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Assessment of nursing staff knowledge regarding reversible and irreversible forms of confusion in the elderly

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Luotto, Julie Lynn Gleisner, M.S.

San Jose State University, 1990

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ASSESSMENT OF NURSING STAFF KNOWLEDGE
REGARDING REVERSIBLE AND IRREVERSIBLE FORMS OF CONFUSION
IN THE ELDERLY

A Thesis

Presented to

The Faculty of the Department of Nursing
San Jose State University

In Partial Fulfillment
of the Requirements for the Degree
Master of Science

By

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December, 1990

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ABSTRACT

ASSESSMENT OF NURSING STAFF KNOWLEDGE REGARDING REVERSIBLE AND IRREVERSIBLE FORMS OF CONFUSION IN THE ELDERLY

By Julie Gleisner Luotto

This thesis identifies the knowledge base of Registered Nurses (RNs) and Nursing Assistants (NAs) from an acute hospital, a home care agency, and a nursing home regarding reversible and irreversible forms of confusion in the elderly. Utilizing a nonexperimental survey method, data were collected from 59 respondents through the use of a questionnaire developed by Ruth Lincoln, R.N., M.S.N., University Hospitals of Cleveland, 1984.

From the 59 RNs and NAs, a moderate amount of knowledge was found (41 or 69.5% of the RNs and NAs scored 75% or better) regarding reversible and irreversible confusion in the elderly. While the analysis of variance, ANOVA, did not reveal any significant differences in the mean scores of RNs or NAs based on environmental differences, a significant difference did exist at the $p .01$ level between the knowledge scores of RNs and NAs in all three settings.

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TABLE OF CONTENTS

	Page
LIST OF TABLES	vii
Chapter	
1. INTRODUCTION	1
Statement of the Problem	3
Purpose and Need for the Study	3
Definition of Terms	5
Research Questions	7
Sample Population	8
Research Design	9
Data Analysis	9
Scope and Limitations	10
2. CONCEPTUAL FRAMEWORK AND REVIEW OF RELATED	
LITERATURE	11
Conceptual Framework	11
Holistic Nature of Man	11
Compromised Brain Support	13
Sensoriperceptual Problems	14
Disruptions in Pattern and Meaning.	14
Alterations in Normal Physiologic	
States	15
The True Dementias	16
Related Literature	16
Knowledge Level of Nurses	16

Chapter	Page
Reversible and Irreversible Confusion . .	19
Mental Status Examinations	24
Summary	26
3. THE METHOD	28
Research Design	28
Research Instrument	28
Research Sample	30
Procedure for Data Collection	31
Data Analysis	35
4. ANALYSIS AND INTERPRETATION OF DATA	38
RNs and NAs Knowledge Levels	39
Knowledge Level of RNs in All Sites	39
Knowledge Level of NAs in All Sites	42
Statistical Significance of Knowledge Scores of RNs and NAs in All Sites	42
Formal Education, Workshops, and Inservices .	45
Knowledge Level of Each Test Statement . . .	47
5. CONCLUSIONS AND RECOMMENDATIONS	51
Conclusions	51
Recommendations	54
REFERENCES	56
APPENDIXES	60
A. Questionnaire	60
B. Permission to Use Tool	65

	Page
C. Consent Letters	68
D. Instruction Sheet	71
E. Informed Consent	73

LIST OF TABLES

Table		Page
1.	Returned Survey Packets From RNs and NAs in All Sites	40
2.	Distribution of Knowledge Scores of RNs and NAs in All Sites	41
3.	Comparison of Knowledge Scores of RNs in All Sites	43
4.	Comparison of Knowledge Scores of NAs in All Sites	44
5.	Statistical Analysis Using ANOVA to Compare Mean Knowledge Scores of RNs and NAs in All Sites	46

Chapter 1

INTRODUCTION

The elderly population has moved to the forefront in American society. In 1982, there were 26.8 million persons or approximately 11.7% of the total population, age 65 years and older in the United States. The United States Census Bureau figures project that by the year 2030, 64.3 million people or 1 out of 5 Americans will be 65 or older (Taeuber, 1983). The state of California will essentially possess an internal nation of older persons, with 6.2 million people plus over the age of 65 (California Council on Gerontology and Geriatrics, 1989). As the aged population expands, a proportional increase will occur in the number of elderly seeking medical treatment in hospitals, through home care agencies, and in nursing homes.

A crucial factor in promoting quality of life in the elderly population is the assessment and treatment of cognitive deficits. It is estimated by LaPorte (1982) that three million Americans who are over 65 years of age experience loss or impairment of intellect that is severe enough to be clinically significant. This group includes nearly 10% of the elderly who live in the community and 50% to 70% of the nursing home population. Roughly 15% of those with such impairment are believed to have potentially reversible disorders that are undetected. An additional 20%

to 25% are estimated to have undiagnosed contributing conditions for which some form of therapeutic intervention other than mere symptomatic treatment is important (LaPorte, 1982). The extent of confusion among hospitalized elderly persons is not well documented; although it has been estimated that between 10% and 15% of all patients on medical-surgical units develop an acute confusional state at some point during the course of hospitalization and that among older patients the estimate is as high as 40% (Liston, 1984). Patients with undetected cognitive deficits may rapidly deteriorate during the stress of acute hospitalization. The development of confusion in the older person who has been mentally intact, physically well, and functioning independently is often a source of substantial distress both to patients and to their families (McCartney & Palmateer, 1985). While dementia or irreversible confusion has attracted growing attention from the health professions in recent years, delirium or potentially reversible confusion in the elderly continues to be neglected (Lipowski, 1983). It has been observed in nursing homes that little distinction is made between those elderly with reversible forms of confusion and those with irreversible brain disease (Lincoln, 1984). Such vulnerability demands that health professionals possess knowledge of acute confusional states in the elderly in order to provide

effective care. Gerontological medicine is a relatively new area of study, and gerontological nursing has only recently been defined as a content area that should be included in basic education for nurses (Lee & Cody, 1987). Recognition of the elderly population's special needs has naturally outpaced dissemination of knowledge on how to meet those needs. Collecting baseline data regarding nurse's knowledge of confusional states can be an initial step in lessening this existing disparity.

Statement of the Problem

The research problem was to assess the knowledge of Registered Nurses (RNs) and Nursing Assistants (NAs) working in hospitals, home care agencies, and nursing homes regarding reversible and irreversible forms of confusion in the elderly. Although they are important members of the nursing profession, Licensed Vocational Nurses (LVNs) were not included, as they were not utilized in two of the three settings chosen for this study. Therefore, the study included only RNs and NAs.

Purpose and Need for the Study

The rapid growth of our nation's elderly population has had an effect on the health professions. All health care settings have experienced an increase in the proportion of elderly clients. As the largest group of health professionals in the United States, it is imperative that

nurses move effectively into assuming responsibility for comprehensive health care of the older adult. Comprehensive nursing care necessitates a dynamic process whereby scientific knowledge is continually synthesized into principles specific to nursing management of the elderly client. The first step in helping nursing expand the scientific knowledge base from which gerontologic nursing educational needs can be assessed is by determining baseline data (what the nurse already knows). In light of recent demographic changes and studies related to incidence and mortality resulting from acute confusional states, the need to determine nurses' knowledge of reversible and irreversible forms of confusion in the elderly becomes urgent. The consequences of even mild confusion can be substantial since injuries may occur during the episodes. There may be untoward effects from measures taken to ensure safety of the patient but which enforce immobility and increase the potential for self-injury such as broken bones. Costs to the hospital, nursing home, or home care agency may also be considerable since confused patients require extensive nursing surveillance. Nurses working in these institutions have the capacity to influence the care of the aged. The purpose of this study, then, was to measure the knowledge of RNs and NAs working in hospitals, home care agencies, and nursing homes regarding reversible and

irreversible forms of confusion in the elderly. Care to the aged can ultimately be improved by laying the groundwork for a definitive knowledge base in gerontological nursing through the collection of such baseline data.

Definition of Terms

For the purpose of this study, the following terms are defined:

1. Nursing staff refers to both Registered Nurses (RNs) and Nursing Assistants (NAs). Licensed Vocational Nurses (LVNs) were purposively excluded from this study since two of the three chosen sites for conducting the study do not utilize LVNs in the workplace.

2. Registered Nurse (RN) is any nurse who has been licensed by the California State Board of Registered Nurse Examiners regardless of educational preparation. "A registered nurse diagnoses and treats human responses to actual or potential health problems" (American Nurses Association, 1980, p. 9).

3. Nursing Assistant (NA) is an individual who assists registered nurses by doing the patient care procedures which do not require special training. These procedures include feeding patients, bathing patients, and taking temperature, pulse, and respiration (Thomas, 1981, p. 973).

4. Hospital is an institution for the treatment, care, and cure of the sick and wounded, for the study of disease,

and for training of physicians, nurses, and allied health personnel (Stedman's Medical Dictionary, 1989, p. 726).

5. Home health agency is:

A public agency, private organization, or subdivision of such an agency or organization which is primarily engaged in providing skilled nursing and other therapeutic services on a part-time or intermittent basis to patients in a place of residence used as the patient's home under a plan of treatment as prescribed by the attending physician (Title 22, 1979, p. 2209).

6. Nursing home refers to a convalescent home or private facility for the care of individuals who do not require hospitalization and who cannot be cared for at home (Stedman's Medical Dictionary, 1989, p. 1073).

7. Knowledge is "the fact or condition of knowing something with familiarity gained through experience of association" (Webster's New Collegiate Dictionary, 1979, p. 633).

8. Reversible confusion, delirium, or acute confusional state is defined as:

a condition in which the essential features are:

- (a) a reduced ability to maintain attention to external stimuli and to appropriately shift attention to new external stimuli; (b) disorganized thinking

manifested by rambling, irrelevant, or incoherent speech; (c) a reduced level of consciousness, sensory misperceptions, disturbances of the sleep-wake cycle and level of psychomotor activity; (d) disorientation to time, place, or person; and (e) memory impairment. The onset is relatively rapid, and the course typically fluctuates. The total duration is usually brief (American Psychiatric Association, 1987, p. 100).

9. Irreversible confusion or dementia is defined as: a condition in which the essential feature is impairment in short- and long-term memory, associated with impairment in abstract thinking, impaired judgment, other disturbances of higher cortical function, or personality change. The disturbance is severe enough to interfere significantly with work or usual social activities or relationships with others (American Psychiatric Association, 1987, p. 103).

10. Elderly refers to persons 65 years of age and older. The terms aged, older, and elderly will be used interchangeably in this study.

Research Questions

This study attempted to provide exploratory data on the following questions:

1. What is the knowledge level of RNs and NAs working in hospitals, home care agencies, and nursing homes

regarding reversible and irreversible forms of confusion in the elderly as measured by the research instrument?

2. What is the difference in the level of this knowledge possessed by RNs working in hospitals, RNs working in home care agencies, and RNs working in nursing homes?

3. What is the difference in the level of this knowledge possessed by NAs working in hospitals, NAs working in home care agencies, and NAs working in nursing homes?

Sample Population

The survey packets were distributed to 114 RNs and NAs employed on the orthopedic surgical unit of an acute hospital, the home care agency of the same hospital, and a nursing home in Santa Clara County, California. Of these 114 nurses, 28 RNs and 11 NAs were from the acute hospital, 21 RNs and 4 NAs were from the home care agency, and 25 RNs and 25 NAs were from the nursing home. Fifty-nine RNs and NAs completed the questionnaire according to guidelines established prior to the study. This included 18 RNs and 6 NAs from the acute hospital, 21 RNs and 4 NAs from the home care agency, and 8 RNs and 12 NAs from the nursing home. This convenience sample was chosen because of the high percentage of elderly the RNs and NAs cared for. All participants were required to have the ability to read English.

Research Design

This investigation was exploratory in nature. The knowledge level of RNs and NAs regarding reversible and irreversible confusion which can affect the elderly client was assessed through the use of a questionnaire in a nonexperimental survey method. This type of study seeks to establish priorities for future research by clarifying baseline data, the initial step in the development of new knowledge.

Data Analysis

Descriptive and inferential statistics were employed to analyze the data generated by this study. The descriptive statistics used were frequency distributions, mean test scores, and standard deviations to describe and summarize the knowledge scores of RNs and NAs from an acute hospital, a home care agency, and a nursing home as measured by the research instrument. The inferential statistic, analysis of variance or ANOVA, was used to search for differences in the mean test scores of the RNs and NAs in the three environments. It is acknowledged that the application of inferential statistics requires random sampling. The exploratory nature of this study did not involve a random process in sample selection, however, ANOVA was applied to the data.

Scope and Limitations

This exploratory descriptive study should be viewed as a preliminary investigation. The scope of the study included only nonrandom RNs and NAs working in a selected area of an acute hospital and a selected home care agency and nursing home. Hence, the research results cannot be generalized to other populations. It was designed to facilitate the generation of further research that will help nurse educators and gerontological nurse specialists plan successful strategies in educating RNs and NAs about the elderly. It is also hoped that this investigation will form a basis for developing hypotheses and will stimulate systematic testing in other settings and with other groups of nurses.

Chapter 2

CONCEPTUAL FRAMEWORK AND RELATED LITERATURE

Conceptual Framework

The conceptual framework chosen for this study and the one used to guide the development of the questionnaire used in this study, focuses on a holistic model of confusion that includes perceptual, social, cultural, and biologic elements. These elements are viewed as stimuli that result in behavioral responses and the need for adaptation. The related literature will explore reversible and irreversible confusional states in the elderly and will report other nursing studies that assessed nurses' (including RNs, LVNs, and NAs) knowledge level with regards to confusion.

This conceptual framework was formulated by Wolanin and Phillips (1981) from their studies on confusion. Utilizing adaptation theory, they describe confusion as a failure of an individual to adapt to changes in their external and internal environment. It is in part based on the classic works of Goldstein and Angyal who are theorists identified with a holistic approach. In 1939, Goldstein developed one of the first theories of holism used in the field of medicine.

The Holistic Nature of Man

It is impossible to separate perceptual, social, cultural, and biologic elements from each other or from the

individual. It is equally difficult to portray the relationships between these elements. Man interacts as a total individual with the total environment. An individual's behavior is a total expression of response to stimuli that is impinging on the individual. When an organism perceives a stimulus as significant, the stimulus will produce a complex reaction involving the whole organism. Physiologic, social, cultural, and biologic changes result in stimuli that require new styles of adapting to and interacting with the environment. Malfunctional behaviors, such as confusion, result from the failure to adopt to new styles of adaptation (Wolanin & Phillips, 1981).

Confusion should not be viewed as a disease state but rather as a response that is secondary to some cause. Within this framework, Wolanin and Phillips (1981) delineate five categories of primary sources of confusion from the four elements of man (physiologic, social, cultural, and biologic). These five categories include: (a) compromised brain support; (b) sensoriperceptual problems; (c) disruption in pattern and meaning; (d) alterations in normal physiologic states; and (e) the true dementias. The following discussion includes a description of each of these five primary sources of confusion (Wolanin & Phillips, 1981).

Compromised Brain Support

This is an area of interaction problems in the physiologic realm that can result in confusion among elderly people. These interaction problems are secondary to sudden changes in the brain's physiology which apparently interfere with the neurons as cells that metabolize oxygen, glucose, and other substrates. The aged brain is especially sensitive to physiologic changes caused by a host of physical illnesses. The confusional state is often the first sign that the brain's support is compromised. If it is assumed that the confusion is a normal progression of the aging process and untreatable, the primary disease may be overlooked. Without correcting the altered physiologic state, the acute confusional state can lead to a permanent state. Both the confusion and the physiologic problem must be treated. The four major areas under compromised brain support include hypoxia, hypoglycemia, hyperglycemia, and drug toxicity (Wolanin & Phillips, 1981).

Contributing factors to acute confusional states due to hypoxia includes conditions such as anemia, blood loss, folic acid deficiency, dehydration, hypocalcemia, hypercalcemia, hypothermia, hyperthermia, renal failure, ventilatory problems, cardiac problems, hypotension, increased intracranial pressure, normal pressure hydrocephalus, and hypothyroidism (Wolanin & Phillips,

1981). Hypoglycemic and hyperglycemic reactions may vary significantly in older diabetics from those in younger diabetics. Many older diabetics do not show the signs of increased epinephrine output (sweating, anxiety, nervousness, tachycardia) that often occur in hypoglycemic attacks. Elderly diabetics, even when controlled only by diet or oral hypoglycemic agents, are also prone to hyperglycemic reactions. Warning signs of increased blood glucose may be milder and reactions of this type may not be expected if the person is not insulin dependent. Drug toxicity may be caused by digitalis, sedative hypnotics, and hypotensives. The aged have a significant variation in physiologic response to drugs and to polypharmacy (Wolanin & Phillips, 1981).

Sensoriperceptual Problems

Elderly people may be particularly prone to confusion associated with sensory alteration because of physiologic changes within their sensory apparatus of touch, hearing, and vision. Some of these changes are related to pathologic changes that are commonly found in the older age group and others are related directly to the normal aging process. Sensory deprivation, distortion, and overload may coexist for the elderly client (Wolanin & Phillips, 1981).

Disruptions in Pattern and Meaning

This category deals with confusion that arises from

interactions with an external environment in which either the pattern or the meaning is disrupted. When the pattern and/or meaning of stimuli are disrupted or are no longer perceived by an individual, acute confusion results. The pattern and/or meaning of an older person's existence can be disrupted by stressors that interfere with the individual's personal milieu. These stressors include loss of natural, social, and economic supports; role reversal; threat to body integrity or body image; discontinuity with usual lifestyle; and confrontation with the individual's own vulnerability, aging, and death because of maturation (Wolanin & Phillips, 1981).

The pattern and/or meaning of an older person's existence can also be disrupted by the social structure of environment that interferes with the person's perception of meaning. Relationships with other significant people are often characterized by dependence as the elderly person becomes frail. These relationships then, become crucial to the survival of the individual and the maintenance of the person's self-concept and ego. The success of this social interaction has a direct influence on whether or not some elderly people will become confused (Wolanin & Phillips, 1981).

Alterations in Normal Physiologic States

This category includes pain avoidance, sleep, activity,

and elimination. Normal physiologic states have a direct effect on a person's identity or body image. Interference with the natural body rhythms and feedback mechanisms such as pain, insomnia, constipation, or having a catheter may lead to confused behavior (Wolanin & Phillips, 1981).

The True Dementias

The prevalence of true senile dementia is unknown and Wolanin & Phillips (1981) believe only a small portion of the total number of people who receive an organic diagnosis (arteriosclerotic brain syndrome, chronic brain syndrome, organic brain syndrome, and senile dementia) are probably affected by an irreversible phenomenon. The true dementias consist most commonly of Alzheimer's disease and arteriosclerotic dementia. Pick's disease, Huntington's chorea, Jakob-Creutzfeldt disease, and neurosyphilis as causes of dementia are seen less often (Wolanin & Phillips, 1981).

Related Literature

Knowledge Level of Nurses

A negative attitude towards the elderly prevails in our society. Negative attitudes include behaviors such as rejection, intolerance, and impatience. Campbell (1971) found that all categories of nursing personnel in her study (RNs, LVNs, NAs) demonstrated negative attitudes regarding the elderly. She also found that although the RNs had the

most extensive educational background and were the least willing to accept negative statements, they spent the least time caring for old people and preferred not to work with them. The LVNs and NAs spent more time with elderly patients and accepted more of the negative statements, but were also more willing to work with old persons than were the RNs.

As early as 1975, the National League for Nursing recognized the need for nursing education programs to include gerontological nursing as an intentional and universal part of their basic curricula (Lee & Cody, 1987). However, there still is not a consensus on a core curriculum in gerontological nursing (Lee & Cody, 1987) and much of the literature indicates that education is not effective in changing attitudes toward the elderly or in increasing nursing students' desire to seek employment which involves care of the elderly (Tollett, 1982). Gerontological nursing content has been found to be generally integrated into other courses in the curriculum (Hogstel, 1988). With the results of a survey of nursing students, Hogstel (1988) reported a slow and gradual recognition by nursing students of the need for additional content and experience in gerontological nursing.

In their study, Robb and Malinzak (1981) looked at all levels of nursing personnel to see if any particular group

of RNs, LVNs, or NAs were more knowledgeable than the others regarding gerontological nursing. They found that RNs with associate or higher degrees who were 20 to 30 years of age, had earned academic credit for one or more courses in gerontological nursing, had completed formal educational preparation for nursing within the past 10 years, and were assigned to acute care settings, were more knowledgeable about gerontological nursing than other RNs, LVNs, or NAs.

Only two studies (Brady, 1987; Palmateer & McCartney, 1985) were found that studied nurses' knowledge specifically related to confusion in the elderly. Brady (1987) developed a tool which collected a variety of information from nursing staff regarding confusional states in the elderly. Twenty-six staff members of a nursing home including RNs, LVNs, medication aides, and NAs participated in the study. On the first part of this tool, participants were asked to indicate the degree to which they used 12 listed characteristics in labeling confusion. Examples of the listed characteristics included disorientation to time, place, or people. The characteristic cited most frequently in labeling confusion was time disorientation on an average of 70%. The participants were then asked to indicate the presence or absence of these characteristics on a patient on video as predetermined by the investigator. Of the 26 respondents, only one subject correctly listed the characteristics of the

nursing home residents and three subjects incorrectly labeled the patient as confused. Brady (1987) concluded that in a forced choice situation, RNs, LVNs, medication aides, and NAs, had minimal ability to correctly assess characteristics presented by an elderly person on video and to identify confusion.

Palmateer and McCartney (1985) attempted to identify causes for nursing staff avoidance in cognitive assessment. The final phase of their study consisted of developing a questionnaire to elicit a self-report of nursing assessment behaviors. A section of this questionnaire included a test of RNs knowledge regarding dementia and cognitive assessment. The RNs of four medical/surgical units completed the questionnaire. Only 36% of the RNs scored 85% or higher on the knowledge survey. Sixty-seven percent incorrectly answered the true-false question regarding the earliest manifestation of dementia, and 47% incorrectly defined disorientation.

Reversible and Irreversible Confusion

With the exception of the work by Wolanin and Phillips (1981), the literature reveals a paucity of nursing studies regarding acute confusional states in the elderly. A contributing factor for this negligible systematic nursing investigation of acute confusion and nursing staff's low knowledge level regarding confusion may be that there is no

standard definition of confusion found in the literature. Foreman (1986) feels there is inconsistent, overlapping terms such as dementia, delirium, acute brain failure, pseudosenility, and acute brain syndrome used to describe confusion. More than thirty terms were found by Liston (1982) which were more or less synonymous and interchangeable medical definitions of confusion. Ahronheim (1982) suggests a discussion regarding confusion with respect to the elderly can be even more difficult because of the close link between acute and chronic confusional states in this group. A longstanding debate has existed whether acute confusional state, delirium, or acute brain failure is the preferred diagnostic label that appropriately directs the diagnosis and treatment of reversible forms of confusion (Foreman, 1986).

The extent of confusion among elderly persons is also not well documented and varies in the literature. Liston (1984) found incidence rates varied from 10% to 50% among hospitalized elderly. A daily prevalence rate varying from 0% to 13% and averaging 5.5% among patients over age 60 on general medical and surgical units in one hospital was reported (Chisholm et al., 1982). Foreman (1987) found that approximately one in every four patients over the age of 60 who were admitted to the hospital became confused within the first two to three days of hospitalization. Liston (1982)

reported significant mortality rates for elderly patients with delirium. He found that in the first month of illness the mortality ranged from 17% to 25% and death between six months and two years occurred in up to 30% of the elderly persons in his study.

Despite the extensive work and holistic approach formulated by Wolanin and Phillips (1981), other researchers are not in agreement whether physiologic, social, cultural, or biologic factors are necessary or sufficient for the development of acute confusional states. It is generally agreed upon that the elderly are more prone to developing an acute confusional state due to altered physiology, the presence of multiple chronic physical illnesses, and sensory impairments. Lipowski (1983) has found depression, malnutrition, physical illness, and polypharmacy as contributing factors to acute confusional states. LaPorte (1982) believes the most common causes of acute confusional states include medication toxicities, depression, and metabolic or infectious disorders. Williams, Campbell, Raynor, Musholt, Mlynarczyk, and Crane (1985) studied elderly post-surgical hip-fracture patients and found that age, errors on a mental status exam, level of pre-injury activity, and urine elimination problems were the variables cited most frequently as predictors of acute confusional states.

As a result of physiologic changes with aging, the elderly frequently experience medication toxicity from dosages that are correct for younger adults (LaPorte, 1982). In a study of over 200 elderly persons living in a community, more than 80% were taking three or more drugs and approximately 14% were taking up to 15 different drugs (Liston, 1984). Many of these drugs included hypnotics, sedatives, and minor tranquilizers which are of special concern for older patients due to their capabilities of inducing acute confusional states through toxic effects on cerebral function (Liston, 1984). Doherty and Kane (1973) found that nearly a quarter of the subjects they studied showed signs of digitalis toxicity. The signs of digitalis toxicity included mental confusion, cardiac arrhythmias, and extreme fatigue.

Patients with a chronic irreversible dementia can be doubly affected when they develop a new superimposed acute confusional state such as that due to a medication toxicity. Often the state is masked by the irreversible confusion or mistaken for an exacerbation of its symptoms. This can add to the buildup of irreversible brain impairment (LaPorte, 1982). One major study found that a third of hospitalized demented patients had a superimposed acute confusional state (Lipowski, 1983). A patient may die from an unrecognized acute physical illness or suffer permanent exacerbation of

his or her intellectual decline (Lipowski, 1982). Lipowski (1983), however, believes the transition from an acute confusional state to an irreversible dementia is relatively uncommon.

Kay, Beamish, and Roth (1970) report an overall prevalence of irreversible confusion in 6.2% of the population over 65 years of age, with the bulk of the occurrence being among those over 80 years of age. Over one half of the identifiable pathology of irreversible confusion is of the Alzheimer type and approximately 20% of this is due to arteriosclerotic disease (Miller, 1977).

The only study in the literature found by this author/researcher designed to differentiate nursing staff knowledge between reversible and irreversible forms of confusion in the elderly was by Lincoln (1984). Lincoln developed the tool used in this study to compare differences in scores between RNs, LVNs, and NAs in a nursing home. Subjects included 35 RNs and LVNs and 75 NAs. Lincoln determined that (a) RNs and LVNs had a higher mean score than NAs, (b) the lowest mean scores were found in the over 50 age group in both subsamples, (c) the subjects with a greater amount of formal education had higher mean scores, and (d) the RNs and LVNs more closely matched the original intent of the instrument measuring attitudes regarding reversibility and irreversibility of confusion as they chose

15 out of 16 conditions as reversible and three out of four as irreversible. None of the conditions were marked by 75% or more of the NAs indicating less certainty on their part as to the reversibility of the conditions. It was recommended by Lincoln that subsequent studies using this tool be done to assess not only nursing staff knowledge in nursing homes, but other environments as well.

Mental Status Examinations

For a reversible or irreversible confusion to be treated and the differential diagnosis to be made, the confusion must first be detected. Without formal screening of an individual's cognitive capacity, the early stages of both reversible and irreversible forms of confusion may not be detected (McCartney & Palmateer, 1985). Unfortunately, neither physicians nor nurses (including all levels of nursing) assess cognition in a regular and consistent fashion possibly due to inadequate knowledge regarding mental status examinations, time restraints, or both.

The three most frequently used mental status screening questionnaires are the Short Portable Mental Status Questionnaire (SPMSQ), the Mini-Mental State Examination (MMSE), and the Cognitive Capacity Screening Examination (CCSE) (Foreman, 1987). These screening mental status tools can be used to provide a baseline mental status for all patients and are easy to use allowing administration several

times a day to assess for fluid changes that often accompany an acute confusional state. Patients also often appear cognitively intact during superficial interpersonal interactions and go undetected unless one of these types of screening mental status tools are used (Palmateer & McCartney, 1985).

In the first phase of the study previously discussed by Palmateer and McCartney (1985), they attempted to compare the number of cognitively impaired elderly identified by the CCSE with the number identified by RN assessment techniques in use at the time. The CCSE was administered to all patients over 65 admitted to four general medical/surgical units within 24 hours of admission over a six-week period. Thirty-six percent of the 182 patients who were administered the CCSE received a score under 20 which suggests the presence of reduced cognitive capacity. Only 18 or 28% of these 65 patients with significant CCSE scores were identified by the RNs to have cognitive deficits.

The major limitation of the CCSE and the other mental status examinations is that they are simply screening tools that use an arbitrary cutoff score to identify patients with cognitive deficits. False results may be obtained and high scores should not rule out the possibility of either reversible or irreversible confusional states. An exam score should only be considered in light of other aspects of

patient evaluation. These aspects include a complete physical assessment; a review of the patient's cultural, social, educational, psychological, and intellectual makeup; an assessment of the patient's visual and auditory capacities, and a consideration of the current environment within which the patient is functioning (Palmateer & McCartney, 1985).

Summary

Many nursing care providers, especially NAs, still feel confusion is an expected and inevitable outcome of the normal aging process and that the pathology involving circulation, oxygenation, and metabolism of the brain tissue completely explains the existence of confusion. They also believe that since this confusion arises from a syndrome of the brain, its effects are neither preventable nor reversible (Wolanin & Phillips, 1981).

Characteristics of the phenomenons of reversible and irreversible forms of confusion limit the knowledge and research base. Multiple etiologies and variability in the presentation and course of confusional states among individuals are also problematic aspects. However, education utilizing a holistic approach to confusional states and the use of formal assessment techniques should assist RNs (as well as nurses at all levels) to increase their knowledge base to detect, assess, treat, and prevent

reversible forms of confusion in the elderly. With increasing limits on resources and the ever increasing elderly population, it becomes imperative that nursing staff possess knowledge of and can differentiate between reversible and irreversible forms of confusion to provide adequate and safe care for this growing segment of the population.

Chapter 3

THE METHOD

This chapter describes the design, the instrument, the sample, data collection techniques, and data analysis. Each topic will be explored in a sequential manner.

The Design

Due to the paucity of studies related to nursing staff knowledge of acute confusional states in the elderly, an exploratory study was chosen to explore this arena. The research questions were chosen to guide this exploratory study and were utilized in a fact-finding and relationship-finding manner to amass additional data and to formulate hypothesis for future studies.

A questionnaire was chosen to collect data on the knowledge scores of the two groups of nursing staff (RNs and NAs) in three settings (hospital, home care agency, and nursing home). A questionnaire without identifying data helped to ensure the confidentiality of the respondents.

The Instrument

The research instrument was a questionnaire developed by Ruth Lincoln, R.N., M.S.N., University Hospitals of Cleveland, 1984 (Appendix A). Permission was requested and obtained from the author to use the tool (Appendix B). Lincoln conducted an item analysis of the questionnaire to validate the instrument and found that, as a whole, the

instrument differentiated between levels of educational preparation. Fifteen of the items discriminated between RNs and LVNs compared to NAs in their knowledge of categories of confusion. A Cronbach's alpha was determined to test for internal consistency and reliability of the instrument. The true-false section had a reliability coefficient of $r = .69$ and the opinion questions regarding reversibility or irreversibility demonstrated $r = .64$. These coefficients indicate a moderate reliability.

The questionnaire was divided into two sections. These sections consisted of demographic data collection and the test questions. The following demographic data were collected through the questionnaire: (a) type of nursing staff - RN or NA; (b) place of employment - acute hospital, home care agency, or nursing home; and (c) number of courses in gerontology or in caring for the elderly through formal education, workshops, and inservices. The number of demographic items collected in this study were decreased from the original study. Educational preparation was deemed the most likely influential intervening variable; therefore, data regarding coursework, continuing education, and inservice education were collected.

The test statements consisted of 20 true-false questions and 20 opinion questions. The true-false questions measured the respondents' general knowledge about

confusion in the elderly and were based on five categories of confusion delineated by Wolanin and Phillips (1981). These five categories of primary sources of confusion included: (a) compromised brain support, (b) sensoriperceptual problems, (c) disruption in pattern and meaning, (d) alterations in normal physiological states, and (e) the true dementias (Lincoln, 1984, p. 28). The opinion questions were designed to determine the respondents attitudes regarding confusion in the elderly. Twenty conditions or circumstances were listed and reactions were elicited with relevance to reversibility or irreversibility of confusion. These items were based on the same five categories previously listed (Lincoln, 1984).

The Sample

The RNs and NAs employed on an orthopedic surgical unit of an acute hospital, the home care agency of the same hospital, and a nursing home within Santa Clara County were chosen as the population to survey. A purposive approach was used to select the facilities from which to secure a convenience sample of RNs and NAs. The orthopedic surgical unit contained 26 beds, had an occupancy rate of 60% to 100%, and cared for patients with a myriad of health problems. The home care agency cited a monthly visit ratio of approximately 1900 visits to a three county area. The nursing home had a total capacity of approximately 150

patients with a 32 bed wing devoted to the care of the Alzheimer patient. All of these facilities cared for a high percentage of elderly clients. Along with 100% of elderly clients of the nursing home population, at least 50% of the hospital unit and the home care agency's patients at any one time were elderly. The sites were also chosen for their accessibility for the researcher.

One hundred and fourteen nursing staff - including 28 RNs and 11 NAs from the acute hospital, 21 RNs and 4 NAs from the home care agency, and 25 RNs and 25 NAs from the nursing home - were asked to participate in the study. Upon initial contact, all agreed to participate in the study. RNs and NAs who were unable to read English were excluded from the study.

Procedure for Data Collection

The Nurse Managers for the orthopedic surgical unit and the home care agency, along with the Nurse Practitioner for the nursing home were contacted for permission to conduct the study within their facilities. Consent to use these areas for the study was obtained (Appendix C). The proposal was then reviewed by the Human Subjects Review Committee of the hospital and the university review board.

The procedure for distributing and returning the survey packets differed in each of the three settings. A master schedule with nurses names and work schedule was

obtained from the Nurse Manager of the orthopedic surgical unit in the hospital. With the information from the schedule as to which days and shift a particular RN or NA would be working, the survey packets were distributed over a period of seven days by the researcher to all RNs and NAs available during that period. Several nursing staff were not available during that time frame due to vacation or illness. The researcher went to the orthopedic surgical unit at the afternoon change of shift and handed the survey packets to the day and evening nursing staff. The contents of the survey packet and how to return the packets to their manager was explained by the researcher to these participants. Questions regarding the study were also answered at this time. Survey packets were left with the RN in charge of the evening shift to distribute to the night shift RNs and NAs. The researcher stressed to the charge RN to encourage the night shift personnel to contact the researcher with any questions or concerns. All of the RNs and NAs were given the option to complete or not to complete the questionnaire. In either case, the participants were asked to return the sealed survey packets to a box in the Nurse Manager's office marked "Questionnaires." If the office door was locked, participants were asked to slide the envelopes under the door and the Nurse Manager would place the sealed envelopes in the box upon her return. The

completed survey packets were then picked up daily from the box by the researcher.

The survey packets were distributed in the morning for five weekdays in the home care division. The researcher contacted each RN and NA presently working in the home care division and distributed the survey packets. Again the study and the procedure for returning the survey packets to their manager were explained by the researcher. The RNs and NAs were asked to return the completed survey packets to the incoming mail box in the Nurse Manager's office. The completed survey packets were picked up daily by the researcher. It was emphasized in both of these settings that participation was voluntary and that confidentiality of the data would be assured.

As the most direct manager of the RNs and NAs of the nursing home, the Nurse Practitioner of the nursing home chose to explain the study and distribute the survey packets to these participants. The researcher was also unfamiliar with the setting and the nursing staff. The researcher met with the Nurse Practitioner prior to the survey packet distribution. The study and a sample survey packet were explained. The Nurse Practitioner was given the opportunity to ask questions regarding the informed consent, the questionnaire, and the proposed method of returning the data. The survey packets were distributed by the Nurse

Practitioner to the participants. The sealed survey packets were then returned by the participants to a mail basket in the Nurse Practitioner's office. The researcher asked the Nurse Practitioner to stress the fact that the respondents participation in the study was voluntary and that confidentiality of the data would be protected.

The survey packet contained an instruction sheet (Appendix D) which gave the participant instructions regarding the following:

1. The participant was asked to sign an informed consent (Appendix E) prior to completing the questionnaire. The hospital and the home care RNs and NAs were given an informed consent appropriate to the institution and the Human Subjects Committee guidelines for that institution. RNs and NAs at the nursing home received an informed consent that met the guidelines of the researcher's university review board. The instruction sheet included directions to read the consent, sign the consent if willing to participate, place the consent in a white legal envelope provided which was marked "informed consent," and then seal the envelope. This envelope did not have any identifying information on the outside and was separated from the questionnaire at the time of data analysis. This was to ensure confidentiality of the participants.

2. The questionnaire consisted of four typed pages.

After completing the questionnaire, the participant was asked to place it in the white legal envelope provided which was marked "questionnaire." Both of the white envelopes also had reminders on the flap of the envelopes to seal the envelopes.

3. The participants were then asked to place both the envelope containing the informed consent and the envelope containing the questionnaire in the large yellow envelope provided. This envelope also contained a reminder to seal the envelope prior to returning the packet to the designated places. The participants were asked on the instruction sheet to return the survey packets to the designated places within 72 hours of receiving them. It was found by the researcher to be impossible to determine if participants had indeed returned the survey packets within 72 hours.

Therefore, all survey packets returned from a hospital or home care RN or NA were utilized by the researcher. The nurse practitioner of the nursing home was contacted after one week and at that time it was agreed that an additional week was needed to collect the survey packets from the RNs and NAs. All the completed survey packets were then picked up by the researcher two weeks after the delivery date.

Data Analysis

The data were quantitatively scored and summarized using descriptive statistics. Frequency distributions, mean

test scores, and standard deviations used to compare the knowledge of RNs working in acute care, home care, and the nursing home and NAs working in these environments as acknowledged by the survey instrument. Inferential statistics were then used to determine if a significant difference existed between the mean test scores of the RNs and NAs in the three environments. It is acknowledged that the application of inferential statistics requires random sampling which was not used in this study.

A 2x3 ANOVA or analysis of variance was the statistic chosen to compute F values when using more than two groups (LiBiondo-Wood & Haber, 1986, p. 246). An acknowledged limitation in using this test was the fact that cell samples were not evenly distributed. However, it was deemed important to attempt to compare effect for position (RNs versus NAs), effect for location (hospital versus home care versus nursing home), and the effect for the interaction between position and location of the mean test scores of the groups studied.

The plan in analyzing the data included using inferential statistics to determine if attendance at courses, inservices, or continuing education involving gerontological content influenced respondents' test scores. The analysis of variance, ANOVA, using a 2x5 cross-tabulation was to be used to determine the effect of each of

these types of education on the questionnaire scores of RNs and NAs. However, this was precluded by the small sample size and subsequent small sample size in each cell of the crosstabulation designed to assess the effect of these variables.

Chapter 4 presents the analysis and interpretation of the data. The analysis utilizes descriptive as well as inferential statistics to derive conceptual meaning and practical significance from the data generated by this study.

Chapter 4

ANALYSIS AND INTERPRETATION OF THE DATA

The purpose of this study was to explore the knowledge of RNs and NAs working in hospitals, home care agencies, and nursing homes regarding reversible and irreversible forms of confusion in the elderly. The questions answered were:

1. What is the knowledge level of RNs and NAs working in hospitals, home care agencies, and nursing homes regarding reversible and irreversible forms of confusion in the elderly as measured by the research instrument?
2. What is the difference in the level of this knowledge possessed by RNs working in hospitals, RNs working in home care agencies, and RNs working in nursing homes?
3. What is the difference in the level of this knowledge possessed by NAs working in hospitals, NAs working in home care agencies, and NAs working in nursing homes?

In order to obtain this data, a 20 statement true-false and 20 statement opinion questionnaire developed by Ruth Lincoln, R.N., M.S.N., University Hospitals of Cleveland, 1984 (Appendix A) was administered to 114 RNs and NAs working in Santa Clara County, California. The sample was divided among three sites as follows: Twenty-eight RNs and 11 NAs working in an acute hospital constituted 34% of the total sample; twenty-one RNs and 4 NAs working in a home care agency comprised 22% of the sample; and 25 RNs and 25

NAs from a nursing home comprised 44% of the sample. Within these divisions, 18 RNs and 6 NAs from the acute hospital setting, 21 RNs and 4 NAs from the home care agency, and 8 RNs and 12 NAs from the nursing home completed the questionnaire or 60.5% of the total sample (Table 1). Ten of the returned questionnaires were unacceptable due to unmarked answers to one or more questions. This made for 59 usable questionnaires. The following portion of this chapter analyzes the data generated from these responses.

RNs and NAs Knowledge Levels

The first question posed by the study was, "What is the knowledge level of RNs and NAs working in hospitals, home care agencies, and nursing homes regarding reversible and irreversible forms of confusion in the elderly as measured by the research instrument?" The RNs and NAs scores ranged from 15 to 38 correct answers out of a possible 40 questions. The mean number of correct answers for the 59 RNs and NAs responding to the questionnaire was 30.6 with a standard deviation of 5.8. In examining the RN and NA scores as a whole, 41 RNs and NAs or 69.5% had 30 (75%) or more correct answers. Nine RNs and NAs or 15.3% had a score of 36 (90%) or better. Only 3 NAs or 5.1% scored below 50% (Table 2).

Knowledge Level of RNs in All Sites

To determine if there was a difference in knowledge

Table 1

Returned Survey Packets From RNs and NAs in All Sites

(N = 69)

Site	RN	NA	% of Sample
Acute hospital	18	6	35%
Home care agency	21	4	36%
Nursing home	8	12	29%
Total	47	22	100%

Table 2

Distribution of Knowledge Scores of RNs and NAs in All Sites
(N = 59)

Scores	<u>n</u>	%
36-40	9	15.3
30-35	32	54.2
20-29	15	25.4
0-19	3	5.1
Total	<u>N</u> = 59	100.0

M = 30.6 SD = 5.8

level regarding reversible and irreversible confusion in the elderly between RNs working in hospitals, home care agencies, and nursing homes as measured by the research instrument, mean scores were computed for the three groups. Table 3 presents the mean score and the standard deviation of the three groups of RNs. The mean number of correct answers achieved by the hospital RNs was 32.8 with a standard deviation of 3.0. RNs working in home care achieved a mean score of 33.5 with a standard deviation of 4.1 and RNs in the nursing home had a mean score of 27.6 with a standard deviation of 5.6.

Knowledge Level of NAs in All Sites

As presented in Table 4, the mean score of the NAs working in the hospital was 22.8 with a standard deviation of 8.3, the mean score of the NAs working in home care was 28.3 with a standard deviation of 6.4, and the mean score of the NAs working in the nursing home was 27.4 with a standard deviation of 5.9.

Statistical Significance of Knowledge Scores of

RNs and NAs in All Sites

The analysis of variance, ANOVA, was used to determine if there was any statistical significance between the mean scores of RNs and NAs from the hospital, the home care agency, and the nursing home. A 2x3 factorial design was employed to compare the mean test scores of these groups. A

Table 3

Comparison of Knowledge Scores of RNs in All Sites
(N = 43)

RNs	<u>n</u>	<u>M</u>	<u>SD</u>
Hospital	17	32.8	3.0
Home Care	19	33.5	4.1
Nursing Home	7	27.6	5.6

Table 4

Comparison of Knowledge Scores of NAs in All Sites
(N = 16)

NAs	<u>n</u>	<u>M</u>	<u>SD</u>
Hospital	5	22.8	8.3
Home Care	3	28.3	6.4
Nursing Home	8	27.4	5.9

significant difference was found when computing F values for occupation (RN versus NA) on the entire sample with $F = 11.4$ significant at the $p < .01$ level. This is an expected finding, as the mean scores of the RNs should be higher due to educational preparation alone. A significant difference was not found when comparing the work environment (hospital, home care, nursing home) of either RNs or NAs. However, a significant difference was found when comparing the interaction effect of occupation and work environment. That is, $F = 3.8$ was determined significant at the $p < .05$ level (Table 5). An analysis of simple effect using the Scheffe' method was then computed to determine where the interaction effect was located. A significant difference was found between the RNs and NAs from the hospital setting. The implications of this significant difference were deemed statistically beyond the scope of this study.

Formal Education, Workshops, and Inservices

The demographic data section of the study questionnaire included a question regarding education. The respondent was asked "Number of courses you have had through formal education, workshops, and inservices in gerontology or in caring for the elderly?" Data regarding formal education and attendance at workshops or inservice training was collected for the purpose of determining if the scores of the RNs and NAs differed between those who had had this type

Table 5

Statistical Analysis Using ANOVA to Compare Mean Knowledge
Scores of RNs and NAs in All Sites
(N = 59)

Source	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>
Occupation	273.4	1	273.4	11.4**
Work site	86.3	2	43.1	1.8
Interaction	183.4	2	91.7	3.8*
Within	1264.3	53	23.9	
Total	1807.4	58		

* $p < .05$

** $p < .01$

of education and those who had not. The question also attempted to determine if the type of education (formal education, workshops, inservices) had any effect on the respondents' scores.

It was deemed statistically impossible to determine if the types of education had any influence on respondents' scores. It was hoped to determine if the type of education influenced the RNs and NAs scores through the use of a 2x5 ANOVA. However, the small sample size, especially of the NAs, precluded any statistical analysis of this variable and the data collected were not used.

Using descriptive statistics, it can be acknowledged that over 50% of RNs and NAs had at least one course regarding gerontology or caring for the elderly through formal education and inservice training. Less than 50% of RNs and NAs attended at least one workshop regarding gerontology. However, 92% of the NAs working in the nursing home reported having attended 4 or more inservices regarding gerontology.

Knowledge Level of Each Test Statement

An item analysis was performed in order to determine which test statements were answered incorrectly by the RNs and the NAs as a whole. In the true and false section, questions 10 and 6 were the most frequently missed by the RNs and NAs. Forty-five respondents (66.2%) did not agree

that confusion can result from having to be fed all the time. Forty-one RNs and NAs (61.2%) thought that the usual reason for senile brain disease is problems with the blood vessels in the person's brain. It is acknowledged that both of these items may have been interpreted in several different ways. The author of the original study (Lincoln, 1984) suggested that these questions be reworded or changed due to a high difficulty score and negative discrimination as a result of the item analysis conducted on her study. However, thirty-three percent of the RNs and NAs felt that poor hearing will rarely make a person act confused and that there are few sources of confusion that we can do anything about. Only two respondents answered question 2 (a physical illness that prevents oxygen from getting to the brain can cause confusion) and question 19 (scolding a person when he does something wrong will not lessen the person's confusion) incorrectly.

On part two of the questionnaire, 67.7% of the RNs and NAs did not think that crippling arthritis could be a temporary cause of confusion and 47.8% that urinary tract infections could lead to a confusional state. Almost 90% of the RNs and NAs agreed that problems with sleeping could be a temporary cause of confusion and 94% acknowledged that no visitors to talk to could also lead to a temporary form of confusion.

In comparing the results of this study to the study by Lincoln (1984), licensed staff (RNs in this study and RNs and LVNs in the Lincoln study) had higher mean scores than nonlicensed (NA) staff. Question 19 (scolding a person when he does something wrong will help lessen his confusion) was the item most often answered correctly in both of the studies and question 10 (confusion can result from having to be fed all the time) was the item most often answered incorrectly.

Robb and Malinzak (1981) also found in their study of assessment of gerontological nursing knowledge that NAs had the lowest scores and RNs earned the highest scores. In addition, Robb and Malinzak found that nurses who were assigned to acute care settings were the most knowledgeable about gerontological nursing. In this study, there was not any statistical difference in the mean test scores between RNs working in an acute hospital, a home care agency, or a nursing home or NAs in any of these settings.

Although 25 RNs and 25 NAs (44% of the total sample) from the nursing home were asked to participate in the study, only 8 RNs and 12 NAs completed the questionnaires. It is acknowledged that the lower compliance rate may be attributed to the survey distribution methods used in this study. In the hospital and the home care settings, the researcher distributed the survey packets to the

participants and was on the unit and in the agency daily to collect completed questionnaires. The researcher was unfamiliar with the nursing home setting and did not have any personal contact with the participants. The RNs and the NAs of the nursing home may also have questioned the confidentiality aspect of the study, as their immediate supervisor was responsible for distributing and collecting the survey packets.

Chapter 5

CONCLUSIONS AND RECOMMENDATIONS

This exploratory study sought to investigate the knowledge of RNs and NAs working in hospitals, home care agencies, and nursing homes regarding reversible and irreversible forms of confusion in the elderly. Knowledge regarding reversible and irreversible forms of confusion in the elderly was explored through the use of a 20 statement true-false and 20 statement opinion questionnaire distributed to 114 nurses. Of the 114 possible respondents; 59 completed surveys were used. This sample of 59 consisted of 18 RNs and 6 NAs from the acute hospital, 21 RNs and 4 NAs from the home care agency, and 8 RNs and 12 NAs from the nursing home. This chapter presents conclusions and recommendations generated from the study findings.

Conclusions

It is important that these conclusions be interpreted within the limitations imposed by the study. The nonprobability sampling techniques necessitate a conservative interpretation of the study results. However, even though the results from this study cannot be generalized to other populations, it is believed that the results may be suggestive of what may be characteristic of similar populations. These findings also have implications for further study.

As a whole, RNs and NAs from the hospital setting, home care agency, and nursing home demonstrated a moderate amount of knowledge with regards to reversible and irreversible forms of confusion in the elderly. Of the 59 RNs and NAs who completed the questionnaire, 56 (94.9%) answered 50% of the test questions correctly. Forty-one (69.5%) RNs and NAs scored 75% or better and 9 (15.3%) had a score of 90% or better on the research instrument.

The study did not find any statistical difference in the test scores of RNs working in a hospital, a home care agency, and a nursing home. RNs in home care had the highest mean test scores with 33.5, followed by hospital RNs with 32.8, and nursing home RNs with 27.6. The group of nursing home RNs had a significantly smaller sample size than either the hospital or home care RNs. Future study results may be more generalizable given larger and more equal sample sizes.

The same recommendation may be given for future studies in looking at the question of difference in knowledge of NAs regarding reversible and irreversible confusion in the elderly. The total sample of NAs was very small ($n = 16$) from the three sites. Again, there was not any statistical significance found between the test scores of NAs from the hospital, the home care agency, and the nursing home. NAs from the home care agency had the highest mean score of

28.3, followed by the nursing home NAs with 27.4, and the hospital NAs with 22.8.

Identifiable gaps existed in the knowledge level of RNs and NAs from the three settings regarding reversible and irreversible forms of confusion in the elderly. This is evidenced in the findings that NAs had lower mean scores than RNs in all three settings. Lincoln (1984) also found higher scores in the RN/LVN group in the nursing home compared to NAs. In addition, Lincoln found high percentages of incorrect responses in the area of irreversible confusion. This may be due to an inadequate knowledge base surrounding reversible forms of confusion. It may also be due to the many varying degrees and forms that confusion can manifest as in elderly persons. The elderly population may also include several generations and consideration should be given to the young old, middle old, and old old.

These findings have direct application for education. Inclusion of gerontological content in nursing curricula is needed at all levels to give nurses the theoretical base needed to care for the elderly. This gerontological content should include physiological and sensory changes with regards to the aging process, psychosocial needs of the elderly, and differences between reversible and irreversible confusion in the elderly. The content should also include

information along the continuum from young old to old old. RNs and NAs already in the workplace may benefit from focused teaching in these areas with special emphasis given to the age and diagnosis of the elderly that the RN or NA is directly involved with in the workplace. A knowledge level assessment prior to teaching would be helpful to determine where the gaps in knowledge lie.

The last portion of the study hoped to identify any significant differences between the mean test scores of RNs and NAs who had had formal education in gerontology or had attended workshops or inservices and those who had not. Given the three choices for type of education in gerontology, the sample size of RNs and NAs was too small to allow any statistical analysis of the data collected. A larger sample size and/or less options for type of education may benefit future studies that would want to look at the influence of the type of education which may increase knowledge in the area of confusion in the elderly.

Recommendations

Based on the findings from this study, the following recommendations are made:

1. Replicate the study using a large stratified random sample in order to obtain a greater degree of representation. Attempt to keep the number of subjects and environments chosen to study as equal in size as possible to aid in

statistical analysis.

2. Improve the validity and reliability of the research instrument used in this study and developed by Lincoln (1984) by changing and/or deleting questions with the use of pilot tests in varied environments.

3. Develop continuing education courses and inservice classes regarding reversible and irreversible forms of confusion in the elderly. The instrument used in this study could be utilized as a pre and/or posttest. These courses and classes should also include instruction regarding the administration of mental status examinations and the incorporation of the examinations into holistic assessment.

4. Develop courses regarding physiologic and sensory changes associated with aging, psychosocial needs of the elderly, and differences between reversible and irreversible confusion in the elderly. These courses should be incorporated into the curriculum of basic education for RNs and NAs.

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APPENDIX A
Questionnaire

Questionnaire

PART I. DEMOGRAPHIC CHARACTERISTICS

Please put a check in the blank that applies to you.

1. TYPE OF NURSE

Registered nurse _____
Nursing assistant _____

2. PLACE OF EMPLOYMENT

Acute hospital _____
Home care agency _____
Nursing home _____

3. NUMBER OF COURSES YOU HAVE HAD IN GERONTOLOGY OR IN
CARING FOR THE ELDERLY

formal education

workshops

inservices

none _____

none _____

none _____

1 _____

1 _____

1 _____

2 _____

2 _____

2 _____

3 _____

3 _____

3 _____

4 or more _____

4 or more _____

4 or more _____

Used with permission of Ruth Lincoln, R.N., M.S.N.,
University Hospitals of Cleveland, 1984.

PART II. QUESTIONS

Please answer the following questions TRUE or FALSE. Circle the T for TRUE and the F for FALSE. Put down the first answer that comes to mind. Do not change your answers. Please do not skip any questions.

- T F 1. Most people over the age of 65 have senile brain disease.
- T F 2. A physical illness that prevents oxygen from getting to the brain can cause confusion.
- T F 3. Poor hearing will rarely make a person act confused.
- T F 4. The stress of moving to a nursing home is enough to make a person confused.
- T F 5. Confusion and disorientation can come from being dehydrated.
- T F 6. The usual reason for senile brain disease is problems with the blood vessels in the person's brain.
- T F 7. Some elderly get confused from having low blood pressure.
- T F 8. How much a person can see makes little difference in the amount of confusion the person has.
- T F 9. A person's mental abilities can be affected by having a chronic physical illness.
- T F 10. Confusion can result from having to be fed their meals all the time.
- T F 11. There are few sources of confusion that we can do anything about.
- T F 12. Hypothermia (body temperature below normal) can be responsible for confused behavior.
- T F 13. Lack of stimulation from the environment is enough to make a person confused.
- T F 14. When staff expect a confused person to be confused, he will probably act that way.
- T F 15. When a person acts confused at night, it is because the person's brain disease is worse at night.
- T F 16. Once a person has a diagnosis of senile brain disease, there is little that can be done to help the person.
- T F 17. Medications will rarely cause a person to act confused.
- T F 18. Being alone without family or friends can increase disorientation in an elderly person.
- T F 19. Scolding a confused person when he does something wrong will help lessen the confusion.
- T F 20. Pain can lead to confusion in a normally alert elderly person.

This section lists conditions or circumstances that may lead elderly persons to become confused. Please answer the following based on your experiences with elderly patients. Read each condition. Decide if you think it may lead to confusion.

Check NO if you think the condition does not lead to confusion.

Check YES, TEMPORARY if you think the condition does lead to confusion, and something can be done about the condition, so that the confusion gets better or goes away.

Check YES, PERMANENT if you think the condition does lead to confusion, but nothing can be done about the condition - it cannot be treated or changed.

DOES THIS CONDITION LEAD TO CONFUSION?

1. tranquilizer drugs	NO ___ YES, TEMPORARY ___
YES, PERMANENT ___
2. urinary tract infection	NO ___ YES, TEMPORARY ___
YES, PERMANENT ___
3. hardening of the arteries	NO ___ YES, TEMPORARY ___
YES, PERMANENT ___
4. lack of color in rooms	NO ___ YES, TEMPORARY ___
YES, PERMANENT ___
5. being treated as senile	NO ___ YES, TEMPORARY ___
YES, PERMANENT ___
6. difficulty in breathing	NO ___ YES, TEMPORARY ___
YES, PERMANENT ___
7. no clocks or calendars	NO ___ YES, TEMPORARY ___
YES, PERMANENT ___
8. Alzheimer's disease	NO ___ YES, TEMPORARY ___
YES, PERMANENT ___
9. crippling arthritis	NO ___ YES, TEMPORARY ___
YES, PERMANENT ___
10. chronic impactions	NO ___ YES, TEMPORARY ___
YES, PERMANENT ___
-

11. no variety in schedule	NO___ YES, TEMPORARY___
YES, PERMANENT___
12. being tied in a chair	NO___ YES, TEMPORARY___
YES, PERMANENT___
13. small strokes	NO___ YES, TEMPORARY___
YES, PERMANENT___
14. anemia (low blood count)	NO___ YES, TEMPORARY___
YES, PERMANENT___
15. no visitors to talk to	NO___ YES, TEMPORARY___
YES, PERMANENT___
16. no choice about when to
do things	NO___ YES, TEMPORARY___
YES, PERMANENT___
17. low blood sugar	NO___ YES, TEMPORARY___
YES, PERMANENT___
18. problems with sleeping	NO___ YES, TEMPORARY___
YES, PERMANENT___
19. organic brain syndrome	NO___ YES, TEMPORARY___
YES, PERMANENT___
20. cannot get to bathroom	NO___ YES, TEMPORARY___
YES, PERMANENT___

THANK YOU VERY MUCH!!!

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APPENDIX B
Permission to Use Tool

**University Hospitals
of Cleveland**

2074 Abington Road
Cleveland, Ohio 44106
216-844-1000

Lakeside Hospital
Rainbow Babies & Childrens Hospital
MacDonald Hospital for Women
Leonard C. Hanna House
Howard M. Hanna Pavilion
George M. Humphrey Building
Robert H. Bishop Building
Abington House
Wearn Medical Research Laboratories
Harry J. Bolwell Health Center
University Hospitals Health Center/East
University Suburban Health Center

66

November 21, 1988

Ms. Julie Luotta
1141 West Dana Street
Mountain View, CA 94041

Dear Julie:

I was very pleased that you were interested in adapting my tools for measuring knowledge and opinions of nursing staff regarding confusion.

I know that you will realize that these are relatively untested tools, used for a small sample. I am enclosing the item analysis I conducted on the tool itself. The "difficulty" index was the percentage of the total group who answered incorrectly. Therefore the higher the difficulty score, the more people missed the question. A "good" difficulty score would be between 20-40. The "discrimination" score was the percentage of nursing assistants who missed the item subtracted from the percentage of nurses who missed it. Therefore, the higher the discrimination score the more the item discriminated between licensed and unlicensed personnel. A "good" discrimination score would be any number over 7 or 8. A negative discrimination means that more nursing assistants answered correctly than did nurses. These are probably items that should be revised.

On the Part II of the tool itself, I have circled the correct answer, and put stars by those items which should be revised based on the item analysis. Either they were items that had very high difficulty scores or a negative discrimination score or both.

On Part III, I have indicated what I considered as reversible or irreversible based on review of the literature. Item #13 was intended to refer to multi-infarct dementia which is a cause of irreversible brain disease. However, many subjects answered the "Yes, Temporary" choice, perhaps interpreting it based on experience with TIA's where the symptoms are often reversible; I would delete this item. Obviously there can be argument about a number of the opinionnaire items. Use the tool as you see fit.

Ms. Julie Luotta
November 21, 1988

Page 2

You certainly have my permission to change it. When using the tool in the original or revised version, please give appropriate credit by adding at the bottom "used with permission of Ruth Lincoln, RN, MSN, University Hospitals of Cleveland, 1984".

Good luck. I would be interested in knowing your results.

Sincerely,

A handwritten signature in cursive script, appearing to read "Ruth Lincoln".

Ruth Lincoln, RN.C, MSN
Clinical Nurse Specialist

RL:s
(W-71)

APPENDIX C
Consent Letters

DEPARTMENT OF NURSING EDUCATION & RESEARCH

Nursing Research Support

I have reviewed the proposal submitted by Julie L. Luotto titled:
ASSESSMENT OF NURSING STAFF KNOWLEDGE REGARDING REVERSIBLE AND IRREVERSIBLE FORMS OF
CONFUSION IN THE ELDERLY

It meets the following criteria and I agree to have the investigator(s) collect re-
 search data on my unit/region.

Criteria

1. The research question is important to nursing and/or patient care.
2. Suitable subjects are available.
3. The study can be completed as described.
4. The study does not interfere with patient care or I agree to
 adjust the unit routines to accommodate the study.
5. The study does not duplicate or interfere with other nursing or
 medical research currently in progress on the unit/region.

ADN Signature(s)CNC Signature(s)Date 3/3/89Date 3/15/89Date 11/12/89Date 11-9-89

Date _____

Date _____

Date _____

Date _____

Date _____

Date _____

Date _____

Date _____

Nursing Research Support

I have reviewed the proposal submitted by Julie L. Luotto, R.N., titled: ASSESSMENT OF NURSING STAFF KNOWLEDGE REGARDING REVERSIBLE AND IRREVERSIBLE FORMS OF CONFUSION IN THE ELDERLY.

The research question is important to nursing and to patient care. Registered nurses and nursing assistants are available in this nursing home and I believe the study can be completed as described. The study will not interfere with patient care or other nursing or medical research that may be in progress.

Signature_____

Nursing Home_____

APPENDIX D
Instruction Sheet

January 22, 1990

Dear Colleague,

As a graduate student at San Jose State University, I am conducting a study regarding an important aspect of quality nursing care. This study is for my thesis in partial fulfillment for the degree of Master of Science with a focus as a Gerontological Clinical Nurse Specialist.

I would greatly appreciate your participation in completing the enclosed questionnaire. In doing so, you will contribute significant data, which, when analyzed, may be used to guide further research to facilitate educational programs for nurses and the advancement of nursing as a profession.

Before you begin the questionnaire, please read the informed consent, sign it if you are willing to participate in this study, place it in the envelope provided, and seal the envelope. The questionnaire will take you approximately 15 minutes to complete. You are not obligated to continue your participation in this study, and there will be no adverse consequences should you decline further participation. Your anonymity is assured, as there is no identifying information on the questionnaire.

Each page of the questionnaire contains directions for completing it. If you have any questions, please feel free to contact me. When you are finished with your questionnaire, please place it in the appropriate envelope provided and seal it. Place both white envelopes in the large yellow envelope and return it to your manager within 72 hours of receiving the survey packet. Results of the study will be available upon request.

Thank you for considering to participate in this study.

Sincerely,

Julie L. Luotto, B.A.
Graduate Student
Department of Nursing, HB 417
San Jose State University
San Jose, California 95192
(408) 924 - 3124

APPENDIX E
Informed Consent

AGREEMENT TO PARTICIPATE IN RESEARCH AT SAN JOSE STATE UNIVERSITY

RESPONSIBLE INVESTIGATOR: Julie L. Luotto, R.N., B.A.

TITLE OF PROTOCOL: Assessment of nurse's knowledge regarding temporary and permanent forms of confusion in the elderly.

I have been asked to participate in a research study that is investigating nursing staff knowledge regarding temporary and permanent forms of confusion in the elderly. The results of this study should further our understanding of an important issue facing the elderly and assist nurse educators and specialists to plan successful ways to educate nurses about the elderly.

I understand that:

- 1) I will be asked to complete a questionnaire which will take me approximately 15 minutes to complete. I will place the questionnaire in the envelope provided, seal it, and return it to my manager within 72 of receiving it.
- 2) the researcher does not anticipate any risks or harm to me from participating in this study.
- 3) the results from this study may be published, but no information can be identified with me. Any findings will be reported as a group and not as individuals.
- 4) any questions about my participation in this study will be answered by Julie Luotto, R.N., who can be reached at (415) 329-6500. Complaints about the procedures may be presented to Irene D. Lewis, her thesis advisor, at (408) 924-3160. For questions or complaints about research subject's rights, or in the event of research-related injury, contact Serena Stanford, Ph.D., Associate Academic Vice President for Graduate Studies at (408) 924-2480.
- 5) my consent is given voluntarily without being coerced; I may refuse to participate in this study or in any part of this study, and I may withdraw at any time, without prejudice to my relations with San Jose State University, [].
- 6) I have received a copy of this consent form for my file. (Upon request)

I HAVE MADE A DECISION WHETHER OR NOT TO PARTICIPATE. MY SIGNATURE INDICATES THAT I HAVE READ THE INFORMATION PROVIDED ABOVE AND THAT I HAVE DECIDED TO PARTICIPATE.

SUBJECT'S SIGNATURE

INVESTIGATOR'S SIGNATURE

DATE

Title: ASSESSMENT OF NURSING STAFF KNOWLEDGE REGARDING
REVERSIBLE AND IRREVERSIBLE FORMS OF CONFUSION IN
THE ELDERLY
Date: November 9, 1989

EXPERIMENTAL SUBJECTS BILL OF RIGHTS

Persons who participate in a medical experiment are entitled to certain rights. These rights include but are not limited to the subject's right to: be informed of the nature and purpose of the experiment; be given an explanation of the procedures to be followed in the medical experiment, and any drug or device to be utilized; be given a description of any attendant discomforts and risks reasonable to be expected; be given an explanation of any benefits to the subject reasonable to be expected, if applicable; be given a disclosure of any appropriate alternatives, drugs or devices that might be advantageous to the subject, their relative risks and benefits; be informed of the avenues of medical treatment, of any available to the subject after the experiment if complications should arise; be given an opportunity to ask questions concerning the experiment or the procedures involved; be instructed that consent to participate in the medical experiment may be withdrawn at any time and the subject may discontinue participation without prejudice; be given a copy of the signed and dated consent form; and be given the opportunity to decide to consent or not to consent to a medical experiment without the intervention of any element of force, fraud, deceit, duress, coercion or undue influence on the subject's decision.

INFORMED CONSENT

You were selected to participate in a research study that is investigating nurse's knowledge regarding reversible and irreversible forms of confusion in the elderly. The questionnaire should take you approximately 15 minutes to complete and there are no obvious risks to you if you should decide to complete the questionnaire. The results of this study should further our understanding of an important issue facing the elderly and assist nurse educators and specialists to plan successful ways to educate nurses about the elderly. WE CANNOT AND DO NOT GUARANTEE OR PROMISE THAT YOU WILL RECEIVE ANY BENEFITS FROM THIS STUDY.

Any data that may be published in scientific journals will not reveal the identity of the subjects. In the interest of public safety, patient information will be provided to

Federal and regulatory agencies as required.

No payment will be provided for this project. There will be no additional cost to you for participation in this study. The investigator is a graduate student at San Jose State University and is researching this subject to fulfill requirements for a Masters Degree in Community Health Nursing. There is no financial support or material being provided by any institution or company.

You are free to withdraw your consent and to discontinue participation at any time without prejudice to you or to your relationship with [] or San Jose State University.

If you have any questions, we expect you to ask us. If you have any additional questions later, I will be happy to answer them.

All forms of medical diagnosis and treatment -- whether routine or experimental -- involve some risk of injury. In spite of all precautions, you might develop medical complications from participating in this study. If such complications arise, the researcher will assist you in obtaining appropriate medical treatment but this study does not provide financial assistance for additional medical or other costs. Additionally, [] is not responsible for research and medical care by other institutions or personnel participating in this study. You do not waive any legal rights by signing this form. For further information, please call [] or write []

In addition, if you are not satisfied with the manner in which this study is being conducted, you may report any complaints to the same telephone number and address.]

YOUR SIGNATURE INDICATES THAT YOU HAVE READ AND UNDERSTAND THE ABOVE INFORMATION, THAT YOU HAVE DISCUSSED THIS STUDY WITH THE PRINCIPAL INVESTIGATOR AND HIS OR HER STAFF, THAT YOU HAVE DECIDED TO PARTICIPATE BASED ON THE INFORMATION PROVIDED, AND THAT A COPY OF THIS FORM HAS BEEN GIVEN TO YOU.

Signature & Date

Signature of Investigator or Witness