RELATIONSHIP BETWEEN WORK ENVIRONMENT ON A SPECIAL CARE UNIT TO WELL-BEING OF PATIENTS WITH DEMENTIA OF ALZHEIMER'S TYPE

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Chapter I

Introduction

Caring for an individual with Dementia of Alzheimer's Type (DAT) causes tremendous stress. Loss of cognitive ability causes a change in the individual patient's life and the life of caregivers. Poor adaptation to caregiving could lead to physical or psychological abuse or neglect of the members with DAT (Phillips, 1986). Lack of success in caregiving may require that family caregivers place their family member with DAT in a long-term care facility. While there is considerable research describing the impact of caregiving on caregivers (Cohen, & Eisdorfer, 1988; Pallet, 1990; Schulz, O'Brien, Bookwala, & Fleissner, 1995), little is known about the impact of the caregiving work environment on the person with DAT.

Caregivers can be either informal or formal. Informal caregivers are family members or friends caring for the patient in the home or in an environment outside an institution. Employees are the formal caregivers who are providing care in an institutional environment. Caregivers, whether formal or informal often become overwhelmed by the physical, emotional, and/or interpersonal demands of caregiving.

Burdened informal caregivers may choose to place their family members or friends with Dementia of the Alzheimer's Type (DAT) in a long-term care facility. Placement in a long-term care facility may be in a special care unit. The special care unit is a specific environment that is designed to meet the unique needs of patients with moderate to advanced Alzheimer's disease (Holmes, 2001).

Employees on a special care unit are subject to the same physical and psychological stressors as informal caregivers but to a greater degree. The increased number of patients with DAT contribute to a stressful work environment for employees.

Success of the caregiving task within the special care unit may be related to the degree to which the employees, as a unit, can provide the necessary support for one another (Hollinger-Smith, Ortigara, & Lindeman, 2001) and the degree of family communication and participation in patient care (Maslow & Ory, 2001). If the employees and family are not successful in providing the necessary support for each other and the patient with DAT, a decline of patient well-being may result.

Significance of the Problem

Dementia in the elderly is becoming one of the nation's most pressing public health concerns. Dementia of the Alzheimer's Type (DAT) affects four million people in the United States and is the fourth leading cause of death in adults (Keane, 1994). It is a devastating disease which is progressive causing cognitive, functional and behavioral impairments. One out of every ten people over age 65, and nearly one out of every two people age 85 or older have primary degenerative dementia of the Alzheimer's type.

Because the 85 plus age group is the fastest growing segment of our population, the number of cases of dementia is expected to triple in the next 25-30 years (Carroll, 1998). Therefore, the number of caregivers delivering care to DAT members is expected to increase.

Families are required to adapt to many demands presented by the patient. Additionally, the length of time of caregiving can be extensive. Progression of the disease can last as long as twenty years. Family work must be redistributed among members because patients are frequently unable to perform family duties. Many family members have family and job responsibilities of their own, creating conflicting role demands, and little time for caregiving duties. Some families live great distances apart, limiting availability to caregiver or patient.

The primary caregiver is often a spouse who is elderly and may have physical limitations or poor health. The patient with DAT demonstrates a profound lack of judgment, lack of recall for routine objects, inability to name objects, and has limited ability to understand and express words. Patients are frequently unable to dress or use utensils. Other DAT symptoms may include restlessness, emotional lability, depression and apathy. Late in the disease process patients are incapable of self care, may display senseless use of words, and are unable to recognize self and people close to them. Patients may have hallucinations, become unable to speak, become incontinent and eventually become bedridden (Kelly & Lakin, 1988). Without adequate support from caregivers the well-being of the patient is likely to deteriorate.

Caregiving can be emotionally draining. Caregivers may be emotionally hurt because the person with DAT no longer recognizes them, calls them incorrect names, expresses neither appreciation or love, and sometimes responds angrily and is resistant to care. In addition, some families report a lack of support from other family members and a destruction of family relationships (Biegel, Sales & Schulz, 1991).

Family caregiving takes place within a historical context, since bonds of affection and reciprocity that sustain caregiving took roots in past relationships. Both recipient and giver of care bring history of interactions that may enhance or detract from the current relationship. Pre-morbid relationships marked by ambivalence, dislike, resentment, or conflict hold little promise for emotional satisfaction for the caregiver or receiver (Pallet, 1990). Is it in the best interest of the patient to be a part of this type of relationship? Would placement on a special care unit be a better choice for this individual?

Twenty percent (20%) of the long-term care facilities in the United States maintain special care units that are targeted to meet the needs of persons with demented illness (Leon, Cheng, & Alvarez, 1997; Holmes, Teresi, and Monaco, 1992). According to these authors, special care units are supposed to provide: specialized environments tailored to meet the needs of persons with dementia; tailored activity programs; staffing levels that are responsive to resident need; care planning that is continuous, detailed, and flexible; families that are involved to the maximum feasible extent in care planning and implementation; and have specific admission and discharge criteria.

The unifying goal of special care units is to provide an environment that enhances the quality of life (well-being) of each resident. Many factors make studying special care units challenging. One has to do with the way the environment is conceptualized which may be either global, macro, micro, or discrete (Altman, & Rogoff, 1987; Wiseman, Calkins, & Sloane, 1994). The second factor relates to the diversity of the care setting that the person with dementia resides in whether it is a home-like or institutional-like environment. A third factor is related to satisfaction of employees in the environment (Hollinger-Smith, Ortigara, & Lindeman, 2001). It is important to recognize that the physical environment does not exist in a vacuum but rather as an integral part of the holistic system which includes the employees, family, friends of the patient, and the patient.

The perception of work in a long-term care environment is that it is difficult and unattractive, which makes careers in this environment less desirable than many others. Working with cognitively impaired residents who have multiple functional impairments, requires caregivers who are patient, persistent and committed to these frail elders (Wunderlich, Sloan, & Davis, 1996). Therefore, institutions with special care units face many challenges when trying to provide a supportive environment for patients with DAT. Challenges include: poor salaries; inadequate benefits; insufficient staffing and inadequate numbers of professional staff; poor working conditions; lack of education and chances for promotion; poor relationships with supervisors and co-workers; lack of staff member involvement in decision making; lack of training for staff; and high staff turnover rates (Hollinger-Smith, Ortigara, & Lindeman, 2001).

Ideally, formal and informal caregivers in a special care unit environment can support the well-being of the patient with DAT. A supportive environment would focus on individualization of care, provide programs to promote maximum physical and functional ability, foster social interaction, and provide an environment which decreases problem behaviors and enhances well-being.

Purpose of the Study

The purpose of this study is to explore the relationship of the work environment on a special care unit to the level of well-being of a patient with Dementia of Alzheimer's Type. Additionally, demographic variables including: age; gender; educational level; ethnicity; and length of time caregiving will be measured as they relate to the level of patient well-being.

Research Questions

The research questions that guide this study are:

1. Is the employee's work-related stress related to the level of patient well-being?

2. Is the employee's problem solving ability related to the level of patient well-being?

3. Is the employee's level of communication related to the level of patient well-being?

4. Is the level of employee's work closeness related to the level of patient well-being?

5. Is the level of employee's work flexibility related to the level of patient well-being?

6. Is the level of employee's work satisfaction related to the level of patient well-being?

7. Is the perceived level of family communication related to the level of patient well-being?

8. Is the level of patient's weight change related to the level of patient well-being?

9. Is the level of patient stress behavior related to the level of patient well-being?

10. Is the level of patient social interaction related to the level of patient well-being?

11. Is the level of patient function related to the level of patient well-being?

Theoretical Framework

The caregiving environment for patients with DAT is complex. In order to better understand what potential factors could be related to patient well-being, this study has been guided by general systems theory.

General Systems Theory

In systems theory it is not possible to separate patient, family, and environment. The systemic view of families takes into account the environments in which particular families are located. For the purposes of this study family is considered to include formal caregivers, informal family caregivers and the patient with DAT. The family caregiving experience could be very different depending on any combination of the micro and macro environmental influences.

No assumption is more fundamental to systemic thinking than that of Wholism. "The whole is greater than the sum of its parts." A caregiving family system therefore, cannot be assessed by doing individual level assessment alone and no one part of the system can control the system (Boss, Doherty, LaRossa, Schumm, & Steinmetz, 1993).

The caregiving family system is responsible for regulating boundaries, managing change in caregiving family structure, managing identity tasks, the emotional climate of the caregivers and care-receiver, devising strategies to meet the basic needs of each member and providing for the maintenance of the residence. The caregiving family system is structurally complex. It comprises multiple subsystems, is goal directed, has purposes and tasks that must be fulfilled. The central task in this study is providing care for a member with DAT.

The notion of boundary is essential to systems thinking. Boundaries determine what or who is included as part of the system and what or who is not a part of the caregiving family system. Boundaries are said to be either open/closed or permeable/non-permeable. The degree of permeability relates to the amount of matter, energy, or information that is allowed into or out of the system. Caregiving families then control information and either extreme (too much or too little information), is not desirable.

The concept of boundary in caregiver families is operationalized in one of two ways: 1) by an assessment of the internal cohesion of the caregiver family (Constantine, 1986); or (2) by the level of emotional connectedness among caregiver family members (Olson, Sprenkle & Russell, 1979).

Caregiver family patterns are another interesting concept in systems theory. Patterns are repeated and maintained in response to negative feedback. Negative feedback is very important to the stability of the system. Positive feedback stimulates or influences the system to change. A balance of both positive and negative feedback is desirable. When faced with a new challenge in "caregiving" the caregiver family may attempt to act in familiar ways until those strategies are not effective and then the information becomes positive feedback requiring the caregiver family to change, hopefully in a more effective manner. If the caregiver family continues to behave in a manner consistent with negative feedback the caregiving experience may be very unsatisfactory for all members of the family.

All caregiver families must facilitate the development of a sense of identity for the family as a whole and for individual family members. Within the family system individuals obtain information about their personal qualities, attributes, and about their strengths and weaknesses. This information serves as the foundation of self-concept. From a conceptual point of view, a highly functional family promotes well-being and esteem of individual family members.

Caregiver families are responsible for managing the emotional climate of the family in such a way as to promote the emotional and psychological well-being of family members. In order to manage the emotional climate, families must develop strategies for nurturing and supporting all members for promoting togetherness and developing rules for managing conflict. Psychological well-being has also been equated with the absence of depression (Pruchno, Kleban, Michaels, & Dempsey, 1990; Russo, Vitaliano, Brewer, Katon & Becker, 1995; Schutz & Williamson, 1991). Effective strategies result in family members feeling nurtured, supported and valued by other members of the family. Families who are successfully managing the emotional climate would also work cooperatively toward the goal of caregiving.

Additionally, caregiver families must provide for the basic needs such as food, water, shelter, education, and maintenance of the residence. Adequate provision of these physical needs must be in place for adequate caregiver family functioning.

Caregiving for an ill family member is stressful. How well caregivers deal with stress and change is important to overall family function. Changing needs from outside the system or from within the system, introduces stress to the system. Stress informs the system whether current interaction patterns are adequate, or whether change or reorganization of the system is required. Thus, stress, openness, adaptability and family functioning are linked. Less effective caregiver systems fail to make the necessary adaptations or they make unnecessary adaptations, while effective and functional caregiver systems maintain stability and balance it with flexibility (Sabatelli & Bartle, 1995).

In summary, family systems theory provides a framework for multi-level assessment of caregiver family function as it relates to care of patients with DAT. The independent variable for this study is the work environment on a special care unit and the dependent variable is the level of function of the patient with DAT. In addition, the influence of family communication as perceived by the formal caregivers, is treated as an intervening variable.

Importance of the Study

This is a exploratory descriptive, and correlational study that is designed to investigate the relationship of the work environment on a special care unit to the level of well-being of a patient with Dementia of Alzheimer's. Results will help administrators' employees and gerontologists working on special care units in long-term care facilities identify work environmental factors that may influence the level of well-being of the patient with DAT.

There is no cure for DAT at this time. Biomedical research will continue to look for a cure. In the meantime, facilitating the patient to achieve the highest level of well-being within the limits of the disease process seems to be the optimal goal. Family scientists, health care professionals and gerontologists should be knowledgeable about the caregiving experience on a special care unit. This knowledge should aid in the development of improved special care work environments in long-term care facilities.

Definitions of Terms

Specific terms used in the study will be defined as follows:

Dementia of Alzheimer's Type: Alzheimer's disease causes a decline in cognitive function: "This decline is manifested by impairments in recent and remote memory, concentration, judgment, language, abstract thinking, and constructional ability. Manifestations also include disorientation to time and place, social withdrawal, wandering, suspiciousness and paranoia, changes in sleep patterns, increasing agitation and belligerence, flat affect, loss of interest in activities, and functional losses in activities of daily living that require ongoing assistance", (Buckwalter, Gerdner, Hall, Stolley, Kudart, & Ridgeway; 1995, p. 11).

Family: The family can be defined as a complex structure consisting of an interdependent group of individuals who (a) have a shared sense of history, (b) experience some degree of emotional bonding, and (c) devise strategies for meeting the needs of individual family members and the group as a whole (Anderson & Sabatelli, 1995). For the purposes of this study the family includes: formal caregivers (employees); informal caregivers (family); and patients with DAT.

Well-being: Well-being is a construct that was developed for the purpose of this study and includes: (1) the level of social interaction; (2) the frequency of stress-related behaviors; (3) patient weight change; and (4) level of functional ability. Functional ability for the purposes of this study will be measured by the FAST scale (Reisberg, 1988).

Work Environment: Work environment is described as: (1) work stress; (2) problem solving; (3) communication; (4) closeness and flexibility; and (5) satisfaction as experienced by employees (formal caregivers) of a special care unit in a long-term care facility. Work environment will be measured by an instrument developed by (Fournier, Champ & Cruser, 1991) this scale is an adaptation of the Coping & Stress Profile (Olson).

Perceived Family Communication: Perceived family communication will be measured by a "Family Communication Scale" which is included in the Coping & Stress Profile (Olson et al., 1985) and will measure family communication as perceived by employees on special care units.

Special Care Unit: Special care units are located within long-term care facilities. They are designed to provide: specialized environments tailored to meet the needs of persons with dementia; tailored activity programs; staffing levels that are responsive to resident need; care planning that is continuous, detailed, and flexible; families that are involved to the maximum feasible extent in care planning and implementation; and have specific admission and discharge criteria (Holmes, 2001, p. 29).

Chapter II

Literature Review

Introduction

The review of literature will be organized around the conceptual model developed by the researcher for this study. This conceptualization was developed for this study from current literature and guided by General Systems Theory as previously discussed. The conceptual model appears in Appendix A.

Special Care Units

The concept of special care units (SCUs) for people with Dementia of the Alzheimer's Type (DAT) grew dramatically from the mid-1980's through the 1990's and into 2000. According the a report by the U.S. Agency for Health Care Policy and Research (AHCPR, 1990), in 1987 eight percent of the 1668 nursing homes had at least one special care unit for people with DAT. This same group reported that in 1987, 42 percent of all nursing home residents (637,600 individuals) had dementia (AHCPR, 1990).

Early in 1990, the U.S. Office of Technology Assessment (OTA) conducted a study for the Alzheimer's Association. The study found that there was no evidence of widespread problems with special care units, and no research to support that SCUs were more effective than non-specialized nursing home units for people with dementia. The report concluded that there was a need for evidence-based information about special care units (1992).

These studies helped to formulate a national research effort which laid the foundation for a 2 million dollar research effort sponsored by the National Institute on Aging (NIA). The research addressed the magnitude, nature and effects of specialized dementia care in nursing home settings (Maslow & Ory, 2001). Many other research Projects were developed over the decade between 1990 and 2000 but only a few will be discussed here.

Characteristics of Special Care Units

Leon (1998) identified the following characteristics of special care units (SCUs): segregated in terms of cognitive impairment and/or behavioral challenges; controlled entry and egress; formal admission and discharge criteria; modified environment to compensate for memory loss; designated unit leadership; specialized ongoing staff training and support; specialized activity programming; and specialized family programs. However, in 1990, only about 50 percent of the nursing homes reported that the SCUs had all of these features (Leon, Cheng, & Alvarez, 1997).

Research on Patient Outcomes in SCUs

Research has been done on cognitive, behavioral and functional outcomes on patients with dementia in special care units. Outcomes demonstrated that SCUs were moderately effective in changing certain processes of care that were associated with more positive behaviors and affect (Kutner & Bliwise, 2000; Van Haitsma, Lawton & Kleban, 2000). These author's reported an increase in engagement and sociability and displays of pleasure among dementia residents on SCUs.

Research on Impact of Family Involvement to Patient Outcomes in SCUs

Families who place their relatives in an SCU have generally expressed higher satisfaction with care than have families of residents who are cared for in non-SCUs (Grant & Ory, 2000). However, family partnership programs can increase family involvement in care activities but that does not necessarily lead to increased satisfaction (Murphy, Morris, & Kiely, 2000). Additionally, family members report that communication between caregivers and family members is essential for those being cared for. Families are able to provide history about who the patient had been for the staff so that the staff can better understand who the patient has become (Gunther & Weber-

Mack, 2001). Finally, some family members who are involved in providing care may become more dissatisfied with staff care because they see what is needed and do not believe that staff is providing the necessary care (Murphy, Morris, & Kiely, 2000).

Employees

Care Practices and Staffing Issues

Administrative practices such as pay rate, staff stability and special dementia training have all been associated with resident care and outcomes (Leon & Ory, 1999; Lindeman, Arnsberger, & Owens, 2000). Staff recruitment and retention are among the most serious problems facing the long-term care industry today (Accorinti, Gilstner & Dalessandro, 2000). High staff turnover and vacancy has been associated with poor dementia patient outcomes including greater levels of disorientation, depression, medication errors, falls, and isolation (Hollinger-Smith, Ortigara & Lindeman, 2001). Short staffing levels places greater stress on the remaining workers who have greater workloads. Greater levels of job stress have been linked to decreased work effectiveness and poor job satisfaction. Poor salaries and inadequate benefits have been attributed to workforce shortages and insufficient staffing (Wunderlick, Sloan, & Davis, 1996). For residents with dementia, persistent staff turnover and shortages are bound to aggravate disorientation and disrupt continuity of the care provided (Cohen-Mansfield, 1997).

According to Teresi, Grant, Holmes and Ory (1998), consistent staff are more likely to be able to establish meaningful relationships with both residents and families. A work environment of consistent staff member assignments leads to better staff member and resident outcomes.

Staff Retention

Support from co-workers and administration has been associated with reduced job stress and burnout. For nurse aides or certified nurse assistants (CNAs), there is a growing body of support to suggest that the key element to long term care (LTC) staff retention is the worker's relationship with his or her immediate supervisor. The Paraprofessional Healthcare Institute (2000) reported that CNAs who were satisfied with their positions cited the following factors as important: fair, knowledgeable, and caring supervisors; educational opportunities; supervisors who listen; feeling part of the healthcare team; and adequate resources to do their job.

Another level of intervention for staff retention focuses on the job environment. The Gallup Organization conducted a multi-year study to define a great workplace. Twelve key components were found that differentiated great workplaces. Some of the key components identified were: relationships with supervisors and co-workers; opportunities for development; clear work expectations;

adequacy of resources; recognition and rewards; commitment to quality work; and feeling that their opinions count (Buckingham & Coffman, 1999).

In summary, work environment, staff turnover, poor pay, inadequate benefits, poor relationships with supervisors and co-workers, lack of education, decreased chances for promotion, insufficient staffing and emotional stress related to providing dementia care may contribute poor outcomes for employees and patients with DAT in special care units. This study has been designed to examine many of the work environmental factors and the level of patient well-being as an important patient outcome.

Theoretical Models

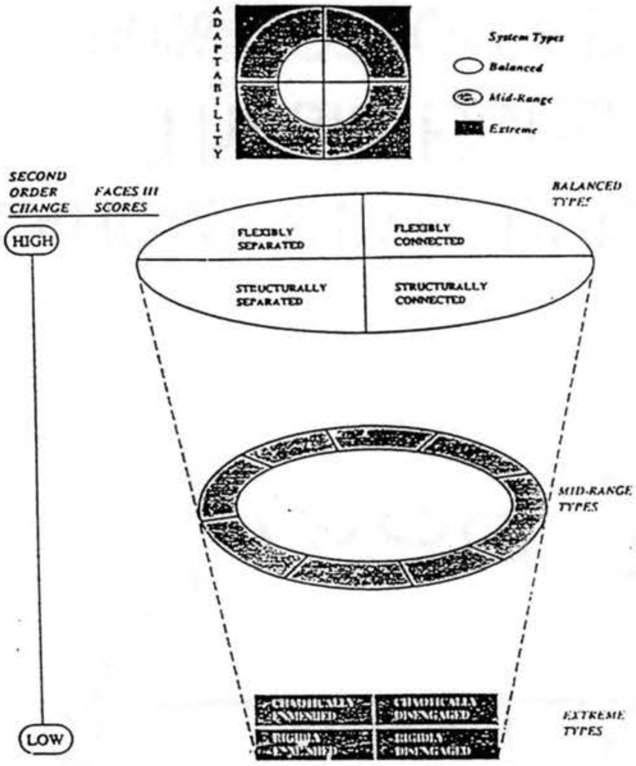
Within the family systems framework Olson and colleagues (1989) developed the Circumplex Model of Marital and Family Systems. An understanding of this model will provide a framework that can be used to describe and measure family function.

The Circumplex Model

According to Olson's Circumplex Model of Marital and Family Systems (1983) family function can be described and measured by using a three dimensional model.

The dimensions of the model are family, cohesion, flexibility and communication. This model has been used to describe a variety of types of family systems across the life cycles, experiencing normative stress (Olson, McCubbin, Barnes, Larsen, Muxen, & Wilson, 1989).

THREE-DIMENSIONAL FAMILY CIRC'JMPLEX MODEL



Cohesion Demension

Family Cohesion is defined as the emotional bonding that family members have toward one another (Walsh, 1993). Variables that can be used to measure the family cohesion dimensions are: emotional bonding, boundaries, coalitions, time, space, friends, decision making, interests and recreation.

According to this model, there are four levels of family cohesion ranging from disengaged (very low) to separated (low to moderate) to connected (moderate to high) to enmeshed (very high). Central levels of family cohesion (separated and connected) make for optimal family functioning. In general, the extreme levels (disengaged and enmeshed) are seen as problematic especially over prolonged periods of time.

Balanced families (separated and connected) are seen as being able to experience and balance the two extremes. Individual members are able to function independently while remaining connected to their families. Families that need therapy frequently fall into one of the extreme types (disengaged and enmeshed). If family cohesion is excessively high the system is described as enmeshed. There is too much consensus and not enough independence. At the opposite end of the extreme spectrum (disengaged systems), family members have a high degree of independence with little attachment or commitment to the family (Walsh, 1993).

Separated and connected systems are viewed as more balanced and therefore more functional. In separated relationships there is some emotional separateness, but it is not as extreme as the disengaged relationship. In this situation time apart seems to be more important than time together. There is however, some family time together, some family decision making and some marital support. Activities and interests are shared at times, but more often are experienced separately. Connected relationship systems display emotional closeness and loyalty. There is emphasis placed on togetherness. Time together is more important than time apart. There are both separate and shared friendships. Shared interests are common with some activities separate. Unbalanced levels of family cohesion (disengaged or enmeshed) are either very low or very high (Walsh, 1993).

Disengaged relationships are viewed as having extreme levels of emotional separateness. This may lead to a feeling of disconnection for one or more members of the family. Disconnection may lead to withdrawal and social isolation for the person with Alzheimer's Type Dementia. In families described as disengaged, individuals often do their own thing. Separate time, space, and interests are the norm, and members are unable to turn to each other for support and assistance with problem solving (Walsh, 1993).

In enmeshed relationships there is an extreme amount of emotional closeness, and loyalty is demanded. Individuals are very dependent upon one another. There is very little individual separateness and little private space. The energy of the couple or family is primarily focused inside the family, there are very few outside interests or friends (Walsh, 1993).

Flexibility Demension

Family flexibility (adaptability) is the amount of change in leadership, relationship roles and relationship rules a family is able to make in response to changes in the environment. In order to describe and measure this dimension in families the Circumplex Model identifies four basic concepts. They are: leadership (control, discipline), negotiation styles, role relationships and relationship rules. There are four levels of flexibility that range from very low (rigid) to very high (chaotic). As with family cohesion, the central levels, structured (low to moderate) and flexible (moderate to high) are more likely to produce balanced levels of functioning. Extremes on the flexibility dimension (rigid and chaotic) tend to be more problematic for families. Families and couples need both stability and change. The ability to change when appropriate, distinguishes functional families from those who are not. Balanced couple and family systems (structured and flexible) tend to be more functional over time. While unbalanced families and couples tend to be either rigid or chaotic. A rigid relationship exists when one person is in charge and is very controlling. Roles are strictly defined, rules do not change, and negotiations are limited. Patients with DAT need structure but may become resistant in a controlling environment. A chaotic relationship is characterized by either erratic or limited leadership. Decisions tend to be impulsive and with minimal forethought. Roles are not clear and tend to shift from individual to individual (Walsh, 1993). Chaotic relationships may increase stress and confusion for the member with DAT.

Although there is no absolute best level for any relationship, flexible and structured families are better able to balance change and stability while relationships may have problems if they always function at the extremes (Walsh, 1993).

Communication

Communication is the third dimension of the Circumplex Model and it is considered a facilitating dimension. Communication is considered critical for facilitating couples (dyads) and families to move on the other two dimensions.

Family communication is measured by focusing on the family as a group with regard to their listening skills, speaking skills, self-disclosure, clarity, continuity, and respect and regard. In terms of listening skills, the focus is on empathy and attentive listening. The member with DAT may lose the ability to speak, but the need to be "listened to" still remains. Speaking skills include speaking for oneself and not speaking for others.

Self-disclosure describes the willingness of members to share feelings. Continuity refers to the ability to stay on topic. Respect and regard relate to the affective aspects of communication. Several studies have been done to investigate family communication and problem-solving skills. According to Walsh (1993), these studies found that Balanced family systems tend to have very good communication skills, while Extreme family systems tend to have poor communication. Therefore, Extreme family systems caring for a member with Dementia of the Alzheimer's Type should encounter problems with communication.

This review of literature using Olson's Circumplex Model does focus around the functioning of the family system. Although this model was developed to assess family function, it has also been used to assess organization style in business and/or departments (Olson, 1982). Because the Circumplex Model is a multilevel measure that includes both the individual level assessment and the family level assessment, it is possible to make adaptations in its use. This Model can be used with individual employees working on a special care unit system, as well as with the employees as a group in the system and the individual patient with DAT.

There have been no previous research studies utilizing the Circumplex Model to investigate long-term care facility system functioning. This study investigated specifically the subsystem of the special care unit.

Seven Clinical Stages of Dementia of the Alzheimer's Type

Alzheimer's disease has been described by Reisberg and colleagues (1993) to progress in seven clinically distinguishable stages, from normal cognition and functional capacity to very severe dementia of the Alzheimer's type. The stages can be briefly described as follows: Stage 1; normal cognitive capacity in the absence of either subjective or objective evidence of cognition-related functional deficit; Stage 2, subjective complaints of cognitive and/or cognition-related functional impairment in the absence of clinically manifest deficits; Stage 3, subtle, clinically manifest cognitive or cognition-related functional impairment which may be of sufficient magnitude to interfere with complex occupational or social tasks and which may be accompanied by anxiety. Stage 4, cognitive and cognition-related functional deficits which are clearly manifest on a detailed clinical interview; functional deficits are generally of sufficient magnitude to interfere with performance in complex activities of daily living such as management of personal finances and/or complex meal preparation or marketing skills; Stage 5, cognitive and cognition-related functional deficits of sufficient magnitude to interfere with independent community survival; Stage 6, cognitive deficits sufficient to require continuous assistance with basic activities of daily life such as bathing and dressing, and Stage 7, deficits sufficient to require continuous assistance with basic activities of daily life (Reisberg, Sclan, Franssen, DeLeon, & Kluger, 1993).

Global Deterioration Scale

The global deterioration scale (GDS) was developed to measure the seven distinct stages of DAT described by Reisberg and associates (1993). The GDS has several advantages over the Clinical Dementia Rating (CDR) system developed by Hughes, Berg, Danziger, Cohen and Martin (1982). The CDR scale does not presently describe the evolution of dementia pathology beyond the point at which dementia patients "require much help with personal care (and are) often incontinent", (Reisberg et al, 1994, p. 188) indicating a CDR stage 3. The CDR stages that might apply to more severely demented patients have been proposed but not fully developed.

The GDS system has two other related measures, the Brief Cognitive Rating Scale (BCRS), and the Functional Assessment Staging (FAST). Additionally the GDS system takes only a brief period of time to administer (average of 14 minutes). The GDS staging system is useful in characterizing normal aged, mildly impaired and mildly to moderately demented patients, but also patients who have been previously considered untestable. Stage 7 in the GDS system characterizes patients who are considered to have "failure to thrive."

Failure to Thrive

Failure to thrive (FTT) is a label commonly used to describe a complex of non-specific symptoms that often leads to increased disability and premature death (Kimball

& Williams-Burgess, 1995). Newburn and Krowchuck (1994) identify the following critical attributes of FTT: problems in social relatedness; physical/cognitive dysfunction; loss; dependency; feelings of exclusion; shame, helplessness, and worthlessness; loneliness; inadequate nutritional intake; and non-responsiveness to medical and non-medical interventions. The term FTT implies that the older adult "should" thrive despite chronic illnesses and age related changes, but does not.

Problems with social relatedness included: 1) disconnectedness; 2) inability to give of oneself; 3) inability to find meaning in life and 4) inability to attach to others. Problems with social relatedness provide the common threads for each of these attributes. Each represents a failure of the human-environment interaction.

Social relatedness enables people to stay connected with life. As losses, integral to old age occur, maintaining those bonds become harder. However most older adults manage. They attach to friends and confidants (Hamilton, 1990) and to animals (Cusack, 1988), and participate in religious and social activities (Koenig, George & Siegler, 1988). They find meaning in life through interaction with another and through giving of themselves to that other (Trice, 1990).

Attributes rooted in physical and/or cognitive dysfunction are the characteristics of FTT in the elderly found in the medical literature. These attributes are: 1) consistent unplanned weight loss; 2) decline in cognitive function; and 3) signs of depression. They are important because if left to run their course, death ensues. FTT is the construct used to define the DAT patient who is experiencing a low level of function.

Patient Function

Alzheimer's disease (AD) accounts for the majority of all cases of dementia (Weiler, 1987). Cognitive deficits of AD have received the most attention, however, impairment of function including activities of daily living skills is also a major dysfunction of the illness. The DSM-III-R mandates that for a diagnosis of dementia the disturbance must be "severe enough to interfere significantly with work or usual social activities or relationships with others" (American Psychiatric Association, 1987).

Numerous scales have been developed to assess functional ability in the older adult population. However, many of these instruments were not designed specifically for the DAT patient population. The Index of Activities of Daily Living (Index of ADL; Katz & Akpom, 1976) was developed to evaluate elderly patients with limited mobility. The patients studied had hip fractures, arthritis or other conditions resulting in bone, joint or muscular dysfunction. Thus, the Index of ADL was not designed to evaluate persons with dementia. Similarly, the Philadelphia Geriatric Center Instrumental Activities of Daily Living (PGC:IADL; Lawton & Brody, 1969) scale and the Oars

Multidimensional Functional Assessment Questionnaire (Fillenbaum & Smyer, 1981) were neither developed nor standardized for the assessment of functional change in AD patients. Both of these instruments are widely used to assess functional impairment in the older population.

Several scales have been specifically designed to measure functional change in dementia patients. The Dementia Scale of Blessed, Tomlinson, and Roth (1968) is perhaps the best known of these instruments. This scale is designed to assess instrumental activities of daily living (IADL's). These are tasks such as, the ability to deal with money or the ability perform household chores. It also contains items to assess more basic functional capacities (e.g., eating, dressing, toileting). However, also included are items related to personality changes and emotional disturbances. This measure does not allow for the separation of functional disturbances from behavioral disturbances. The Scale of Functional Capacity (SFC; Pfeffer, Kurosaki, Harrah, Chance & Filos, 1982) is a seven point, progressive rating scale ranging from normal to severely incapacitated. However, the SFC does not adequately reflect the progressive and ordinal nature of functional decline in DAT. The Functional Assessment Staging (FAST; Reisberg, Ferris & Franssen, 1986) is a 16-item scale that evaluates seven major functional levels of dementia. The 16 FAST stages have been developed so as to be concordant with the Global Deterioration Scale (GDS;

Reisberg, Feris, deLeon, & Crook, 1982). The progression of deficits on the FAST was designed to mirror the characteristic progression of functional loss in dementia of the Alzheimer's type.

The FAST measure can stage in relative detail dementia patients who because of the severity of their disease are untestable on other commonly used measures. Generally the FAST can identify approximately 5 to 10 successive stages through which patients with progressive dementia will pass beyond the point at which other behavioral measures are useful (Reisberg,1988). Marked deviation in the FAST ordinality are indicative of other dementia etiologies or excess disability (Reisberg, 1988).

Excess Disability

Excess disability may be defined as a reversible deficit that is more disabling than the primary disability. It exists when "the magnitude of the disturbance in functioning is greater than may be accounted for by basic physical illness or cerebral pathology" (Brody, et.al, 1974; p. 79). For example, a patient may show irreversible memory decline and language dysfunction, yet have reversible deficits in self-care and social withdrawal. The reversible deficits are far more disabling in carrying out daily activity than the actual disability. Because of cognitive decline, patients with Alzheimer's are at high risk for acquiring excess disability.

Excess disability can be attributed to many factors. Physical illness, psychological impairment, and social problems all have the potential for accentuating behaviors associated with cognitive impairment (Wang, 1977). For example, physical discomfort caused by constipation may first manifest as an increase in restlessness or agitation and may be misinterpreted as a part of the disease process. But, when the constipation is recognized and alleviated, such excessive behaviors decrease. Shouting, pacing, and restlessness may be behaviors attributed to irreversible cognitive impairment, they may also be caused by either a lack of or an extreme of social or sensory stimulation. Adequate and appropriate stimuli may prevent or reverse such behaviors.

Disuse also contributes to excess disability. Patients with Alzheimer's disease will quickly lose the ability to walk if they are not allowed to. Because increasing muscular rigidity is characteristic of this disease process, mobility must be encouraged and maintained.

The goal for optimal care is to prevent or reverse excess disability so that the patient is not prematurely disabled and is functioning to capacity. When excess disability is eliminated as a component in the presenting disability, what remains is the patient's actual disability.

Summary

The GDS and the FAST scale have been developed to be used together and are sensitive measures even in the very severe stages of DAT. The GDS can be used to identify the appropriate stage of the disease. Then the level of function will be assessed and matched to the stage. If, for example, the patient is found to be in Stage 5 according to the GDS, but functionally is in either Stage 6 or 7, then excess disability is present. If on the other hand, the patient is functionally appropriate for Stage 5, he is said to be functioning at the highest level possible for his disease. If excess disability exists, a comprehensive evaluation of all possible causes for this needs to be explored, including environmental and family factors.

Assumptions

Assumptions of the study are:

1. All behavior has meaning.
2. The work environment influences level of patient well-being.
3. Patient well-being influences the work environment.
4. That employees of the special care unit will answer all questions honestly and as accurately as possible.

Summary

Many patients with DAT are cared for in special care units located in long-term care facilities. Caring for patients with DAT is stressful and impacts both families and employees in the work environment. Long-term care facilities face many challenges in caring for this type of patient. Challenges include: poor salaries; inadequate benefits; insufficient staffing and inadequate numbers of professional staff; poor working conditions; lack of education and chances for promotion; poor relationships with supervisors and co-workers; lack of staff member involvement in decision making; lack of training for staff; and high staff turnover rates (Hollinger-Smith, Ortigara, & Lindeman, 2001). Discovery of the significant factors in the SCU work environment that may be related to the level of patient well-being should aid in the development of improved work environments in long-term care facilities and better patient outcomes.

Chapter III

Methodology

This study explores the relationship of the work environment on a special care unit to the level of well-being of a patient with Dementia of Alzheimer's Type (DAT). The special care unit environment which includes employees, family, friends of the patient, and patient may have an impact on the level of well-being of the patient with DAT. The relationship of the work environment to the level of well-being of the patient with DAT has not been adequately studied.

The level of Dementia of Alzheimer's Type patient well-being is determined to a degree by the amount of destruction in the brain as a result of the disease process. However, other factors can impact the level of patient well-being. DAT patients suffering from an acute illness, acute pain, a recent loss of a friend or family member, those experiencing a recent change in environment or family relationships, may demonstrate a lower level of well-being than what is determined by the disease process alone. Additionally, patient weight, frequency of stress related (agitated) behaviors, the level of social interaction, and the level of function of the patient with DAT may contribute to the level of patient well-being. A lower level of function is called excess disability.

The presence of excess disability indicates that patients with DAT are not functioning to their fullest capacity. If the patient's excess disability is due to the special care unit work environment, then healthcare professionals could change the environmental factors that are detrimental to the DAT patient's level of function and overall well-being.

Research Methodology

This is an exploratory, descriptive, and correlational study using a multilevel approach to investigate the relationships of the caregiving work environment on a special care unit to the level of well-being of a patient with Dementia of Alzheimer's Type. This methodological approach is consistent with the theoretical framework previously described.

Exploratory Research

Exploratory studies are particularly useful during the early stages of investigating the relationships of phenomena about which not much is known (Isaac & Michael, 1995).

Descriptive Research

In descriptive studies, phenomena are described or the relationship between variables is examined. This type of research is appropriate when little is known about the variables under investigation (Isaac & Michael, 1995).

Correlational Research

The purpose of correlational research is to determine "the extent to which variations in one factor correspond with variations in one or more other factors based on correlation coefficients" (Isaac & Michael, 1995, p. 53). Correlational research is useful when: (1) variables are complex or not subject to controlled manipulation; (2) measurement of several variables simultaneously is required in a realistic setting; and (3) it is desirable to describe the amount or degree of relationships rather than the presence or absence of an experimental effect (Isaac & Michael, 1995).

Although this method is commonly used in social science research, it has several limitations. The inability to determine cause and effect relationships; less control over the independent variables; the tendency to identify spurious relational patterns; relational patterns may be arbitrary and ambiguous; and outcome data may defy meaningful or useful interpretation due to indiscriminant source (Isaac & Michael, 1995). These limitations have been addressed in this study by attempting to ground the study in theory and by limiting any attempt to generalize beyond the sample.

Research Setting

Data were collected in four long-term care facilities on a special care unit for patients with Dementia of Alzheimer's Type. This environment consists of multiple variables which could influence the level of well-being of the patients on the unit.

Sample

The sample was one of convenience in order to maximize time and expense. This non-probability sample consists of formal caregivers and patients with Dementia of the Alzheimer's Type (DAT) on a special care unit in four separate private long-term care facilities. The location of the long-term care facilities is in a large southwestern metropolitan city. The formal caregivers consisted of subjects that were: (1) registered nurses; (2) licensed practical nurses; (3) nursing aides; (4) activity directors; (5) social workers; (6) or other individuals employed on the special care unit. The patient sample consisted of all patients currently residing on each special care unit. All of the patients had been diagnosed by a physician as having DAT; and all were in stages four through seven of DAT as measured by the Global Deterioration Scale (Appendix B) (Reisberg, et al. 1982).

Protection of Human Rights

Several procedures were utilized to ensure that the rights of the participants were protected. This study was submitted to the Oklahoma State University Institutional Review Board (IRB) for review and approval (See Appendix B). Participation in the study was strictly voluntary and there were no inducements or penalties for participation or non-participation. All participants remained anonymous and all data were kept strictly confidential, data collection instruments were coded. These were kept locked in a file cabinet. All data collection instruments were destroyed by the researcher upon completion of the study. All data are reported in the aggregate form so that individual-level data are not recognizable. All data were entered into a computer that was password secured.

Consent

The administrator and the director of nursing at each of the four long-term facilities used in the study were asked to sign the consent form for the research to be conducted in their facility (See Appendix C). The researcher described the study verbally to each formal caregiver and the caregiver was asked to sign a consent if he/she was interested in participating (See Appendix D). Participants were given the right to withdraw from the study at any time without penalty. Patient data were recorded by the licensed nurse supervisors responsible for the patients on each special care unit (See Appendix E). The researcher had no direct access to patient names or information. Patient names were not recorded on data collection instruments.

Variables

Correlational research does not necessarily distinguish between dependent and independent variables. In this study, however, a distinction will be made to facilitate the explanation of the study results.

Independent Variables

The independent variable is the work environment on the special care unit. Work environment includes formal caregivers (employees): work-related stress; problem-solving ability; level of communication; work closeness; work flexibility; and work satisfaction (See Appendix F).

Intervening Variable

Family communication is the third dimension of the Circumplex Model and it is considered a facilitating dimension. The family communication scale (see Appendix G) was developed by Olson, adapted for the purposes of this study and was treated as an intervening variable. This scale was completed by the licensed nurse supervisors on the special care units and is a reflection of the nurses' perception of family communication and participation in patient care. The family's ability as a group to continue to speak, listen, respect, regard and self-disclose is important to the patient with DAT. In addition, the family's ability to communicate with staff caregivers and their ability to participate in the care of the patient was thought to be important to the level of patient function.

Dependent Variable

The dependent variable is the level of function of the patient with DAT. Functional ability will be measured by an instrument developed by Reisberg and colleagues (1984). The Functional Assessment Staging Scale (FAST) (See Appendix H). This functional assessment scale has been developed to be used with the Global Deterioration Scale (See Appendix I).

Model

The relationship among variables can be conceptualized in a model developed by the researcher for the purpose of this study (See Appendix A). This is a two-dimensional model representing the relationship of the work environment on a special care unit to the level of function of a patient with Dementia of Alzheimer's Type.

The formal caregivers are a part of the work environment. The level of caregiver function, according to the Circumplex model, can result in the identification of 16 distinct types. These types can be collapsed into three distinct typologies, they are: balanced, mid range and extreme.

Balanced caregivers on the cohesion (closeness) dimension are able to balance separateness and connectedness. On the adaptability (flexibility) dimension these caregivers are both structured and flexible. Balanced caregivers are able to change the structure of the group as necessary to meet the ever-changing demands of the caregiving situation. This type is the most desirable and therefore, is expected to have a positive influence on the level of function of the patient with DAT. Stage appropriate function, as measured by the FAST Scale, is the highest level of function that the patient is able to attain.

The influence of mid-range caregivers on the level of function of patients with DAT can not be determined with any degree of accuracy using the circumplex model; therefore, no specific statement is made about the direction of the relationship. Some mid-range caregivers may have a positive influence on the function of the patient with DAT while others may have a negative influence.

Extreme caregivers are more likely than either the balanced or mid-range caregivers to have a negative influence on the level of function of the patient with DAT. According to the Circumplex Model extreme caregivers on the cohesion (closeness) dimension are described as enmeshed. Enmeshed caregivers display too much consensus and not enough independence. At the other end of the cohesion (closeness) spectrum are caregivers described as disengaged. Disengaged caregivers have a high degree of independence with little attachment. Lack of attachment may lead to a feeling of disconnection for one or more members of the group. Extreme caregivers on the adaptability (flexibility) dimension range from very low (rigid) to very high (chaotic). Extreme caregivers are expected to have trouble changing the caregiving work environment structure as needed to meet the ever-changing demands presented by the patients. Therefore, the extreme caregivers are expected to have a negative influence on the level of function of the patient with DAT. A negative influence will result in a lower level of function for the patient with DAT than what the disease process alone would produce.

Instruments

Employee Survey

The employee survey (see Appendix J) was developed by the researcher for the purpose of this study to collect demographic data. This survey is basically demographic data, the content was extrapolated from the review of literature and the theoretical framework previously identified.

The Global Deterioration Scale

The Global Deterioration Scale (GDS) is comprised of detailed clinical distinguishable stages, from normal cognition and functional capacity to very severe Dementia of the Alzheimers' Type. It was used in this study for staging the severity of disease for all patients on each of the four special care units. Subjects were in Stages IV - VII (see Appendix I). Patients in Stage VII were not used in this study.

The stages can be succinctly described as follows: Stage I, normal cognitive capacity in the absence of either subjective or objective evidence of cognitive or cognitive-related functional deficit; Stage II, subjective complaints of cognitive and/or cognition-related functional impairment in the absence of clinically manifest deficit; Stage III, subtle, clinically manifest cognitive or cognition-related functional impairment which may be of sufficient magnitude to interfere with complex occupational or social tasks and which may be accompanied by anxiety; Stage IV, cognitive and cognition-related functional deficits which are clearly manifest on a detailed clinical interview; functional deficits are generally of sufficient magnitude to interfere with performance in complex activities of daily life such as management of personal finances and/or complex meal preparation or marketing skills; Stage V, cognitive and cognition-related functional deficits of sufficient magnitude to interfere with independent community survival; Stage VI, cognitive deficits of sufficient magnitude to interfere with basic activities of daily life such as dressing and bathing, and Stage VII, deficits sufficient to require continuous assistance with basic activities of daily life.

Test Development

The GDS was developed on the basis of systematic phenomenological observations of the nature of the symptomatology in normal aged cognitive functioning and progressive DAT. The validity of the GDS has been demonstrated through studies of concurrent validity, specific content validity and reliability.

Concurrent Validity

Concurrent validity of the GDS has been demonstrated by work which indicates that the GDS correlates strongly with other dementia scales and with other psychometric test batteries and measures (Reisberg, et al. (1982);

Reisberg, Ferris, deLeon, & Crook, 1988); (Johansson, & Zarit, 1991). For example, the magnitude of correlation of the GDS with the mini-mental state examination was 0.9(p <.001, n = 154) (Reisberg, et.al., 1988). In another study of cognitive impairment in a representative population aged 84 to 90 using the GDS and a rating derived from performance on five neuropsychological tests, the "overall degree of convergence between the measures was high" and the results indicated a "high degree of convergence of clinical and neuropsychological indicators" (Johansson, & Larit, 1991).

Content Validity

Specific content validity of the GDS descriptive phraseology has received strong support from two separate lines of investigation. In one naturalistic study Overall and associates (1990) developed a 30-item questionnaire derived from the GDS staging descriptions which were completed by 115 relatives or caregivers of elderly patients seen in an outpatient gerontology clinic. Twelve preliminary scale values were calculated from the responses to the questionnaires and used to locate each of the 30 manifestations along a severity continuum. Overall, Scott, Rhoades and Lesser (1990), then used principal components analysis to combine the 12 preliminary indices into a composite scale that "more reliably represents the distances between the 30 clinical manifestations". They noted that "the scale scores for the clinical manifestations were observed to cluster into relatively discrete groups, suggesting naturally occurring stages or phases". The resulting stages were very similar to those embodied in the GDS staging descriptions.

Another approach to the study of specific content validity of the GDS has been the separation of the elements of the global staging descriptions into components. Each of these component elements has been separately studied as part of derivative assessment instruments known as the Brief Cognitive Rating Scale (BCRS) and Functional Assessment Staging Scale (FAST). These studies (Reisberg,& Ferris, 1988; Reisberg, Ferris, Torossian, Kluger, & Monteiro,1992) discussed later, add further strong support for the optimal weighting of the hierarchically sequenced items in the GDS staging descriptions. Therefore, the specific impairments characteristic of each stage almost always follow the impairment described for the previous stage. Also, the grouping of impairment characteristics within stages appears to be optimal.

Reliability

The GDS has demonstrated excellent interrater and test-retest reliability in four separate studies conducted in diverse settings and in diverse subject populations. Reliability coefficients have ranged from 0.82 to 0.97 in these studies (Gottlieb, Gur, & Gur,1988; Foster, Sclan, Welkowitz, Boksay, & Seeland, 1988; Reisberg, Ferris, Steinberg, Schulman, de Leon, & Sinaiko, 1989; Dura, Haywood-Niler, & Kiecolt-Glaser, 1990).

Clear advantages of the GDS staging system over other available staging measures include: (1) readily interpretable and clinically meaningful stages and substages; (2) improved definition of the boundaries of normal aging and incipient DAT; and (3) the ability to chart the course of the severely impaired, previously "untestable" portion of the disease. With experience, it takes approximately 5 minutes for a clinician to use this instrument to determine the appropriate clinical stage of the disease. In addition, two concordant and independent clinical rating scales, the Brief Cognitive Rating Scale (BCRS) and the Functional Assessment Staging Measure (FAST), have been developed to be used together to enhance the assessment of the patient with dementia and have been used together as outcome measures for pharmacologic trials (Gershon, Ferris, Kennedy, Kurtz, Overall, Pollock, Reisberg, & Whitehouse, 1993; Ala, Romero, Knight, Feldt, & Frey, 1990).

Functional Assessment Staging

The Functional Assessment Staging of Dementia (FAST) is a 16-item scale which was derived from, and is a more detailed version of the 7-point functioning and self-care axis V of BCRS. The 16 FAST stages have been enumerated so as to be optimally concordant with the corresponding GDS stages. The FAST will be used to measure the level of function of the DAT patient (see Appendix H).

The FAST staging procedure has unique advantages as a diagnostic measure for dementia of the Alzheimer's type in the identification of excess disability. The FAST procedure can stage in relative detail dementia patients who are generally untestable because of the severity of their disease. Generally the FAST can identify approximately five to 10 successive stages through which patients with progressive dementia will pass beyond the point at which other behavioral measures, are of utility (Reisberg, 1988). In Alzheimer's disease, the FAST is useful in staging an otherwise undifferentiated 30 to 50 percent of the identifiable potential time course of the disease.

Test Development

The FAST is useful in staging dementia patients with behavioral disturbances such as depression, agitation, anxiety, and psychosis. These common behavioral disturbances in dementia frequently cause mental status, psychometric, and other cognitive assessments in dementia patients to result in unreliable scores. Behavioral disturbances may also cause dementia patients to be entirely untestable. Useful FAST staging data can be obtained in dementia patients with even the most severe agitation or other behavioral symptomatology (Reisberg, 1988).

Validity

In a study of 50 outpatients, (25 men, 25 women) with normal aging or DAT. Pearson correlations between FAST staging and 10 independent psychometric test measures ranged from 0.59 to 0.73 (p.<.001) (Reisberg, et al., 1984). Relationships between the FAST and independent clinical assessments ranged from 0.83 to 0.94 (p.<.001).

In a second study of forty consecutive outpatients with either normal aging or DAT (10 men, 30 women). FAST assessments were compared with the Mini-Mental State Examination (MMSE; Folstein, Folstein, & McHugh, 1975) scores (Reisberg, Ferris, Anand, deLeon, Schneck, Buttingner, Borenstien,1984). The Pearson correlation coefficient between MMSE and FAST assessments was reported to be 0.87 (p.<001).

The extent to which Alzheimer's patients follow the proposed ordinal pattern of functional deterioration of the FAST has also been systematically studied (Borenstein & Reisberg, 1987; Reisberg, et al., 1989). Fifty-six patients with DAT were studied. The patient group consisted of 14 men and 42 women. Information was obtained as to the presence of all functional impairments on the FAST. Fifty patients manifested the ordinal pattern predicted. The six exceptions were of a magnitude of 1 to 2 points on the 16-point scale. A Guttman analysis was performed to determine the likelihood that the results observed were not due to chance and to evaluate the statistical utility and validity of the FAST Scale. The coefficient of reproducibility was 0.993. A coefficient of reproducibility higher than 0.9 is considered to indicate a valid Guttman scale (Nie, Hull, Jenkins, Stienbrenner, & Bent, 1975). In summary, there is a strong evidence to support the concurrent and ordinal validity of the FAST staging assessment methods in normal aging, age associated memory impairment, and Alzheimer's disease.

Reliability

Foster, et al., (1988), in two studies conducted on patients referred for psychiatric consultation in a long-term care facility, found an interrater reliability coefficient of 0.96 for BCRS Axis V (FAST is derived from BCRS Axis V) in 20 patients rated by five attending psychiatrists. However, in a second study 20 different patients in which the raters consisted of a psychiatric nurse, a clinical psychologist and a clinical psychology graduate student, the interrater reliability coefficient of BCRS Axis V was 0.76. The data suggest that physicians were better able to reach agreement on this assessment than non-physicians.

In an interrater and test-retest reliability study of 38 outpatients with normal aging, coexisting cerebrovascular diseases, and degenerative dementia with and without cerebrovascular concomitants, Reisberg and associates (1989) found a reliability coefficient for the BCRS Axis V of 0.83. In sum, the FAST assessment instrument is a valid and reliable measure of the level of function even in patients with severe DAT.

Workplace Environment Scale

The workplace environment scale used in this study (Appendix F) is a set of 74 questions which taps three levels of an individual's experience at work. Twenty-eight items are related to work stress and 36 items are related to coping. This scale was originally developed by Olson and Stewart (1990) and was called "Work Profile."

Today's workplace demands high performance. Today a team oriented organization requires that employees are flexible, creative, and are capable of sustainable performance. The Special Care Unit environment is stressful and, therefore, a tool that has been developed to assess stress and coping in the workplace seems appropriate. According to Olson, there are four key relationship coping resources which are: 1) problem solving-the ability to deal directly with, not avoid, problems in the workplace and make positive changes to resolve them; 2) communication-the ability to honestly share thoughts and feelings with co-workers to promote mutual understanding; 3) closeness-a comfort level and ability to connect with other people in the work environment; and finally, 4) flexibility-a willingness and ability to respond to change. This instrument can be used to show relationships between stress, coping resources and overall satisfaction.

This researcher found no published studies of the relationship between work environment and cohesion (closeness) and adaptability (flexibility) of staff working in long term care facilities or more specifically in Special Care Units (SCU's). Champ (1986) used this model to describe the organizational effectiveness of a Head Start Program, and Olson (1982) suggests the use of the model in organizational studies.

Reliability

The workplace environment instrument was adapted to meet the needs of this study as suggested by Champ (1986). The reliability of the instrument Champ used was reported as follows: the alpha coefficient for the job satisfaction subscale was 0.81; the alpha coefficient for the job productivity subscale was 0.84. The organizational style instrument scores for commitment and adaptability were reported to be 0.61 and 0.56 respectively. Cronbach's coefficient alpha is a widely-used measurement of internal consistency. Coefficient alpha establishes a coefficient with a value between 0.0 and 1.0 which gives a numerical value of whether the items are consistent or homogeneous. The closer the alpha coefficient is to 1.0 the more reliable the instrument (Gay, 1987).

Well-Being

Three items for this measure were developed by the researcher for the purposes of this study. The variables selected were developed from the literature reviewed. Three new variables were included into this construct they were: 1) amount of weight change over a 6 month period; 2) level of social interaction; and 3) the frequency of stress related behaviors by the patient with DAT. The level of social interaction was measured by the use of one question developed by the researcher. What is the current level of social interaction of this patient? The response choices were: the DAT patient socially interacts almost never with other patients and staff; once in awhile; sometimes; frequently; or almost always. There was one question developed to measure frequency of stress related behaviors displayed by the patient in the past week. The question asked "How often (in the past week) has this patient displayed agitated or stress related behaviors? The response choices were: almost never (1-2 times); once in a while (3-4 times); sometimes (5-6 times); frequently (daily); or almost always (several times each day) (See Appendix E).

The nurse supervisor completed the Fast scale to measure the level of function for each patient on the unit (Reisberg, et al., 1984). The Cronbach coefficient alpha for this instrument was 0.71.

Perceived Family Communication

The family communication tool used in this study was adapted from an instrument developed by Olson (et al., 1982) which was a 10-item scale. The original reliability was not available. The researcher developed a 9-item instrument for use in this study (see Appendix G). As previously discussed, this instrument was completed by the nurse supervisor and, therefore, is the nurses' perception of how the family members of each patient communicated with: 1) each other; 2) the patient; 3) the staff; and 4) how the family participated in the care of the patient. As constructed the family communication tool was problematic because of a low 0.29 Cronbach coefficient alpha which was unacceptable. Four items were eliminated until the Cronbach coefficient alpha reached 0.84. Items 1, 2, 3, 8 and 9 were maintained for analysis. Items 1, 2, 3 and 8 came from the original instrument developed by Olson (1982) while item number 9 was developed by the researcher. Items 4, 5, 6 and 7 were found to be inconsistent with family communication and were not used in the analysis of data.

Data Analysis

Data were analyzed by use of the version of the SPSS-PC statistical package. Descriptive statistics for each background variable were used to describe aggregates for individual staff member (formal caregiver) and each individual patient with DAT. These statistics provide information concerning the distribution and mean of the samples. The Cronbach's coefficient alphas on all instruments used in this study were also computed by use of the SPSS-PC package. The alpha coefficients on instruments from the study sample ranged from 0.71 for the level of function variable to 0.95 for the items in the work stress

(28 items) subscale of the work environment instrument. All instruments used in this study were found to be acceptably reliable for use in determining exploratory relationships.

There are a number of different methods of computing correlation coefficients; the appropriateness of one over the other depends on the type of data represented by each variable. The most commonly used technique is the product moment correlation coefficient, usually referred to as the Pearson's r (Gay, 1987). Pearson r is considered the most reliable estimate of correlation, therefore, it is preferred and was used in this study to identify significant relationships. Next, the means for each variable were used to compare each special care unit. Bar graphs were developed as a way of comparing these data.

Chi square is a nonparametric test of significance appropriate when the data are in the form of frequency counts occurring in two or more mutually exclusive categories for nominal levels of data. Chi square compares proportions actually observed in a study with proportions expected, to see if they are significantly different. "Chi square for Goodness of Fit can be used to compare frequencies occurring in different categories or the categories may be groups, so that the Chi square is comparing groups with respect to the frequency of occurrence of different events" (Gay,1987, p. 397). Data collected for this study were nominal and ordinal, therefore, Chi square was computed to measure the significance of differences found between variables.

Scope and Limitations

Caregiving in Alzheimer's dementia is extremely complex. There may be other factors that have not been identified by this study that may influence the level of well-being in the patient with DAT. This research represents a beginning. More evidence based research is needed to have a comprehensive view of the caregiving experience from the perspective of all the individuals involved.

Although the research methodology designed for this study has attempted to control bias, researcher bias is a potential threat to the findings of this study. Since a convenience sample with a small sample size was used, these factors will influence the generalizability of the results.

Hypotheses

The hypotheses for this study, stated in the null form, have been generated from systems theory and the literature, they are:

1. There is no relationship between employee's work-related stress and the level of well-being of patients with Dementia of the Alzheimer's Type.
2. There is no relationship between employee's problem-solving ability and the level of well-being of patients with Dementia of the Alzheimer's Type.

3. There is no relationship between the level of employee's communication and the level of well-being of patients with Dementia of the Alzheimer's Type.

4. There is no relationship between the level of employee's work closeness and the level of well-being of patients with Dementia of the Alzheimer's Type.

5. There is no relationship between employee's work flexibility and the level of well-being of patients with Dementia of the Alzheimer's Type.

6. There is no relationship between employee's work satisfaction and the level of well-being of patients with Dementia of the Alzheimer's Type.

7. There is no relationship between the perceived level of family communication and the level of well-being of patients with Dementia of the Alzheimer's Type.

8. There is no relationship between patient weight and the level of well-being of patients with Dementia of the Alzheimer's Type.

9. There is no relationship between the level of patient stress behaviors and the level of well-being of patients with DAT.

10. There is no relationship between the level of patient social interaction and the level of well-being of patients with Dementia of the Alzheimer's Type.

11. There is no relationship between the level of patient function and the level of well-being of patients with Dementia of the Alzheimer's Type.

Chapter IV

Results and Discussion

The purpose of this study was to examine the relationship of the work environment on a special care unit to the level of well-being of a patient with Dementia of Alzheimer's Type. This chapter describes the demographic characteristics of the sample, relationships among variables, the reliability of the instruments, and the analysis testing of each hypothesis. Results are presented and discussed in the context of previous research.

Demographic Characteristics

The research sample is a convenience sample of employees (formal caregivers) and patients with Dementia of the Alzheimer's Type from four long-term care institutions with special care units in a southwestern metro area. The employee sample consisted of 26 employees (formal caregivers) and the patient sample consisted of 79 patients with Dementia of the Alzheimer's Type. The employee demographics were: 2 (7.7%) male and 24 (92.3%) female, ages 19 - 55 (mean = 35.58 years); 21 (80.8%) full-time and 5 (19.2%) part-time; and 17 (65.4%) were nursing aides and 6 (23.1%) were Licensed Practical Nurses; 1 (3.8%) was a Registered Nurse; 1 (3.8%) described herself as an Activity Director; while another one (3.8%) was identified as other (Table 1).

Table 1

Current Job Title for Formal Caregiver's?

	Frequency	Percent
RN	1	3.8
LPN	6	23.1
Aide	17	65.4
Activity Director	1	3.8
Other	1	3.8
Total	26	100.0

Typically employees in a long-term care institution that provide patient care for patients are female and nursing aides. Therefore, this is a representative sample. Employee education included: 11 (42.3%) completed high school or the equivalent, 6 (23.1%) completed some college and 5 (19.2%) completed a college degree, 1 (3.8%) completed some graduate school and, 1 (3.8%) held a professional degree (LPN) (Table 2).

Table 2

Highest Grade Level in School for Formal Caregiver's?

	Frequency	Percent
Completed Some High School	2	7.7
Completed High School or Equivalent	11	42.3
Completed Some College	6	23.1
College Degree	5	19.2
Completed Some Graduate School	1	3.8
Other Professional Degree	1	3.8
Total	26	100.0

The level of education reported is consistent with nursing aides and Licensed Practical Nurses working in long-term care institutions. The various ethnic groups included: 9 (34.6%) Caucasian, 7 (26.9%) Native Americans, and 7(26.9%) African Americans, and 3 (11.5%) who describe their ethnicity as other (Table 3).

Table 3

Ethnic Background of Formal Caregiver's

	Frequency	Percent
Native American	7	26.9
African American	7	26.9
Caucasian	9	34.6
Other	3	11.5
Total	26	100.0

The range of years which the 26 employees had been providing care for patients on the special care unit was one month to 11.4 years. Thirteen (50%) of the employees have been caring for the patients with DAT on special care unit for seven months or less (Table 4).

Table 4

Formal Caregivers Time on Present Job

Years/Months	Frequency	Percent	Cumulative Percent
.10	2	7.7	7.7
.11	1	3.8	11.5
.20	2	7.7	19.2
.30	1	3.8	23.1
.40	3	11.5	34.6
.60	3	11.5	46.2
.70	1	3.8	50.0
1.30	1	3.8	53.8
1.60	1	3.8	57.7
2.00	1	3.8	61.5
2.30	1	3.8	65.4
2.40	1	3.8	69.4
3.30	1	3.8	73.1
4.00	2	7.7	80.8
6.00	1	3.8	84.6
8.00	1	3.8	88.5
10.50	1	3.8	92.3
11.00	1	3.8	96.2
11.40	1	3.8	100.0
Total	26	100.0	

High staff turnover rates (up to 100% for nursing assistants and 50% for nurses annually) are prevalent in long-term care institutions (Hollinger-Smith, Ortigara, & Lindeman, 2001). Therefore, this sample is representative of employees in long-term care institutions.

Relationships Among Variables

Table 5 indicates that twenty-six employees (formal caregivers) completed the work environment scale. A Pearson's r product moment Correlation Coefficient was done to determine significant relationships among work environment subscales.

Results for the total sample (N = 26) reveal (Table 5) the following significant relationships in the data at the p = 0.01 level. There is a high correlation between "work relationship" and "work productivity" at 0.814 and "work supervisor" at 0.771. In addition to "work relationship", work supervisor is highly correlated with "work productivity" at 0.862. While "problem solving" is highly correlated with work flexibility at 0.559. Work communication is highly correlated with both "work flexibility" at 0.667 and "work satisfaction" at 0.672.

Results for the total sample revealed only two moderate relationships in the data for subscales "work closeness" and "work communication" at 0.527 and between "work problem solving" and "work communication" at 0.465. These data are significant at the $p < 0.05$ level.

Table 5

Relationship Among Work Environment Items

N = 26

	Work Relationship	Work Supervisor	Work Productivity	Problem Solving	Work Communication	Work Closeness	Work Flexibility	Work Satisfaction
work Relationship	------	0.771**	0.814**	-0.232	-0.101	-0.054	-0.112	0.005
Work Supervisor	0.771**	------	0.862**	-0.262	-0.305	-0.059	-0.198	0.000
Work Productivity	0.814**	0.862**	------	-0.028	-0.016	0.187	0.100	0.303
Problem Solving	-0.232	-0.262	-0.028	------	0.465*	0.289	0.559**	0.356
Work Communication	-0.101	-0.305	0.016	0.465*	------	0.527*	0.667**	0.672**
Work Closeness	-0.054	0.059	0.187	0.289	0.527*	------	0.321	0.377
Work Flexibility	-0.112	-0.198	0.100	0.559**	0.667**	0.321	------	0.449
Work Satisfaction	-0.005	0.000	0.303	0.356	0.672**	0.377	0.449*	------

* Correlation is significant at the 0.05 level

** Correlation is significant at the 0.01 level

Table 6 is a continuation of the subscales of work environment between three additional subscales, they are: 1) job characteristics, 2) work benefits, and 3) work schedule for the total sample of 26 employees.

Results for (Table 6) reveal that subscale "work benefits" is highly correlated with five subscales at the $p < 0.01$ level of significance, they are: "job characteristics" at 0.770; "work relationships" at 0.590; "work supervisor" at 0.826; "work productivity" at 0.842; and "work schedule" at 0.843. These correlations were significant at the $p = 0.01$ level. There was also a negative correlation between "job characteristics" and "problem solving" at -0.404. This correlation was moderate at the $p < 0.05$ level of significance.

The work environment instrument contains several scales under the work stress subscale (28 items) which includes: 1) job characteristics (7 items); 2) work benefits (5 items); 3) work schedule (4 items); 4) work relationship (4 items); 5) work supervisor(s) (4 items); and 6) work productivity (4 items). These items are highly correlated as previously discussed in Tables 5 and 6. To further describe the subscale "work stress", see Figure 2. Figure 2 demonstrates the amount of total "work stress" (28 items) by each special care unit.

Table 6

Relationship Among Work Environment Items

N = 13

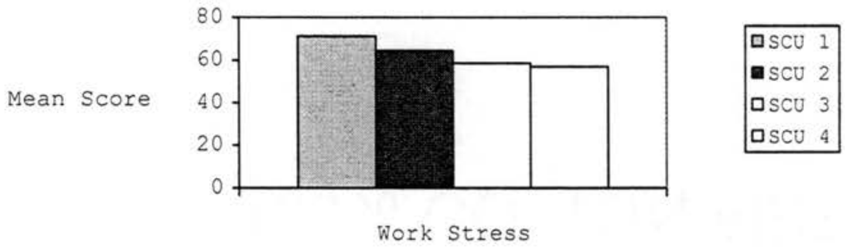
	Work Benefits	Job Characteristics	Work Relationships	Work Supervisor	Work Productivity	Work Schedule	Problem Solving
Work Benefits	------	0.770**	0.590**	0.826**	0.731**	0.671**	-0.281
Job Characteristics	0.770**	------	0.857**	0.877**	0.842**	0.843**	-0.404*
Work Schedule	0.671**	0.843**	0.865**	0.856**	0.933**	------	-0.078
Work Satisfaction							

* Correlation is significant at the 0.05 level

** Correlation is significant at the 0.01 level

Figure 2

Total Work Stress by Special Care Unit



The mean score for "work stress" for each special care unit was calculated and used for comparison. The higher the mean score the higher the amount of stress reported by employees in each unit. The mean for the total sample N = 26, was 64.84. The actual mean scores were as follows: the mean score for SCU 1 N = 13 was 71.25, this was the highest mean score of the four special care units: the mean score for SCU 2 was 64.50, which was about the average score for the total sample. However, this should be interpreted with caution because the number of employees that this represents is N = 2. The mean scores for SCU 3 and SCU 4 were 58.66 (N = 6) and 57.00 (N = 5) respectively. Therefore, SCU 4 employees reported the lowest level of stress. It may also be of interest to note that the SCU 4 employees have only been caregiving in this environment for an average of four months. Perhaps this factor is related to the low level of stress reported. Employees in SCU 1 and SCU 3 have worked an average of 41 months and 43 months respectively. Overall, each special care unit has about the same level of stress. There is very little variability among the mean scores. A one-way Analysis of Variance (ANOVA) was done on work stress. The findings indicated that there were no significant differences between special care units on work stress.

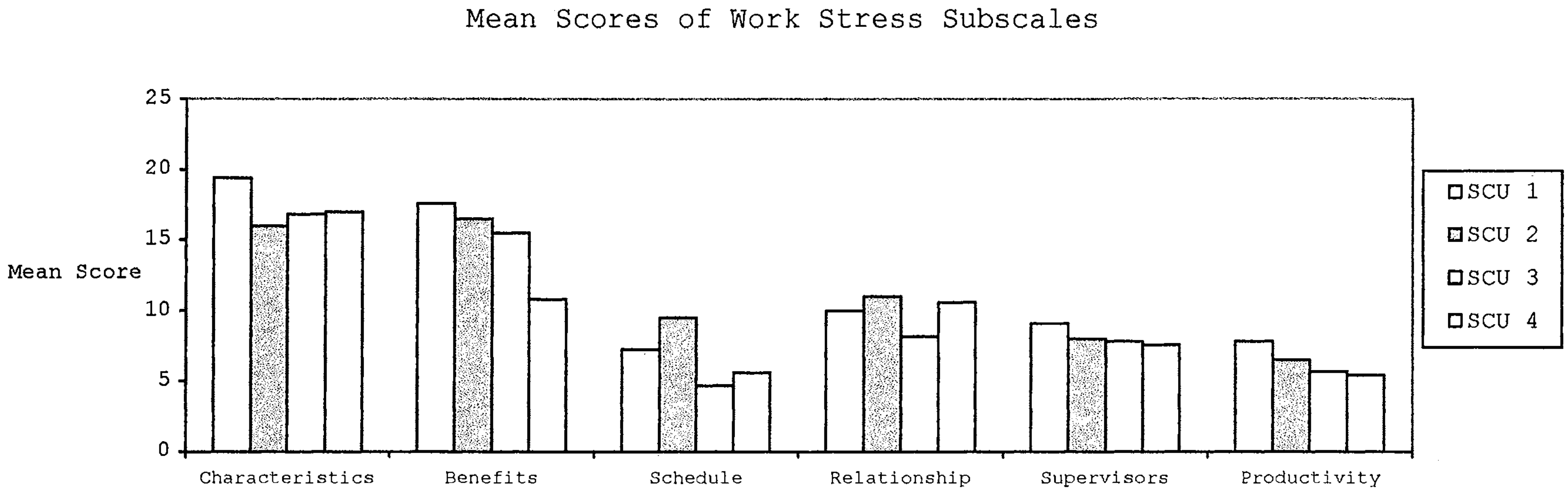
Table 7

Work Stress by Special Care Units

	Sum of Squares	df	Mean Score	F	Sig.
Between Groups	157.810	3	52.603	0.277	0.841
Within Groups	3,986.750	21	9.845		
Total	4,144.560	24			

Figure 3 presents each of the 6 subscales that make up "work stress" and compares the mean scores for each subscale by Special Care Unit. This graph demonstrates that of the six subscales of "work stress", "job characteristics" makes the greatest contribution to high scores for this scale. While "work productivity" contributes the least to the overall stress.

Figure 3


Mean Scores of Work Stress Subscales
25
20
15
10
5
0
Mean Score
Characteristics
Benefits
Schedule
Relationship
Supervisors
Productivity
SCU 1
SCU 2
SCU 3
SCU 4

Job Characteristics

The "job characteristics" subscale (7 items) includes: 1) my job is everything I want it to be; 2) my employer demands too much; 3) some things about my job are a problem; 4) the type of job I have creates problems; 5) my job is demanding, tedious or creates tension; 6) I am tired or not physically ready for work; and 7) I am not interested or happy with my job. Employees selected a response from 1 = never to 5 = very often. The mean for "job characteristics" for the total sample was 18.04. The mean score for SCU 1 on "job characteristics" was 19.41. The mean scores for the other three SCU's were: 16.0, 16.83, and 17.0 respectively. Several items within the "job characteristics" subscale, item 2, demands too much, and item 5, job is demanding and creates tension clearly relate to work on the Special Care Unit being stressful. While items 6 "I am tired and not physically ready for work" and item 7 "I am not interested or happy with my job" may be indicative of "burnout." Burnout and high stress have been described in the literature (Hollinger-Smith, Ortigara, & Lindeman, 2001) as factors related to staff turnover in long-term care facilities. In this study "job characteristics" were highly correlated with multiple factors: benefits, relationships, supervisors, productivity, and schedule; and, inversely related to problem solving (Table 6). A possible explanation for the inverse relationship may be a combination of the high stress and low level of interest which may decrease the willingness of the employee to problem solve. Additionally, the employee may lack the energy to invest in problem solving or may not have the necessary knowledge base to solve complex problems.

Work Benefits

The overall mean for "work benefits" (N = 25) was 15.44. The range of individual mean scores (shown on Figure 3) was from 10.80 for SCU 3 to 17.60 for SCU 1. Inadequate pay and benefits are also described by Hollinger and colleagues (2001) as factors that commonly result in turnover of staff in long-term care facilities. This subscale includes 5 items related to benefits, they are: 1) it is hard to receive a promotion, 2) salary; 3) benefits create problems, 4) I am not paid fairly, and 5) employee benefits are not adequate. The response scale for the items range from 1 = never to 5 = very often. Findings, from this sample are consistent with findings of other researchers related to benefits in long-term care facilities.

Work Schedule

Work schedule is a 4 item subscale which asks about control over schedule, hours worked, and knowledge about schedule. The mean score for the total sample (N = 25) was 6.48. The range for individual special care units was 4.66 for SCU 3 to 9.50 for SCU 2.

Work Relationships

Work relationships is a 4 item subscale which asks about the ability to get along with co-workers. Work relationships in this study were found to be highly correlated with supervisor, productivity, benefits, job characteristics, and schedule (Table 5 and 6). Robertson and colleagues (1994) found that relationships with co-workers was one of the important retention factors for Registered Nurses (RN) working in long-term care facilities. They also reported that support from co-workers and administrators was associated with reduced job stress and burnout. For this study, the mean score for "work relationship" was 9.76 (N = 25). Special Care Unit 3 had the lowest individual mean score of 8.16 and SCU 2 had the highest mean score of 11.00.

Work supervisors are very important to the overall work environment and the employees perception of the work environment. Many published articles in the long-term care (LTC) literature related to work issues addressed the employee's relationship with his/her supervisor. Robertson and colleagues (1994) suggest that for Certified Nurse Assistants (CNA's), the key elements to LTC staff retention is the worker's relationship with his or her immediate supervisor. They also reported that CNA's were more satisfied with their positions if they had a caring supervisor. The Gallup Organization (1999) published a report listing twelve key components that differentiated great workplaces with high employee retention rates. The first item mentioned in this report was relationships with both supervisors and co-workers. In addition, item number 4 in this subscale speaks to "suggestions being valued by supervisors." This was mentioned by the Gallup Organization Report as "feeling their opinions count."

Work Supervisor

For this sample the mean score for "work supervisors" (N = 25) was 8.4. The mean score for SCU 4 was 7.60 and for SCU 1 was 9.08. For this study work supervisor was highly correlated with relationship, productivity, job characteristics, schedule and benefits.

Work Productivity

Work productivity is the last of the subscales within "work stress." For the total sample (N = 25) the mean score for this scale was 6.72. The range for individual SCU's was 5.40 for SCU 4 to 7.83 for SCU 1. Work productivity was not found as a specific variable in the literature reviewed. In this study it was found to be highly correlated with supervisor and relationships.

Summary

The work stress subscale of the work environment scale used in this study was found to be highly reliable, the Cronbach alpha coefficient = 0.95. Results found in this study are similar to relationships reported by other researchers. High work stress has been reported to correlate with high staff turnover. In this study, employees of two out of the four SCU's have been providing care for a short period of time SCU 4 (mean = 4 months) and SCU 2 (mean = 8 months). This may be a reflection of the stressful and demanding nature of the work on special care units. In addition, Hollinger and colleagues (2001) make the connection between high staff turnover and poor patient outcomes. In this study, the patient outcome being investigated is DAT patient well-being. These authors (Hollinger, & et al., 2001) also support the notion that environmental factors in long term care facilities can influence patients.

Coping Subscales of the Work Environment Scale

Introduction

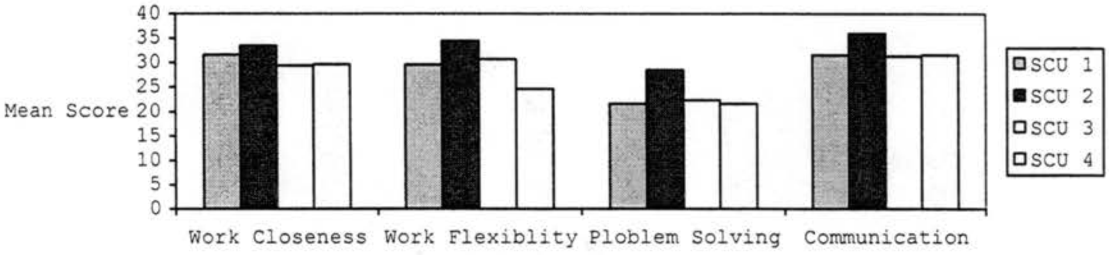
When an individual is confronted with a stressful situation that continues for long periods of time he/she experiences both physical and psychological effects. If the stress is prolonged and the individual cannot effectively adapt, the stress will have a negative impact on the health of the individual. In this study, the utility of investigating the coping subscales of the total work environment may provide insight about the degree to which employees in these four special care units adapt to their environment by using four specific strategies: 1) communication; 2) problem solving; 3) work flexibility, and 4) work closeness. Three of these subscales are dimensions of the Circumplex Model previously discussed. Problem solving is not specifically explained by use of the

Circumplex Model, however, it is seen as an action oriented strategy aimed at decreasing or modifying stress. Walsh (1993) makes the connection between communication and problem solving.

Figure four illustrates the findings related to the four subscales of coping in the individual special care units studied.

Figure 4

Subscales of Coping by Special Care Unit



Work Closeness

The mean score for the total sample (N = 25) was 30.84. Individual SCU mean scores ranged from 29.33 for SCU 3 to 33.50 for SCU 2. There are ten items in this subscale, the Cronbach alpha coefficient for reliability was 0.84. Response choices range from 1 = never to 5 = very often. A sample of the items are as follows: 1) sense of working as a team; 2) ability to depend on co-workers; 3) personally committed to the team; 4) mutual trust and respect; and 5) care about each other (see Appendix J) for the complete scale. According to Olson's Circumplex Model (1983) cohesion (closeness) measures: emotional bonding, boundaries, coalitions, times, space, friends, decision making, interests, and recreation. According to this model there are four levels of cohesion ranging from disengaged (very low) to separated (low to moderate) to connected (moderate to high) to enmeshed (very high). The central levels of functioning along this continuum are seen as balanced. In general, the extreme levels disengaged (very low) and enmeshed (very high) can be problematic especially over a long period of time. If an employee overuses this coping strategy he/she may have a negative influence on the work environment and patient well-being. If on the other hand, the employee underuses this strategy the same result would be expected over time. The use of this strategy at the extremes is expected to have a negative impact on patient well-being and is illustrated by use of the conceptual model developed by the researcher for this study (see Appendix A). The mean scores for all four special care units on closeness do not demonstrate variability. A one-way Analysis of Variance (ANOVA) was done and the findings indicate that there is no significant difference for work closeness by special care unit (Table 8).

Table 8

Work Closeness Between Special Care Units

	Sum of Squares	df	Mean Score	F	Sig.
Between Groups	46.505	3	15.502	1.124	0.361
Within Groups	303.341	22	13.788		
Total	349.846	25			

Work Flexibility

The work flexibility subscale is also discussed within the framework of Olson's Circumplex Model (1983). The "work flexibility" dimension of the scale is a measure of the ability of the employee to adapt by changing in response to the stress in the work environment. Like closeness it has 10 items with responses ranging from 1 = never to 5 = very often. The Cronbach alpha coefficient for reliability for this subscale was 0.76.

There are four levels of flexibility described by Olson. At the extreme ends of the continuum are: very low (rigid) and very high (chaotic). This dimension measures: 1) negotiation styles; 2) role relationships; and 3) relationships rules, according to Olson. Again, the central levels of "work flexibility" indicate more appropriate levels of adaptability and are expected to result in better employee and patient outcomes. Rigid employees are likely to be very controlling. This may result in roles being strictly defined, rigid rules and limited negotiation ability. Chaotic levels of adaptation may result in erratic behaviors and impulsive decision making. Chaotic relationships are not consistent and may result in an increase in stress for both the employees and patients. Figure 4 also illustrates the mean scores for each SCU on the flexibility dimension. The mean score for the total sample (N = 25) was 29.24. Special care unit 4 employees were the least flexible (mean 24.60, N = 5) when compared to the other three units. This may be related to the short time of employment on this unit (4 months). New employees may not be as accomplished at adaptability as employees who have worked in the environment for a longer period of time. Special care unit 2 employees were the most flexible (mean = 34.50, N = 2). The argument related to flexibility and time worked used above does not seem to be supported with SCU 4 employees. Special Care Unit 2 with only 2 employees have worked on average 8 months; therefore, the sample size may have influenced this measure. An alternative explanation may be that these employees actually represent the extreme ends of the continuum. However, the mean scores for all special care units does not indicate that there is much difference in work flexibility between SCU's. A one-way Analysis of Variance (ANOVA) indicated that there was no significant difference in work flexibility by special care units (Table 9). Since this pattern would only be found 9 times out of 100, this trend should be investigated in future studies.

Table 9

Work Flexibility between Special Care Units

	Sum of Squares	df	Mean Score	F	Sig.
Between Groups	181.428	3	60.476	2.477	0.088
Within Groups	537.033	22	24.411		
Total	718.462	25			

A scatterplot was developed to illustrate each employee's position on the Circumplex Model (see Appendix K). Three employees were found to be flexibly separated (Quadrant I), while eleven employees were found to be flexibly connected (Quadrant II). Of the eleven employees in this quadrant, three were found to be chaotically enmeshed.

These three employees represent extreme cases and, according to the model, may be problematic. Quadrant III (structurally separated) represents a very structured environment and nine employees were found to be in this area. However, the special care unit environment would be expected to be structured. Of these nine employees, two employees are rigidly disengaged. These employees represent extreme cases and according to the model may be problematic. Lastly, three employees were located in Quadrants IV (structurally connected). Of the twenty six employees, sixteen employees are balanced, five employees are mid-range, and five employees are extreme. Employees who are balanced are expected to have a positive impact on patient well-being. Employees at the extremes could have a negative impact on patient well-being at times.

Work Communication

The work communication subscale has 10 items which relate to communication with both co-workers and supervisors. The Cronbach alpha coefficient for reliability was 0.54. The response choices are the same 1 = never and 5 = very often. There is a stem statement which asks the employee to, "please indicate how often the following items happen to you at work." The questions range from: 1) respectful communication exists; 2) I am clear about what is expected of me; 3) my co-workers and supervisors tell me when I am doing a good job; 4) communication in our group is effective; 5) it is easy for me to say what is on my mind, and 6) I am encouraged to express my ideas.

According to Olson (1983), communication is the third dimension of the Circumplex Model and is considered a facilitating dimension. Communication facilitates both the adaptation and cohesion dimensions. Therefore, open communication should be a reliable coping strategy for the employee who is confronted with a stressful work environment. The communication subscale measures: 1) listening skills; 2) self-disclosure; 3) clarity; 4) speaking skills; 5) and respect and regard. Moderate to high work groups on the communication dimension are expected to have a positive impact on work environment for employees, families and patients. Lower communication for work groups would be expected to have a negative impact on work environment and patent care.

Figure 4 also illustrates the mean scores for communication for each special care unit. The mean score for the total sample was 32.73. The range of means was very close for three units, the mean score for SCU 3 was 32.33, SCU's 1 and 4 had the same mean score of 31.60. The highest mean score 36.0 for communication was SCU 2. Again this score should be viewed cautiously because it represents an N of 2. A one-way Analysis of Variance (ANOVA) indicates no significant difference on work communication by special care unit see Table 10.

Table 10

Communication Between Special Care Units

	Sum of Squares	df	Mean Score	F	Sig.
Between Groups	43.813	3	14.604	0.585	0.631
Within Groups	549.303	22	24.968		
Total	593.115	25			

Problem Solving

The problem solving subscale has 6 items. With a stem statement that reads: "when you are under stress at work, indicate how often you do the following." The response choices are the same as for the other subscales, 1 = never to 5 = very often. Some of the items include: 1) talk to others to find a solution; 2) find new ways of dealing with the problem; 3) take steps to eliminate stress; 4) use humor; and 5) I try to be creative. Walsh (1993) makes the connection between communication skills and problem solving skills. The question that asks directly about "taking steps to eliminate stress" represents an action-oriented strategy for relief of stress that has generally been accepted as a recommended coping strategy.

The mean score for this sample for problem solving was 21.56 (N = 25). The range of mean scores was from 21.6 for SCU's 1 and 4 to 28.5 for SCU 2. Problem solving ability for SCU 2 may be related to sample size N = 2 and, therefore, should be interpreted cautiously. The findings indicate that problem solving as a coping strategy is the skill used least in all SCU's. Education may be useful to improve employee skills in this area. The mean scores for all special care units do not indicate that there is much difference in work problem solving between special care units. A one-way Analysis of Variance (ANOVA) indicated that there was no significant difference on work problem solving by special care units (Table 11).

Table 11

Work Problem Solving Between Special Care Units

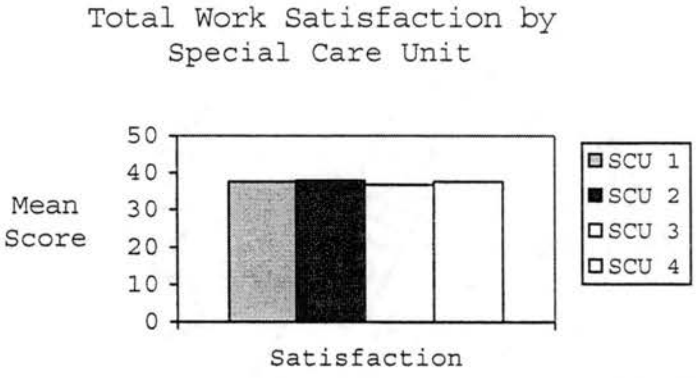
	Sum of Squares	df	Mean Score	F	Sig.
Between Groups	114.851	3	38.284	1.014	0.405
Within Groups	830.264	22	37.739		
Total	945.115	25			

Work Satisfaction

Work satisfaction is the last subscale of the total work environment scale. It is a summary subscale that asks the employee to rate overall satisfaction. The stem statement is: please indicate how satisfied you are with these aspects of your work. A sample of the work stress subscale items are: 1) benefits; 2) supervisor and co-worker relationships; 3) chances for promotion; 4) my suggestions are taken into consideration; and 5) salary and schedule. As expected this subscale was highly correlated with all of the other subscales of work stress. However, work satisfaction may be useful as an general reflection of how employees in each of these special care units perceive their work environment.

The mean score for the total sample (N = 26) was 37.38. Figure 5 illustrates the mean score comparisons for each group. On average employees in SCU 2 were the most satisfied with the work environment (mean score 38.0) and employees in SCU 3 (mean score 36.8) were the least satisfied with the work environment. The range, however, is very small so that the differences may be misleading and not related to patient outcomes.

Figure 5



A one-way Analysis of Variance (ANOVA) was done to test for significant differences but none were found on work satisfaction by special care units (Table 12).

Table 12

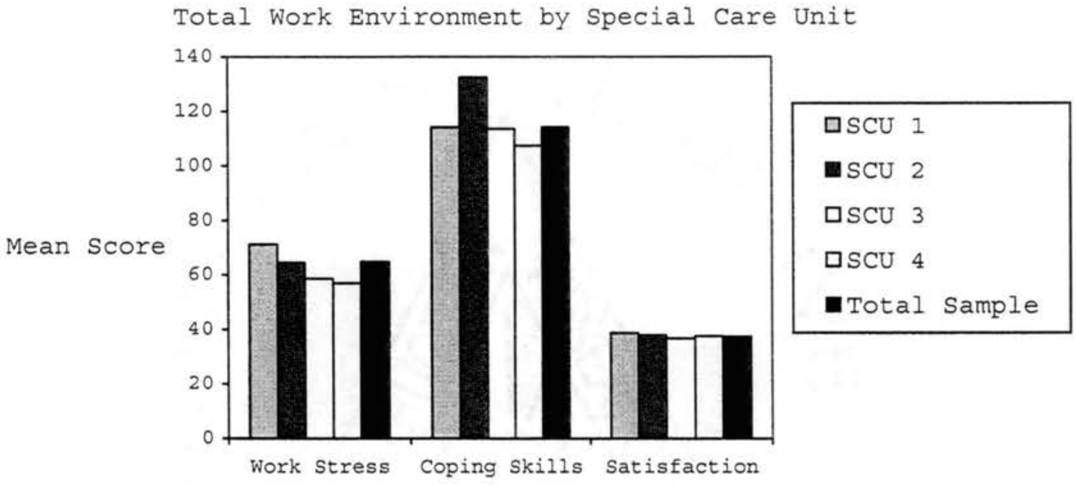
Work Satisfaction between Special Care Units

	Sum of Squares	df	Mean Score	F	Sig.
Between Groups	46.185	3	15.395	0.183	0.907
Within Groups	1,851.969	22	84.180		
Total	1,898.154	25			

Total Work Environment

Figure 6 represents the mean scores for all special care units. The subscales include: work stress; coping skills; and work satisfaction.

Figure 6



A one-way Analysis of Variance (ANOVA) was done to test for significant differences on work environment between special care units see Table 13. No significant differences were found.

Table 13

Work Environment between Special Care Units

	Sum of Squares	df	Mean Score	F	Sig.
Between Groups	1,628.177	3	542.726	1.573	0.226
Within Groups	7,243.583	21	344.933		
Total	8,871.760	24			

Perceived Family Communication

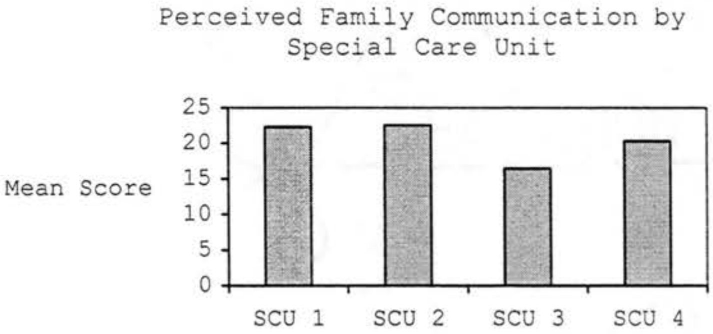
Perceived family communication for this study was measured by an instrument adapted by the researcher from a ten item scale developed by Olson (1982). Five items were selected as appropriate for analysis based on a Cronbach alpha coefficient for reliability of 0.84. The five items that were used were: items 1, 2, 3, 8, and 9. The instrument can be found in Appendix G.

A licensed employee, either a registered nurse (RN) or a licensed practical nurse (LPN), was asked to complete this questionnaire about family communication and involvement. The researcher recognizes that the utility of this variable may be limited, however, employee perceptions may impact "work environment" because perceptions have "meaning" and, therefore, in the context of "work environment", may be an influencing factor. It is recognized that actual data collected from family members about their communication and involvement should be combined with employee perceptions. Recognizing that this may be considered a weakness of this study, the findings should be interpreted with caution. There is no attempt made here to make inferences to the family members actual level of communication and involvement. Future research should combine insider (faculty) and outsider (employee) perceptions of family involvement.

The 5 items selected for analysis were: 1) staff are satisfied with how family members communicate with each other regarding this patient; 2) family members are good listeners; 3) family members express affection for each other and the patient; 4) family members are able to communicate with the patient; and 5) staff are satisfied with the involvement of family in the plan of care for this patient. The response choices range from 1 = almost never to 5 = very often. All five items on the perceived family communication tool were tested for reliability and the Cronbach alpha coefficient was found to be 0.84.

Figure 7 illustrates the mean score comparison for each special care unit. The mean score for perceived family communication (N = 65) was 20.44.

Figure 7



The range of the mean scores was 16.50 for SCU 3 to 22.32 for SCU 1. Communication has been identified as a very important variable for employees in the work environment. It is expected that as a facilitating variable employee work communication, family communication, and patient communication would be related. The Pearson's r product moment correlations for perceived family communication are illustrated on Table 14.

Table 14

Relationships Between Items for Perceived Family Communication

	Good Listeners	Express Affection	Communicate with Patient	Communicate with Each Other	Involved in Care
Good Listeners	------	0.625**	0.386**	0.680**	0.732**
Express Affection	0.625**	------	0.351**	0.561**	0.566**
Communicate with Patient	0.386**	0.351**	------	0.451**	0.508**
Communicate with Each Other	0.680**	0.561**	0.451**	------	0.737**
Involved in Care	0.732**	0.566**	0.508**	0.737**	------

** Significant relationships at the 0.01 level

For the purposes of this study perceived family communication was only used to establish a relationship with the level of patient well-being. However, communication among and between all groups should be studied. The researcher would recommend studying communication in this setting for future research.

Patient Well-being

Weight

As previously discussed, this investigator attempted to develop an instrument that would measure multiple dimensions of well-being. Weight was expected to help the researcher differentiate those patients who were experiencing a higher level of well-being. This was based on the Failure to Thrive literature. According to Newburn and Knowchuck (1994), inadequate nutritional intake is a marker related to decreased health and, therefore, well-being. These authors also suggest that individuals who fail to thrive have problems with social relatedness as well. They suggest that problems with social relatedness represent a failure of the human-environment interaction. Newburn and Knowchuck suggest that individuals should "thrive" despite their chronic illness and that environment, either positively or negatively, influences an individual's ability to "thrive."

It seemed reasonable to think that dementia patients who were stressed and uncomfortable in the SCU environment may either eat in excess (for comfort) or eat less because of distress. The individual's response to stress in this environment would be expected to follow his/her previous patterns of behavior (before the diagnosis of dementia).

For the purposes of this study, the researcher developed two questions to assess weight. What is the patient's current weight? For comparison, What was the patient's weight 6 months ago? It was expected that weight loss greater than -7 lbs. over the past six months indicated that the patient well-being was less. Conversely, if the patient gained weight greater than +7 lbs. in the past 6 months that this may be indicative of a reaction to stress. Weight change greater than (+7, -7) as a variable was used as one measure of patient well-being.

The mean score for current weight for the total sample N = 65 was 142.65 pounds. The range was from 96.4 pounds to 220.6 pounds. The mean score for weight change over a six month period was from −19 pounds to a +31 pounds. Variations for weight were found in each special care unit. A 7 pound variance was considered acceptable and was based on one standard deviation from the mean.

A Chi Square for Goodness of fit was done to determine if the differences for the frequency of weight change were significant by special care unit. Chi Square indicates that there were significant differences in the weight change by special care units (Table 15).

Table 15

Weight Change by Special Care Unit

	Number of Patients Observed with Weight Change greater than +7 or -7	Total Number of Patients	Observations divided by Number of Patients
# 1	11	28	39.28
# 2	1	7	14.28
# 3	8	18	44.40
# 4	1	12	8.33
Total			106.29

df = 3

Table Value = 16.266 at p. 0.001 level of significance

Chi Square Value = 106.266

* Weight change expected less than +7 or -7 for all patients with DAT

Social Interaction

The investigator expected that the level of social interaction of the patient, even in the presence of dementia, would be an indication of the degree to which the DAT patient remained "connected" to others and to his/her environment. The human-environment interaction is important to all human beings especially to persons with dementia.

The mean score for the one question, "What is the current level of social interaction of this patient?" was 4.03 across 65 observations. The response choices ranged from 1 = almost never to 5 = almost always. The range of mean scores were from 3.75 (SCU 4) to 4.42 (SCU 2). The mean score indicated very little difference between special care units on the level of social interaction of patients. Additionally, the level of social interaction reported indicates that patients on these units "frequently" interact with other patients and staff. This is surprising when compared to the other variables used in this study to measure the level of patient well-being. A possible explanation for this might be that the responses to this question lacked "criterion" which were specific enough to find actual differences in levels of social interaction that may exist. Another explanation might be that one question is not adequate to measure this variable.

Stress Related Behaviors

This investigator was interested in the frequency of agitated or stress related behaviors demonstrated by the patients in this study over a one week period. One single item was developed to attempt to assess this variable. The question was: "How often (in the past week) has this patient displayed agitated or stress related behaviors?" The response choices ranged from 1 = almost never (1-2 times) in the past week to 5 = almost always (several times each day).

Frequent stress related behaviors may be an indication of the only way a patient with dementia can communicate his/her discomfort. This discomfort would not necessarily indicate that a problem existed within the human-environmental context on the SCU but it could. It may also be indicative of pain or other physical discomforts (e.g. constipation, headache, or even hunger).

The mean score for the total sample (N = 65) for stress related behaviors was 2.67. This suggests that on average each patient (N = 65) displayed agitated or stress related behaviors 5 to 6 times in one week. Examples of agitated or stress behaviors may be 1) combativeness; 2) restlessness; 3) yelling; 4) wandering; 5) kicking; and 6) spitting (Roper, Shapira, & Chang, 1991). Frequent displays of agitated behavior can create a very stressful environment for the staff as well as for all patients.

To determine the frequency of stress behaviors for each patient the investigator developed an adjusted score for each SCU. The adjustment was made to attempt to control for the variation in size of the four special care units. The observed number of behaviors for each unit was multiplied by 100. Using the adjusted behavior scores a Chi Square for goodness of fit was calculated and resulted in significant differences. Chi Square indicates that there were significant differences in stress related behaviors by special care units (see Table 16).

Table 16

Frequency of Stress Related Behaviors by Special Care Unit

	Observed	Expected	$O - E^2$	$\frac{(O - E)^2}{E}$
# 1	546	540	36	0.06
# 2	600	540	3600	6.67
# 3	405	540	18,225	33.75
# 4	608	540	4,624	8.56
Total				49.04

df = 3

Table Value = 16.26 at p 0.001 level of significance

Chi Square Value = 49.04

Functional Assessment Staging Scale

The functional assessment staging scale (Reisberg, 1988) (see Appendix H) was used to measure DAT patient function. The Cronbach alpha coefficient for this study was 0.70. This scale was used with the Global Deterioration Scale (see Appendix I) to determine if each dementia patient's level of function was appropriate for the stage of his/her disease. If there is a difference in the stage of the disease and the level of function, there is "excess disability." The frequency of excess disability for patients in this study ranged from 16.7% (SCU 3) to 100% for (SCU 2).

Excess disability can be the result of overuse of physical restraints, inappropriate use of psychotropic medications or other measures used by staff to control disruptive behaviors. It may be the result of attempting to keep the patients from falling. However, excess disability is seen as an avoidable consequence of Alzheimer's disease. If patients are not allowed to walk they will lose the ability to walk. Many patients in this study were not functioning at the highest level possible for the stage of their disease. The work environment in all of the special care units studied was stressful. Staff turnover was evident and some employees had little work experience which may partially explain the decreased level of function found.

Figure 8

Percent of Excess Disability by Special Care Unit

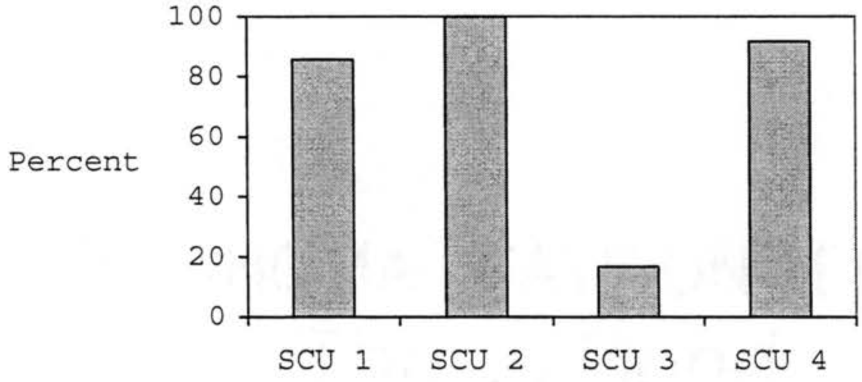


Figure 8 illustrates the frequency of excess disability found in each special care unit. Special Care Unit 3 is very different from the others on this variable. Data from this study do not provide a clear understanding about why this occurred. Perhaps staff on SCU 3 have developed better strategies for maintenance of function. Staff on this unit have worked on this unit on average 3.5 years. Another possible explanation for this finding may be that patients on this unit regularly receive physical therapy.

A Chi Square for goodness of fit was done to determine the significance of the variation found between Special Care Units. Results indicated that a significant difference (p = 0.001) was found see Table 17.

Table 17

Frequency of Excess Disability by Special Care Unit

	Observed	Expected	Observed - Expected^2	$\frac{(O - E)^2}{E}$
# 1	85.71	73.52	148.59	2.02
# 2	1000	73.52	701.19	9.54
# 3	16.7	73.52	3,228.5	43.91
# 4	91.67	73.52	329.42	4.48
Total				59.95

df = 3

Table Value = 16.266 at p 0.001 level of significance

Chi Square = 59.95

Relationships between functional assessment staging scale (FAST) and perceived family communication is illustrated on Table 18.

Table 18

Relationship Between FAST and Perceived Family Communication

	Good Listeners	Express Affection	Family Communication	Involvement
FAST b Unable to bathe	------	------	0.268*	------
FAST d Incontinent of urine	0.371**	0.280*	0.297*	------
FAST e Incontinent of feces	0.341**	------	0.396**	0.272*
FAST 7a Ability to speak	------	------	------	0.268*
FAST 7c Loss of ambulatory ability	------	------	0.304*	.0268*

* significant at the 0.05 level

** significant at the 0.01 level

Pearson's r product moment correlations were done using the perceived family communication items and each of the measures of the FAST Scale. Four of the five items on the perceived family communication scale were significantly correlated with five items on the FAST Scale. The explanation for these relationships may be that family members communicate more with staff and the patient in the late stages of the disease process because the loss of function becomes more dramatic and problematic.

Well-Being

As previously stated well-being for the purpose of this study has been defined as: 1) weight change in a 6 month period within + or - 7 lbs.; 2) frequent social interaction with others; few stress related behaviors; and 3) stage appropriate level of function. For persons with Dementia of the Alzheimer's Type (DAT) these indicators were proposed to be useful when assessing positive patient outcomes. Negative outcomes (poor well-being) would indicate that the DAT patient may need care that is not currently being provided. This type of assessment may provide the staff in LTC facilities a practical approach to measuring the quality of care being provided to each resident in the special care unit. Persons with DAT are difficult to assess because of the disease process.

A well-being score was calculated for each patient. Zero was used if the patient outcome on each of the four variables was poor. A one was used if the patient had the desired response in each of the four categories. Each patient could have a score of 1-4. One being very poor and 4 being very well. The mean score for well-being for N = 65 was 2.38. Seven patients (10.8%) scored 1 and 29 patients (44.6%) scored 2 on the well-being scale. These thirty six patient (55.4%) by this measure have low well-being. Twenty-six patients scored 3 which accounted for 40% of the total sample. Just three patients had a total score of 4 which represented 4.6% of the population.

Table 19

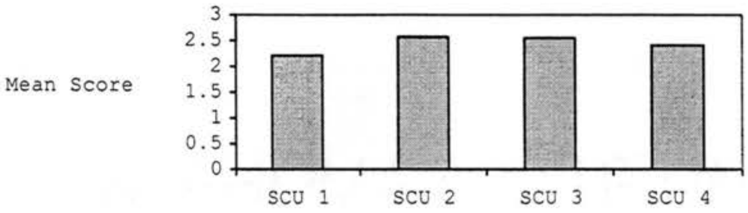
Frequency on Levels of Well-Being for Patients

		Frequency	Percent	Valid Percent	Cumulative Percent
	1.00	7	8.9	10.8	10.8
	2.00	29	36.7	44.6	55.4
	3.00	26	32.9	40.0	95.4
	4.00	3	3.8	4.6	100.0
Missing	System	14	17.7		
Total		79	100.0		

The mean scores for well-being by special care unit ranged from 2.21 for SCU 1 to 2.57 for SCU 2. See Figure 9 for the comparison of mean scores by special care unit.

Figure 9

Mean Score for Well-Being by Special Care Unit



A one-way ANOVA was done to test for significant differences between SCU's on well-being (Table 20), no significant difference was found.

Table 20

Patient Well-Being between Special Care Units

	Sum of Squares	df	Mean Score	F	Sig.
Between Groups	2,425.543	3	808.514	2.405	0.076
Within Groups	20,505.907	61	336.162		
Total	22,931.450	64			

Chapter V

Summary, Findings, Conclusions, Discussion and Recommendations

The purpose of this study was to explore the relationship of the work environment on a special care unit to the level of well-being of a patient with Dementia of the Alzheimer's Type.

Summary

Data were collected in four long-term care facilities on a special care unit for patients with Dementia of the Alzheimer's Type. The total sample of employees was twenty-six and the total number of patients was 65. The administrator and the director of nursing at each facility were asked to sign the consent form for research to be conducted in their facility. The researcher described the study verbally to each employee and he/she was asked to sign a consent if interested in participating in the study. Patient data were recorded by the staff on each special care unit. The researcher had no direct access to patient names or other identifying information. All data were collected over a three month period.

Findings

<u>Hypothesis one</u>: There is no relationship between employee's work related stress and the level of well-being of patients with Dementia of the Alzheimer's Type. The researcher was not able to demonstrate that there was a relationship between these two variables. This may be

related to the fact that only four special care units were used and a larger sample size is recommended. However, overall there did seem to be a high level of stress on these units. Permission to study patients in this environment is difficult to obtain due to issues related to informed consent and confidentiality.

Hypothesis two: There is no relationship between employee's problem solving ability and the level of well-being of patients with Dementia of the Alzheimer's Type.

The researcher was not able to demonstrate that there was a relationship between employee's problem solving ability and the level of well-being of patients with DAT. Findings from this study did suggest that the coping strategy of "problem solving ability" for employees was used least. This may be an area where staff education is lacking.

Hypothesis three: There is no relationship between the level of employee's communication and the level of well-being of patients with Dementia of the Alzheimer's Type.

The researcher was not able to demonstrate that there was a relationship between these two variables. Communication at all levels of the work environment is important. Based on the Circumplex Model and research findings from other organizational settings further research is recommended using a larger sample size. The relationship may exist but due to the limitations of this study were not demonstrated.

Hypothesis four: There is no relationship between employee's work closeness and the level of well-being of patients.

The researcher was not able to demonstrate that there was a relationship between these variables. The mean score for work closeness (30.84) indicated little variation among special care units.

The researcher would suggest further research in this area as well as using a larger sample. The Circumplex Model and research done in other organizational settings would suggest that a relationship may exist.

Hypothesis five: There is no relationship between employee's work flexibility and the level of well-being of patients with Dementia of the Alzheimer's Type.

The researcher did not find a relationship between these variables. The special care unit environment is highly structured. This may impact the flexibility demension of the employees in this environment when compared to other organizational settings. The Circumplex Model suggests that there may be a relationship that was not found due to the limitations of this study. Further research using a larger sample is recommended.

Hypothesis six: There is no relationship between work satisfaction and the level of well-being of patients with Dementia of the Alzheimer's Type.

The researcher was not able to demonstrate that there was a relationship between these variables. The overall mean for work satisfaction (37.38) indicated that employees were fairly satisfied with the work environment. The two main exceptions were salary and benefits.

Hypothesis seven: There is no relationship between the perceived level of family communication and the level of well-being of patients with Dementia of the Alzheimer's Type.

The researcher was not able to demonstrate a relationship between these variables. Actual data from family members would have been better; however, for this study that was not possible. The researcher recommends future research in this area. Family communication is important at all levels, family, staff and patient. The original family communication assessment by Olson is suggested. The changes made by the researcher resulted in an unacceptable reliability, therefore some items were deleted to reach an acceptable level of reliability prior to analysis.

Hypothesis eight: There is no relationship between patient weight and the level of well-being of patients with Dementia of the Alzheimer's Type.

There was a significant difference $p = 0.001$ for weight change greater than +7 or less than -7 for patients in special care units (Table 15). The researcher recommends that weight change is a useful concept to include in patient well-being. The researcher was not able to demonstrate a relationship between these variables.

Hypothesis nine: There is no relationship between the level of stress related behaviors and the level of well-being of patients with Dementia of the Alzheimer's Type.

There was a significant difference p = 0.001 between frequency of stress related behavior between special care units (Table 16). However, using one item to measure this variable may not capture the complexity of the variable for research purposes. The researcher does recommend it as a practical assessment tool.

Hypothesis ten: There is no relationship between the level of patient social interaction and the level of well-being.

There was no significant difference between the level of social interaction and well-being. However, the one item developed for use in this study may not have been adequate for research purposes. The item lacked specific criterion which may have made the data more useful.

Hypothesis eleven: There is no relationship between the level of function and the level of well-being of patients with Dementia of the Alzheimer's Type.

The data suggest a significant difference p = 0.001 between level of function in special care units and well-being (see Table 17). The FAST Scale (Reisberg) did allow the researcher to identify DAT patient's with excess disability. This is the most relevant finding. Dementia patients in three out of the four special care units had poor levels of function. The findings from this study indicate a great need for special care unit employees to routinely assess function in all DAT patients. In addition, the plan of care needs to focus on maintaining functional ability.

Conclusion

This research resulted in the following conclusion: Caregiving for patients with Dementia of the Alzheimer's Type on a special care unit within a long term care facility is complex. The person-environment interactions have not been adequately studied. Access to this fragile patient population is difficult for researchers. This exploratory study was limited by a small number of special care units which may have resulted in the inability to establish the relationships being studied. The most significant finding is that many of the DAT patients studied had excess disability which is avoidable. Special Care Unit staff should assess function frequently and develop a plan of care aimed at maintaining function for as long as possible.

Discussion

The results of this study were supportative of previous studies. It is important to recognize that the physical environment does not exist in a void, but is a part of a larger holistic system. To examine the impact of a single environmental factor without recognizing the role of the social and organizational environment could be detrimental. The findings could be artificial and not replicable in other settings (Calkins, 2001). Previous researchers have operated under the assumption that we could break apart "the setting, study components individually and then put the pieces back together again to make it whole (Altman & Rogoff, 1987). These researchers recognized the complexity of the person-environment interactions on special care units and have identified the need for research in this area.

Grant and colleagues (2001) suggest that a fundamental challenge facing researchers and practitioners is the translation of research into practice. Poor work environments have been associated with high turnover rates which is costly for long-term care facilities. Two of the four special care units in this study had high turnover rates. Staff recruitment and retention are among the most serious problems facing the industry today (Hollinger-Smith, Ortigara, & Lindeman, 2001).

The Oklahoma Foundation for Medical Quality (OFMQ) is the Quality Improvement Organization (QIO) for Oklahoma. This organization recently disseminated the quality indicators for selected nursing homes in Oklahoma. One of the quality indicators is patient function. This organization is prepared to assist LTC facilities with quality training materials for staff education and will help LTC facilities assess and measure outcomes. Results of this study suggest that this type of education and assessment are needed in the special care setting.

Nursing home administrators are faced with assessing organizational performance at many levels. They must consider finances, human resources, the quality of resident care, satisfaction of employees, residents and families. The special care unit environment is complex and more research is needed to build a bridge to support the assumption that the relationship between work environment and DAT patient well-being exists.

Recommendations

Future research should be done to determine if there is a relationship between the work environment on a special care unit and DAT patient well-being. The researcher recommends a multidisicplinary team approach to this research. Multiple researchers, each with complementary expertise, are needed to examine all factors to be identified in this complex environment. This will allow a more comprehensive study which may begin to capture the real world context of the special care environment. This approach would produce many challenges; however, the study results should be more meaningful and useful.

The work environment tool used for this study is recommended to other researchers as a reliable tool for use in this setting.

The perceived family communication tool is not recommended in its current form. Data collected from family members directly in conjunction with the staff perception would provide both insider and outsider data that better taps the complexity of the environment. The researcher recommends that the SCU staff be educated and routinely monitor the level of patient function for all SCU residents. Maintenance of function should be included in the plan of care for each patient.

Additionally, SCU staff may benefit from education aimed at improving problem solving ability. Staff education related to problem solving strategies for stress related patient behavior is advised.

Lastly, long-term care administrators should evaluate the work environment and make the necessary changes to improve the recruitment and retention of employees. The researcher would recommend looking at salary and benefits first. A program that rewards high quality care, and continued education with an increase in salary or benefits may reduce cost (retention) and improve the quality of care.

The research findings for this study were impacted by the small sample size. Perhaps a large system of long-term cares facilities with Special Care Units across the United States, could be approached for future studies to increase sample size and help control for possible local and regional bias.

References

Accorinti, K.L., Gilster, S.D., & Dalessandro, J.L. (2000). Staff programs focus on reducing turnover. Balance, 4, 12-14, 28.

Administration on Aging. Profile of Older Americans: 2000. At www.aoa.dhhs.gov/aoa/stats/profile/default.htm, 2000.

Ala, T., Romero, S., Knight, F., Feldt, K. & Frey, W.H. (1990). Archives of neurology, 47, 1126.

Anderson, S., & Sabatelli, R. (1995). Family interaction: A multigenerational developmental perspective. Boston, MA: Allyn & Bacon.

Altman, I., Rogoff, B. (1987). World views in psychology: trait, interactional, organismic and transactional perspectives. In: Stokols D., & Altman I. (Lds.), Handbook of Environmental Psychology. New York: Wiley and Sons.

American Psychiatric Association (1987). Diagnostic and statistical manual of mental disorders - revised (3rd ed.) Washington, DC: Author.

Biegel, D., Sales, E., & Schulz, R. (1991). Family caregiving in chronic illness: Alzheimer's disease, cancer, heart disease, mental illness and stroke. Newbury Park, CA: Sage Publications.

Blessed, G., Tomlinson, B., & Roth, M. (1968). The association between quantitative measures of dementia and senile changes in the cerebral gray matter of elderly subjects. British Journal of Psychiatry, 114, 797-811.

Boss, P., Doherty, W., LaRossa, R., Schumm, W., & Steinmetz, S., (1993). Sourcebook of family theories and methods: A contextual approach. New York: Plenum Press.

Brody, E.M., Kleban, M.H., Lawton, M.P., & Silverman, H.A. (1971). Excess disabilities of mentally impaired aged: Impact of individualized treatment. Gerontologist, 11, 124-133.

Brody, et.al., (1974). A longitudinal look at excess disabilities in the mentally impaired aged. Journal of Gerontology, 29, 79-84.

Buckingham, M., & Coffman, C. (1999). First break all the Rules: What the World's Greatest Managers Do Differently. New York: Simon & Schuster.

Buckwalter, K., Gerdner, L., Hall, G., Stolley, J., Kudart, P., & Ridgeway, S. (1995). Shining through: The humor and individuality of persons with Alzheimer's disease. Journal of Gerontological Nursing, 21, (3), 11-16.

Centers for Medicare and Medicaid Services (Formerly the Health Care Financing Administration HICFA). (2002). At http://www.cms.hhs.gov/medicaid/mds20/default.htm.

Cohen, D., & Eisdorfer, C. (1988). Depression in family member caring for relatives with Alzheimer's Disease. Journal of the American Geriatrics Society, 36, 885-889.

Cohen-Mansfield, J. (1997). Turnover among nursing home staff: A review. Nursing Management, 28, 59-64.

Constantine, L. (1986). Family paradigms. New York: Guilford.

Cusack, P. (1988). Pets and Mental Health. New York: Hayworth Press.

Dura, J., Haywood-Niler, E., & Kiecolt-Glaser, J. (1990). Spousal caregivers of persons with Alzheimer's and Parkinson's disease dementia: a preliminary comparison. Gerontologist, 30, 332-336.

Edelmon, P. (2001). Research-practice partnership: a journey worth taking. Alzheimer's Care Quarterly, 2, (3), 17-21.

Fillenbaum, G., Smyer, M. (1981). The development, validity, and reliability of the OARS Multidimensional Functional Assessment Questionnaire. Journal of Gerontology, 36, 428-434.

Folstein, M., Folstein, S., & McHugh, P. (1975). Mini-mental state: A practical method for grading the cognitive state of patients for clinicians. Journal of Psychiatric Research, 12, 189-198.

Foster, J., Sclan, S., Welkowitz, J., Boksay, I., & Seeland, I. (1988). Psychiatric Assessment in medical long-term care facilities: reliability of commonly used rating scales. International Journal of Geriatric Psychiatry, 3, 229-233.

Gay, L.R. (1987). Educational Research: Competencies for analysis and application (3rd ed). Columbus, Ohio: Merrill Publishing Company.

Gershon, S., Ferris, S., Kennedy, J., Kurtz, N., Overall, J., Pollack, B., Reisberg, B., & Whitehouse, P., (1993). In R. Prien and D. Robinson, (Eds). Clinical Evaluation of Psychotropic Drugs. American College of Neuro-pharmacology, Washington, D.C.

Gottlieb, G., Gur, R.E., & Gur, R.C. (1988). Reliability of psychiatric scales in patients with dementia of the Alzheimer's type. American Journal of Psychiatry, 45, 857-859.

Grant, L.A. & Ory, M. (2000). Alzheimer special care units in the United States. Research Practice in Alzheimer's Disease, 4, 19-44.

Gunther, S., & Weber-Mack, K. (2001). The experience of Alzheimer's Disease: A family's perspective. Alzheimer's Care Quarterly, 2, (3): 1-4.

Hamilton, G., (1990). Promotion of mental health in older adults. In Geropsychiatric Nursing, Hogstel, M., (Ed.). St. Louis: Mosby.

Hollinger-Smith, L., Ortigara, A., & Lindeman, D. (2001). Developing a comprehensive long-term care workforce initiative. Alzheimer's Care Quarterly, 2 (3), 33-40.

Holmes, D. (2001). The added value of additional nursing aides in dementia special care units and in traditional nursing units. Alzheimer's Care Quarterly, 2 (3), 28-32.

Holmes, D., Teresi, J., & Monaco, C. (1992). Special care units in nursing homes: Prevalence in five states The Gerontologist, 32 (2), 1991-196.

Hughes, C., Berg, L., Danziger, W., Cohen, and Martin R.(1982). A new clinical scale for the staging of dementia. British Journal of Psychiatry, 140, 566-572.

Isaac, S. & Michael, W.B. (1995). Handbook in research and evaluation: Third edition. San Diego, CA: EdITS/Educational and Industrial Testing Services.

Johansson, B. & Zarit, S. H. (1991). Dementia and cognitive impairment in the oldest old: a comparison of two rating methods. International Psycogeriatrics, 3, 29-38.

Katz, S. & Akpom, C., (1976). A measure of primary sociobiological functions. International Journal of Health Service, 6, (6), 493-508.

Keane, W.L. (1994). The patient's perspective: The Alzheimer's Association. Alzheimer's Disease and Associated Disorders, 8, (3), 151-155.

Kimball, M., & Williams-Burgess, C., (1995). Failure to thrive: The silent epidemic of the elderly. Archives of Psychiatric Nursing, 9, (2), 99-105.

Koenig, H., George, L., & Siegler, I. (1988). The use of religion and other emotion-regulating strategies among older adults. The Gerontologist, 28, (3), 303-310.

Kutner, N., Blivise, D.L., (2000). Observed agitation and the phenomenon of "sundowning" among SCU residents. Research and Practice in Alzheimer's Disease, 4, 151-162.

Lawton, M., & Brody, E. (1969). Assessment of older people: Self-maintaining and instrumental activities of daily living. Gerontologist, 9, 179-186.

Leon, J. (1998). Characteristics of dementia Admissions to standard nursing homes and to special care units. American Journal of Alzheimer's Care. 1, 15-28.

Leon, J., Cheng, C.K., & Alvarez, RJ (1997). Trends in special care: Changes in SCU from 1991 to 1995. Journal of Mental Health Aging, 4, 149-168.

Leon, J., Potter, D., Cunningham, P. (1990). Current and projected availability of special nursing home programs for Alzheimer's disease patient. National Medical Expenditure Survey Data Summary 1, Agency for Health Care Policy and Research, Pubic Health Service, DH HS Publication Number (PHS) 90-3462, Rockville, MD: June.

Leon, J., Ory, M.G. (1999). Effectiveness of special care units (SCU) placement in reducing physically abusive behaviors in recently admitted dementia nursing home residents. Alzheimer's Disease and Related Disorders, 4, 217-228.

Lindeman, D.A., Arnsberger, P. Owens, D. (2000). Staffing and specialized dementia special care units: Impact on resident outcomes. Alzheimer's Disease and Related Disorders, 4, 217-228.

Maslow, K., & Ory, M. (2001). Review of a decade of dementia special care unit research: Lessons learned and future directions. Alzheimer's Care Quarterly, 2 (3), 10-16.

Murphy, K.M., Morris, S., & Kiely, (2000). Family involvement in special care units. Alzheimer's Disease and Related Disorders, 4, 229-240.

Newburn, V. & Krowchuk, H. (1994). Failure to thrive in elderly people: a conceptual analysis. Journal of Advanced Nursing, 19, 840-849.

Nie, N., Hull, H., Jenkins, J., Steinbrenner, K., & Bent, D. (1975). Statistical package of the social sciences. (2nd ed.). (p.p. 531-533). New York: McGraw-Hill.

Olson, D.H. (1977). Insider's view of relationships: Research strategies. In G. Levinger & H. Raush, (Eds). Close Relationships. Amherst Massachusetts; University of Massachusetts Press.

Olson, D. (1983). Circumplex model of marital and family systems VI: Theoretical update. Family Process, 24, 203-207.

Olson, D.H., McCubbin, H.I., Barnes, H., Larson, A., Muxen, M., & Wilson, M., (1985). Family Inventories. Life Innovations, Minneapolis.

Olson, D., McCubbin, H., Barnes, H., Larsen, A., Muxen, M., & Wilson, M., (1989). Families what makes them work (2nd ed.). Beverly Hills, CA: Sage.

Olson, D., Russell, C., & Sprenkle, D. (1989). Circumplex model: Systematic Assessment and treatment of families. New York: Haworth Press.

Olson D.H., Sprenkle, D.H., & Russell, C.S., (1979). Circumplex model of marital and family systems: I Cohesion and adaptability dimensions, family types and clinical application. Family Process, 19, 3-28.

Olson, D.H., & Stewart, K.L. (1990). Multisystem assessment of health and stress (MASH) model and the health and stress model and the health and stress profile (HSP).

Overall, J.E., Scott, J., Rhoades, H.M., Lesser, J. (1990). Empirical scaling of the stages of cognitive decline in senile dementia. Journal of Geriatric Psycheatry and Neurology, 3, 212-220.

Pallet, P.J. (1990). State of the science: A conceptual framework for studying family caregiver burden in Alzheimer's type dementia. Image, 22, (1), 52-58.

Paraprofessional Healthcare Institute (2000). Recruiting Quality Healthcare Professionals. Bronx NY: Paraprofessional Healthcare Institute, August.

Pfeffer, R., Kuroski, T., Harrah, C., Chance, J., & Filos, S. (1982). Measurement of functional activities in older adults in the community. Journal of Gerontology, 37, 323-329.

Phillips, L. R. (1986). Caring for the frail elderly at home: Toward a theoretical explanation of the dynamics of poor quality family caregiving. July; 8 (4): 62-84

Pruchno, R., Kleban, M., Michaels, J., & Dempsey, N. (1990). Mental and physical health of caregiving spouses: Development of a causal model. Journal of Gerontology: Psychological Sciences, 45, p 192-p199.

Reisberg, B. (1988). Functional assessment staging (FAST). Psycho-pharmacology Bulletin, 24, 653-659.

Reisberg, B., & Ferris, S.H. (1988). The brief Cognitive Rating Scale (BCRS). Psychopharmacology Bulletin, 24, 629-636.

Reisberg, B., Ferris, S.H., Anand, R., deLeon, M.J., Schneck, M., Buttinger, C., & Borenstien, J. (1984). Functional staging of dementia of the Alzheimer's type. Annals of the New York Academy of Sciences, 435, 481-483.

Reisberg, B., Ferris, S.H., deLeon, M.J., & Crook, T. (1982). The global deterioration scale for assessment of primary degenerative dementia. American Journal of Psychiatry, 139, 1136-1139.

Reisberg, B., Ferris, S.H., deLeon, M., & Crook, T. (1988). The global deterioration scale (GDS). Psychopharmacology Bulletin, 24, 661-663.

Reisberg, B., Ferris, S.H., Franssen, E. (1985). Functional degenerative stages in dementia of the Alzheimer's type appear to reverse normal human development. In Shagass, C. et. Al., EDS. Biological Psychiatry Vol. 7, New York: Elsevier Science Publishing Co.: 1319-1321.

Reisberg, B., Ferris, S., Steinberg, G., Schulman, E., DeLeon, M., & Sinaiko, E. (1989). Longitudinal study of dementia patients and aged controls: an approach to methodological issues. In M.P. Lawton & A.R. Herzon (Eds). Special Research methods for Gerontology. Amityville, New York: Baywood Publishers, 195-231.

Reisberg, B., Ferris, S.H., Torossian, C., Kluger, A., & Monteiro, I. (1992). Pharmacologic treatment of Alzheimer's disease: a methodologic critique based upon current knowledge of symptomatology and relevance for drug trials. International Psychogeriatrics, 4, (supplement 1), 9-42.

Reisberg, B., Sclan, S., Franssen, E., DeLeon, M., Kluger, A. (1993). Clinical stages of normal aging and Alzheimer's disease: The GDS staging system. Neuroscience Research Communications, 13, (Supplement 1), 551-554.

Robertson, J. F., Hert, K. A., & Cummings, C. C. (1994). Long-term care: retention of nurses. Journal of Gerontological Nursing, 20, 4-10.

Roper, J., Shapira, J., and Chang, B. (1991). Agitation in the demented patient: A framework for management. Journal of Gerontological Nursing, 17, (3), 17-21.

Russo, J., Vitaliano, P., Brewer, D., Katon, W., & Becker, J. (1995). Psychiatric disorders in spouse caregivers of care-recipients with Alzheimer's disease and matched controls: A diathesis-stress model of psychopathology. Journal of abnormal Psychology, 104, 197-204.

Sabatelli, R.M. & Bartle, S.E. (1995). Survey approaches to the assessment of family functioning: conceptual, operational and analytical issues. Journal of Marriage and the Family, 57, (11), 1025-1039.

Schulz, R., O'Brien, A., Bookwala, J., & Fleissner, B. (1995). Psychiatric and physical morbidity effects of dementia caregiving: Prevalence, correlates, and causes. Gerontologist, 35, 771-791.

Schulz, R., & Williamson G. (1991). A two year longitudinal study of depression among Alzheimer's Caregivers. Psychology and Aging, 6, (4), 569-578.

Teresi, J., Grant, L.A., Holmes, D. Ory. M. (1998). Staffing in traditional and special care dementia units: Preliminary findings from the National Institute on Aging Collaborative Studies. Journal of Gerontological Nursing, 24, 49-53.

Trice, L. (1990). Meaningful life experience to the elderly. Image, 22, (40), 248-251.

U.S. Congress, Office of Technology Assessment. (1992). Special care Units for People with Alzheimer's and other Dementia's: Consumer Education, Research, Regulatory, and Reimbursement Issues. Washington D.C.: Author.

Van Haitsma, K.M., Lawton, M.P., & Kleban, M.N. (2000). Does segregation help or hinder? Examining the role of homogeneity in behavioral and emotional aspects of quality of life for persons with cognitive impairment in the nursing home. Research and Practice in Alzheimer's Disease 4, 217-228.

Walsh, F. (1993). Conceptualization of normal family processes (pp 3-69). In F. Walsh (ed.), Normal family processes (2nd. ed.). New York: Guilford Press.

Wang, G. (1977). Dementia in old age. In Wells (ED.). Dementia (2nd. ed.). (pp. 15-26). Philadelphia, PA: FA Davis Co.

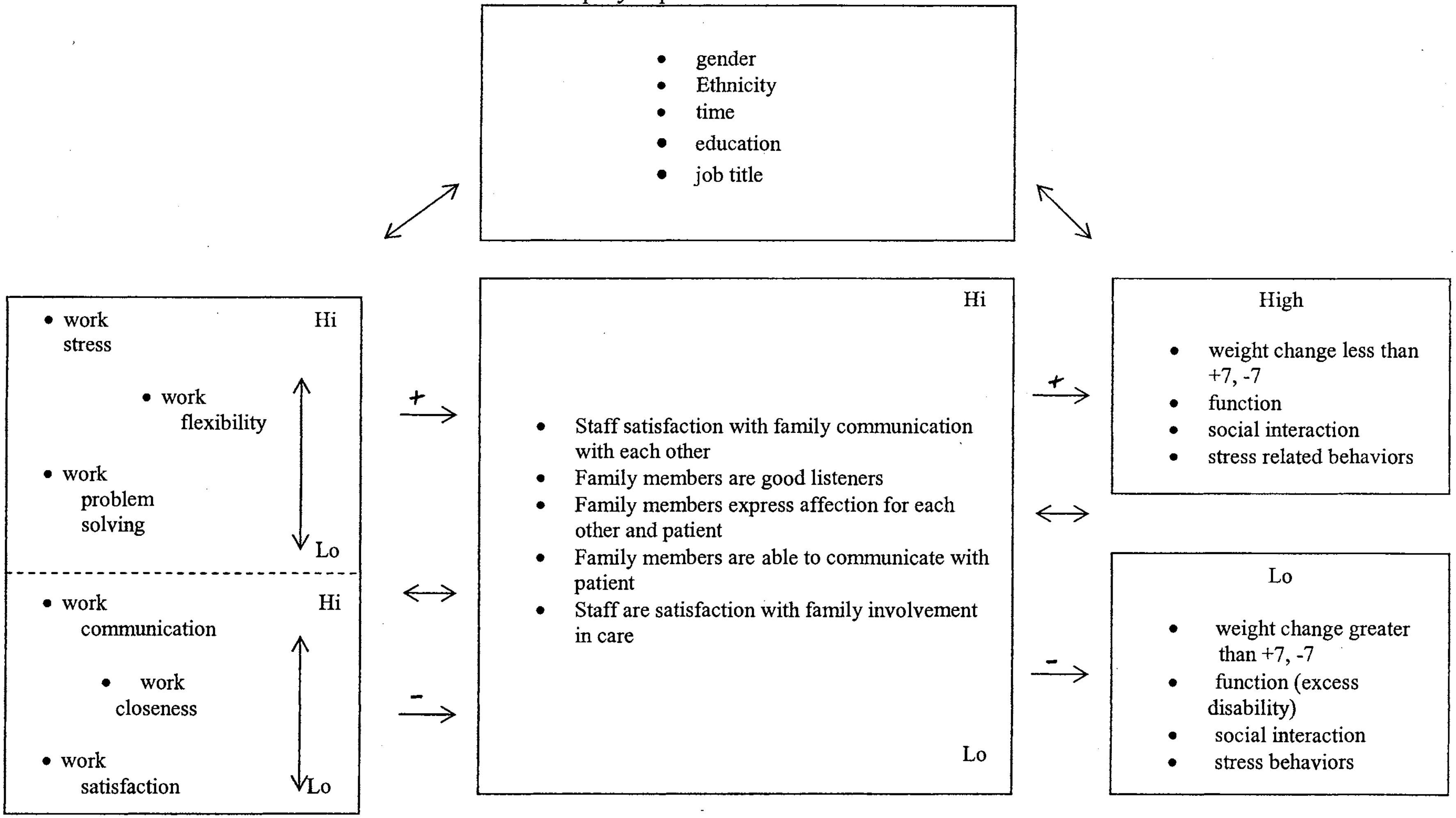
Weiler, P. (1987). The public heath impact of Alzheimer's disease. American Journal of Public Health, 77, 1157-1158.

Weisman, G.D., Calkins, M.P., & Sloane, P.D. (1994). The environmental context of special care. Alzheimer Disease Association Disorders, 8 (suppl. 1), 308-320.

Wunderlich, G., Sloan, F., Davis, C. (1996). (Eds.), Nursing Staff in Hospitals and Nursing Homes: Is it Adequate? Washington D.C.: National Academy Press.

Appendix A

The relationship of the Special Care Unit work environment to Alzheimer patient well-being.



Employee personal environment

- gender
- Ethnicity
- time
- education
- job title

- work stress
- work flexibility
- work problem solving

- work communication
- work closeness
- work satisfaction

- Staff satisfaction with family communication with each other
- Family members are good listeners
- Family members express affection for each other and patient
- Family members are able to communicate with patient
- Staff are satisfaction with family involvement in care

High

- weight change less than +7, -7
- function
- social interaction
- stress related behaviors

Lo

- weight change greater than +7, -7
- function (excess disability)
- social interaction
- stress behaviors

Appendix B

Oklahoma State University
Institutional Review Board

Protocol Expires: 6/3/03

Date: Wednesday, June 05, 2002 IRB Application No: HE0253

Proposal Title: THE RELATIONSHIP BETWEEN THE LEVEL OF FAMILY FUNCTION AND THE LEVEL OF PATIENT FUNCTION IN ALZHEIMER'S TYPE DEMENTIA

Principal
Investigator(s):

Mary Linda Steele 1909 Red Prairie Dr. Edmond, OK 73003	David Fournier 232 HES Stillwater, OK 74078

Reviewed and
Processed as: Expedited (Spec Pop)

Approval Status Recommended by Reviewer(s): Approved *

Dear PI :

Your IRB application referenced above has been approved for one calendar year. Please make note of the expiration date indicated above. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved projects are subject to monitoring by the IRB. If you have questions about the IRB procedures or need any assistance from the Board, please contact Sharon Bacher, the Executive Secretary to the IRB, in 203 Whitehurst (phone: 405-744-5700, sbacher@okstate.edu).

Sincerely,

Carol Olson

Carol Olson, Chair
Institutional Review Board

*NOTE: Protocol is approved, with your assurance that the signed administrator forms will be submitted to this office before the research actually starts.

Appendix C

April 15, 2002

Nursing Home Administrator
And Director of Nursing

Administrative Staff,

My name is Linda Steele; I am a registered nurse and a doctoral student at Oklahoma State University. I would like to conduct research for my doctoral dissertation in your facility. The name of my study is: The relationship between the level of family function and the level of patient function in Alzheimer's type dementia.

I would like to have access to your staff on the Alzheimer's Special Care Unit. I would like to ask them to complete questionnaires related to themselves and the unit environment. I would like to ask the staff on all three shifts to participate. In addition, I would like to have the RN supervisor complete questionnaires about the patients and their family's involvement in care. I do not want to know the names of staff or of patients. The questions are not considered to be personal but general about the level of patient function.

I anticipate that each staff member (if he or she wants to participate) will be able to answer the questionnaires in about 15-20 minutes. Each employee will be asked to sign a consent form prior to participation. The time commitment of the RN supervisor will be about 30 minutes per patient.

I have submitted my research instruments and plan to the Institutional Review Board at Oklahoma State University and have received permission to conduct this research. Participation in this research is voluntary. All participants will remain anonymous and all data will be kept confidential, data collection instruments will be coded. The name of the facility will not appear on the data. All data will be reported in the aggregate form so that facilities or individuals will not be recognizable.

I will provide you with a copy of the results if you wish. If you have questions about this research you may contact my advisor Dr. Dave Fournier at 405-744-8351. You may also contact Sharon Bacher, IRB Executive Secretary, Oklahoma State University at 405-744-5700.

I give my permission for Linda Steele to conduct research on the Special Care Unit in

____.
Name of Facility

______________________________ __________
Administrator Date

______________________________ __________
Director of Nurses Date

Appendix D

CONSENT FORM

I, ________________, hereby authorize or direct Linda Steele, to administer questionnaires to me as a member of the staff on an Alzheimer's Special Care Unit.

This study is to be done as a part of a doctoral dissertation entitled The relationship between the level of family function and the level of patient function in Alzheimer's type dementia. The purpose of the study is to explore the relationships between the level of family function and the level of patient function in Alzheimer's type dementia. Additionally, age, gender, educational level, ethnicity, and length of time of caregiving will be measured as they relate to the level of patient function. The level of function of the Alzheimer patient will be assessed by the nurse supervisor.

I realize that I can voluntarily withdraw from the study at any time. I will not be asked to give any identifying information (such as my name, address or phone number) on the questionnaires. Information provided for the study will not be used for any other purpose and all information will be destroyed at the end of the study. All information about me will be kept confidential. There are no anticipated physical or psychological risks expected as a result of participation in this study.

I understand that participation is voluntary, that there is no penalty for refusal to participate, and that I am free to withdraw my consent and participation in this project at any time after notifying the project director.

I may contact Linda Steele at 405-974-5183 or Dr. David Fournier at 405-744-8351. I may also contact Sharon Bacher, IRB Executive Secretary, Oklahoma State University, 203 Whitehurst, Stillwater, OK 74078; Telephone: 405-744-5700.

I have read and fully understand the consent form. I sign it freely and voluntarily. A copy has been given to me.

Date: ______________ Time: ____________ (am/pm)

Signed: ____
Signature of staff caregiver

I certify that I have personally explained all elements of this form before requesting that he or she sign it.

Signed: ________________________
Project Director

Appendix E

To be completed by RN:

Patient No. __________

Background Data
about patient

1. Patient has history of previous diagnosed psychological disorder?

_____ Yes ______No

2. Patient is experiencing an acute illness?

_____ Yes ______ No

3. Patient is experiencing acute pain?

_____ Yes _____ No

4. Does the patient have any other illness that would be considered terminal (ie, HIV, Cancer)?

_____ Yes _____ No

5. Has the patient changed residences in the past 6 months?

_____ Yes _____ No

6. Has the patient lost a significant other or family member in the last 12 months?

_____ Yes _____ No

7. According to the Global Deterioration Scale which stage of Alzheimer's Disease is the patient?

Stage 4-6 _____ Yes _____ No
Stages 1,2,3 or 7 _____ Yes _____ No

8. What is the current weight of the patient?

_________ pounds

9. What was patient weight 6 months ago? ______________ month
______________ year

________ pounds

10. What is the current level of social interaction of this patient?
(Please check one)

______ Socially interacts with almost never with other patients and staff.

______ Socially interacts once in awhile with other patients and staff.

______ Socially interacts sometimes with other patients and staff.

______ Socially interacts frequently with other patients and staff.

______ Socially interacts almost always with other patients and staff.

11. How often (in the past week) has this patient displayed agitated or stress related behaviors? (Please check one)

______ Almost never (1-2 times) in the past week

______ Once in awhile (3-4 times) in the past week

______ Sometimes (5-6 times) in the past week

______ Frequently (daily)

______ Almost always (several times each day)

Appendix F

Employee Survey

1 = Never 2 = Seldom 3 = Sometimes 4 = Often 5 = Very Often

During the past year, please indicate how often each issue has created stress for you at work: (Answer all the questions in this profile)

Work Stress (28)

Job Characteristics:

1.	My job is everything I want it to be.	1	2	3	4	5
2.	My employer demands too much.	1	2	3	4	5
3.	Some things about my job are a problem.	1	2	3	4	5
4.	The type of job I have creates problems.	1	2	3	4	5
5.	My job is demanding, tedious or creates tension.	1	2	3	4	5
6.	I am tired or not physically ready for work.	1	2	3	4	5
7.	I am not interest or happy with my job.	1	2	3	4	5

Work Benefits/Compensation:

8.	It is hard to receive a promotion.	1	2	3	4	5
9.	Employer policy on payment of wages creates problems.	1	2	3	4	5
10.	Salary and benefits create problems.	1	2	3	4	5
11.	I am not paid fairly or enough for what I do.	1	2	3	4	5
12.	My employee benefits are not adequate.	1	2	3	4	5

Work Schedule:

13.	My work schedule creates problems.	1	2	3	4	5
14.	Working long hours are a problem.	1	2	3	4	5
15.	I never know what hours I will work.	1	2	3	4	5
16.	I have no control over my work hours.	1	2	3	4	5

Work Relationships:

17.	I cannot get along with my co-workers.	1	2	3	4	5
18.	I cannot get along with some of my co-workers.	1	2	3	4	5
19.	Anger or tense relations exist in my work environment.	1	2	3	4	5
20.	Trouble with co-workers causes a poor work environment.	1	2	3	4	5

Work Supervisor(s)

21.	I have difficulty getting along with my supervisor(s).	1	2	3	4	5
22.	My supervisor(s) are too rigid.	1	2	3	4	5
23.	I am not supported by my supervisor(s).	1	2	3	4	5
24.	My suggestions are not valued by my supervisor(s).	1	2	3	4	5

1 = Never 2 = Seldom 3 = Sometimes 4 = Often 5 = Very Often

Work Productivity:

25.	I lose time at work because of personal problems.	1	2	3	4	5
26.	Personal concerns reduce my productivity.	1	2	3	4	5
27.	Personal commitments interfere with my work performance.	1	2	3	4	5
28.	I have problems concentrating on my job.	1	2	3	4	5

Work Problem Solving (6)
When you are under stress at work, indicate how often you do the following:

29.	I talk to others in order to find a solution to the problem.	1	2	3	4	5
30.	I take steps to reduce or eliminate whatever is causing stress.	1	2	3	4	5
31.	I try to new ways of dealing with the problem.	1	2	3	4	5
32.	I try to see something positive in the situation.	1	2	3	4	5
33.	I try to see a humorous side to the situation.	1	2	3	4	5
34.	I try to be creative and open to new ideas.	1	2	3	4	5

Work Communication (10)
Please indicate how often the following items happen to you at work:

35.	It is easy for me to say what is on my mind to my immediate supervisor.	1	2	3	4	5
36.	My co-works listen well and understand my ideas.	1	2	3	4	5
37.	Respectful and effective communication exists between staff and management.	1	2	3	4	5
38.	My supervisor and/or co-workers tell me when I am doing a good job.	1	2	3	4	5
39.	Group discussions are productive and enjoyable.	1	2	3	4	5
40.	Communication in our group is effective.	1	2	3	4	5
41.	People fail to listen to each other.	1	2	3	4	5
42.	I am clear about what is expected for me.	1	2	3	4	5
43.	I am encouraged to express my ideas and opinions.	1	2	3	4	5
44.	We have communication problems.	1	2	3	4	5

Work Closeness (10) 45-54 Work Flexibility (10) 55-64
Please describe your work group:

45.	There is a sense of working together as a team.	1	2	3	4	5
46.	People seem distant and unfriendly.	1	2	3	4	5
47.	We can depend on co-workers for help.	1	2	3	4	5
48.	There is mutual trust and respect.	1	2	3	4	5
49.	People do not seem to really care.	1	2	3	4	5
50.	The atmosphere is cold and impersonal.	1	2	3	4	5
51.	There is professional respect for each other.	1	2	3	4	5
52.	There is unfriendly competition.	1	2	3	4	5
53.	I feel personally committed to the team.	1	2	3	4	5

1 = Never 2 = Seldom 3 = Sometimes 4 = Often 5 = Very Often

54.	I feel proud of the work of my team.	1	2	3	4	5
55.	New ideas or suggestions from people within the organization are encouraged.	1	2	3	4	5
56.	The organization is flexible and makes necessary changes to improve its services.	1	2	3	4	5
57.	Our group is disorganized and/or makes erratic decisions.	1	2	3	4	5
58.	We are encouraged to try and find new ways of solving problems.	1	2	3	4	5
59.	We have flexible policies for taking time off for medical and personal reasons.	1	2	3	4	5
60.	Our team responds quickly when change is necessary.	1	2	3	4	5
61.	We react well when it is necessary to change our normal operating procedures.	1	2	3	4	5
62.	Our team is required to adhere to too many policies.	1	2	3	4	5
63.	We are regulated to policies that stand in the way of progress.	1	2	3	4	5
64.	The manager/supervisor is too controlling and/or rigid.	1	2	3	4	5

Work Satisfaction (10)
Please indicate how satisfied you are with these aspects of your work:

65.	My work is interesting to me.	1	2	3	4	5
66.	My work allows me to make good use of my abilities.	1	2	3	4	5
67.	My work gives me a sense of accomplishment.	1	2	3	4	5
68.	My salary seems fair and adequate.	1	2	3	4	5
69.	I am satisfied with the employee benefits.	1	2	3	4	5
70.	There are good chances for promotion.	1	2	3	4	5
71.	I get along well with my supervisor.	1	2	3	4	5
72.	I get along well with my co-workers.	1	2	3	4	5
73.	I am satisfied with my work schedule.	1	2	3	4	5
74.	My suggestions or ideas at work are taken into consideration.	1	2	3	4	5

Appendix G

Pt. No. ______

FAMILY COMMUNICATION

INSTRUCTIONS:

Communication is an important aspects of family relationships. Please review the statements below respond according to how you see communication among family members of this patient.

1	2	3	4	5
Almost Never	Occasionally	Sometimes	Often	Very Often

1. Staff are satisfied with how family members communicate with each other regarding this patient.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

2. Family members are good listeners.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

3. Family members express affection for each other and the patient.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

4. Family members avoid talking about important issues.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

5. When angry, family members say things that would be better left unsaid.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

6. Family members calmly discuss problems with each other regarding this patient.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

7. Family members disagree regarding care of this patient.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

8. Family members are able to communicate with patient.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

9. Staff are satisfied with the involvement of family in the plan of care for this patient.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Appendix H

Functional Assessment Staging (FAST)

1. ☐ No difficulty, either subjectively or objectively.
2. ☐ Complains of forgetting location of objects. *Subjective work difficulties.*
3. ☐ Decreased job functioning evident to co-workers. Difficulty in traveling to new locations. *Decreased organizational capacity.**
4. ☐ *Decreased ability to perform complex tasks*, e.g., planning dinner for guests, handling personal finances (such as forgetting to pay bills), difficulty marketing, etc. *
5. ☐ *Requires assistance in choosing proper clothing* to wear for the day, season, or occasion, e.g., the patient may wear the same clothing repeatedly, unless supervised.*
6. ☐ (a) *Improperly putting on clothes without assistance or cueing* (e.g., may put street clothes on over night clothes, or put shoes on wrong feet, or have difficulty buttoning clothing) occasionally or more frequently over the past weeks.*
   ☐ (b) Unable to bathe properly (e.g., *difficulty adjusting bath-water temperature)* occasionally ore more frequently over the past weeks.*
   ☐ © *Inability to handle mechanics of toileting* (e.g., forgets to flush the toilet, does not wipe properly or properly dispose of toilet tissue) occasionally or more frequently over the past weeks.*
   ☐ (d) *Urinary incontinence* (occasionally or more frequently over the past weeks).*
   ☐ (e) *Fecal incontinence* (occasionally or more frequently over the past weeks).*
7. ☐ (a) Ability to speak limited to approximately *a half a dozen intelligible different words or fewer*, in the course of an average day or *in the course of an intensive interview.*
   ☐ (b) Speech ability limited to the use of a *single intelligible* word in an average day or in *the course of an intensive interview* (the person may repeat the word over and over).
   ☐ © Ambulatory ability lost *(cannot walk without personal assistance).*
   ☐ (d) *Cannot sit up without assistance (e.g.*, the individual *will fall over if there are no lateral rests (arms) on the chair).*
   ☐ (e) *Loss of ability to smile.*
   ☐ (f) *Loss of ability to hold up head independently.*

Reisberg, et al 1984

Appendix I

The Global Deterioration Scale for Assessment of Primary Degenerative Dementia

Level	Clinical Characteristics
1 No cognitive decline	No subjective complaints of memory deficit. No memory deficit evident on clinical interview.
2 Very mild cognitive decline (Forgetfulness)	Subjective complaints of memory deficit, most frequently in following areas: (1) forgetting where one has placed familiar objects; (b) forgetting names one formerly knew well. No objective evidence of memory deficit on clinical interview. No objective deficits in employment or social situations. Appropriate concern with respect to symptomatology.
3 Mild cognitive decline (Early Confusional)	Earliest clear-cut deficits. Manifestations in more than one of the following areas: (a) patient may have gotten lost when traveling to an unfamiliar location; (b) co-workers become aware of patient's relatively poor performance; (c) word and name finding deficit becomes evident to intimates; (d) patient may read a passage or a book and retain relatively little material; (e) patient may demonstrate decreased facility in remembering names upon introduction to new people; (f) patient may have lost or misplaced an object of value; (g) concentration deficit may be evident on clinical testing. Objective evidence of memory deficit obtained only with an intensive interview. Decreased performance in demanding employment and social settings. Denial begins to become manifest in patient. Mild to moderate anxiety accompanies symptoms.
4 Moderate cognitive decline (Late Confusional)	Clear-cut deficit on careful clinical interview. Deficit manifest in following areas: (a) decreased knowledge of current and recent events; (b) may exhibit some deficit in memory of one's personal history; (c) concentration deficit elicited on serial subtractions; (d) decreased ability to travel, handle finances, etc. Frequently no deficit in following areas: (a) orientation to time and person; (b) recognition of familiar persons and faces; (c) ability to travel to familiar locations. Inability to perform complex tasks. Denial is dominant defense mechanism. Flattening of affect and withdrawal from challenging situations occur.
5 Moderately severe cognitive decline (Early Dementia)	Patient can no longer survive without some assistance. Patient is unable during interview to recall a major relevant aspect of their current lives, e.g., an address or telephone number of many years, the names of close family members (such as grandchildren), the name of the high school or college from which they graduated. Frequently some disorientation to time (date, day of week, season, etc.) or to place. An educated person may have difficulty counting back from 40 by 4s or from 20 by 2s. Persons at this stage retain knowledge of many major facts regarding themselves and others. They invariably know their own names and generally know their spouses' and children's names. They require no assistance with toileting and eating, but may have some difficulty choosing the proper clothing to wear.
6 Severe cognitive decline (Middle Dementia)	May occasionally forget the name of the spouse upon whom they are entirely dependent for survival. Will be largely unaware of all recent events and experiences in their lives. Retain some knowledge of their past lives but this is very sketchy. Generally unaware of their surroundings, the year, the season, etc. May have difficulty counting from 10, both backward and, sometimes, forward. Will require some assistance with activities of daily living, e.g., may become incontinent, will require travel assistance but occasionally will display ability to familiar locations. Diurnal rhythm frequently disturbed. Almost always recall their own name. Frequently continue to be able to distinguish familiar from unfamiliar persons in their environment. Personality and emotional changes occur. These are quite variable and include: (a) delusional behavior, e.g., patients may accuse their spouse of being an impostor, may talk to imaginary figures in the environment, or to their own reflection in the mirror; (b) obsessive symptoms, e.g., person may continually repeat simple cleaning activities; (c) anxiety symptoms, agitation, and even previously nonexistent violent behavior may occur; (d) cognitive abulia, i.e., loss of willpower because an individual cannot carry a thought long enough to determine a purposeful course of action.
7 Very severe cognitive decline (Late Dementia)	All verbal abilities are lost. Frequently there is no speech at all – only grunting. Incontinent of urine, requires assistance toileting and feeding. Lose basic psychomotor skills, e.g., ability to walk. The brain appears to no longer be able to tell the body what to do. Generalized and cortical neurologic signs and symptoms are frequently present.

Reisberg, B., Ferris, S.H., Leon, M.J. & Crook, T. The global deterioration scale for assessment of primary degenerative dementia. *American Journal of Psychiatry,* 1982, 139:1136–1139.

Appendix J

DEMOGRAPHIC DATA

EMPLOYEE SURVEY

INSTRUCTIONS: Please answer the following questions about yourself. If you have any questions, please feel free to ask.

1. What is the month and year of your birth? ______________________________

2. What is your gender? Check one _______ Female _______ Male

3. What is the highest grade level you reached in school? Check one:

______ Competed some high school
______ Completed high school or equivalent
______ Completed some college
______ College degree
______ Completed some graduate school
______ Graduate degree
______ Other Professional degree

4. About how long have you been providing care for patients on this unit?

_______ Years ______ Months

5. Which of the following best describes your ethnic background? Choose one:

________ Native American
________ Hispanic
________ Asian
________ African American
________ Caucasian
________ Other (specify) ___________________________

6. What is your current job title? (Check one)

________ RN
________ LPN
________ Aide
________ Activity director
________ Social worker
________ Other (please specify) ____________________

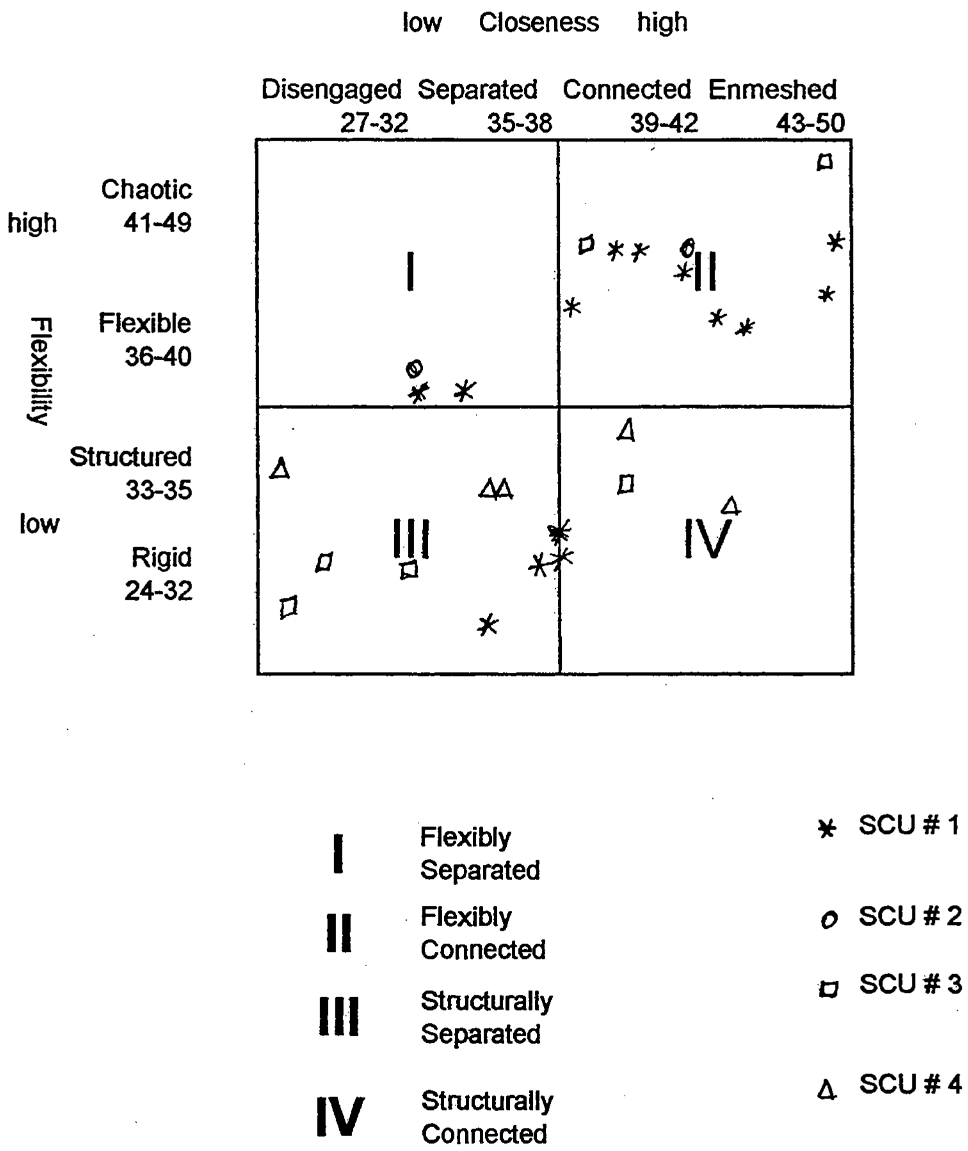
7. How often do you work on this unit?

________ Full time

________ Part time (please specify) ____________________________________

____

Appendix K


low Closeness high
Disengaged
Separated
Connected
Enmeshed
27-32
35-38
39-42
43-50
high
Chaotic
41-49
Flexible
36-40
Flexibility
Structured
33-35
low
Rigid
24-32
I
II
III
IV
I Flexibly Separated
II Flexibly Connected
III Structurally Separated
IV Structurally Connected
* SCU # 1
o SCU # 2
□ SCU # 3
Δ SCU # 4

Appendix L

Four special care units were used for this study. The size and physical environments varied. All four units were located within multi-level long-term care facilities. All SCU's were separated from other units within the facility by locked access. Two special care units provided a "home-like" environment for the residents. These units provided shared social spaces, residential furnishings, carpeting, wallpaper, kitchen, dining room and one unit even had a parlor. Each of these units also had an enclosed courtyard. Both of these units had small numbers of patients, ten or less.

In contrast, two larger units (20-30 residents) were more traditional, "institutional-like" settings with personal, "home-like" decorations. One of these units contained a multi-purpose room which was used for dining, activities, and exercise. Residents were actively engaged in a variety of activities.

The size and physical environment of the special care unit plays an integral part in person-environment fit for patients with Alzheimer's Type Dementia. These SCU environments are in need of further research.

Vita2

Mary Linda Steele

Candidate for the Degree of
Doctor of Philosophy

Thesis: RELATIONSHIP OF WORK ENVIRONMENT ON A SPECIAL CARE UNIT TO THE LEVEL OF WELL-BEING OF A PATIENT WITH DEMENTIA OF THE ALZHEIMER'S TYPE

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