Increases in life expectancy during the twentieth century have produced an aged population of unprecedented size and longevity. The census trend indicates that India has already more than 59 million people who are 60 years and above. During the decade of 2001-11 an increase of 25 million people with the age of 60 years and above is expected (Government of India, 2002). Aging leads to several biological changes that take place over time and results in progressive lose of functional capacity. The aged have to cope up with many physical and mental health problems with advancing age requiring constant attention. Depression, hypertension, arthritis and dementia are highly prevalent among the aged (Fisher, Carstenen, Turk and Noll, 1993).

**Nature of Dementia**

Dementia as “a syndrome due to the disease of the brain, usually of chronic and progressive nature, in which there is disturbance of multiple higher cortical functions, including memory, thinking, orientation, comprehension, calculation, learning capacity

---

* Clinical Psychology Trainee, IHBAS, Delhi-95.
** Associate Professor, Department of Clinical Psychology, IHBAS, Delhi-95.
and language and judgment. Consciousness is not clouded. Impairments of cognitive function are commonly accompanied and occasionally preceded, by deterioration in emotional control, social behaviour or motivation (ICD-10 WHO, 1992). Dementia is a common disorder in the later stage of life that is assuming increasing prominence with the demography shift toward an ever-increasing aging population. Dementia is a generic term for a syndrome that has a variety of etiologies. The most common etiology is Alzheimer disease, which accounts for approximately 60 per cent 70 per cent cases of late onset dementia. DSM-VI-TR (American Psychiatric Association 2000) defines dementia as a syndrome with impairment of memory and at least one other cognitive ability and is disabling, represents a decline from a previous higher level of intellectual functioning and is not present exclusively during a delirium.

The requirements that the syndrome be acquired distinguish dementia from mental retardation. The presence of a minimum of two cognitive disturbances (memory disturbances plus a disturbance in one other cognitive domain) differentiates dementia from amnesia, a syndrome limited to memory loss. Abnormalities are typically present in language, constructional skills and visuospatial perception, calculation and problem solving. Dementia is distinguished from delirium by intact arousal, more preserved attention, less fluctuation and persistence of intellectual changes. The course of dementia is usually progressive, although 10%-15% of cases may be reversible (e.g., hypothyroid dementia).

Dementia, in contrast to disorders defined by deficits in one cognitive or behavioural domain, is diagnosed when deficits are seen in multiple domains. Beside memory dysfunction the other cognitive and behavioural manifestations of the dementia syndrome include abnormalities in speech and language, visuospatial function, abstract reasoning and executive function and mood and personality. Alzheimer disease, the Dementia associated with cerebrovascular disease, Vascular Dementia,
Dementia associated with Parkinson’s disease and Lewy Body Dementia are the most common causes of dementia in elderly.

**Types of Dementia**

(i) **Dementia in Alzheimer’s Disease (AD):** Alzheimer disease is a primary degenerative cerebral disease of unknown etiology, with characteristic neuropathological and neurochemical features. It is usually insidious in onset develops slowly but steadily over a period of years. This period can be as short as two or three years, but can occasionally be considerably longer. The onset can be in middle adult life or even earlier (Alzheimer disease with early onset). In the case before the age of 65-70, there is a likelihood of a family history of a similar Dementia, a more rapid course and prominence of features of temporal and parietal lobe damage, including dysphasia or dyspraxia. In case with a later onset, the course tends to be a slower and to be characterized by more general impairment of higher cortical functions.

(ii) **Vascular Dementia (VaD):** Vascular formerly Arteriosclerotic Dementia, which includes Multiinfarct Dementia, is distinguished from Dementia in Alzheimer disease by its history of onset, clinical features and subsequent course. Typically there is a history of ischemic attacks with brief impairment of consciousness, fleeting pareses, or visual loss. The Dementia may also follow a succession of acute cerebrovascular accidents or less commonly, a single major stroke. Some impairment of memory and thinking then becomes apparent. The Dementia is usually the result of infarction of the brain due to vascular disease, including hypertensive cerebrovascular disease. The infarcts are usually small but cumulative in their effect.

(iii) **Frontotemporal Dementia (FTD):** The term “dysexecutive syndrome” has been applied to the cognitive syndrome of patients with FTD who have grossly disturbed
abstract reasoning, poor judgment and reduced mental flexibility. Behavioural disturbances, which are particularly prominent, can erroneously be attributed to primary psychiatric disease. Patients may become very withdrawn and may be treated for depression to no avail. Alternatively patients may become socially inappropriate, excessive ebullient, inappropriately aggressive, or get themselves into trouble because of grossly impaired judgment.

**Dementia with other Diseases**

(i) **Dementia with Parkinson Disease (PD):** PD is a degenerative disorder of unknown etiology that affects mainly the pigmented brain stem nuclei and basal ganglia and produces a characteristic triad of bradykinesia, rigidity and resting tremor. Approximately 40 per cent of the patients with PD demonstrate overt dementia and most exhibit more subtle neuropsychological deficits (Cummings and Benson, 1992; Pirozzolo et al., 1982). The disease is more common in men than it is among women. The mean duration of illness is 12.8 years and a range of 2-30 years has been described (Hughes et al., 1992).

(ii) **Dementia with Lewy Bodies (DLB):** It is a primary progressive disorder with the clinical profile of fluctuating cognitive impairment, Parkinsonism and psychotic features. DLB may initially present with dementia, Parkinsonism, or both together. Order of onset of the mental and motor symptoms is highly variable particularly in elderly people. Sometimes patients with classic Parkinson disease develop a Dementia characteristic of DLB. Fluctuation in cognitive function is common and regarded by some as the hallmark of DLB. In the early stages, patients may show global deficits in cognitive function, which alternate with periods of normal or near normal performance.

(iii) **Dementia in Human Immunodeficiency Virus (HIV) Disease:** A disorder characterized by cognitive deficits meeting
the clinical diagnostic criteria for Dementia, in the absence of a concurrent illness or conditions other than HIV infection that could explain the findings. HIV Dementia typically presents with complaints of forgetfulness, slowness, poor concentration and difficulties with problem solving and reading. Apathy, reduced spontaneity and social withdrawal are common and in a significant minority of affected individuals. In addition to these there are some other disorders related to Dementia, which is Huntington disease, Creutzfeldt-Jakob disease and Pick’s disease etc?

**Historical Background**

Throughout most of history, the disorder that we now think of as dementia was viewed as an inevitable consequence of aging and (Berchtold and Cotman, 1998). The distinction between the aging process and dementia is a recent conceptual development. The term Dementia was first used in a clinical context similar to its current form in the eighteenth century by Pinel and Esquirol (Cummings and Benson, 1992; Berchtold and Cotman, 1998). Alois Alzheimer first made the linkage of a neuropathological state and a clinical Dementia in 1907. However, blessed and colleagues (1968), in their landmark article on the quantitative relationship between the histopathological findings and cognition in AD, also deserve credit for opening the modern study of dementia.

Since their 1968 report, the field of Dementia went from a backwater to one of the premier areas of neuroscientific investigation. The cognitive methodology that blessed et al., used to make their seminal observation represents the foundation of a rich collaboration between cognitive neuroscientists and clinicians. The fundamental principles established by these pioneers—that components of cognitive function important to Dementia can be identified and that these components can be quantified.
Prevalence of Dementia

The dementing illnesses are the most feared and devastating disorders of late life. Most dementia syndromes are age related and the greater risk for developing dementia is advancing age. Current estimates reveal that there are about 18 million cases of Dementia in the world and by 2025, there will be about 34 million suffering from Dementia. The overall prevalence of Dementia ranges from 5 per cent to 7 per cent. Alzheimer’s disease is the most common dementing disorder accounting for 60 per cent of all cases of Dementia (10/66 Dementia Research Group, 2000).

Compared to individualized nations, developing countries like India, has not been able to report reliable prevalence data on aging related disorder such as Dementia primarily because of lesser emphasis on health and older adults and lesser resources for health research (Chandra, Ganguli, Pandav et al., 1998). Studies provide different figures in separate parts of India, most of which limited by small numbers and using non-standardized instruments. A study on urban Madras (Chennai) sample reported a prevalence of 2.7 per cent (Rajkumar and Kumar, 1996). In two studies on rural samples conducted in southern states of Tamilnadu (Rajkumar, Kumar & Thara, 1997), and Kerela (Shaji, Promodu, Abraham et al., 1996), prevalence for Dementia was reported to be 3.5 per cent and 3.4 per cent respectively for population with age of 60 and above. In an Indo-US study of prevalence of Dementia among elderly population aged more than 55 years in a rural population in Ballabgarh, in Northen India (Chandra, Ganguli and Pandav et al., 1998) found an overall prevalence rate of 0.89 per cent. Possible explanations about the lower prevalence compared to western studies, as argued by the authors reflect referral bias and short survival with disease. The community expectations of an elderly are low and many potentially treatable source of disability including memory loss are tolerated as part of normal aging.
Cognitive Deficits

Cognition in a broad sense means information processing. It denotes a relatively high level of processing of specific information including thinking, memory, perception, motivation skilled movements and cognition. Among the specific functions that may be assessed in determining the intactness of adequacy of cognition are orientation, the ability to learn necessary skills, solve problems, think abstractly reason and make judgments, the ability to retain and recall events, mathematical ability and other form of symbol manipulation, control over primitive actions and behaviours, language use and comprehension, attention, perception and praxis (Campbell R.J., 2004). Cognitive deficits may result in to pay attention, processing information quickly, remember and recall information, respond to information quickly, think critically, plan and solve problems and initiate speech. Brief description of cognitive functions, which have been used in present study, has given below:

(a) Attention is an essential element of cognition. Attention has been characterized in two ways, i.e., either as a resource or capacity or as a skill of resource deployment. There are three type of attention; these are focused attention, divided attention and sustained attention (Posner, 1978). The first, focused attention refers to the capacity to perform a task in the presence of distracting stimuli e.g., to identify a friend in a crowd, to be able to study in a noisy hostel. The second, sustained attention refers to the capacity to attend a task in hand for a required period of time. Sustained attention is closely associated with task difficulty and task complexity e.g., the capacity to study for an extended length of time. The third parameter of attention, divided attention, is the capacity to attend to two or more tasks simultaneously. The concept of divided attention explains dual tasking, where in two tasks require efforts and attention.
(b) Learning and memory are the capacities by which a person is able to gain experience and retain it. Learning is the means of acquisition of new information about the environment and memory is the process of retaining it. Learning and memory are interdependent processes. Memory processes are divided into short term and long-term memories. Long-term is a system of theoretically unlimited capacity enduring over the lifetime of an individual (Baddeley, 1990). One of the important aspects of memory is declarative or explicit memory, i.e., memory that can be brought to conscious awareness. Memory for events, figures, words, scene and facts are in the domain in the explicit memory. Encoding and retrieval of personally experienced events is termed as episodic memory. Knowledge of facts and concepts is termed as semantic memory (Tulving, 1999). A gradual accusation process from episodic to semantic memory is likely as semantic memory, would at some stage have been encoded as episodic memory (Fletcher, Frith, Grasby, Shallice, Frackowiak and Dolan, 1995). Learning and memory or verbal and visual material are two important domains of explicit memory.

(c) Visuo-constructive ability is the capacity to construct a design, using either a paper and pencil or blocks or sticks. This ability is the capacity to translate a visually perceived form into a three dimensional object or a two dimensional figure. Visuo-constructive ability requires attention, visuo spatial perception, visuo motor coordination and planning and error correction abilities. This ability is a composite function, which is mediated by bilateral parietal structure. The pre frontal structures also mediate the planning and error correction required for visuo constructive ability (Lezak, 1995).

Type and Prevalence of Cognitive Deficits in Dementia

The most extensive literature available regarding the neuropsychological assessment of individuals with Alzheimer
disease is for those who have mild to moderate cognitive impairment. Cognitive deficits associated with AD and other cortical disorders include intellectual impairment, encoding and/or storage based memory deficits, aphasia, agnosia, apraxia and visuo spatial and constructional deficits. However, two areas of cognitive functioning, language and memory show distinct patterns of deficits and thus, may have potential use in differential diagnosis. (Hom, 1992; Binetti et al., 1993). Anterograde amnesia occurs early in AD and impairs memory for both verbal and nonverbal material (Wilson et al., 1983). An area of functioning that appears to be relatively preserved in AD is procedural memory (Eslinger & Damasio, 1986). The first indication of language difficulties associated with AD is often word finding problems (Huff et al., 1988).

The subcortical dementia of PD is characterized by memory impairment, visuospatial disturbances, executive dysfunction and bradyphrenia. Spontaneous recall and skill acquisition (procedural memory) are impaired whereas recognition memory is largely spared (Cummings and Benson, 1992). Visuospatial deficits are apparent on both motor dependent and motor free tasks (Boller et al., 1984; Vilardita et al., 1982) and disturbances of executive function, including poor concept formation strategy formulation and difficulty with set shifting, are consistently observed (Cummings 1988).

Cognitive deficits are less marked in patients with FTD than in those with AD. Memory, visual spatial skills and mathematical abilities are relatively spared in the early and middle stage of disease (Cummings and Benson, 1992; Knopman et al., 1989). Patients have deficits in executive functioning including difficulty with set shifting tasks (e.g., card sorting), word list generation (e.g., number of animal named in one minute), divided attention and response inhibition (Miller et al., 1991). Language may be affected relatively early in the disease. Naming deficits, impairment
of auditory comprehension and increasingly sparse verbal output are common. Speech stereotypes, echolalia and mutism also may occur (Cummings and Benson, 1992; Graff-Radford et al., 1990; Gustafson 1987).

The pattern of neuropsychological abnormalities in patients with VaD is characterized by “patchiness,” with preservation of some abilities and mild to severe compromise of others. Thus, the profile of deficits varies among patients. In most cases, I Q testing and memory evaluation reveal diminished memory and cognitive abilities and visuospatial abnormalities are demonstrate able in most patients (Reichman et al., 1991). Speech and language assessment reveal dysarthria with relative preservation of language functions (Hier et al. 1985; Powell et al., 1988). Slowing of cognitive function and impairment of executive function are common elements of the dementia syndrome.

**Behavioural Disturbances in Dementia**

Behavioural disturbances in Dementia which have historically been referred term, now it is called as Behavioural and Psychological Symptoms of dementia (BPSD), are defined as “symptoms of disturbed perception, thought content, mood and behaviour frequently accruing in patients with Dementia.” Symptoms can be assessed by patient/relative interview and or behavioural observation (Finkel, 2001). Research have shown that between 50 per cent and 90 per cent of persons with moderate to severe symptoms of Dementia may display clinically significant behavioural problems at some points during the course of their illness (Davis, Buckwalter, & Burgio, 1997; Swearer, Drachman, O’Donell and Mitchell, 1990; Zimmer, Watson and Treat, 1984).

Behavioural disturbance among person with dementia include agitation, verbally disruptive behaviour, physically aggressive irritability, wandering and mood lability as well as apathy (Burgio et al., 1996). Dementia produces an appreciable decline in
intellectual functioning and usually some interference with personal activities of daily living, such as washing, dressing, eating and physical hygiene and toilet activities. Over the course, the demented elderly manifests increasing difficulty in carrying out activities of daily living, impairment in judgement and behavioural disturbances like hoarding, wandering, aggression and disinhibition. Other neuro-psychiatric features include paranoid ideas and hallucinations (Burns, Jacoby and Levy, 1990).

The specificity of the diagnosis of dementia is enhanced by also requiring that the patient’s cognitive and behavioural deficits interfere “significantly” with daily functions and independence.

**Burden in Caregivers of Dementia**

Throughout the care giving literature the terms ‘burden’ and ‘caregiver strain’ and ‘stress’ have been used to refer to the same concept. This concept is broadly defined and deals with the consequences for supporters of the various practical and emotional demands of care giving. Caregiver refers to the family member of the dementia patient who is instrumental in caring for his personal and health care needs. Caregiver stress may be defined as events or circumstances that are attributable to the patient’s dementing illness, that have direct and indirect adverse effects on the psychological or the physical well being of the caretaker. The psychological aspects of the disease, which may include, may bring on caregiver stress; frustration over lost memories, aggravating repetition, catastrophic reactions or the loss of recognition of the spouse or close family member. Caregiver stress can manifest itself in many forms.

Emotional reactions that can occur inter-mittently or consistently may include; anger, loneliness, frustration, embarrassment, guilt, anxiety, depression in caregivers. Behavioural symptoms that require continual supervision or involve aggressive acts are more strongly associated with caregiver burden is the
need for physical assistance with activities of daily living. Non-aggressive behavioural symptoms can increase the distress of the caregiver because the demands they make on the caregiver’s time and attention are less predictable than those of routine daily care. Caregiver distress and poor interpersonal relations between the patient and the caregiver can exacerbate behavioural and psychological symptoms of Dementia (BPSD). Behavioural disturbances among person with Dementia are consistently reported to be among the most stressful aspects of providing care to these individuals.

Need for the Study

Impairment in cognitive functions such as memory, attention and executive functions and associated behavioural disturbances such as agitation, verbally abusive, disruptive behaviour, physically aggressive, irritability, wandering and mood changes, have been consistently reported at some points during the course of their illness and are the most stressful aspects of providing care to these individuals. So, one systematic attempt is needed to understand the relationship between the cognitive deficits, behavioural disturbances and caregiver’s burden. How these influences the individuals who suffers with Dementia and their caregivers.

On the basis of review of literature following conclusions has been drawn:

A significant relationship may exist between cognitive deficits in patients and caregiver burden but requires further investigation. Behavioural disturbances are positively related to the caregiver burden. Although literature reviewed has provided considerable empirical support for a relationship between caregiver ratings of behavioural disturbances and burden in caregivers, attempt must be made to determine whether more objective ratings of
behavioural disturbances would be as closely related to outcomes as caregiver’s appraisal of these behaviours.

Less number of studies has been done to establish the relationship between cognitive impairment and behavioural disturbances. Whatever studies are done not providing the consistent and specific findings. So, more research efforts are required to confirm the relationship in these variables.

**METHOD**

**Aim:** To study the relationship among cognitive deficits and behavioural disturbances of the persons with dementia and their burden on the caregivers.

**Objectives:**
- To assess the cognitive impairments of the persons with Dementia.
- To assess the behavioural disturbances among persons with Dementia.
- To assess the burden in caregivers of persons with dementia.
- To study the relationship between cognitive deficits and behavioural disturbances.
- To study the relationship between cognitive deficits and carer’s burden.
- To study the relationship between behavioural disturbances and carer’s burden.

**Sample:** The purposive sampling method was used. The total sample consisted of 40 participants in which n-20 Dementia patients and n-20 their caregivers. Subjects were taken from the neurobehavioural clinic of IHBAS, Delhi as per the inclusion and exclusion criteria for both. All the Dementia persons were diagnosed by the neurologist at IHBAS. Inclusion criteria for the persons with dementia:
• Meeting the diagnostic criteria of Dementia of any type (ICD-10, F00; WHO, 1992)
• Above 55 years of age

Inclusion criteria for the caregivers:
• Who are above 18-years of age?
• Who have been living with the patient for more than one year?

Exclusion criteria for the caregivers:
• Who had history of psychotic disorder or severe neurological illness?

Tools and Description

Socio-demographic and Clinical Data Sheet for patients with dementia and their caregivers (SCDS) (developed for the study). SCDS was developed to obtain socio-demographic characteristics of the patients, their primary caregivers and other family members involved in care of the patient. It consisted of patient’s age, sex, education, occupation, socio-economic status, type of family (joint/nuclear) marital status and number of children, diagnosis and duration of the illness. Similarly it included information regarding primary caregiver’s and other family caregivers age, sex, education, occupation, marital status, living with patient sense how long and any medical illness they are suffering from. Information was gathered from the primary caregiver.

Clinical Dementia Rating Scale (CDR) (Hughes, Berg, Danziger, et al., 1982). The CDR, a global rating device was used to gauge the severity of Dementia. Impairment levels are determined in 6 categories, memory, orientation, judgment and problem solving, community affairs, home and hobbies and personal care. A five point scale is used to the function in each category (0, 0.5,1, 2, 3) final over all scores of 0 and 0.5 refer to healthy and questionable category respectively. The scores of 1, 2 and 3
indicate mild, moderate and severe Dementia respectively. For determining CDR, memory is considered as the primary category and all other are secondary. If at least 3 secondary characteristics are given the same numerical score as memory, then CDR is same as the memory score. If 3 or more secondary categories are given a score greater or lesser than memory score, CDR is score of majority of secondary characteristics. Inter rater reliability on CDR has been good with Kendall’s TAU B= 0.91, Weighted Kappa= 0.87. Information was obtained through interview with the patient and the family members to determined functional impairment in each category.

**Hindi Mental Status Examination (HMSE).** This test consists of 22 items, which test different components of intellectual capability. The items cover several areas of cognitive functions such as orientation to time and place, memory, attention and concentration, recognition of objects, language function, both comprehension and expressive speech, motor functioning and praxis. It is relatively simple to administer and provides a quick, brief index of the subject’s current level of cognitive functioning. It is a modified version of the Mini-Mental State Examination MMSE (Folstein, M.F., Folstein, S.E. and McHugh, P.R, 1975.). The standard cut off scores for impairment is 23 or below. However, the following cutoff scores can be used to provide a more precise classification of cognitive functioning: 24-30= no impairment, 18-23 = mild cognitive impairment, 11-17 = moderate cognitive impairment; 0-10= severe cognitive impairment.

**4. Triads Test** (To measure Divided Attention): The triad test was developed at NIMHANS. It combines a verbal triads task with a tactual number identification task. The two tasks differ with reference to the stimulus modality and the number of stimulus processing. The subject is blind fold in this test. The verbal triad test consists of 48 concrete nouns grouped into 16 word triads. In each triad, two words belong to one category...
while the third one does not. The subject names the odd word.

Score: The number of error committed on each task is counted. The omission in saying the word is also counted as an error. The maximum errors in each category are 16 as there are 16 trials in test.

5. Test to Measure Logical Memory: Logical Memory is assessed by the immediate and delayed recall of a meaningful passage. The passage used in the Wechsler Memory Scale was adapted by changing the names in the passage to those with which the Indian population would be more familiar. This passage has been used in the NIMHANS Neuropsychological Battery (Mukundan et al., 1987), as well as in the PGI Memory Scale (Pershad & Wig, 1976). The test consists of a short story with 21 facts. The number of facts correctly recalled in the immediate recall trial is the immediate Recall Score and the number of facts correctly recalled in the delayed recall trial is the Delayed Recall Score. The number and nature of confabulations if any is also noted down. The test takes about 10 minutes for both recalls together.

6. Rey’s complex figure test (Test of visual constructive ability and visual memory): The Visuo Constructive ability was tested using the Rey’s Complex Figure Test (Meyers & Meyers, 1995). Rey developed the test in 1941. The test consists of a complex design, which is abstract in nature and cannot be named easily. It has an overall structure and multiple sub-components within it. The figure from the complex figure test described earlier, is copied and subsequently recalled. Immediate and delayed memory scores are obtained. Learning over trials is not tested in this test. The design-learning test on the other hand involves learning over trials, immediate memory and delayed memory. The complex figure is recalled by drawing it from memory. The subject is asked to recall the figure twice: the first time is an immediate
recall three minutes after the copying is completed and the second time is a delayed recall 30 minutes later.

7. Dementia Behaviour Disturbance Scale (Baumgarten M, Becker R, Gauthier S (1990): The dementia behaviour disturbance scale is a 28 item scale developed to avoid some of the problems with earlier scales, for e.g., the confusion of collecting information about cognitive and non-cognitive features in the same instrument. A need for assessment outside the clinical setting was also considered. Two samples were assessed: community-residing patients assessed at a geriatric assessment unit and patients taking part in a drug trail. Test/retest reliability (two weeks later) was 0.71, internal consistency was 0.84 and construct validity was described in terms of positive correlations with the Behavioural and Mood Disturbance Scale (BMDS). Time taken in administration is 10-15 minutes, scoring done in the form of rating in an interview with the patient’s primary caregiver, or as a self-administered scale by the carer.

8. Zarit Burden Interview (ZBI) (Zarit, Reever and Peterson, 1980): It is a structured interview schedule, which helps in the assessment of the overall subjective burden on the categories of dementia patients. This is a widely used instrument and has an advantage over other measures for stress and burden in being specific for caregivers of dementia patients. This was assessed on primary caregivers. Caregivers were asked to respond to the series of 22 questions about the impact of the patient’s disability on their life. For each item, caregivers indicate how often they felt in a particular way (never, rarely, some time, quite frequently or nearly always). On each of the 22 items, score range from 0 to 4, thus the total scores of a caregiver range from 0 to 88. Estimates of the degree of burden can be made as little burden Score (0-20), Mild burden Score (21-40), Moderate burden Score (1-60), Severe burden Score (61-88). Internal
reliability has been estimated using Chronbach’s alpha at 0.91. Test retest reliability is reported at 0.71.

Procedure

A total of 64 persons with dementia (n=32) and their caregivers (n=32) were screened on inclusion and exclusion criteria for both out of them 20 persons with dementia and their 20 caregivers were selected for the study. They were explained about the study and written consent was obtained. The assessment was started with the administration of the above mentioned tests. After completing the assessment they were psychoeducated about the disease’s nature, course and prognosis as well as caregivers were given the tips to deal with the problem of care giving.

Statistical Analysis

Quantitative and qualitative methods of analysis were used. Pearson coefficient of correlation was calculated in order to understand the relationship between the variables. Data was also analyzed qualitatively for explaining the relationships.

Description of Sample Used in the Present Study

The socio-demographic details of the dementia persons are presented in Table 1. 55 per cent of the subjects were males compared to females (45 per cent). The sample mostly consisted the age groups of 60-64 years that is 30 per cent although the sample spread from 55 to 84 years of range. In this sample 65 per cent of the subjects were school educated and 5 per cent were college educated and rests were illiterate. Almost equal number of subjects were living in the joint and nuclear extended families. Domicile of the 60 per cent patients was urban and 40 per cent was rural.
TABLE-1
Depicting gender, age, education, family, type and domicile of the dementia patients.

<table>
<thead>
<tr>
<th>Category</th>
<th>No. of cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>11</td>
<td>55%</td>
</tr>
<tr>
<td>Female</td>
<td>09</td>
<td>45%</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55-59</td>
<td>4</td>
<td>20%</td>
</tr>
<tr>
<td>60-64</td>
<td>6</td>
<td>30%</td>
</tr>
<tr>
<td>65-69</td>
<td>5</td>
<td>25%</td>
</tr>
<tr>
<td>70-74</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>75-79</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>80-84</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illiterate</td>
<td>6</td>
<td>30%</td>
</tr>
<tr>
<td>School educated</td>
<td>13</td>
<td>65%</td>
</tr>
<tr>
<td>College educated</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>Family type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nuclear</td>
<td>9</td>
<td>45%</td>
</tr>
<tr>
<td>Joint</td>
<td>11</td>
<td>55%</td>
</tr>
<tr>
<td>Domicile</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>8</td>
<td>40%</td>
</tr>
<tr>
<td>Urban</td>
<td>12</td>
<td>60%</td>
</tr>
</tbody>
</table>

The clinical characteristics of the dementia patients such as duration of illness, type of dementia and severity of dementia are given in Table 2. 35 per cent of the patient’s duration of illness was 1-2 years, 2-3 years were 30 per cent, 3-4 years were 20
per cent and 4 to 5 years patients were only 15 per cent. Diagnosis of the mostly patients was Alzheimer Dementia (55%), rests were PD=10 per cent, LBD=5 per cent, FTD =5 per cent, VaD=10 per cent and others were 15 per cent of mixed Dementia.

TABLE-2

Depicting the clinical characteristics of the dementia patients

<table>
<thead>
<tr>
<th>Category</th>
<th>No. of cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Duration of illness in years</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-2</td>
<td>07</td>
<td>35%</td>
</tr>
<tr>
<td>2-3</td>
<td>06</td>
<td>30%</td>
</tr>
<tr>
<td>3-4</td>
<td>04</td>
<td>20%</td>
</tr>
<tr>
<td>4-5</td>
<td>03</td>
<td>15%</td>
</tr>
<tr>
<td><strong>Diagnosis</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A D</td>
<td>11</td>
<td>55%</td>
</tr>
<tr>
<td>P D</td>
<td>02</td>
<td>10%</td>
</tr>
<tr>
<td>L BD</td>
<td>01</td>
<td>5%</td>
</tr>
<tr>
<td>FTD</td>
<td>01</td>
<td>5%</td>
</tr>
<tr>
<td>VaD</td>
<td>02</td>
<td>10%</td>
</tr>
<tr>
<td>Others</td>
<td>03</td>
<td>15%</td>
</tr>
</tbody>
</table>

Socio-demographic characteristics of the caregivers are given in Table 3. Almost same number of subjects were males and female 45 per cent and 55 per cent respectively. Mean age was 42.2 years and mostly subjects were educated except only two, those were illiterate. Relationship with the patient indicate that 50 per cent caregivers were children or daughter in law, 25 per cent were spouse and other 25 per cent were close relatives of the dementia patients.
Table 3 depicts the gender, age, education and relationship with the patients.

<table>
<thead>
<tr>
<th>Category</th>
<th>No. of cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>09</td>
<td>45%</td>
</tr>
<tr>
<td>Female</td>
<td>11</td>
<td>55%</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>Mean=42.2 years</td>
<td></td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illiterate</td>
<td>02</td>
<td>10%</td>
</tr>
<tr>
<td>School educated</td>
<td>09</td>
<td>45%</td>
</tr>
<tr>
<td>College educated</td>
<td>09</td>
<td>45%</td>
</tr>
</tbody>
</table>

Table 4 shows the matrix of correlation among all variables. Scores on Hindi Mental State Examination (HMSE) are positively and statistically significantly correlated with scores on divided attention test (0.54, P<0.05), logical memory immediate and delayed recall (0.53, P<0.05 and 0.47, P<0.05), visual construction test scores (0.61, P<0.01) and visual memory immediate and delayed recall (0.60, P<0.01 and 0.56, P<0.01). HMSE scores are also statistically significant and negatively correlated with the scores on behavioural disturbances scale and burden interview schedule (-0.53, P<0.05 and -0.53, P<0.05).

Divided attention scores are statistically significant and negatively correlated with the scores on behavioural disturbances scale (-0.69, P<0.05) and burden interview schedule (-0.46, P<0.01). Logical memory (immediate recall) scores are not significantly correlated with any of the variables except HMSE. But the logical memory scores (delayed recall) are statistically significant and positively correlated with scores on visual construction test (0.50, P<0.05) and visual memory immediate and delayed recall scores (0.57 and 0.66, P<0.01). Logical memory...
delayed recall scores are statistically significant and negatively correlated with the scores on behavioural disturbances scale and burden interview schedule (−0.28 and −0.55, P<0.05). Visual construction scores are statistically significant and positively correlated with visual memory immediate and delayed recall scores (0.81 and 0.87, P<0.05). Visual memory immediate recall scores are statistically significant and positively correlated with visual memory delayed recall scores (0.86, P<0.01). Visual memory delayed recall scores are not significantly correlated with the scores on behavioural disturbances scale and burden interview schedule. The scores on behavioural disturbance scale are positively and statistically significantly correlated with scores on burden interview schedule (0.85, P<0.01).

Table 3 depicts the correlation of different cognitive function test scores with burden scores and behavioural disturbances scores. HMSE scores are statistically significant and negatively correlated with the scores on behavioural disturbances scale and burden interview schedule (−0.53, P<0.05 and -0.53, P<0.05). Divided attention scores are significantly negatively correlated with the scores on behavioural disturbances scale (−0.69, P<0.01) and burden interview schedule (−0.46, P<0.05). Logical memory (immediate recall) scores are not significantly correlated with the scores on behavioural disturbances scale and burden interview schedule. Logical memory delayed recall scores are significantly negatively correlated with the scores on behavioural disturbances scale and burden interview schedule (−0.28 and-0.55, P<0.05). Visual construction scores are not significantly correlated with the scores on behavioural disturbances scale and burden interview schedule. Visual memory (immediate and delayed recall) scores are not significantly correlated with the scores on behavioural disturbances scale and burden interview schedule.
### TABLE-4

**Correlation Matrix for HMSE, DA, LMIR, LMDR, VC, VMIR, VMDR, B and BD**

<table>
<thead>
<tr>
<th>Variables</th>
<th>HMSE</th>
<th>DA</th>
<th>LMIR</th>
<th>LMDR</th>
<th>VC</th>
<th>VMIR</th>
<th>VMDR</th>
<th>B</th>
<th>BD</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMSE (Hindi Mental State Examination)</td>
<td>0</td>
<td>0.54*</td>
<td>0.53*</td>
<td>0.47*</td>
<td>0.61**</td>
<td>0.60**</td>
<td>0.56*</td>
<td>-0.53*</td>
<td>-0.53*</td>
</tr>
<tr>
<td>DA (Divided Attention)</td>
<td>0</td>
<td>0.31</td>
<td>0.24</td>
<td>0.31</td>
<td>0.36</td>
<td>0.20</td>
<td>-0.46*</td>
<td>-0.69**</td>
<td></td>
</tr>
<tr>
<td>LMIR (Logical Memory Immediate Recall)</td>
<td>0</td>
<td>0.81</td>
<td>0.68</td>
<td>0.53</td>
<td>0.66</td>
<td>-0.44</td>
<td>-0.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LMDR (Logical Memory Delayed Recall)</td>
<td>0</td>
<td>0.50*</td>
<td>0.57**</td>
<td>0.66**</td>
<td>-0.55*</td>
<td>-0.28*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VC (Visual Construction)</td>
<td>0</td>
<td>0.81**</td>
<td>0.87**</td>
<td>-0.23</td>
<td>-0.22</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VMIR (Visual memory Immediate Recall)</td>
<td>0</td>
<td>0.86**</td>
<td>-0.35</td>
<td>0.29</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VMDR (Visual Memory Delayed recall)</td>
<td>0</td>
<td>-0.31</td>
<td>0.24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B (Burden)</td>
<td>0</td>
<td>0.85**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BD (Behavioural Disturbances)</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(*P<0.05) Two tailed  (**P<0.01) Two tailed
<table>
<thead>
<tr>
<th>Cognitive functions</th>
<th>Behavioural disturbances on DBDS (Pearson r coefficient)</th>
<th>Burden on ZBI (Pearson r coefficient)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hindi Mental State Examination (HMSE)</td>
<td>-0.53*</td>
<td>-0.53*</td>
</tr>
<tr>
<td>Divided Attention (DA)</td>
<td>-0.69**</td>
<td>-0.46*</td>
</tr>
<tr>
<td>Logical Memory Immediate Recall (LMIR)</td>
<td>-0.22</td>
<td>-0.44</td>
</tr>
<tr>
<td>Logical Memory Delayed Recall (LMDR)</td>
<td>-0.28*</td>
<td>-0.55*</td>
</tr>
<tr>
<td>Visual Construction (VC)</td>
<td>-0.22</td>
<td>-0.23</td>
</tr>
<tr>
<td>Visual Memory Immediate Recall (VMIR)</td>
<td>0.29</td>
<td>-0.35</td>
</tr>
<tr>
<td>Visual Memory Delayed Recall (VMDR)</td>
<td>0.24</td>
<td>-0.31</td>
</tr>
</tbody>
</table>

(* P<0.05) Two tailed

(** P<0.01) Two tailed
DISCUSSION

The aim of the study was to study the relationship among cognitive deficits and behavioural disturbances of the persons with dementia and their burden on the caregivers. To assess the cognitive impairment of the dementia patients HMSE and other independent tests of logical memory, visual memory and visual construction were administered. On HMSE 20 per cent of the patients showed no impairment, whereas 30 per cent patients reported mild impairment and rest of the patients showed moderate to severe cognitive impairment. Those who showed no impairment belong to vascular dementia or other than Alzheimer dementia diagnosis. That may be due to in early stages of this illness generally patients shows no impairment but as the disease progress they develop cognitive disabilities. This finding is supported by the earlier studies. Further, in spite of no impairment in 20 per cent cases HMSE scores are significantly negatively correlated with behavioural disturbances scores and caregiver burden scores and means increase in cognitive impairment will leads to much behavioural disturbances and therefore more burden will be perceived by the caregivers. This finding supports the findings of Lyketsos et al., (1999) study that behavioural problems in persons with dementia are generally seen to increase as a function of increase cognitive impairment. Eagles et al., (1987), O’Connor et al., (1990) and LoGiudice et al., (1995) also reported significant correlation between cognitive disability and burden in mixed gender samples of carers.

Divided attention scores are significantly negatively correlated with the scores on behavioural disturbances scale and burden interview schedule (Table 5) means that impairment of divided attention increases the burden of care and behavioural disturbances among persons with dementia. Richard, J. et al., (1999) concluded that divided attention and aspects of selective attention, such as set shifting and response selection are particularly vulnerable while
sustained attention is relatively preserved in the early stages of dementia illness. They also stated that the difficulties with activities of daily living, which occur in even mildly demented patients, might be related to attention deficits. In another study M. Rizzo, et al., (2000) investigated visual attention impairments in AD. Patients with AD performed significantly worst than control subjects on measures of sustained attention, divided attention and selective attention. They found deterioration of attention abilities occurs in early stages of AD and likely contributes to functional decline in these patients.

Performance on logical memory test was also poor by the dementia persons in this study. This is very well documented that early signs in AD and other dementias are memory deficits. A strong correlation found between memory, behavioural disturbances in persons with dementia and caregiver burden supported the findings of earlier studies by many researchers. Au, A. et al., (2003) studied that episodic recall is the most sensitive discriminator between patients with Mild AD and normal elderly, while semantic memory tends best to differentiate between moderate and severe AD patients. In this study visual construction abilities are not associated with the behavioural disturbances and caregiver burden. This may be due to because the task is so complex or some of the patients were illiterate and simply forgetting of instructions were given to them for this test or impairment in attention had led to poor performance. So, much effort is required to get valid findings and in future research some simple tasks and familiarity with the content can be one of the choices. Therefore visual memory also can be tested. Finally, strong positive relationship found between behavioural disturbances and caregiver burden is supported by the findings of the R.F. et al., (1997) study. In this study increased carer burden was related independently to increased levels of patient behaviour disturbance and decreased levels of informal social support. In their study Zarit, et al.,
(1980) studied non-cognitive features of dementia to be the strongest correlates of the carer’s burden.

CONCLUSION

Overall findings of this study suggest that impairments on HMSE, divided attention and logical memory is positively correlated with behavioural disturbances and caregiver’s burden. Caregiver burden is also positively correlated with behavioural disturbances in persons with dementia.

Recommendations for Caregivers

On the basis of analysis of data and results it is recommended that psychoeducation should be given to the caregivers in the following areas:

(i) **Explaining Dementia:** Dementia occurs as a result of a disease process. When a person is diagnosed by his/her physician and is said to have a dementing illness- Alzheimer disease or a related disorder it is because that the person shows clear signs of impaired memory, thinking and behaviour. The first signs the family may see are problems in remembering recent events and difficulty performing routine, familiar tasks. The person may experience confusion, personality change, behaviour change, impaired judgment and difficulty finding words, finishing thoughts or following directions.

(ii) **Explaining Alzheimer Disease:** Alzheimer Disease (AD) attacks the part of the brain that control thought, memory and language. The onset of the disease is gradual and the person’s decline is usually slow. Currently, the cause of the diseases unknown and there is no cure. AD affects all groups in society and is not linked with social class, gender, ethnic group and geographical location. Although, AD is more common among elderly persons, younger persons can also be affected.
What are the Symptoms of AD

AD affects each person in a different way. The symptoms of AD can best be understood in the context of three stages of development: early, middle, and late. The symptoms will vary from person to person and no one person experiences the progress of the disease in exactly the same way as another.

**Early stage:** It is difficult to identify the exact time this stage begins because the onset of disease is product. The person may show difficulties with language and experience significant memory loss by being disoriented in time and getting in familiar places. Display difficulty in decisions-making, lack of initiative and motivation. Shows signs of depression and aggression and loss of interest in hobbies and activities.

**Middle stage:** As the disease progresses, problem become more evident and restricting. The person with AD has difficulty with day-to-day living. He may become very forgetful—especially of recent events and people’s name, can no longer to manage to live alone without problems. Is unable to cook, clean or shop. May become extremely dependent and need assistance with personal hygiene, *i.e.*, toilet, washing and dressing. He has increased difficulty with speech like notable to remember words or to speak clearly. Shows problems with wondering and other behavioral abnormalities like aggression and suspiciousness, become lost at home and in the community. He may see or hear certain things, which are not present in the environment like hearing some voices of people while sitting alone.

**Late stage:** This stage is one of total dependence and inactivity. Memory disturbances are very serious and physical side of the disease becomes more obvious. The person may have difficulty in eating, recognizing relatives, friends and familiar objects, difficulty in understanding and interpreting events. Be unable to find their way around in the home. Have difficulty walking and bladder and
bowel incontinence is seen. Displays inappropriate behaviour in public and finally gets confined to wheel chair or bed.

**What Causes AD:** Currently the cause of the disease is uncommon. However it is known that does not cause AD. AD is not caused by hardening of arteries, under use or over use of brain, sexually transmitted diseases, infection old age or by exposure to aluminum or other metals.

**Treatment:** No, at the movement there is no curative treatment for Alzheimer’s disease. However, there is a great deal that can be done for the persons with AD as well as things to ease the burden on the caregivers. There are some drugs available in some countries for people with mild to moderate AD. These drugs do not cure but may help some people with some symptoms of AD. There are certain behavioural strategies to ameliorate the behavioural problems that the patient manifests like wandering and aggression. Other techniques are there to help the person with AD in his Activities of Daily Living (ADL).

**Dementia in other diseases:** There are other diseases in which dementia can occur, the pattern of giving the psycho education will be the same and before giving the psycho education it must be made clear about the nature and type of dementia. Nature of some common type of dementias is given in the introduction part of this article. Along with psycho education, the following suggestions should be given to the primary caregiver of the patient with dementia, which will help them to cope with the care giving stress:

**Accepting Help:** It is important to accept help from other members of the family if they are available and not to try to carry the whole burden of caring on your own.

**Share Your Problems:** You need to share your feelings about your caregiving experiences with others. It may be more difficult for you to look after the person with Dementia if you keep it to
yourself. Try to accept the support when others offer it. It will be easier for you to cope. Try to think ahead and have someone to turn in an emergency.

**Behavioural Strategies**

Behavioural techniques such as time out, differential reinforcement and over correction can be adopted to handle the behavioural problems of the Dementia. In addition to above mentioned techniques, caregivers can be given the following tips to deal with common challenges that they might face during the illness in care of their demented relatives. These are based on WHO manual- “help for caregivers” (2000).

**Bathing and Personal Hygiene:** The person with Dementia may forget to bathe or no longer recognize the need or may have forgotten what to do. In this situation it is important to respect the person’s dignity when offering to help.

- Maintain the person’s former routine for washing as much as possible.
- Try to make bathing a pleasant and relaxing occasion.
- Simplify the task as much as possible you can.
- If the patient refuses to take bath, try again a little later, when the mood may have changed.
- Allow the person to do as much as possible without any help.
- If the person appears embarrassed, keeping other parts of the body covered while bathing may be helpful.
- If you have problems with helping this, get someone else to do it.
- If bathing always leads to conflict, a stand up wash may be helpful.
Dressing
- Lay out clothes in the order they are to be put on.
- Avoid clothes with complicated fastenings.
- Encourage independence in dressing as far as possible.
- Use repetition if necessary.
- Use non-skid rubber soled shoes.

Toileting and Incontinence
- Create a schedule for going to the toilet.
- Label the toilet door using bright colours and large letters.
- Leave the toilet door open so it is easy to find.
- Make sure clothing can be easily removed.
- Limit drink within reason before bedtime.
- Providing a chamber pot or commode by the bedside may be helpful.

Cooking
- Assess how well the person can do his or her own cooking.
- Enjoy cooking as a shared activity.
- Install safety devices.
- Remove sharp utensils.
- Provide meals and try seeing that enough nutrition food is given.

Eating
- Remind the person how to eat.
- Use finger food to make it easier.
- Cut up food in small pieces to prevent choking.
- Remind the person to eat slowly.
• Be aware that person may not be able to sense hot or cold and may burn their mouth on hot foods or liquids.
• Serve one portion of food at a time.

Driving

It could be dangerous for the person with dementia to drive, since judgment is impaired and reflexes are slowed.
• Discuss the subject with the person gently.
• Suggest using public transportation as appropriate.
• If you cannot dissuade one person from driving, consult doctor or licensing authority.

Alcohol and cigarettes

• Cigarettes can lead to a greater danger because of the risk of fire and damage to health.
• Discourage drinking and smoking altogether with a physician’s prescription.

Difficulty in sleeping

• The patient may be restless at night and may disturb the family.
• Try to discourage sleeping during the day.
• Try daily long walks and add more physical activity during the day.
• Try to make the person as comfortable as possible at bedtime.

Repetitive behaviour

A person with dementia may forget what they have said from one moment to the next leading to repetitive questioning and action.
• Try to distract the person with dementia offering something else to see, hear or do.
Cognitive Deficits and Behavioural Disturbances...

- Write down or audio tapes the answer of commonly asked questions.
- Give hugs and reassure with warmth, if appropriate for the person.

Clinging

The person with dementia may become extra dependent and follow you everywhere.

- Provide something to occupy his/her attention while you step away.
- You may call on any relative to give yourself some privacy.

Losing things and accusations of theft

The patient with dementia may often forget where objects were placed. In some cases they will accuse you and others of taking missing objects.

- Discover if the patient has a favorite hiding place.
- Keep replacements of important items e.g., key
- Check wastebaskets’ before emptying it.
- Respond to the person’s accusations gently.
- Agree with the patient that the item is lost and help find it.

Wandering

The patient may wander around home or leave the house. He/she may get lost.

- Make sure the person carries some form of identification like address card.
- Make sure your home is secure and what the person is safe in your home and cannot leave without your knowing.
- When the person is found, avoid showing anger speak calmly with acceptance and love.
- It is helpful to keep up to date photograph in case the person gets lost and you must ask help from others.
Violence and Aggression

From time to time, the person may become angry, aggressive or violent.

- Keep calm; try not showing fear or alarm.
- Try to draw the person’s attention to a calming activity.
- Give the person more space.
- Find out what caused the reaction and try to avoid in future.
- If the violence occurs often, seek help for support.

Delusions and Hallucinations

The person with dementia may experience delusions and hallucinations. A delusion is a false belief, e.g., he may hold a false belief that someone in family is trying to kill him. Hallucination is seeing things or hearing voices without any stimulation from the environment.

- Do not argue with the person about the validity of what was seen or heard.
- When he is frightened, try to give comfort by holding a hand with calm voice.
- Distract the person by drawing attention to something real in room.

Inappropriate Sexual Behaviour

The person with dementia may display inappropriate sexual behaviour but it is rare. Behaviour may include undressing in public fondling the genitals, or touching someone in an inappropriate way.

- Try not to overreact to the behaviour
- Try to distract the person to another activity.
- If the person removes clothing, gently discourage the behaviour and try to distract the person.
**Depression and Anxiety**

Patient may experience depression, can be withdrawn, unhappy and will speak act and think slowly, which can affect daily routine and interest in food.

- Give more support and love to the person.
- Don’t expect the person to shape out of the depression immediately.
- Try to engage him in activities that bring pleasure to him.

**Communication**

Techniques for the communication, e.g., the four S’s keep it-Simple, Slow, Short and Specific.

**REFERENCES**


Blessed, G., Tomlinson, B. E. and Roth, M. (1968). The association between quantitative measures of dementia and of senile change in


