

Assessment of Severity, Distress and Cognitive Functions of Dementia Clients Seeking Treatment in Southern Part of India

Divya Gigy¹, Anumol Joseph²

Abstract

A new case of dementia every three seconds is a strong message that highlights how dementia will be the biggest challenges faced by the growing elderly population across the globe in the coming years. In India, the situation is no different; since there is no cure for dementia research plays a crucial role in improving the quality of care. Research in the field of dementia must be encouraged in order to bring about a change in the quality of care and to develop and implement new methods and activities for the active well-being of people of dementia. *Objectives:* To assess the severity, distress and cognitive functions of dementia patients and to seek association between them. *Methodology:* Quantitative research approach with non-experimental descriptive survey design was selected for the present study. The sampling technique chosen was non-probability convenient sampling technique for a sample size of 100. The study chosen was from memory clinic of Southern India. The tool consisted of Part A demographic profile with 5 variables. Part B consisted of Clinical dementia rating scale (CDR), Neuropsychiatric symptom inventory (NPI) and Addenbrooke's cognitive Examination (ACE-III). We analyzed the scores using descriptive and inferential analysis. Association between them was performed using Chi-square. Statistical significance was taken to be $p < 0.05$. *Results:* The study shows that the majority were in the age group of 60-70 years. Maximum numbers of dementia clients were females. Duration of cognitive impairment was majorly between 1 and 3 years. The greater part of the diagnosis was of Alzheimer's dementia and mostly under hospital care. The study also revealed that the CDR score constituted majorly of mild level among dementia clients and out of 85 clients receiving domiciliary services majority had mild impairment of 47%. The NPI-D confirms that 99% had mild distress. Moreover, in Residential care facility out of 5 clients there was equal percentage of mild and severe impairment, i.e. 40%, in Day care service out of 10 clients, half of them had severe impairment, i.e. 50%. Furthermore, NPI-FxS presented 90% with mild distress and ACE-III showed 79% with impaired cognition. There was no association between distress and severity and gender but there is a significant association between diagnosis and cognitive function. *Conclusion:* Dementia awareness and early detection is the urgent need of the hour, early symptom detection will help in alleviating the distress to a significant level. The interventional package will serve to cater the needs of the dementia patients in various dimensions of holistic health.

Keywords: Cognitive impairment; Alzheimer's disease; Dementia; Domiciliary Service; Cognition.

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Introduction

The ability to think sets apart humans from other living things. An ailing brain can play havoc with one's life as one grows older. An estimated 4 million people suffer from dementia and Alzheimer's and the number expected to triple by 2050.¹ Globally, at least 44 million people are living with dementia, making the disease a global health crisis that must be addressed.² About 10% of people

develop the disorder at some point in their lives. It becomes more common with age. About 3% of people develop between the ages of 65 and 74 have dementia, 19% between 75 and 84 and nearly half of those over 85 years of age.³

Alzheimer's disease is by far the most common cause of dementia. A combination of brain cell death and depletion of the neurotransmitter acetylcholine is responsible for its symptoms. Alzheimer's disease develops as a result of complex interactions among multiple factors including age, genetics, environment, lifestyle and coexisting medical conditions. Aging population, vascular diseases, diabetes, genetic and nutritional factors, stroke and poor economic status are risk factors for dementia. Dementia is a broad term that describes symptoms associated with a decline in memory or other thinking skills, severe enough to reduce a person's ability to perform everyday activities.⁴

As we grow older, our brains change and we have problems remembering certain details. However, Alzheimer's disease and other dementias cause memory loss and other symptoms which are serious enough to interfere in once daily life. The symptoms of Alzheimer's include: trouble in completing task that were once easy, difficulty solving problems, changes in mood or personality; withdrawal from friends and family, problem with communication, either written or spoken, confusion about places, people and events, visual changes such as trouble understanding images.²

For diagnosis, the symptoms must be present for at least six months. Diagnosing accurately and earlier is important because it allows a better treatment to improve the quality of life, provides better opportunity of support services, provides opportunity to express wishes regarding future care and living arrangements and time to put financial and legal plans in place.²

Defining a person's disease stage helps physicians determine the best treatment approach and aids communication between health providers and caregivers. The scales allow one to better understand the different stages of Alzheimer's disease via cognitive decline and functionally.⁵

Currently, there is no cure for Alzheimer's disease from progressing; there are medications to treat dementia symptoms. In addition, having support systems in place and the use of non-pharmacologic behavioral interventions can improve quality of life for both people with dementia and their caregivers and families. People with this disease should be motivated to remain active towards preventing

mental decline. Proper nutrition and exercises help. Advanced cases need more supervision. For decades, physician and researchers believed dementia cannot be prevented. However new research in which the researchers identified nine risk factors which might increase person's chances of developing dementia. This includes lack of education, midlife hypertension, obesity, hearing loss, depression, diabetes, physical inactivity, smoking and social isolation.⁶ The researchers believe targeting these risk factors with treatment or intervention could delay or prevent some cases of dementia. The objectives were to assess the severity, distress and cognitive functions of dementia patients and to seek association between them.

Materials and Methods

Quantitative research approach with non experimental descriptive survey design was selected for the present study. The sampling technique chosen was non-probability convenient sampling technique for a sample size of 100. The study chosen was from memory clinic of Southern India. The tool consisted of Part A demographic profile with 5 variables. Part B consisted of Clinical dementia rating scale (CDR), Neuropsychiatric symptom inventory (NPI) and Addenbrooke's cognitive Examination (ACE-III). We analyzed the scores using descriptive and inferential analysis. Association between them was performed using Pearson correlation. Statistical significance was taken to be $p < 0.05$. An interventional package will be developed comprising of education and training of staff, career prospects for nurses in dementia care, implementation of regular caregiver meetings, establishment of dementia friendly communities, follow-up home visits and end of life care, psychosocial interventions and nursing interventions.

Results

Table 1 presents the age, gender, duration of cognitive impairment, diagnosis and types of facilities of the dementia clients. The data show that 39% dementia clients were in the age group of 60-70, 36% were in the age group of 71-80, 18% were under 59 and only 7% were in the age group of 81 and above. The gender wise breakup revealed that the maximum numbers of dementia clients under study were females, i.e. 59% and remaining were males 41%.

Table 1: Frequency and percentage distribution of dementia clients by their sample characteristics

N = 100

S. No	Sample Characteristics	Frequency	Percentage
1	Age		
	Under 59	18	18
	60-70	39	39
	71-80	36	36
	81 & above	7	7
2	Gender		
	Male	41	41
	Female	59	59
3	Duration of cognitive impairment		
	Less than a year	34	34
	1-3 years	43	43
	4-6 years	19	19
	7-10 years	1	1
	More than 11 years	3	3
4	Diagnosis		
	Frontal lobe dementia	2	2
	Vascular lobe dementia	6	6
	Alzheimer’s dementia	80	80
	Mild cognitive impairment	7	7
	Other type of dementia	5	5
5	Types of facilities		
	Residential care	5	5
	Day care	10	10
	Hospital	85	85

The findings reveal that a significant proportion 43% had been suffering with dementia for the past 1-3 years. Additionally, 34% got diagnosed with dementia in less than a year. 19% of our patients are living with dementia for a period of 4-6 years. Some proportion of the clients that is 3% reported that had been suffering for more than a decade and only 1% reported to be affected with dementia for 7-10 years. Table 1 depicts that a significant percentage

of the dementia clients that is 80% had Alzheimer’s dementia followed by mild cognitive impairment, vascular dementia, other types of dementia and frontal lobe dementia comprising of 7%, 6%, 5% and 2% respectively. The data revealed that most of the patient seek OPD hospital services that is 85%, whereas 10% of people were from day care facilities and only 5% had residential care facility.

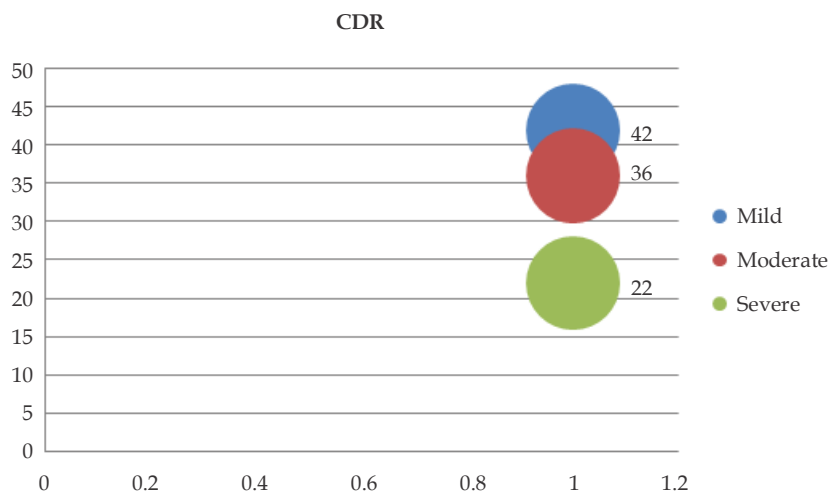


Fig. 1: A Scattered diagram shows the frequency distribution of CDR among dementia clients.

The data reveals that the CDR of dementia clients constituted majority of mild clients with 42% then 36% moderate and 22% severe (Fig. 1).

Figure 2 shows that most of the patients had mild distress that is 99% with 1% moderate distress and no severe distress.

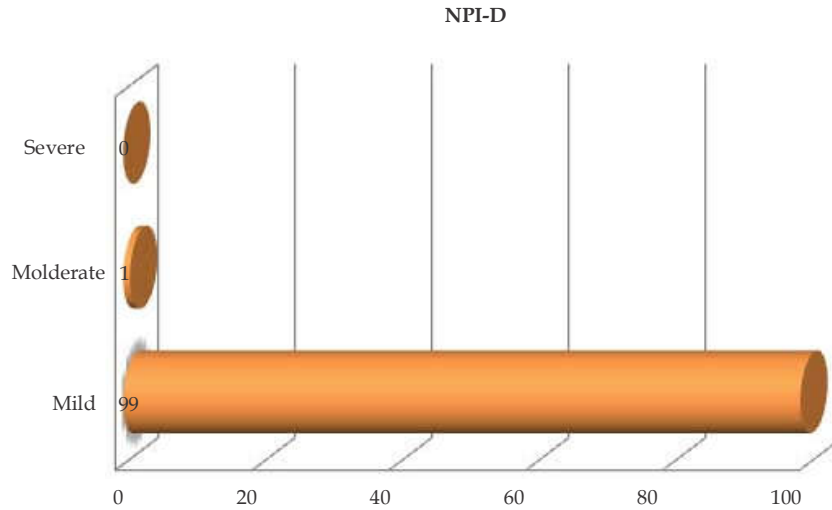


Fig. 2: A bar diagram shows the frequency distribution of NPI-D among dementia clients.

The data reveals that most of the patients had mild distress that is 90% and 9% had mild NPI-FxS respectively (Fig 3).

Figure 4 donut diagram illustrates that 79% of the people with dementia had moderate impaired cognition whereas 21% had mild impaired cognition.

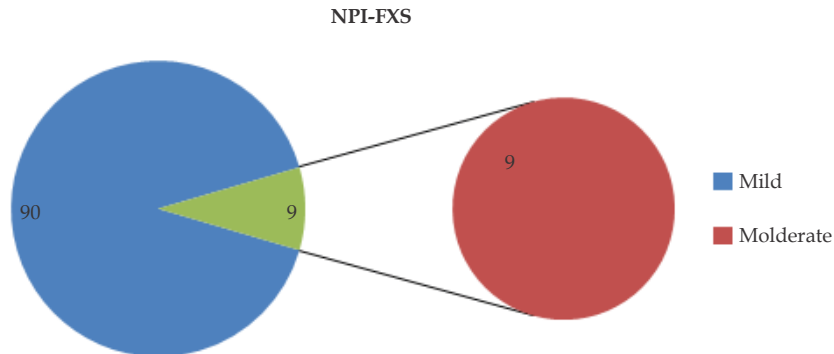


Fig. 3: A pie diagram shows the frequency distribution of NPI-FxS among dementia clients.

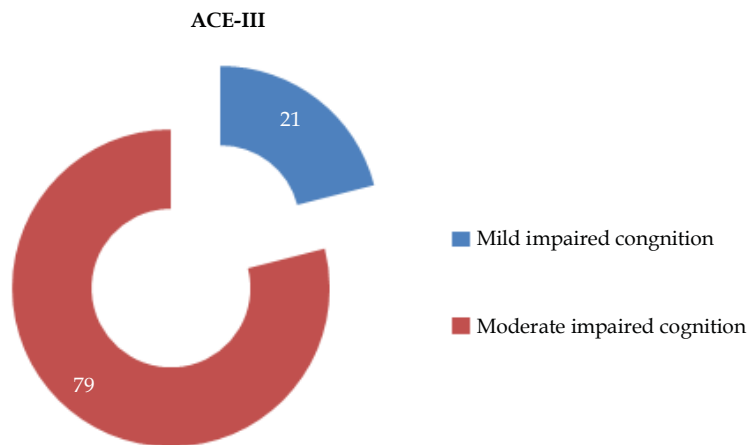


Fig. 4: A donut diagram shows the frequency distribution of ACE-III among dementia clients.

The data represents that out of 85 clients receiving domiciliary services majority of the clients had mild impairment that is 47%, 38.8% had moderate impairment and 14% had severe impairment. Moreover, in Residential care facility out of 5 clients there was equal percentage of mild and

severe impairment, i.e. 40% and 20% with moderate impairment. Furthermore, in Day care service out of 10 clients, half of them had severe impairment, i.e. 50%, rest 30% moderate impairment and 20% mild impairment respectively (Fig. 5).

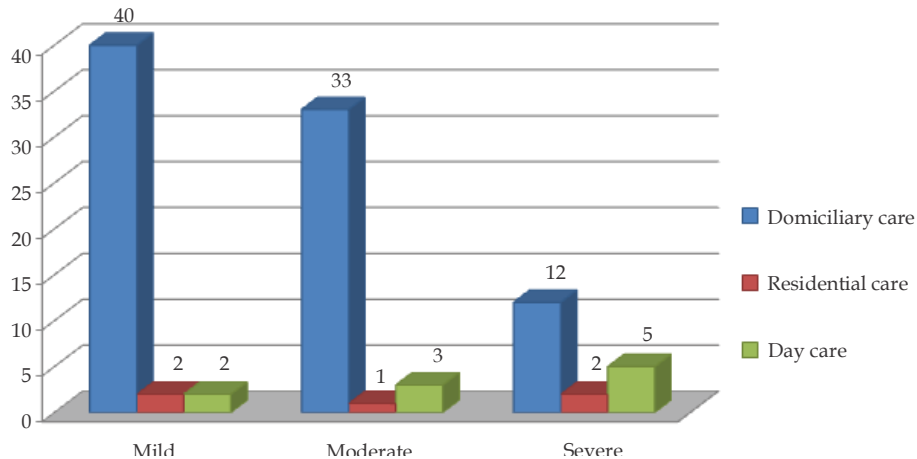


Fig. 5: A bar diagram shows the frequency distribution of dementia clients in domiciliary, residential, day care services in relation to the CDR-III.

The data given in Table 2 indicate that the mean value of CDR scale was 1.67, NPI-D was 8.19, NPI-FxS was 19.87 and ACE-III was 69.36. The median value of CDR scale was 0.5, NPI-D was 7, NPI-FxS was 16.5 and ACE-III was 73.5. The mode value

of CDR scale was 0.5, NPI-D was 2, NPI-FxS was 18 and ACE-III was 87. The standard deviation of CDR scale was 8.5, NPI-D was 5.6, NPI-FxS was 16.2 and ACE-III was 21.3.

Table 2: Mean median, mode and standard deviation on the levels of severity, distress and cognitive impairment among the dementia clients

S. No	Dementia clients	Mean	Median	Mode	Standard Deviation
1	CDR	1.67	0.5	0.5	8.5
2	NPI-D	8.19	7	2	5.6
3	NPI FxS	19.87	16.5	18	16.2
4	ACE-III	69.36	73.5	87	21.3

Table 3 shows that there is no association between distress and severity and gender but there

is a significant association between diagnosis and cognitive function.

Table 3: Association between selected demographic variables and distress and severity and impairment

Parameters	Demographic variables	Chi-square	Degree of freedom	Table value	Test of significance
Gender					
1.	CDR	4.1	3	7.82	NS
2.	NPI-F	0.01	2	5.9	NS
3.	NPI-FxS	0.0	2	5.9	NS
4.	ACE	0.42	1	3.8	NS
Diagnosis					
1.	CDR	4.20	8	15.51	NS
2.	NPI-F	7.8	8	15.51	NS
3.	NPI-FxS	6.6	4	9.4	NS
4.	ACE	18.5	8	15.5	NS

Discussion

Dementia refers to a syndrome that is characterized by progressive deterioration of cognitive functions. According to data we collected, Prevalence of dementia was higher in women than in men and nearly doubled with every five year increase in age.⁷ Age is the most important risk factor for dementia. The present study revealed that majority was in the age group of 60–80 years and were females which are in line with the study of Jishnu⁸ et al. which confirms that majority were in the age group of 75–85 years and mostly were females.

In this study, it was examined that majority were diagnosed Alzheimer's dementia which is similar to the article of W M van der Flier & P Scheltens⁷ which says Alzheimer's disease (AD) is the most prevalent cause of dementia. It is a neurodegenerative disorder, generally assumed to be caused by neurotic plaques and neurofibrillary tangles accumulating in the brain.

The study revealed that the majority of the clients in the domiciliary services had mild impairment which is in parallel to the study of Khurana PS⁹ et al. which says only 27% out of 100 in the hospital setup confirms the high risk symptoms.

There was no association between distress and severity and gender but there is a significant association between diagnosis and cognitive function.

Conclusion

Dementia is the most common form of neurodegenerative condition and is increasingly frequent as world population ages. It is a leading cause of death and is responsible for considerable morbidity, expressed in the high levels of functional dependence and need for burden some interventions characteristic of late stages of dementia. A healthy lifestyle that is good for the heart and brain might reduce the risk of developing dementia and might delay the onset of dementia symptoms to a later age. Keeping your heart and

brain active will help to build brain reserve, so that your brain can compensate and keep functioning well for longer, delaying the onset of dementia. Diagnosis requires careful history-taking and skilled clinical assessment, followed by appropriate laboratory investigations. Drug treatments at present provide symptomatic relief. Psychosocial and other supportive therapies are essential.

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