.00	.38
Botany (Bt)	.55±.82	1.65±2.39	153.50	1.40
Object (Obj)	.45±.75	2.00±1.71	79.00	.46**
Nature (N)	.45±.60	1.55±1.23	90.00	3.15*

(*p<..05), (**p<.01)

Whole human (H) responses were slightly fewer in dementia patients (M = 3.00, SD = 1.68) than controls (M = 3.60, SD = 3.03), with no significant difference. Fewer H responses in dementia is indicative of decline in social cognition and reduced capacity for perspective – taking or

empathy. Whole animal (A) responses were also lower in dementia (M = 9.95, SD = 3.00) compared to controls (M = 11.35, SD = 4.69), again not statistically significant. It is linked to reduced associative thinking and impaired categorization. Animal detail (Ad) responses were nearly equal across groups. However, object responses (Obj) were significantly fewer in dementia patients (M = 0.45, SD = 0.75) than in controls (M = 2.00, SD = 1.71), with $p = .001$. lower object responses reflect deficits in concrete thought and naming ability in dementia patients. Similarly, nature content (N) responses were significantly reduced in dementia (M = 0.45, SD = 0.60) versus controls (M = 1.55, SD = 1.23), with $p = .002$. Botany responses (Bt) were lower in dementia (M = 0.55, SD = 0.82) than controls (M = 1.65, SD = 2.39), though the difference was not significant. These patterns suggest that although content variability is somewhat preserved, dementia patients rely more on basic, emotionally salient or familiar themes and produce fewer responses requiring higher-order abstraction or environmental richness. This pattern may represent a cognitive regression and narrowing of associative processes typical of neurodegenerative decline.

Table 5: showing ego strength and group conformity.

Subjects Rorschach Variables	Dementia patients (N=20) Mean+SD	Normal Control Mean + SD Subjects (N=20)	U value	Z value
F+%	63.34±5.06	77.69±6.15	25.00	4.73***
A%	65.89±13.17	49.33±11.03	61.00	3.76***
Afr	.50±.29	.52±.14	141.50	1.58
P	3.60±1.09	4.65±1.18	106.50	2.60**
MMSE	15.75±4.47	25.75±2.75	2.00	5.37***

(**p<.01), (***p< .001)

Table 5 presents derived percentages (F+%, A%) and cognitive status through MMSE. The percentage of good form responses (F+%) was significantly lower in dementia patients (M = 63.34, SD = 5.06) than in controls (M = 77.69, SD = 6.15), p = .001. Conversely, the percentage of animal content responses (A%) was significantly higher in the dementia group (M = 65.89, SD = 13.17) compared to normal controls (M = 49.33, SD = 11.03), also p = .001. Higher A% is suggestive of regression to simpler, more concrete thought. It can also indicate overlearned associations due to semantic memory degradation. The number of popular responses (P) was lower in dementia (M = 3.60, SD = 1.09) than controls (M = 4.65, SD = 1.18), with p = .009. Although the Afr (affective ratio) did not differ significantly, the MMSE scores clearly distinguished the groups, with dementia patients scoring much lower (M = 15.75, SD = 4.47) than normal controls (M = 25.75, SD = 2.75), a highly significant difference (p = .001). Most importantly, MMSE scores were significantly lower among dementia patients, providing

objective confirmation of cognitive decline. The consistency of low MMSE with reduced F+%, P, and high A% underscores the interrelationship between projective performance and cognitive status.

5.2 Qualitative signs found in dementia patients

Table 6: showing qualitative signs in dementia and control group

Qualitative signs	Observed in dementia patients (n=20)	Observed in control group (n=20)
Perseveration	10 (50%)	2 (10%)
Perplexity	12 (60%)	3 (15%)
Anomia	9 (45%)	2 (10%)
Cognitive fragmentation	11(55%)	1 (5%)
Impotence	7 (35%)	1 (5%)
Delayed initiation	13 (65%)	4 (20%)
Concrete thinking	15 (75%)	6 (30%)

The results in the table demonstrate significant differences between dementia patients and the control group with regard to various qualitative signs. Perseveration was observed in 50% of dementia patients, compared to just 10% in the control group, highlighting its higher prevalence in dementia and suggesting it may be a key sign of cognitive dysfunction. Perseveration**,** or repeating actions or thoughts, was seen when patients would repeatedly say things like, “This is also like a butterfly... this also looks like a butterfly... maybe this is a butterfly too.” Similarly, perplexity was more common in dementia patients (60%) than in controls (15%), indicating that

confusion and difficulty understanding are far more frequent in those with dementia. Perplexity, which is a state of confusion, was evident when patients would express confusion about their surroundings, such as saying, “I don't understand what this could be... maybe it's something, but it’s not clear.” Anomia, or the difficulty in finding words, was noted in 45% of dementia patients and 10% of the control group, saying things like, “This... this is the thing... the one that cuts... I can’t remember the name.”, further emphasizing a notable distinction in cognitive abilities between the two groups. Cognitive fragmentation, observed in 55% of dementia patients and only 5% of controls, also underscores the disrupted thinking processes often seen in dementia. Cognitive fragmentation, where thoughts become disorganized, was evident when patients would give incomplete or jumbled responses like, “These... these are two things... an animal... no, maybe a tree... or both together.” Impotence, affecting 35% of dementia patients compared to just 5% in the control group, may suggest a connection between dementia and physical health issues. Impotence, or giving up due to frustration, was observed when a patient said, “I can't do it, I can't tell what this is.” Delayed initiation was observed in 65% of dementia patients versus 20% in the control group, indicating a tendency for dementia patients to exhibit delays in starting tasks or activities. Concrete thinking, which was observed in 75% of dementia patients compared to 30% of the control group, saying, “Yes... one minute... maybe I can see something.”

CHAPTER 6

6.1 DISCUSSION

The findings of this study reveal distinct cognitive and perceptual patterns in individuals with dementia compared to normal controls. A significantly lower number of total responses among dementia patients indicates diminished cognitive productivity and reduced spontaneous engagement with visual stimuli, likely reflecting overall cognitive slowing and attentional deficits. This shows that they are less mentally active, have lower motivation, and may struggle to engage with the task. The reduction in common detail responses suggests a decreased ability to identify and focus on commonly perceived or conventional aspects of the inkblots, indicating difficulty in identifying and focusing on shared, socially typical perceptions. The research findings by Orme, J. E. (1955), who found that the senile dementia group produced fewer movement and shading responses, indicate there is very little insight or awareness of any inner conflict. Due to lack of understanding is reflected in the delay in responsiveness which is in alignment with this research. Perry et al., (1996) also confirm low M, shading, and color responses in the dementia group on the Rorschach test indicating a reduction in ideational activity and capacity for imaginative elaboration.

The markedly lower good form quality responses and overall form quality percentage in the dementia group imply a disruption in the ability to perceive and organize visual stimuli accurately. These deficits are indicative of weakened reality testing, a core cognitive function often compromised in dementia. This suggests their understanding of the world is less organized, and they may have trouble making sense of visual information. It reflects poor reality testing. In contrast, the higher percentage of animal content responses suggests a shift toward more simplistic, familiar, and concrete imagery, often interpreted as a sign of cognitive regression or

reliance on basic associative processes in the face of declining abstract reasoning. A high A% often reflects regression to primitive levels of thinking. As higher-order cognitive processes decline (such as abstract reasoning, symbolic thought, and imaginative flexibility), individuals fall back on basic, biologically ingrained categories like animals. Dementia patients often show a concrete, literal style of thinking, as opposed to abstract or symbolic thought. Seeing animals in inkblots is usually less demanding cognitively, requiring less imagination or emotional depth. A high A% reflects this simplified perceptual and cognitive style. A high A% also signals low content diversity. Healthy individuals tend to give a wider range of responses—mentioning people, objects, emotional themes, or symbolic content. According to Exner's comprehensive system (1993), a decline in D responses shows reduced perceptual discrimination and conceptual focus which are impaired in dementia.

Further, movement responses involve imagined movement, like a person dancing or an animal running. Fewer movement responses in dementia patients show a loss of imagination, creativity, and abstract thinking. It also means their mental life is less active or expressive, which is typical in cognitive decline. Movement responses are typically linked with inner psychological dynamism and cognitive complexity; their reduction may signify a constricted inner mental life. This is in line with Exner (2003), who emphasized that a drop in movement responses reflects a reduction in ideational richness and adaptive imagination in neurocognitive disorders.

Additionally, deficits in color-form and form-shading responses indicate a reduced capacity for affective modulation and integration, underscoring difficulties in processing and expressing emotional content. CF responses are associated with emotional reactivity and spontaneity. When someone gives a CF response, it usually means they are reacting to the emotional pull of the

color without much intellectual control or form-based reasoning. As per the results, Dementia patients gave fewer color-form responses. This means they show less emotional spontaneity and may have blunted or restricted emotional reactions. They may also struggle to respond to emotionally stimulating elements in their environment. This is important because dementia can dull not only memory and logic but also emotional responsiveness.

FY responses involve recognizing something in the blot based on shading rather than just form or color. For example, a person might say "a shadow" or "a deep hole" because of the light-dark gradient, not because of the shape alone. FY is linked to emotional sensitivity and subtle affective processing. It reflects a person's awareness of internal emotional states, discomfort, or nuance in feeling. People who give FY responses often have a more refined sense of their own or others' emotions. Dementia patients also give fewer FY responses, suggesting a diminished sensitivity to emotional subtleties. They may be less able to notice or process nuanced emotional cues, both in themselves and others. This can lead to flattened affect, emotional withdrawal, or socially inappropriate behavior—common in many types of dementia.

Content analysis revealed that dementia patients generated significantly fewer object and nature-related responses. This finding supports Weiner & Greene (2008), who noted that lower object content may signify deteriorating environmental orientation and reduced recognition of common stimuli. Object responses reflect a person's awareness and engagement with practical, external reality. They indicate how well someone recognizes and relates to everyday items in their environment. High object content typically reflects grounded thinking, good reality testing, and a functional connection with one's surroundings. Dementia patients tend to give fewer object responses, as found in your data. This may indicate a weakened ability to identify structured,

familiar objects, possibly due to declines in memory, visual recognition, or associative thinking. It can also reflect a shrinking perceptual world, where patients are less able to access stored knowledge about common objects. This reduced object perception mirrors real-life difficulties in identifying or using items, such as forgetting what a spoon is for or misplacing familiar belongings. Nature responses are associated with a person's capacity to observe, appreciate, and connect with their external natural environment. Dementia patients also give fewer nature-related responses, which may indicate a loss of environmental connectedness or a narrowing of cognitive associations. As dementia progresses, individuals often become more internally focused or confused by their surroundings. Their reduced ability to generate nature-based imagery may reflect impairments in semantic memory (knowledge of the world) and imaginative capacity. Regarding nature responses, It can also point to a flattening of experience and a disconnection from the broader, natural world—a trend seen behaviorally in many dementia patients who struggle with orientation and external awareness.

Finally, the significantly lower MMSE scores among dementia patients corroborate the projective test findings, confirming substantial cognitive deterioration. This test measures general cognitive functioning like memory, attention, and orientation. Dementia patients scored much lower, confirming their cognitive decline. The MMSE provides a clear, standardized measure showing how impaired their overall thinking and memory abilities are. This supports findings by Folstein et al. (1975), who established MMSE as a reliable indicator of global cognitive impairment in dementia, aligning with changes observed in projective test behavior. Together, these results highlight the value of Rorschach variables as sensitive indicators of cognitive and perceptual impairment in dementia and support their use alongside structured cognitive assessments like the MMSE in diagnostic contexts.

The results highlight several qualitative signs that are closely linked to dementia, each reflecting specific cognitive and behavioral challenges faced by patients. Perseveration, perplexity, anomia, cognitive fragmentation, impotence, delayed initiation, and concrete thinking are frequently cited in dementia literature. For example, Bayles & Tomoeda (2007) found significant language disruptions, including anomia and perseveration, as hallmark features of Alzheimer ’s-type dementia. Kaszniak & Christenson (1991) also reported frequent signs of fragmented thought and impaired abstraction in clinical dementia. Perseveration, where patients repeat thoughts or actions, is significant as it indicates impaired cognitive flexibility, a common feature of dementia. Perplexity, or confusion, is linked to the progressive decline in memory and comprehension often seen in dementia, showing difficulty in making sense of the environment. Anomia, the inability to find words, is a key sign of language impairment in dementia, particularly in conditions like Alzheimer's disease. Cognitive fragmentation, where patients’ thoughts become disjointed, signals a breakdown in the brain's ability to organize and integrate information, a hallmark of dementia. Impotence and delayed initiation reflect the emotional and executive dysfunctions seen in dementia, where patients may struggle with motivation and completing tasks. Lastly, concrete thinking, where patients interpret abstract ideas literally, signifies a decline in higher-level cognitive functions, such as abstract reasoning, which is commonly impaired in dementia. These signs are essential for diagnosing dementia and understanding the cognitive decline that patients experience. Research findings regarding qualitative signs found in the dementia group align with a study conducted by Perry et al. (1996), it was found that Rorschach perseveration is a hallmark of cognitive rigidity or failure to shift mental sets which is a known sign in Alzheimer’s. Other qualitative signs like perplexity,

anomia, cognitive fragmentation, impotence, delayed initiation, and concrete thinking also show a match with the results of the previous research.

6.2 LIMITATIONS OF THE STUDY

This study provides valuable insights into the qualitative differences in Rorschach responses between dementia and the control group, which had several limitations. Firstly, the sample size taken for the study is less which limits the generalizability of the findings. A large sample could provide more statistical support. Secondly, the interpretation of qualitative signs in the Rorschach test depends on the judgment of the examiner which is highly subjective excluding standardized procedures. Cultural factors may also influence the responses of participants considering India is a diverse country affecting consistency. Additionally, the study excluded the type or stage of dementia which may impact the frequency of certain signs and responses. As the control group was screened using the GHQ, other subtle neurocognitive changes might have gone undetected.

6.3 RECOMMENDATIONS FOR FUTURE RESEARCH

Future research can focus on including a larger and more diverse sample to elevate the generalizability of the findings. Studies can include types or stages of dementia and explore variations in responses on the Rorschach test which might also help in early differential diagnosis. Moreover, further studies can combine quantitative scoring methods with qualitative methods to reduce subjectivity and lead to improvement in reliability. Additionally, longitudinal studies can be useful in analyzing the changes in different stages of dementia in Rorschach responses. Including neuropsychological assessments or brain imaging alongside projective techniques like Rorschach may offer a more comprehensive view of cognitive and emotional

factors regarding dementia. Lastly, cross-cultural comparisons can be conducted to explore differences in responses on Rorschach based on cultural influence.

CHAPTER 7

7.0 CONCLUSION

This study provides valuable insights into the cognitive and emotional patterns of dementia patients through the lens of the Rorschach test. The findings reveal significant differences in the

response profiles of dementia patients compared to normal controls, particularly in areas such as response time, form quality, and emotional regulation. Dementia patients demonstrated shorter total response times and first reaction times, reflecting potential deficits in cognitive processing speed. Additionally, their higher rates of shading and vague responses highlight difficulties with emotional control, a sense of overwhelm, and impaired cognitive organization.

These results align with previous research, which has consistently pointed to the role of cognitive decline and emotional dysregulation in dementia. The study also emphasizes the utility of the Rorschach test as a diagnostic and exploratory tool for understanding the psychological impairments associated with dementia. However, factors such as sample size, cultural considerations, and the influence of medications or comorbidities warrant further exploration to enhance the robustness of these findings.

In conclusion, the study underscores the complexity of cognitive and emotional impairments in dementia and highlights the importance of integrating projective tests like the Rorschach with other neuropsychological tools for a comprehensive assessment. Future research should focus on expanding sample diversity, employing longitudinal designs, and exploring cross-cultural variations to deepen our understanding of the cognitive and emotional challenges faced by individuals with dementia. These efforts can ultimately contribute to the development of more effective diagnostic and therapeutic approaches, improving the quality of life for patients and their caregivers.

CHAPTER 8

8.0 REFERENCES

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CHAPTER 9

APPENDIX

9.1 CONSENT FORM

Consent Form for Participation in Research Study

Dear Participant,

You are invited to participate in a research study aimed at understanding language and perseveration errors in individuals with dementia. This study is being conducted by Divjot Kaur, a final-year Master's student from the Thapar School of Liberal Arts and Sciences, Patiala, as part of the requirements for the completion of a Master's degree in Psychology, under the guidance of my supervisor, Dr. Sarika Alreja Mishra.

Your participation in this study is entirely voluntary, and you may withdraw at any time without penalty. All personal information collected will remain confidential. Your name will not appear on any study documents; instead, your responses will be identified by your initials. The data will be used strictly for research purposes and securely stored.

This study will be conducted in two phases. This consent form pertains to the initial phase. Depending on your interest and eligibility, you may be invited to participate in the second phase. Participation in the second phase is also entirely voluntary. You may stop participating at any time without any negative consequences.

Your participation will help advance research on cognitive impairments in dementia. The results of this study may help improve methods for diagnosing and treating dementia in the future. You will participate in a cognitive task where you will be asked to respond to a series of questions

based on visual stimuli. The session will last approximately 60–90 minutes. Your verbal responses will be recorded for analysis.

Consent:

I have read and understand the information provided above. I understand that my participation is voluntary, and I may withdraw from the study at any time without penalty. By signing this form, I consent to participate in this research study.

- Yes [ ]
- No [ ]

Phase Two Participation:

If you are interested in participating in the second phase of this research, please indicate below:

- Interested [ ]
- Not Interested [ ]

Participant Information:

Age: _____

Gender: _____

Signature: _____

For participants with dementia or cognitive impairments, a caregiver or legal guardian may also be required to provide consent:

Caregiver's Name (if applicable): _____

Caregiver's Signature: _____

Date: _____

Thank you for your participation! Your contribution is invaluable to our research. If the participant has any further questions, they may feel free to contact the primary investigators at the following email address – dkaur_ma23@thapar.edu

9.2 DEMENTIA SEVERITY RATING SCALE (DSRS)

PARTICIPANT'S NAME:_____ DATE:_____

PERSON COMPLETING FORM:_____

Please circle the most appropriate answer.

Do you live with the participant? No Yes

How much contact do you have with the participant? Less than 1 day per week 1

day/week 2 days/week 3-4 days/week

5 or more days per week

Relationship to participant

Self Spouse Sibling Child Other Family Friend Other _____

In each section, please circle the number that most closely applies to the participant. This

is a general form, so no one description may be exactly right -- please circle the answer that

seems to apply most of the time.

Please circle only one number per section, and be sure to answer all questions.

MEMORY

0 Normal memory.

1 Occasionally forgets things that they were told recently.

Does not cause many problems.

2 Mild consistent forgetfulness. Remembers recent events but often forgets parts.

3 Moderate memory loss. Worse for recent events. May not remember something you

just told them. Causes problems with everyday activities.

4 Substantial memory loss. Quickly forgets recent or newly-learned things. Can only remember things that they have known for a long time.

5 Does not remember basic facts like the day of the week, when last meal was eaten or what the next meal will be.

6 Does not remember even the most basic things.

DEMENTIA SEVERITY RATING SCALE (DSRS)

SPEECH AND LANGUAGE

0 Normal ability to talk and to understand others.

1 Sometimes cannot find a word, but able to carry on conversations.

2 Often forgets words. May use the wrong word in its place. Some trouble expressing thoughts and giving answers.

3 Usually answers questions using sentences but rarely starts a conversation.

4 Answers questions, but responses are often hard to understand or don't make sense. Usually able to follow simple instructions.

5 Speech often does not make sense. Can not answer questions or follow instructions.

6 Does not respond most of the time.

RECOGNITION OF FAMILY MEMBERS

0 Normal - recognizes people and generally knows who they are.

1 Usually recognizes grandchildren, cousins or relatives who are not seen frequently but may not recall how they are related.

2 Usually does not recognize family members who are not seen frequently. Is often confused about how family members such as grandchildren, nieces, or nephews are related to them.

3 Sometimes does not recognize close family members or others who they see frequently. May not recognize their children, brothers, or sisters who are not seen on a regular basis.

4 Frequently does not recognize spouse or caregiver.

5 No recognition or awareness of the presence of others.

ORIENTATION TO TIME

0 Normal awareness of time of day and day of week.

1 Some confusion about what time it is or what day of the week, but not severe enough to interfere with everyday activities.

2 Frequently confused about time of day.

3 Almost always confused about the time of day.

4 Seems completely unaware of time.

ORIENTATION TO PLACE

0 Normal awareness of where they are even in new places.

1 Sometimes disoriented in new places.

2 Frequently disoriented in new places.

3 Usually disoriented, even in familiar places. May forget that they are already at home.

4 Almost always confused about place.

ABILITY TO MAKE DECISIONS

0 Normal - as able to make decisions as before.

1 Only some difficulty making decisions that arise in day-to-day life.

2 Moderate difficulty. Gets confused when things get complicated or plans change.

3 Rarely makes any important decisions. Gets confused easily.

4 Not able to understand what is happening most of the time.

SOCIAL AND COMMUNITY ACTIVITY

0 Normal - acts the same with people as before

1 Only mild problems that are not really important, but clearly acts differently from previous years.

2 Can still take part in community activities without help. May appear normal to people who don't know them.

3 Often has trouble dealing with people outside the home without help from caregiver. Usually can participate in quiet home activities with friends. The problem is clear to anyone who sees them.

4 No longer takes part in any real way in activities at home involving other people. Can only deal with the primary caregiver.

5 Little or no response even to primary caregiver.

HOME ACTIVITIES AND RESPONSIBILITIES

0 Normal. No decline in ability to do things around the house.

1 Some problems with home activities. May have more trouble with money management (paying bills) and fixing things. Can still go to a store, cook or clean. Still watches TV or reads a newspaper with interest and understanding.

2 Makes mistakes with easy tasks like going to a store, cooking or cleaning. Losing interest in the newspaper, TV or radio. Often can't follow a long conversation on a single topic.

3 Not able to shop, cook or clean without a lot of help. Does not understand the newspaper or the TV. Cannot follow a conversation.

4 No longer does any home-based activities.

PERSONAL CARE - CLEANLINESS

0 Normal. Takes care of self as well as they used to.

1 Sometimes forgets to wash, shave, comb hair, or may dress in wrong type of clothes. Not as neat as they used to be.

2 Requires help with dressing, washing and personal grooming.

3 Totally dependent on help for personal care.

EATING

0 Normal, does not need help in eating food that is served to them.

1 May need help cutting food or have trouble with some foods, but basically able to eat by themselves.

2 Generally able to feed themselves but may require some help. May lose interest during the meal.

3 Needs to be fed. May have trouble swallowing.

CONTROL OF URINATION AND BOWELS

0 Normal - does not have problems controlling urination or bowels except for physical problems.

1 Rarely fails to control urination (generally less than one accident per month).

2 Occasional failure to control urination (about once a week or less).

3 Frequently fails to control urination (more than once a week).

4 Generally fails to control urination and frequently can not control bowels.

ABILITY TO GET FROM PLACE TO PLACE

0 Normal, able to get around on their own. (May have physical problems that require a cane or walker).

1 Sometimes gets confused when driving or taking public transportation, especially in new places. Able to walk places alone.

2 Cannot drive or take public transportation alone, even in familiar places. Can walk alone outside for short distances. Might get lost if walking too far from home.

3 Cannot be left outside alone. Can get around the house without getting lost or confused.

4 Gets confused and needs help finding their way around the house.

5 Almost always in a bed or chair. May be able to walk a few steps with help, but lacks sense of direction.

6 Always in bed. Unable to sit or stand.

9.3 GENERAL HEALTH QUESTIONNAIRE

A 1. been able to concentrate on whatever Better Same Less Much less you’re doing? than usual as usual than usual than usual

A 2. lost much sleep over worry? Not at all No more Rather more Much more than usual than usual than usual

A 3. been having restless, disturbed nights? Not at No more Rather more Much more all than usual than usual than usual

A 4. been managing to keep yourself More so Same Rather less Much less busy and occupied? than usual as usual than usual than usual

A 5. been getting out of the house as More so Same Less Much less much as usual? than usual as usual than usual than usual

GHQ6.A 6. been managing as well as most people Better About Rather less Much less would in your shoes? than most the same well well

A 7. felt on the whole you Better About Less well Much were doing things well than usual the same than usual less well

A 8. been satisfied with the way you’ve More About same Less satisfied Much carried out your task? satisfied as usual than usual less satisfied

A 9. been able to feel warmth and Better About same Less well Much affection for those near to you? than usual as usual than usual less well

A 10. been finding it easy to get on with Better About same Less well Much other people? than usual as usual than usual less well

A 11. spent much time chatting with people? More time About same Less time Much less than usual as usual than usual than usual

A 12. felt that you are playing a useful part More so Same Less useful Much less

A 13. felt capable of making decisions about More so Same Less so Much less things? than usual as usual than usual capable GHQ-30 2 HAVE YOU RECENTLY:

A 14. felt constantly under strain? Not No more Rather more Much more at all than usual than usual than usual

A 15. felt you couldn't overcome your Not No more Rather more Much more difficulties? at all than usual than usual than usual

A 16. been finding life a struggle all the time? Not No more Rather more Much more at all than usual than usual than usual

A 17. been able to enjoy your normal More so Same Less so Much less day-to-day activities? than usual as usual than usual than usual

GHQ18.A 18. been taking things hard? Not No more Rather more Much more at all than usual than usual than usual

A 19. been getting scared or panicky for Not No more Rather more Much more no good reason? at all than usual than usual than usual

A 20. been able to face up to your problems? More so Same Less able Much less than usual as usual than usual able

A 21. found everything getting on top Not No more Rather more Much more of you? at all than usual than usual than usual

A 22. been feeling unhappy and depressed? Not No more Rather more Much more at all than usual than usual than usual

A 23. been losing confidence in yourself? Not No more Rather more Much more at all than usual than usual than usual

A 24. been thinking of yourself as a Not No more Rather more Much more worthless person? at all than usual than usual than usual

A 25. felt that life is entirely hopeless? Not No more Rather more Much more at all than usual than usual than usual

A 26. been feeling hopeful about your own More so About same Less so Much less future? than usual as usual than usual hopeful

A 27. been feeling reasonably happy, all More so About same Less so Much less things considered? than usual as usual than usual than usual

A 28. been feeling nervous and strung-up Not No more Rather more Much more all the time? at all than usual than usual than usual

A 29. felt that life isn't worth living? Not No more Rather more Much more at all than usual than usual than usual

A 30. found at times you couldn't do Not No more Rather more Much more anything because your nerves were at all than usual than usual than usual too bad?

9.4 Rorschach cards