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**ALZHEIMER'S DISEASE, NONPHARMACOLOGICAL CARE  
AND THE ENVIRONMENT**

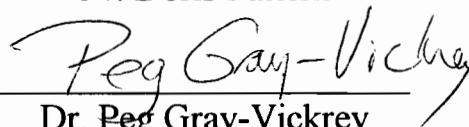
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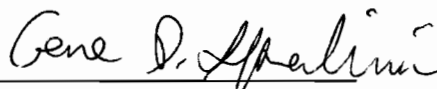
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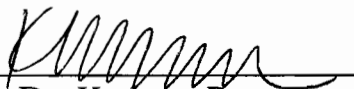
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Alzheimer's Disease, Nonpharmacological Care and

The Environment

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### **Introduction**

In 1907 Dr. Alois Alzheimer, a German physician, reported a "unique illness involving the cerebral cortex" (Shapira, 1994). His patient presented with memory loss and persecutory delusions (Shapira, 1994). This became known as Alzheimer's disease, a progressive, degenerative disease that attacks the brain and results in impaired memory, thinking and behavior (Alzheimer's Association, 1994). At that time Alzheimer's disease was considered a rare disorder (Alzheimer's Association, 1994). Since then and especially in the last two decades, considerable attention has been focused on this disease which is recognized as the most common cause of dementia in the United States (Shapira, 1994). From the onset of symptoms, the life span of a person with Alzheimer's disease can range anywhere from three to twenty years. Alzheimer's disease is always fatal (Alzheimer's Association, 1994).

At present, Alzheimer's disease (AD) affects approximately 2.5 million Americans (Yi, Abraham & Holoroyd, 1994). Epidemiological studies indicate that for individuals over the age of 65, the prevalence of AD approximately doubles every five years, rising from less than one

percent among those 60 to 65 years old, to as much as 40 percent in people over the age of 85 (Banner, 1992). AD is the fourth leading cause of death for adults, and it is the cause of death for more than 100,000 people every year. It is expected that more than 14 million people will be affected by AD by the year 2040 (Shapira, 1994).

### **Pathophysiology and Symptomatology**

The neuropathologic hallmarks of Alzheimer's disease are neurofibrillary tangles and neuritic plaques (Yi et al, 1994). Neurofibrillary tangles are made of paired filaments that are twisted in a spiral fashion and occupy the cell body of medium and large neurons, blocking the long neuronal processes by which information is transported from cell to cell in the brain (Yi et as, 1994). The formation of neurofibrillary tangles is difficult to study because they cannot be formed experimentally in animals, and because by nature, the tangles are so insoluble that analysis of their chemical structure is difficult (Banner, 1992). A major component of the tangles has been found to be a protein that normally binds together the microtubules in axons. Due to the presence of the ApoE genes, these proteins become detached from the

microtubules and accumulate in the neurofibrillary tangles (Banner, 1992; Baker, 1994).

The amyloid plaques or neuritic plaques that form in the brain, cluster around the ends of neurons in the cerebral cortex and hippocampus (Banner, 1992). The accumulation of the plaques causes a decrease of synaptic connections and death of neurons which cannot be replaced (Banner, 1992). As the numbers of neurofibrillary tangles and neuritic plaques increase, the symptoms of Alzheimer's disease also increase (Burns & Buckwalter, 1988).

Some of the gross structural changes that occur in individuals with Alzheimer's disease are also seen in normal aging. Normal aging is characterized by gradual atrophy in the brain, including a 7% to 8% decrease in brain weight, decreased brain water content, narrowing of the cortical gyri, widening of the sulci, meningeal thickening, ventricular enlargement, and decreases in certain neurotransmitters (Yi et al, 1994). Studies have shown that the decrease in brain weight normally seen in aging is 10% greater in patients with Alzheimer's disease (Yi et al, 1994). The cortical grey matter decreases by as much as 15% (Yi et al, 1994).

A loss of hemispheric white matter also occurs and may equal or exceed that of the grey matter loss (Yi et al, 1994). The normal age-related shrinkage of large neurons in the cerebral cortex is more pronounced in AD (Yi et al, 1994).

**Symptomatology**

The symptoms displayed by the patient with Alzheimer's disease vary depending on the progression of the disease. Eileen Driscoll (1994) outlined the progress of AD in four phases in which symptoms and behaviors are grouped according to how much deterioration has occurred, (see Table 1).

**Table 1**

**The Phases and their Symptoms**

Phase I	Prediagnosis (forget, early confusion -forgetful of names, events, phone numbers -lost in familiar surroundings -difficulty telling time -difficulty making decisions -lack of spontaneity -easily angered, irritable -aware of losses -may express concern
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## Alzheimer's Disease 6

Phase II	<p>During and after diagnosis (Early dementia)</p> <ul style="list-style-type: none"> <li>-word-finding problems</li> <li>-reverts to earlier language</li> <li>-difficulty following story line</li> <li>-abstract thought impaired</li> <li>-planning &amp; problem solving impaired</li> <li>-forgets routine tasks, hygiene</li> <li>-loses items and claims stolen</li> <li>-complains of neglect</li> <li>-distractable, decreased attention span</li> <li>-refuses help with ADL's</li> <li>-decreased ability to handle finances</li> <li>-overt anxiety</li> <li>-uses denial to cope</li> <li>-restless, impatient</li> <li>-social skills may remain</li> </ul>
Phase III	<p>Early to middle dementia</p> <ul style="list-style-type: none"> <li>-gait changes, small steps, halting</li> <li>-increased rigidity</li> <li>-intolerance to cold</li> <li>-bowel and bladder incontinence</li> <li>-decreased ability to read, do math</li> <li>-decreased ability in purposeful movement</li> <li>-decreased ability to recognize objects</li> <li>-perseveration</li> <li>-wandering</li> <li>-immodesty</li> <li>-swallowing problems</li> <li>-actively resists help with ADL's</li> <li>-affect flat</li> <li>-paranoia</li> <li>-agitation</li> <li>-hallucinations and delusions</li> <li>-violent behavior</li> </ul>
Phase IV	<p>Late dementia</p> <ul style="list-style-type: none"> <li>-seizures</li> <li>-myoclonic jerking</li> <li>-severe loss of body weight</li> <li>-slow movements</li> <li>-automaticisms, lip smacking</li> <li>-indifference to food</li> <li>-little response to stimuli</li> <li>-loss of verbal abilities</li> <li>-use of agitation to communicate</li> </ul>

(Driscoll, 1994)

The changes in symptom and behavior can be related to the specific parts



of the brain that are affected. Nerve cell loss is seen in the frontal, temporal, parietal, and occipital lobes of the cerebral cortex. The normal functions of the cerebral lobes are displayed in Table 2.

With damage to the frontal lobe we see forgetfulness and difficulty making decisions in the pre-diagnosis stage. In the early and middle stages, the changes include decreased problem solving ability, decreased attention span, gait changes, increased rigidity and decreased ability to move purposefully. In the late stages, damage to the frontal lobes cause myoclonic jerking and slow movements. Damage to the parietal lobes produces intolerance to cold, difficulty following a storyline, and decreased ability to understand and express language. Damage to the temporal lobes causes symptoms such as hallucinations or delusions due to the changes in interpretation of sensory experiences. Damage to the occipital lobes produces decreased ability to recognize objects. This may result in a client with Alzheimer's disease calling a simple object like a fork "something you eat with" or something completely different than a fork.

**Table 2**

**Functions of the Brain**

Lobe	Function
Frontal Lobes	<p><u>Motor areas</u> control movements of voluntary skeletal muscles</p> <p><u>Association areas</u> carry on higher intellectual processes such as those required for concentration, planning, complex problem solving, and judging the consequences of behavior</p>
Parietal Lobes	<p><u>Sensory areas</u> are responsible for the sensations of temperature, touch, pressure, and pain from the skin</p> <p><u>Association areas</u> function in the understanding of speech and in using words to express thoughts and feelings</p>
Temporal Lobes	<p><u>Sensory areas</u> are responsible for hearing</p> <p><u>Association areas</u> are used in the interpretation of sensory experiences and in the memory of visual scenes, music, and other complex sensory patterns</p>
Occipital Lobes	<p><u>Sensory areas</u> are responsible for vision</p> <p><u>Association areas</u> function in combining visual images with other sensory experiences</p>

(Hole, 1987)

**Etiology**

At this point, the cause of Alzheimer's disease is unknown. There are several hypotheses about possible causes of AD which are being investigated, however, no single cause has been identified (Yi et al, 1994). Certain environmental factors such a head trauma, high levels of aluminum, and viral or infectious agents have been implicated in the

onset of Alzheimer's disease. Head trauma, as seen in boxers who have suffered repeated blows to the head in the ring have developed an AD type of dementia called "dementia pugilistica" (Burns & Buckwalter, 1988). Although the relationship between head trauma and development of AD is still inconclusive, there are many similarities between the pathologic changes that occur in AD and those found in "battered brains" (Burns & Buckwalter, 1988).

The neurofibrillary tangles and neuritic plaques found in AD have been associated with high levels of aluminum (Burns & Buckwalter, 1988). The careful study of the relationship of aluminum to AD has resulted in differing interpretations from researchers. The evidence supporting aluminum toxicity comes from the investigation of kidney dialysis and microscopic study of neurofibrillary tangles and neuritic plaques (Shapira, 1994).

Clients who undergo kidney dialysis may experience a progressive intellectual deterioration, speech abnormalities, myoclonic jerking of muscles and abnormal electroencephalograms due to aluminum toxicity. Although this is a clear example of how aluminum toxicity could cause

dementia however, these symptoms differ from what is observed in clients with AD (Shapiro, 1994).

Staining the plaques and tangles from the brains of AD patients reveals the presence of aluminum. When aluminum is administered experimentally however, the neurofibrillary tangles differ in appearance from those of AD (Shapiro, 1994). As a result, many researchers now believe that aluminum deposits are the result of cell death, rather than the cause of the formation of neurofibrillary tangles and neuritic plaques (Burns & Buckwalter, 1988).

Evidence for the viral hypothesis is weak. The fact that diseases like Creutzfeldt-Jakob disease and kuru are transmittable neurodegenerative diseases has generated the hypothesis that other dementias, including AD, may be related to viral infections (Yi et al, 1994). Even in animal models, the disease scrapie forms a plaque similar to those found in AD (Burns & Buckwalter, 1988). Although several diseases that can cause dementia are believed to be caused by slow viruses, no specific virus has been consistently associated with AD (Burns & Buckwalter, 1988).

Abnormalities of the immune system have also been cited as possible causes of Alzheimer's disease (Burns & Buckwalter, 1988). Studies have identified autoimmunologic problems and problems with immunoregulation in patients with AD, however, these findings are not conclusive and it is unlikely that autoimmune problems specific to AD constitute the primary cause of the disease (Yi et al, 1994).

One of the most interesting hypotheses is the genetic hypothesis. Progress has been made in this area in identifying possible gene sites for ApoE, the amyloid protein precursor on chromosomes 14, 19, and 21 (Baker, 1994; Yi et al, 1994). According to Baker (1994), there are "good" forms and "bad" forms of ApoE. The good form, ApoE2, keeps the growth of lesions in check or prevents their growth (Baker, 1994). The bad forms or the variant, ApoE4 allows the growth of plaques and tangles which scramble communications between nerve cells and lead to dementia (Baker, 1994). The amyloid protein precursor causes the formation of the amyloid protein frequently found in the neuritic plaques consistently found in AD clients (Yi et al, 1994).

### **Nonpharmacological Treatment**

There are two different types of treatment available for patients with Alzheimer's disease: pharmacological and nonpharmacological.

Pharmacological treatment involves the use of medications such as certain antipsychotics, which may be prescribed to decrease behavioral problems and drugs such as cognex which prevent or delay the cognitive dysfunctions (Curchoe, 1994). This paper will focus on the non-pharmacological or non-medicinal treatments for AD, due to the copious amount of information available on the topic.

### **Reality Orientation and Validation Therapy**

Nonpharmacological treatments often involve the use of certain activities and the use of therapies such as reality orientation and validation therapy. Reality orientation and validation therapy are two very different approaches in treating the memory loss that occurs in Alzheimer's disease. The aim of reality orientation is to make the client aware of the place, time, and person to enhance memory through the use of verbal cues and signs and other environmental cues (Stokes & Goudie, 1990). One study by Ratcliffe (1988) measured subjects' response to reality orientation using the Holden Communication Scale which

measures conversation, awareness, knowledge and communication during treatment. Results of this study showed improvement in the subjects in each of the areas, supporting the effectiveness and ease of implementation of reality orientation.

While Ratcliffe's findings suggest that reality orientation is beneficial to the Alzheimer's patient, however, Bleathman and Morton's (1988) findings offer conflicting results. According to the study by Bleathman and Morton, constantly reorienting clients may only cause increased disorientation and agitation. Validation therapy was developed from dissatisfaction with reality orientation (Bleathman & Morton, 1988). This type of therapy focuses on the actual meaning of clients words and the feelings that the client is experiencing instead of ignoring the clients feelings or emotions as in reality orientation (Scanland & Emershaw, 1993). Validation therapy may be more appropriate for some clients because of their level of disorientation and emotional need to escape from reality (Bleathman & Morton, 1988).

The results of research on validation therapy lack scientific support (Scanland & Emershaw, 1993). A study by Scanland & Emershaw

(1993) revealed no significant differences between the use of reality orientation and validation therapy. Clients who scored below 24 on the mini-mental state examination were divided into groups, each receiving one of reality orientation or validation therapy. (Scanland & Emershaw, 1993). Pre- and post-tests were done using the mini-mental state examination to assess mental status, the Katz Index of ADL Evaluation to measure functional status, and the Modified Beck Depression Inventory to determine level of depression (Scanland & Emershaw, 1993). The reality orientation group and the validation therapy group each received four months of structured therapy in a classroom-like setting, and both groups were led by the same registered nurse who had a background in group psychotherapy (Scanland & Emershaw, 1993). The study revealed no significant differences of the means in pre- and post-test scores for mental status or functional status (Scanland & Emershaw, 1993). Post-depression mean scores revealed a slightly higher degree of depression (Scanland & Emershaw, 1993).

### **Activities**

Involvement in enjoyable and meaningful activities is often



beneficial for the client with Alzheimer's disease. Activities that are relevant to the interests of the patient's life can promote a sense of well being and self-esteem of the patient (Sheridan, 1987). Although it may seem that the clients with advanced AD are unresponsive, there are a variety of ways to stimulate those who are in the late or fourth stage of dementia (Stokes & Goudie, 1990). Some things persons with late dementia may respond well to, or that may be meaningful to these clients, are quiet music, evocative smells, having a hand held, and having special textures of sheets, pillows, cushions or clothing (Stokes & Goudie, 1990). Creativity and innovation are the key to adapting activities to suit individual patient abilities. The remainder of this paper will address activities that are most beneficial to clients with early to middle dementia.

### **General Guidelines**

The most successful activities in early to middle AD take advantage of old skills, offer social interaction, allow considerable physical activity, and support cognitive functions (Sheridan, 1987). Activities should be short and simple with few verbal instructions, have a 20 to 30 minute duration due to decreased attention span of clients, have

few distractions, be flexible, and be on the highest level possible depending on the degree of impairment of the client (Stokes & Goudie, 1990).

Certain activities have been found to be more useful than others in working with clients with Alzheimer's disease. Some of the more successful activities discussed in the literature are: music therapy, exercise, art therapy, and reminiscence. These activities have been found to be both enjoyable for the client and in some cases improve certain behaviors.

### **Music Therapy**

Music therapy is an appropriate activity for clients with AD because it does not require that the client have a long attention span or have good coordination (Sheridan, 1987). Old songs and melodies are useful in sparking old thoughts, imagery and feelings. Music can also create new thoughts and feelings or cheer up or relax clients (Sheridan, 1987). Different types of music can touch parts of the self that are unreachable by other means (Sheridan, 1987). Clients with Alzheimer's disease can be involved in music therapy by playing simple instruments,

simply listening to music, participating in sing-alongs, and even making movements to music (Sheridan, 1987).

Music therapy is one of the most successful activities for clients with AD (Sheridan, 1987). Research has found that Alzheimer's patients retain musical perception even into the later stages of the disease. Bright (1987) identified music as a powerful precipitate for pleasant or unpleasant memories in clients with AD. Music that evokes pleasant memories which will produce a soothing effect on the agitated patient. In a study by Cohen-Mansfield, Werner, and Marx, (1989) 24 cognitively impaired subjects were observed for the frequency of agitated behaviors within their social and physical environment. This study included observations with and without music, although type and frequency was not controlled. Subjects were observed for a three-minute interval during each hour of the day for approximately three months. Although the results were not statistically significant, there was a reduction in the manifestation of four agitated behaviors when subjects were exposed to music: strange movements, strange noises, requests for attention, and aggressive. A limitation of this study was that type and frequency of

music was not controlled.

A study by Gerdner and Swanson (1993) revealed that there are positive effects when music is utilized on an individualized basis. Five patients between 70 and 99 years of age who exhibited agitation and presence of mental confusion were selected from a nonprofit retirement complex. The Modified Cohen-Mansfield Agitation Inventory was used to document agitated behavior before, during, and after intervention with music. Each client was individually assessed and results were compared. Several of the clients in this study were positively affected by the use of music therapy. Music in this study was selected to fit the preferences of each individual client. Four out of five clients showed a decrease in agitation following intervention.

### **Exercise**

Exercise offers the client with Alzheimer's disease the opportunity to maintain a good level of fitness. Often the overall activity of Alzheimer's patients is decreased, leading to the reluctance to move at all or to restless pacing (Sheridan, 1987). Because clients with Alzheimer's disease have a tendency to repeat movements, Grossman (1990)

recommends activities which are repetitive such as pass the ball, bowling, dusting, vacuum cleaning, or beating eggs. Studies by Ebel (1992) have shown that exercise can provide mental stimulation, maintain or increase functional capacity, enhance appetite, improve quality of sleep, help alleviate depression, reduce disruptive behaviors, and provide a feeling of success and accomplishment. Adequate exercise helps relieve feelings of tension and anxiety, and patients are much calmer as a result (Miziniak, 1994). Exercise has been shown to help confused clients sleep better at night (Miziniak, 1994). Research has shown that a 15-minute walk has the same effect as a tranquilizer on muscle tension (Miziniak, 1994).

Friedman and Tappen (1991) studied thirty patients with moderate or severe cognitive impairment due to AD. There were two groups of patients; one group where patients walked thirty minutes three times per week while talking with an investigator and another group where patients spent the time talking with an investigator but not walking (Friedman & Tappen, 1991). Friedman and Tappen (1991) theorized that because the neurons that control the activities of talking and walking are located in the motor areas of the cerebral cortex, walking might somehow improve

communication. The study showed that after ten weeks of treatment the group that walked showed improvement on tests of communication skills while the other group did not (Friedman & Tappen, 1991). It was concluded that this type of exercise is beneficial and improves communication skills in patients with AD (Friedman & Tappen, 1991)

### **Art Therapy**

Crafts or artistic activities are often an integral part of an activity program. Research into art therapy in the geriatric setting is scant, however, there is some evidence that it enhances mental health and well being of these clients (Wadson, Durken, & Perach, 1989). Projects must be chosen carefully with the interests and capabilities of the patient in mind. Projects should be simple, utilizing materials that are easily manipulated by the client. The length of time it takes to complete a project must also be taken into consideration due to the decreased attention span of the client (Sheridan, 1987).

The primary goal of art therapy is to help offset the losses suffered by victims of dementing illnesses such as AD in intellect, memory, speech, and physical abilities by providing activities at which the client

can succeed (Wadeson, Durken & Perach, 1989). The client can take pride in the personal accomplishment as long as the therapist creates an environment geared toward success by eliminating extraneous distractions, minimizing functional deficits, and providing encouragement and definition to attempts at artistic expression (Wadeson, Durken & Perach, 1989). Patients with previous abilities in art have a special area where they can excel and get recognition and complements from patients and staff, which boost their self esteem (Wadeson, Durken & Perach, 1989).

Sterritt and Pokorny (1994) performed a study of eight patients with AD to determine whether these cognitively impaired clients could benefit from participation in art activities. The interventions consisted of one-hour sessions of art activity using cut paper in a variety of colors and patterns (Sterritt & Pokorny, 1994). During the client's participation, observation and interview were used to determine whether the activity was pleasurable or meaningful (Sterritt & Pokorny, 1994). The results indicated that art activities helped the elderly demented patients experience flow and achieve greater control, and that these activities led to increased interaction with group members (Sterritt & Pokorny, 1994).

Art dramatically illustrated knowledge the patients in this study had about themselves and their past (Sterritt & Pokorny, 1994).

### **Reminiscence**

Reminiscence allows clients to relive and rethink the past, putting memories into larger perspective and tempering them with other experiences (Sheridan, 1987). It also enables the listener to understand part of a client's mind (Sheridan, 1987). Research shows that many persons go through a process of reviewing their lives in the later years of life (Sheridan, 1987). Many clients with AD have vivid memories of the past and can recall life events with marked clarity (Sheridan, 1987). It is the nature of the disease that recent memory loss is very profound while long term memory remains intact particularly throughout the early stages of disease (Soltys & Coats, 1994). According to Sheridan (1987), reminiscence is successful for a number of reasons:

1. It is a relatively non-threatening activity since clients usually feel the most secure and confident in discussing their past.
2. Exploring the past can serve as a substitute for active



present experiences.

3. Reminiscence helps to validate contributions the client has made throughout his life (Sheridan, 1987).

Themes that may be utilized in reminiscence include home, school, pets, sports, vacations, romance, and work (Sheridan, 1987).

Activities are an essential part of the treatment of Alzheimer's disease. The environment in which the client with AD lives is also an important part of therapy and maintenance of the highest quality of life possible for the Alzheimer's sufferer.

### **The Environment and Special Care Units**

Alzheimer's disease alters a person's ability to relate to the environment in fundamental ways (Roberts & Algase, 1988). Understanding of the specific alterations in ability to relate to the environment allows for modification of the environment which may maximize the ability of the person with AD to function more efficiently for longer periods of time (Roberts & Algase, 1988). Studies have suggested that cognitively impaired persons' functional capacity, self respect, and dignity can be maintained and increased in special

environments (Namazi et al, 1991).

The concept of person-environment fit as developed by Lawton (1975), is derived from systems theory, which emphasizes the inter-relatedness of systems and their subsystems (Lawton, 1975).

Dysfunctional and socially inappropriate behaviors of patients with AD can be more easily understood in terms of person-environment fit, in that impairment of ego-sensory, perceptual, and cognitive processes affect overall performance within specific environments (Lawton, 1975). Active readjustment for AD patients often is expressed in behaviors that are considered dysfunctional, such as wandering or refusal to perform self-care activities (Lawton, 1975). Therapeutic interventions focus on facilitating accommodation by modifying the environment to reduce demand on the AD patient's cognitive abilities (Lawton, 1975).

Based on the notions of person-environment fit, Hall and Buckwalter (1987) proposed that nursing home residents with AD need to have environmental demands modified because of their declining abilities, and as a result developed the Progressively Lowered Stress Threshold Model (PLST). The PLST model emphasizes reducing stress by

modifying environmental demands, thereby promoting functional adaptive behavior on the part of the person with AD (Hall & Buckwalter, 1987).

This model includes the notion of controlled or managed environmental stimuli which are specific to individual victims of AD (Hall & Buckwalter, 1987). Stress from environmental and internal demands causes the client with AD to be anxious (Maas et al, 1994). If the stressful stimuli are allowed to continue or increase, the patient's behavior becomes increasingly dysfunctional and often uncontrollable (Hall & Buckwalter, 1987).

Controlling and modifying the environment in which patients with AD live, helps to improve the overall functioning of these patients. Special care units have a modified environment which decreases stressful stimuli such as ringing telephones, piercing alarms, loud conversation, scurrying health care workers, and irritating bright lighting which typically can be found on the traditional nursing home unit (Millard, 1989). Other environmental modifications include reducing prints and patterns on floors, walls, and furniture, and covering floors with carpet to reduce glare (Buckwalter, 1990). According to Berg and his associates

(1991), special care units (SCU) are designed to:

1. Evaluate potential residents with regard to their medical and psychiatric needs;
2. Reevaluate the resident frequently for their needs and for evidence of excess disabilities, other illnesses, or medication effects that may increase or exacerbate dementia;
3. Establish a secure, dignified, stable, and personalized environment and secure freedom without inappropriate barriers but with redundant or repetitive cuing and signs;
4. Attend to the individual resident's customary routines, valued rituals, and quality of life;
5. De-emphasize the traditional medical thrust of nursing home care and promote activity and social components of care;
6. Integrate environment and meaningful specialized programs that assist the cognitively impaired individual both to maximize their level of cognitive and physical functioning

and to allow them to feel productive, useful and less dependent;

7. Encourage appropriate resident autonomy and social interaction with other residents, family and staff;
8. Train, supervise and support staff to provide "loving management" that rewards acceptable behaviors and ignores unacceptable behaviors;
9. Analyze problem behaviors of residents in order to find and correct probable causes whenever possible;
10. Provide programs for staff development, goals, and awards to promote staff satisfaction and stability;
11. Help the family of the impaired individual initially by setting reasonable, mutually acceptable expectations and defining the units goals and programs thereafter by providing counseling and support groups; and
12. Maintain family involvement in care and decision making when appropriate.

It is appropriate to reiterate the importance of the use of activity in Alzheimer's care. Activities are an essential part of programming in

special care units (Maas, Swanson & Buckwalter, 1994). It is through activities that clients are kept occupied and purposefully engaged (Maas, Swanson, & Buckwalter, 1994). Most facilities prefer a consistent routine for activity from day to day (Stokes & Goudie, 1990). Some programs use a series of back-to-back, structured activities to prevent residents from having long periods of inactivity and to provide a means for exercise other than wandering (Maas, Swanson & Buckwalter, 1994).

Activities such as music therapy, art therapy, reminiscence and exercise, are commonly found on Alzheimer's special care units. Traditional nursing home settings tend to utilize activities which include new learning, precise directions, current events discussion, and residents' councils which are usually inappropriate for cognitively impaired Alzheimer's patients (Berg et al, 1991).

There is some controversy as to whether special care units are effective or even a good idea. On one side there are proponents who argue that segregated dementia units improve patient outcomes, enhance family and staff satisfaction, and improve the nursing home experience for the nondemented nursing home client (Sheridan, 1987). On the other

hand are those who believe that special care units are ineffective and unnecessarily costly (Sheridan, 1987). According to Sheridan (1987), the arguments for integrating the cognitively impaired and the non-cognitively impaired are that:

1. Frail but more able residents may act as appropriate role models for confused peers and may assist and support them in their daily lives; the confused persons may benefit from stimulation from more able residents;
2. All elderly people in residential care have the same basic needs; and
3. It is wrong to deprive dementia sufferers equal access to resources and other elderly people because of a label of dementia.

A study by Mathew, Kilby, Sloan, and Flood (1988) revealed a number of striking similarities and differences between patients in the special care unit and those in traditional nursing home settings. The study compared 13 patients from an SCU, 18 patients from a traditional nursing home unit in a facility where there was an SCU and 16 patients

from a facility without an SCU (Mathew et al, 1988). The study revealed significant differences with number of medical diagnoses being higher on the traditional nursing home setting, number of routinely administered psychotropic medications being higher on special care units, and number of clients physically restrained to be higher in traditional nursing home settings (Mathew et al, 1988).

There were no differences in scores with regard to mental status testing, functional ability, behavioral characteristics, number of patients with a standing order for psychotropic medications as needed, number of patients with an injury, fall or hospitalization within the previous four months, weight change during the four months prior to the study, number of patients losing weight in the four months prior to the study, number of patients with any documented sleep problems during the four months prior to the study, and number of patients with new decubiti documented four months prior to the study (Mathew et al, 1988).

Sheridan (1987) suggests that the arguments for segregating the cognitively impaired and the non-cognitively impaired are that:

1. Confused elderly people decrease the skills level of rational



residents who share the same accommodations;

2. Non-dementing residents are distressed and agitated by confused residents who may be noisy, disruptive, or go through or take their possessions;
3. Dementia sufferers are rejected by more able residents and thus experience a decrease in life quality; and
4. Although physical needs are common to both, confused elderly have special needs resulting from memory loss and intellectual deterioration.

Swanson, Maas, and Buckwalter (1993) performed a quasi-experimental study which compared catastrophic reactions and other behaviors of Alzheimer's residents on a special care unit with Alzheimer's residents on a traditional nursing home unit. Using the individual Incident Record the investigators recorded daily occurrences of catastrophic and other behaviors for 29 special care unit and 34 traditional nursing home setting clients (Swanson, Maas & Buckwalter).

Catastrophic reactions among the special care unit clients decreased from 156 occurrences in the pretest to 48 occurrences in the post test period

(Swanson, Maas & Buckwalter, 1993). In the traditional nursing home group, catastrophic reactions decreased from 82 occurrences in the pretest to 46 occurrences in the posttest (Swanson, Maas, & Buckwalter, 1993). A Sign Test indicated that there was a significantly greater reduction in catastrophic reactions for subjects in the special care unit group from pretest to posttest than for subjects in the traditional group (Swanson, Maas & Buckwalter, 1993).

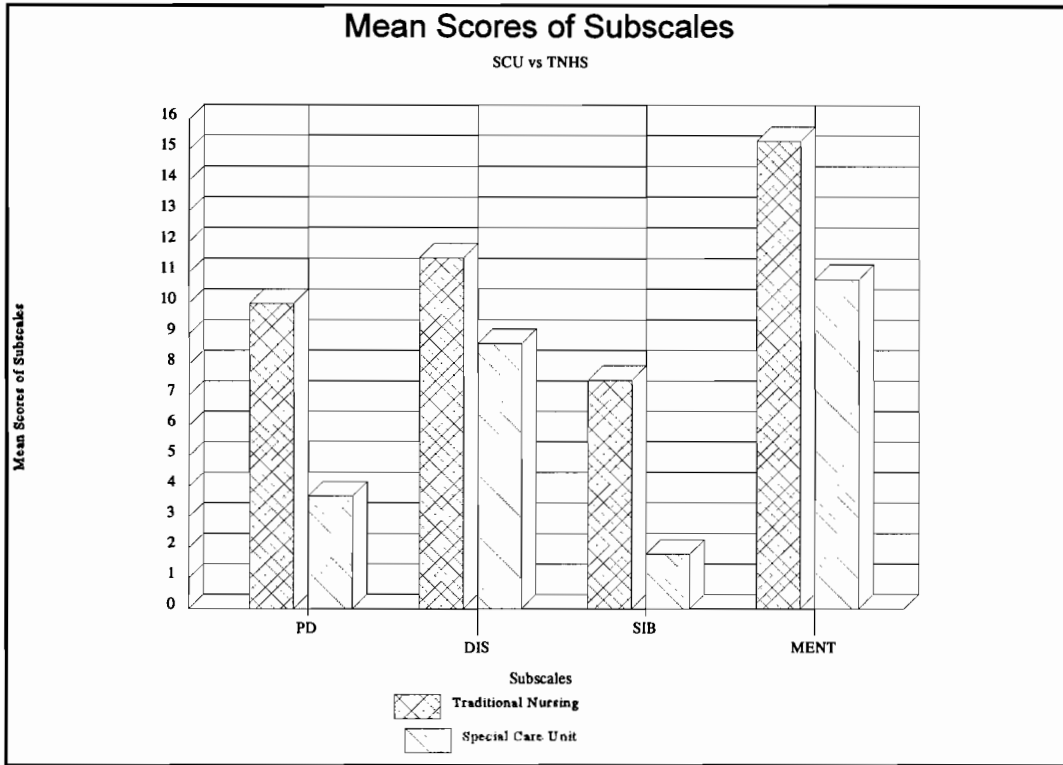
According to research by Eakin and Deen-Kargbo (1994), special care units are beneficial. This study compared nursing home residents with Alzheimer's disease that lived in a traditional nursing home unit and residents with similar degrees of deterioration on a special care unit. Six clients from a SCU and six clients from a traditional nursing home unit were selected. Criteria for inclusion included a diagnosis of Alzheimer's disease and wandering behavior. The London Psychogeriatric Rating Scale (LPRS) (Hersch, 1978) was used to assess mental, physical, behavioral, and social functioning. The LPRS was divided into four different categories: (1) social disengagement or not interacting with other residents or staff, (2) decreased levels of physical disability, (3) decreased

mental disorganization or confusion, and (4) decreased levels of socially irritating behaviors such as threatening others, taking clothes off at the wrong time or place, and taking the possessions of others.

The results of the study by Eakin and Deen-Kargbo revealed that there were a number of differences between patients in a specialized care unit and those on the traditional nursing home setting. Figure 1 illustrates the significance of these findings by comparing the mean scores for the subscales of the special and traditional nursing home settings.

Figure I indicates that levels of physical disability, social disengagement, socially irritating behaviors, and mental confusion were much higher in the traditional nursing home group than in the special care unit group.

Figure 1



The lack of environmental structure in traditional nursing home settings, creates an environment that is not desirable for clients with Alzheimer's disease. The results of this study support the need for the structured environment of the specialized care unit in decreasing physical disability, socially irritating behaviors, social disengagement, and mental disorganization or confusion. It is also apparent from this study that the overall performance of the clients is affected by the environment in which

they live.

### **Conclusion**

Management of patients with AD is complicated, requiring time, energy, and a thoughtful balancing of caregiver needs versus patient needs (Driscoll, 1994). With no known cure for Alzheimer's disease to date, management of this disease in both community and institutional settings is extremely important (Swanson, Maas, and Buckwalter, 1993). Through the appropriate use of activity, therapy, and environmental theory, nurses can enhance the quality of life for clients with AD and their families and caregivers.

### References

- Alzheimer's Association (1994). Alzheimer's disease: An overview.  
Chicago: Alzheimer's Disease and Related Disorders Association,  
Inc.
- Baker, B. (1994). Outsmarting Alzheimer's: New research may speed  
prevention drug. AARP Bulletin, 35(9), 1,14-15,17.
- Banner, C. (1992). Recent insight into the biology of Alzheimer's  
disease. Generations, 16(4), 31-34.
- Berg, Buckwalter, Chafetz, Gwyther, Holmes, Koepke, Lawton,  
Lindeman, Magaziner, Maslow, Sloane, & Teresi (1991).  
Special care units for persons with dementia. Journal of the  
American Geriatrics Society, 12,1229-1236.
- Bleathman, C. & Morton, I. (1988). Validation therapy with the  
demented elderly. Journal of Advanced Nursing, 13(4),511-514.
- Bright, R. (1987). The use of music therapy and activities with  
demented patients who are deemed "difficult to manage."  
Clinical Gerontologist, 6(2), 131-141.

- Burns, E.M. & Buckwalter, K.C. (1988). Pathophysiology and etiology of Alzheimer's disease. Nursing Clinics of North America, 23(1), 11-27.
- Cohen-Mansfield, J., Werner, P. & Marx, M.S. (1989). An observational study of agitation in agitated nursing home residents. International Psychogeriatrics, 1, 153-165.
- Curchoe, M. (1994). Alzheimer's research: An examination of pharmacological and nonpharmacological therapies. (Unpublished Manuscript).
- Driscoll, E.H. (1994). Alzheimer's: A handbook for the caretaker. Boston: Branden Publishing Company.
- Eakin, K.J. & Deen-Kargbo, A. (1994). Differences between patients on a specialized care unit and the traditional nursing home setting. (Unpublished Manuscript).
- Ebel, S. (1992). A new approach for physical therapists in long-term care of Alzheimer's patients. American Journal of Alzheimer's Care and Related Disorders & Research, 7(3), 12-18.

- Friedman, R. & Tappen, R.M. (1991). The effects of planned walking on communication in Alzheimer's disease. Journal of the American Geriatrics Society, 39(4), 650-654).
- Gerdner, L.A. & Swanson, E.A. (1993). Effects of individualized music on confused and agitated elderly patients. Archives of Psychiatric Nursing, 7(5), 284-291.
- Grossman, M. (1990). Roles of the physical therapist, occupational therapist, and recreation therapist. In L.L. Duncan (Ed.), Alzheimer's Disease: A Handbook for Caregivers. St. Louis: C.V. Mosby.
- Hall, G. & Buckwalter, K.C. (1987). Progressively lowered stress threshold: A conceptual model for care of adults with Alzheimer's disease. Archives of Psychiatric Nursing, 1, 309-412.
- Hole, J.W. (1987). Human Anatomy and Physiology (4th ed). Dubuque: Wm. C. Brown Publishers.
- Lawton, M. (1975). Competance, environmental pressure and the adaptation of older people. In: P. Wendly, T. Byerts, & F. Ernst (Eds.), Theory development in environment and aging.



Washington, D.C.: Gerontological Society.

- Maas, M., Swanson, E., & Buckwalter, K. (1994). Alzheimer's special care units. Nursing Clinics of North America, 29(1), 173-193.
- Mathew, L., Sloane, P., Kilby, M. & Flood, R. (1988). What's different about a special units for dementia patients? A comparative study. American Journal of Alzheimer's Care and Related Disorders & Research, 3(2), 16-23.
- Millard, S.M. (1989). Maintaining control of the Alzheimer's unit. Nursing Homes, 38(2), 13-16.
- Miziniak, H. (1994). Persons with Alzheimer's: Effects of nutrition and exercise. Journal of Gerontological Nursing, 20(10), 27-32.
- Namazi, Whitehouse, Rechlen, Calkins, Johnson, Brabender, & Hevener (1991). Environmental modifications in a specially designed unit for the care of patients with Alzheimer's disease: An overview and introduction. The American Journal of Alzheimer's Care and Related Disorders & Research, 6(6), 3-9.
- Ratcliffe, J. (1988). Worth a try...reality orientation. Nursing Times,

84(16), 28-30.

Roberts, B.L. & Algase, D.L. (1988). Victims of Alzheimer's disease and the environment. Nursing Clinics of North America, 23(1), 83-93.

Scanland, S.G. & Emershaw, L.E. (1993). Reality orientation and validation therapy. Jornal of Gerontological Nursing, 19(6), 7-11.

Shapira, J. (1994). Research trends in Alzheimer's disease. Journal of Gerontological Nursing, 20(4), 4-9.

Sheridan, C. (1987). Failure free activities for the Alzheimer's patient. San Francisco: Cottage Books.

Soltys, F.G. & Coats, L. (1994). The SolCos Model: Facilitating reminiscence therapy. Journal of Gerontological Nursing, 20(11), 11-16.

Sterritt, P.F. & Pokorny, M.E. (1994). Art activities for patients with Alzheimer's disease and related disorders. Geriatric Nursing, 15(3), 155-159.

Stokes, G. & Goudie, F. (1990). Working with dementia. Bichester: Winslow Press.

- Swanson, E.G., Maas, M.L. & Buckwalter, K.C. (1993). Catastrophic reactions and other behaviors of Alzheimer's residents: Special unit compared with traditional units. Archives of Psychiatric Nursing, 7(5), 292-299.
- Wadson, H., Durken, J., & Perach, D. (1989). Advances in art therapy. New York: John Wiley & Sons.
- Yi, E.S., Abraham, I.L. & Holroyd, S. (1994). Alzheimer's disease and nursing: New scientific and clinical insights. Nursing Clinics of North America, 29(1), 85-99).