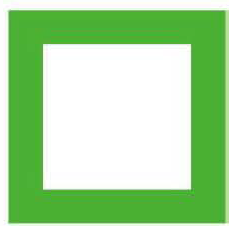
EARLY SIGNS AND SYMPTOMS OF ALZHEIMER DISEASE

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# ABSTRACT



**OBJECTIVE**

The purpose of the study was to examine the Early Non­ cognitive symptoms of Alzheimer's disease and to determine the duration and frequency of Non-cognitive symptoms of Alzheimers.

# STUDY & DESIGN

It was cross-sectional descriptive study

# PLACE AND DURATION OF THE STUDY

The duration of the study was nine months from May 2008 to February 2009

# SUBJECTS AND METHODS

Non- probability convenient sampling technique was used to collect the data. Patients were first screened on the scores of Mini Mental State Examination (MMSE) and Geriatric Depression Scale (GDS) and then detailed assessment of those patients was done with Coronel! Scale for Depression in Dementia (CSDD). Furthermore, the measurements including, Informant Questionnaire on Cognitive Decline in Elderly (IQCODE), Personality Inventory (Pl), and section H of Cambridge Mental Disorder in Elderly Examination (CAMDEX). Data was analyzed using SPSS version 10.

# RESULTS

The non-cognitive symptoms among the study participants were personality change, every day activity impairment, depressed mood, sleep, persecution, hallucination, and behavioral symptoms.The resultsalso revealed thatat least two non-cognitivesymptoms were present among all the patients.

# CONCLUSION

Behavioral and psychological symptoms encompass more than halfofthepresenting features of Alzheimer'sdisease.

# KEYWORDS

Depression, Alzheimer disease, Behavioral and psychological symptoms of dementia.

# INTRODUCTION

Alzheimer's disease is a primary degenerative cerebral disease among elderly people. Prevalence of Alzheimer's in both genders, at the age of 85 is11-14%,21-250/oatage90,andatthe ageof95 is36-41%.'

Cummings and his colleagues (1990)' described personality changes among Alzheimer's patients with dementia' Most of the studies have found symptoms of Depression in approximately 50% of all that patients.' In the early stages of thisdisease Depression is more common.' In the subcontinent elderly people with memory problems were rarely taken to a doctor for treatment and culturally people were more tolerant towards behavior problems such as wandering.' A similar attitude towards memory and behavioral problems has been reported in Argentina where people consider it a part of aging and seek no medical help.'

A consensus statement issued by the International Psycho-geriatric Association recommended the term "behavioral and psychological symptoms of dementia (BPSD)" to encompass all symptoms of mood, perception, thought or behavior thatispresent in dementiapatients.'

These Behavioral and Psychological Symptoms diminish the quality of life of patient and their families. It also causes distress; it increases the cost of care and complicate effective medical care. These can also be used as tool to differentiate between different types of Dementia. These symptoms help in early diagnosis and hence maximize the chances of early treatment. It also increases opportunitiesfor patientsand theircare givers to utilize community support, counseling facilities and adapting better lifestyle'.

Current study aims to enlist early Non-Cognitive Symptoms of Alzheimers in Pakistani population, living in the catchment area of Benazir Bhutto Hospital,Rawalpindi-Pakistan.

# METHOD

#### Participants

A purposive sample of 290 participants from the general strata of the society was included. Inclusion criterion was defined as participants to be selected irrespective of gender, aged at least 16 and having experienced the death of a first-degree relative in the past one year. Exclusion criterion is defined as the presence of any already existing psychiatric disorder beforethedeath of thedeceased.

#### Sample

45 participants of both genders were selected through non­ probability convenient sampling technique. Inclusion criteria were

(a) Patients above age of 65 years, (b) Fulfilling ICD-10 criteria for Alzheimer's disease (c) must accompanied by an attendant. Exclusion criteriawere (a) Patients having serious co-morbid medical problems; uremia, hepatic Encephalopathy, congestive cardiac failure, anemia, chronic pulmonary disease, hypertensive encephalopathy etc.

#### Instruments

**Mini Mental State Examination (MMSE)**

It is a brief 30 items scale'. It assesses orientation, attention, immediate and short-term memory, language, and the ability to follow simpleverbal and writtencommands.

#### Geriatric Depression Scale

It isa 15 items questionnaire used to screen depression in old age. The rangesare classified as 0-9 "normal", 10-19 as "mildly depressed", and 20-30as "severelydepressed".'°

#### (GDS)Cornell Scale for Depression (CSD)

It is a 19 item questionnaire used to assess current symptoms of depression. On the basis of a semi structured interview by a reliable informant, this test was specifically design to evaluate signs and symptoms of Major Depression in patientsofDementia."

#### Informant Questionnaire on Cognitive Decline in the Elderly (IQCODE)

It isa 26 item informant rated questionnaire.The optimal cutoff score on the modified Informant Question was 3.42, with 90% sensitivity and 95% specificity."

Descriptive statistics were calculated.The Paired sample T-test was used to calculatepersonalitychanges onvarious itemsof Pl.

## RESULTS

Total of 60 patients fulfilling the study criteria were invited to participate in the study, 08 refused to participate while other 7 were excluded because they did not fulfill the inclusion criteria, 45 consented to participate and successfully completed the study protocol. Amongst the total 45 study participants 15 (33.3%) were males and 30 (66.6%) were females. Mean age of participants was

74.80 years (SD + 7.22 years), mean age of male participants was

72.93 years (SD + 6.09) and mean age of female participants was

75.73 years (SD+ 7.65). The marital status of the study participants revealed that 14(31.3%) were married and 31(68.9%) were widowed. Table 1 showseducationalstatus of thestudyparticipantsand table 2 shows early signs and symptoms of Alzheimer Disease and frequency.

**Table I:**

The Educational Status of Study Participants (N=45)

|  |  |  |
| --- | --- | --- |
| **Statusof Education** | **Frequency** | **Percentage** |
| Illiterate | 23 | 51.1% |
| Primary | 8 | 17.8% |
| Secondary | 10 | 22.2 % |
| Graduate | 1 | 2.2% |
| Post Graduate | 3 | 6.7% |
| Total | 45 | 100% |

**Table 2:**

Early Signs and Symptoms of Alzheimer Disease and It's Frequency

|  |  |  |
| --- | --- | --- |
| **Personality Inventory (Pl):**  This scale comprises of 18 items, which is rated by relatives & total  time taken is 20 minutes. The test should be administered twice as | **Early Symptomsof Alzheimer Disease**  Personality change General Decline | **Frequency**  45 (100%)  41 (91.1%) |
| informant is instructed to think about the patient as how he was 10 | Depressed mood | 38 (84.4 %) |
| yearsback and fillthequestionnaire as well as considerthe condition | Sleep | 35 (77.7%) |
| of patient now and fill the questionnaire again. It can be used to  assess personality in dementia and personality changes aftera severe | **Persecution** | 14 (31.1%) |

head injury."

|  |  |
| --- | --- |
| Hallucination | 20 (44.4%) |
| Behavioral symptoms | 42(93.3%) |
| **Memory impairment** | 38 (84.4%) |
| **Every day activity impairment** | 38 (84.4%) |

## PROCEDURE

Firstly, the procedure was explained to the patients and his/her attendants.Informed consent was taken and demographic form was filled for each patient then physical examination was done. Participants were diagnosed to have Alzheimer Disease on the basis of ICD-10 criteria. Potential participants were screened by administering Mini Mental State Examination (MMSE) and Geriatrics Depression Scale (GDS) (to ruleout depression).Those scoring 25/30 or below on MMSE and 8/15 or below on GDS were selected. Coronell's Scale for Depression in Dementia (CSDD) applied to both patients and informants. Personality inventory was administered twice to the informants. The informants were asked to think about the patient when he had not developed the illness and fill the questionnaire. Then they were asked to think of the way the patient was at the timeof examination and fill the questionnaire again.Then, Informant Questionnaire on Cognitive Decline in the Elderly (IQ CODE) was applied. Data analysis was done using SPSS version 10.

Table 2 shows that 45 (100%) of study participants have showed changes in his/her personality, according to informant. There was general decline in 41 (91.17%) of study participants whereas there was no decline in only 4 (8.9%). Majority, 41 (91.17%) of participants were reported to have lack of interest or enjoyment in things in general whereas, only 10 (22.27%) felt unreasonably guilty. According to 38 (84.4 %) of the informants, their patient was depressed 36 (80%) of study remain restless or waked up during night and 32 (71.1 %) had difficulty in getting off sleep. Persecutory ideation was present in 14 (31.17%) whereas hallucinations were reported in 20 (44.4%) of patients.Regarding changesin memory of the patients, 07 (15.6%) had no changes, however 38 (84.4%) had noticed changing in memory.The everyday activitiesof the patients were judged to be due to cognitive impairment and not due to physicalillness.Themean ofthese difficultieswas 38(84.4%).

**DISCUSSION** attendants, without themthis work was not possible.

Personality changes were the earliest symptoms in 71% patients in present study. Similar results were discussed in a study which exhibited that personality changes may be among the first behavioral alterations exhibited by the patient with a dementia illness. 14 Aspects of behavior such as practicality/ independence, maturity, enthusiasm, stability, affectionateness, sensitivity, and caution relate to persistent behavioral styles, and alterations in these dimensions of behavior are justifiably viewed as personality changes. Theconcept of personality, thus,is appropriate for the items assessed with the current inventory." Carol and Jane reported behavioral symptoms in patients of dementia included fifty percent symptoms of Anxiety and 44% activity disturbance. Six Alzheimer's disease patients which comprises of 18% and two controls group patients which constitute of 10% showed mild to moderate symptoms of Depression; Persecutory ideation was present in 14 (31.17%), the mean duration being 29.07 months (SD + 30.82 months) whereas hallucinations were reported in 20(44.4%) of patients, the mean duration of which was 20.42 months (SD+ 18.81 months)'.



According to Wilson et al behavioral symptoms might be correlated with Course of the disease. A relationship between psychotic symptoms (hallucinations and delusions) and cognitive decline had been found in patients of Alzheimer." Different studies have reported that these symptoms developed over the entire course of illness.

# CONCLUSION

The current study which was aimed to enlist the early non-cognitive symptoms of Alzheimer's disease revealed that at least 2 of behavioral and psychological symptoms were present among all the study participants. There is a need for a longitudinal follow up study for patients of dementia to elucidate the evolution and course of symptoms of dementia.

### Limitations

Patients included in the study were referred by General Practitioners or were recruited from OPD so the sample might not betherepresentativeof the target population.

In Personality Inventory, the informant or the care givers were to recall the personality before the onset of illness. The mean duration of illness was 45.31 months (SD+ 42.47 months), so there isrisk of recall bias in the results of Personality Inventory.

As this was a cross-sectional descriptive study, so we cannot comment on both the evolution and the course of Alzheimer's disease.

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# REFERENCES

1. Sadock BJ, Sadock VA. Synopsis of Psychiatry. 9th Ed. New York. Lippincott Williams and Wilkins. 2002. 329.
2. Cummings JL, Benson DF. The role of the nucleus basis of

Meynert in dementia: Review and reconsideration. Alzheimer DUAssoc Dis 1990;I:128-145.

1. Wragg RE, Jeste DV. Overview of depression and psychosis in Alzheimer disease. Am J Psychiatry 1989; 146:577-587.
2. Cummings JL,Miller B, Hill MA,et al.Neuropsychiatric aspects of

multi-infarct dementia and dementia of the Alzheimer type. Arch Neurol 1987;44:389-393.

1. Chandra V. Prevalence of Alzheimer's disease and other dementias in rural India: the Inda-US study.Neurology 1998; 51, 1000-1008.
2. Mangone CA. Cross-cultural perspectives Argentina In: Behavioral and psychological signs and symptoms in dementia; Implications for research and treatment. International Psychogeriatrics 1996;Vol 8 (Supp 3) 473.
3. Finkel & Burns. Behavioral and Psychological Symptoms in

Dementia: A Clinical and Research Update international Psychogeriatrics.2000; 12 (suppl 1).

1. Carol A, Jane R. Brief checklist for non-cognitive symptoms of dementia. South Australia. Flinders University, Division of Rehabilitation and Aged Care. Australasian Journal on Ageing 2005;24(2),88-93.
2. Folstein M, Folstein S, McHugh P. Mini-Mental State. A practical method for grading the cognitive state of patients for the clinician.JPsych Res 1975;12:189-198.PMID1202204
3. Yesavage JA, Sheikh JI, Brooks JO, 111, Friedman LF, Gratzinger P, Hill RD, Zadeik A, and Crook T. Proposed factor structure of the Geriatric Depression Scale. International Psychogeriatrics 3: 23- 28,1991.
4. Alexopoulos GA, Abrams RC, Young RC & Shamoian CA. Cornell

scale for depression in dementia: Administration & Scoring Guidelines. Biol Psych, 1988, 23:271-284.

1. Siri S, Okanurak K, Chansirikanjana S, Kitiyaporn D, Jorm AF. Modified informant questionnaire on cognitive decline in the elderly (IQCODE) as a screening test for dementia for Thai elderly. Southeast Asian J Trap Med Public Health 2006; 37(3):587-94.
2. Brooks DN, McKinlay W. Personality and behavior change after

severe blunt head injury: a relative's view. J Neural Psychiatry 1983;46:336-344.

1. Lyketsos et al.Mental and Behavioral Disturbances in Dementia:

Findings from the Cache Country Study on Memory in Aging. American Journal of Psychiatry. 2000;157:708-714.

1. Cummings JL, Petry S, Dian L, Shapira J, Hill MA. Organic

Personality Disorder in Dementia Syndromes: An Inventory Approach. Journal of Neuropsychiatry and clinical Neurosciences 1990; 2;261-267.

1. Wilson et al. Clinical Management of Memory Problems. Chapman and Hall,London.1992.