1991

Bedtime Routines and Sleep Patterns of Hospitalized Elderly

Marie E. Vander Kooi
Grand Valley State University

BEDTIME ROUTINES AND SLEEP PATTERNS OF HOSPITALIZED ELDERLY

By

Marie E. Vander Kooi

A THESIS

Submitted to
Grand Valley State University
in partial fulfillment of the requirements
for the degree of

MASTER OF SCIENCE IN NURSING

Kirkhof School of Nursing

1991

Thesis Committee Members:
Katherine Kim, Ph.D., R.N.
Andrea Bostrom, Ph.D., R.N.
Wayne Kinzie, Ph.D.

ABSTRACT

BEDTIME ROUTINES AND SLEEP PATTERNS
OF HOSPITALIZED ELDERLY

By

Marie E. Vander Kooi

The purpose of this study was to examine whether performance of a familiar bedtime routine was related to the self-reported nocturnal sleep pattern quality of the hospitalized elderly. A descriptive correlational design was used to analyze data collected on a convenience sample of 30 elderly patients. The Bedtime Routine Questionnaire was used to describe the bedtime routine at home and measure to what extent it was maintained in the hospital. The nocturnal sleep pattern quality was measured using the Richards Campbell Sleep Questionnaire. The most common bedtime routine activities of the elderly were found to be: going to the bathroom; brushing teeth; praying; cleaning face. These same activities were most frequently identified as being important. For most subjects 50 percent or more of their home bedtime routine activities were maintained in the hospital. No significant relationship was found between the sleep pattern quality and degree of maintenance of a familiar bedtime routine ($p > .05$). Several implications for nursing practice were identified.

Acknowledgments

A project of this magnitude could not have been completed without the support and assistance of many people.

Special appreciation is extended to the chair-person of my committee, Katherine Kim, PhD, RN for the many hours she spent with me sharing her vast knowledge of the research process, for her meticulous attention to detail and her coaxing to strive for the best.

I am grateful to Andrea Bostrom, PhD, RN for her insights into many aspects of the study, but particularly the data collection tools. I extend my thanks to Wayne Kinzie, PhD for his mastery of the English language and his unique perspectives on the study. As members of my thesis committee, they gave willingly of their time and energy in helping me see this project to its completion.

My appreciation is extended to the Blodgett Alumnae Association and the Whinery Research Foundation for their support in providing financial assistance for this study.

Finally, my deepest appreciation goes out to my parents Albert and Francis Mauk, my husband Curt, and my daughters Sarah and Rebecca. I am grateful to my parents for teaching me to value education and to always strive to do my best. Curt's belief in me as a professional, wife, and mother kept me going when there were doubts. It was Sarah and Rebecca who helped me focus on priorities.

Thanks to all.

Table of Contents

List of Tables
vi

List of Figures
vii

List of Appendices
viii

CHAPTER **PAGE**

1 INTRODUCTION.....1

Introduction.....1
Purpose.....2

2 REVIEW OF LITERATURE.....4

Literature Review.....4
Conceptual Framework.....14
Research Questions and Hypothesis.....17
Operational Definitions.....18

3 METHODOLOGY.....21

Research Design.....21
Sample and Setting.....21
Instruments.....24
Protection of Human Rights.....33
Procedure.....34

4 RESULTS.....36

Characteristics of Subjects.....36
Bedtime Routines at Home and in the Hospital...42
Nocturnal Sleep Pattern Quality at Home and in the Hospital.....45
Hypothesis.....46

CHAPTER **PAGE**

5 DISCUSSION/LIMITATIONS/IMPLICATIONS.....54

Discussion.....54
Limitations.....59
Implications for Nursing Practice.....62
Summary.....63

References.....80

List of Tables

TABLE		PAGE
1.	Demographic Characteristics	37
2.	Variables Related to Hospitalization	38
3.	Hours of Nap and Nocturnal Sleep at Home and in the Hospital	40
4.	Sleep Altering Medications Taken at Home and/or in the Hospital	41
5.	Bedtime Routine Activities According to Frequency at Home and in the Hospital	43
6.	Nocturnal Sleep Pattern Quality at Home and in the Hospital	46
7.	Maintenance of Important Bedtime Routine Activities in the Hospital	47
8.	Comparison of the Two Maintenance Groups in Regards to Extraneous Variables	49
9.	Factors Influencing Sleep at the Hospital	50
10.	Richard Campbell Sleep Questionnaire (RCSQ) Scores at Home and in the Hospital for the Two Bedtime Routine Activity Groups	52
11.	Analysis of Covariance for RCSQ Hospital Scores	52
12.	Paired t-test of RCSQ Individual Components and Mean in the Hospital and at Home	53

List of Figures

FIGURE		PAGE
1.	Sleep-stage Cycle	6
2.	Major Concepts of the Roy Adaptation Model of Nursing	17

List of Appendices

APPENDIX **PAGE**

A. Medication Half-life and Duration of Action.....65

B. Richards Campbell Sleep Questionnaire.....67

C. Bedtime Routine Questionnaire.....69

D. Short Portable Mental Status Questionnaire.....73

E. Index of Activities of Daily Living.....74

F. Informed Consent for Human Research Project.....75

G. Verbal Script for Informed Consent.....76

H. Demographic Data.....78

CHAPTER 1

INTRODUCTION

Introduction

People spend about one-third of their lives asleep (Goodemote, 1985). The purpose of sleep is to physiologically and psychologically restore the individual. Sleep is closely linked with other biological cycles and an alteration in the sleep-wake cycle will alter other physiological cycles. Likewise, an alteration in sleep may affect wellbeing. Lack of sleep, or sleep deprivation, may result in apathy, irritability, increased sensitivity to pain, and a lack of daytime alertness (Schirmer, 1983).

Elderly hospitalized patients are at risk to experience an alteration in their sleep . Hospitalization (Pacini & Fitzpatrick, 1982) and age (Lerner, 1982) are two important factors affecting the sleep of elderly hospitalized individuals. Hospitalization imposes a disruption of normal patterns and routines. It requires an individual to exchange an everyday home environment for the unfamiliar setting of the hospital and it establishes schedules and routines that may be contrary to what is customary for the individual (Pacini & Fitzpatrick, 1982). As part of the normal aging process, many aspects of the sleep pattern,

such as total amount of time spent asleep, are altered.

Johnson (1986) conducted a study to explore the relationship between following a bedtime routine and the quality of the sleep pattern. She concluded that in an attempt to ensure a good night's sleep, most people follow a certain bedtime routine prior to retiring for the night. Johnson (1986) suggests that when the activities are neglected or altered a person's sleep may be disturbed.

A number of researchers have identified holistic nursing measures to promote optimal sleep (Davignon & Bruno, 1982; Hoch & Reynolds, 1986; Schirmer, 1983; Goodemote, 1985). Some of the interventions are drinking milk and avoiding caffeine, using music, and avoiding exercise within a few hours of going to sleep. One of the interventions which encompasses some of the others is the sleep history. The sleep history involves assessing those patterns and routines that the patient regularly performs at home and incorporating the information into the nursing plan. It is the role of the nurse to promote optimal sleep in the hospitalized client. One method of doing this is by obtaining a sleep history.

Purpose

The purpose of this study was to examine one portion of the sleep history, the bedtime routine, and to gain more knowledge about the relationship between the bedtime routine and the sleep pattern of hospitalized patients. The self-reported bedtime routines of the hospitalized

elderly were assessed to answer the following questions:

What was the preadmission bedtime routine of the hospitalized elderly, and to what extent was it maintained in the hospital?

Which home bedtime routines were commonly perceived to be important by the elderly?

Was there a relationship between the self-reported nocturnal sleep pattern quality and performance of familiar bedtime routines of the hospitalized elderly?

It has been estimated that in the 1990's, the majority of all hospital patient days will be used by individuals 65 years of age and older (Tomlinson, Westrope, & Wolvertons, 1988). The combination of the normal changes the elderly experience in their sleep pattern and the influence of the hospital environment and routines put the hospitalized elderly at risk for the problems associated with sleep deprivation. If performance of bedtime routines is found to be related to the nocturnal sleep pattern quality, obtaining a sleep history and implementing the routine in the hospital could be a nursing strategy to promote sleep for the hospitalized elderly.

CHAPTER 2

REVIEW OF LITERATURE

Literature Review

Sleep

Sleep is a restorative process closely linked to other biological cycles. The sleep/wake cycle correlates with circadian and other rhythms such as body temperature, plasma cortisol concentration, and excretion of urine potassium and calcium (Goodemote, 1985). Restorative processes occurring during sleep include an increased production of growth hormone with resultant protein synthesis and tissue repair. Epithelial and some specialized cells like brain tissue are prepared and renewed. Sleep allows for energy conservation through relaxation of skeletal muscles. Sleep has the psychological functions of organizing and reviewing information and activities. Dreaming permits the sorting of emotions (Schirmer, 1983).

The disruption of the sleep/wake cycle can create a desynchronization of the entire circadian system. This results in different body functions inappropriately timed with relation to each other (Goodemote, 1985). People deprived of sleep are reported to be irritable and

apathetic with decreased alertness (Schirmer, 1983).

Sleep Cycles

Sleep is a neurobiological process regulated by areas of the brainstem (Schirmer, 1983). Recordings of the electroencephalogram (EEG), the electromyogram (EMG), and the electro-oculogram (EOG) have revealed that sleep consists of two cycles: rapid eye movement (REM) and non-rapid eye movement (NREM) sleep.

The NREM cycle is comprised of four stages. As the individual progresses from Stage 1 to Stage 4 progressively decreased responsiveness to external stimuli is exhibited. Stage 1 is a transition state between sleep and wakefulness lasting only a few minutes. The individual is relaxed and drowsy but easily aroused. The pulse, temperature, respirations, blood pressure, and basal metabolic rate begin to decrease (Schirmer, 1983).

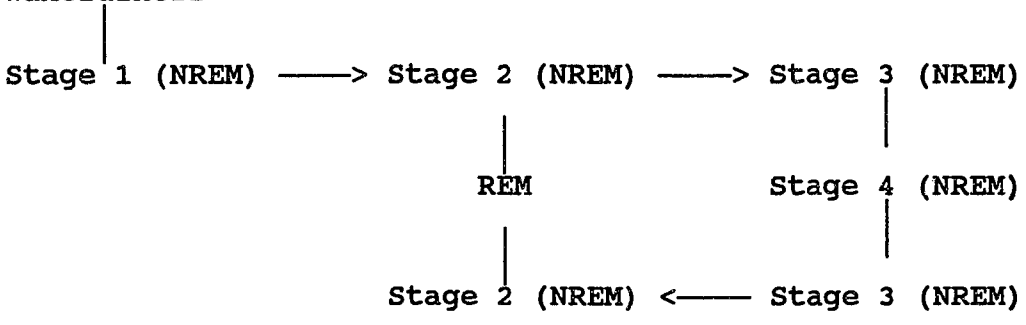
Stage 2 is the first stage of true sleep (Goodemote, 1983; Hoch & Reynolds, 1986). It lasts approximately twenty minutes. The individual is unaware of the surrounding but is easily aroused.

Stages 3 and 4 are the stages of deep sleep with Stage 4 being the deepest. These two stages together last from 15 to 30 minutes. Stage 3 is characterized by a further decreased pulse and temperature. There is muscular relaxation and the individual is difficult to arouse. During Stage 4 there is little movement and arousal is very difficult.

Rapid eye movement sleep is characterized physiologically by increases in body temperature, cerebral blood flow and oxygen consumption, and erratic variability in blood pressure (Hoch & Reynolds, 1986). Head, neck and general muscle tone, and deep tendon reflexes decrease. The EEG pattern is similar to wakefulness even though the individual is more difficult to arouse than in NREM sleep (Hoch & Reynolds, 1986). REM sleep occurs in ninty-minute cycles. The span between cycles increases as the night progresses (Gambert & Duthie, 1981). Dreaming is believed to occur in the REM cycle.

As the individual "falls asleep" there is progression from Stage 1 through to Stage 4 followed by a reversal from Stage 4 to Stage 2. This sequence continues for 60 to 90 minutes followed by ten minutes of REM sleep as shown in Figure 1.

Figure 1. The Sleep-stage cycle. (Richards, 1985)



The amount of time in each stage varies throughout the

night but the sequence of the stages in the cycle remains constant. In the beginning of the sleep time Stages 3 and 4 predominate. By the end of the night the number of REM cycles has increased (Schirmer, 1983). The number of REM and NREM cycles is highly individualized but people usually have 4 to 5 complete cycles per night (Hoch & Reynolds, 1986).

Sleep and Age

As part of the normal neurobiological aging process the sleep pattern is altered. With increasing age there is an increase in Stages 1 and 2 sleep. Stage 2 may increase by 25% and Stages 3 and 4 may decrease by 50% or more. Some elderly people have no Stage 4 sleep (Hoch & Reynolds, 1986). Davignon and Bruno (1982) suggest the decrease in the amount of Stage 4, or deep sleep, may make the individual more susceptible to awakening from environmental noise. Schimer (1983) states the percentage of REM sleep stays the same as for the younger adult but the time from sleep onset to the first REM cycle is decreased and the REM period is increased. Also the REM cycle may be interrupted by nonsequential Stage 2 sleep.

In studies comparing older and younger subjects the consistent findings were: older persons have more awakenings during the night, take more naps, and have more variability in their sleep patterns than younger people do (Hayter, 1983).

Hayter (1983) conducted a study to further determine the nature of sleep behaviors among older people of different ages. She used two instruments. The first was a three-page questionnaire on which subjects indicated their usual activities during a typical 24-hour period so that relationships among nighttime sleep, daytime naps, and other activities could be studied. The second instrument was a modified sleep chart on which subjects marked each 30-minute period they were asleep during each 24-hour period. Data were collected for two weeks. Two hundred and twelve non-institutionalized subjects ages 65 to 93 years participated in the study. The subjects were grouped in age categories of 65 to 74 years, 75 to 84 years, and 85 years and older.

Hayter's (1983) findings agree with those from previous studies that the number of naps, number of nighttime awakenings and variability in sleep behaviors increase with age. Findings of this study also showed clear differences in the sleep behaviors of older people of different ages. By age 75 there was a definite increase in the amount of time spent in bed. There was an increase in the number of naps and the amount of naptime, resulting in an increase in total sleep time. There was also some change to an earlier bedtime, and an increase in both the number of nighttime awakenings and the amount of time awake after sleep onset. By age 85 total sleep time had increased further due to obtaining more sleep during the nighttime hours and taking

longer, but not more, naps. After age 85 there was an increase in the number of awakenings at night and in the amount of time awake before sleep onset (sleep latency).

Hayter (1983) concluded from the findings that older adults have a gradually increasing need for both rest and sleep with advancing age. Because of the extreme variability among findings, even among subjects of the same age, Hayter suggested that each older person should be considered as his/her own norm and a sleep history ("baseline data") should be obtained before planning nursing care.

Sleep and Environment

Dlin, Rosen, Dickstein, Lyons, and Fischer (1971), and Pacini and Fitzpatrick (1982) studied the influence of the unfamiliar hospital environment and routines on the normal sleep/wake cycle of individuals. Using observational methods Dlin et al. (1971) studied the influence of the intensive care unit (ICU) environment on the quality and quantity of the patients' sleep. These researchers kept surveillance for several shifts and recorded all factors that they perceived to interfere with or enhance rest. They also interviewed patients before being admitted to ICU, and one and four days after being in ICU. All patients admitted to the ICU during the eight weeks participated in the study with the exception of those patients undergoing laryngectomies and those having severe

brain damage. Dlin and associates (1971) found that the chief deterrents to sleep, in order of importance, were: activity and noise; pain and physical condition; nursing procedures; light; vapor tents; hypothermia. They concluded that "sleep deprivation in the ICU does exist and can be substantially eliminated. This can only be done through a better understanding of the environment and its effects on the patient" (p. 161). The authors' conclusion that sleep deprivation can be eliminated through an understanding of the environment supports the idea that the hospital routines and environment may be disruptive to the sleep pattern of the patient.

Pacini and Fitzpatrick (1982) studied the sleep patterns of the hospitalized and non-hospitalized elderly to examine the influence of the hospital environment on the sleep pattern. Their hypothesis was that the hospitalized aged would differ from non-hospitalized aged in terms of total sleep time, nocturnal awakening, soundness of sleep, movement during sleep, and state of rest upon awakening. Their sample consisted of 38 individuals between the ages of 60 and 82. Half of the sample were hospitalized in an acute care facility and half resided in their own homes or homes of relatives or friends. Pacini and Fitzpatrick (1982) considered hospitalization to be a major environmental alteration, requiring changes in usual routines, including sleep patterns. This concept was the impetus for their study. They chose the elderly as their

population because they believed the elderly were more likely to be ill and more likely to be hospitalized.

Two data collection tools were used. One was the Sleep Pattern Questionnaire (SPQ) developed by Baekland and Hoy (1971). This questionnaire consisted of 11 items. The subject completed three items just before retiring and eight items immediately after arising. The instrument was reported to have validity (Baekland & Hoy, 1971). The second instrument used in this study was a sleep chart on which subjects drew a line through each half-hour period during which they slept more than 15 minutes. This instrument was not tested for validity or reliability.

These researchers found that although total sleep time did not differ significantly between the two groups, the components of nocturnal sleep time and other sleep time did. The hospitalized group reported more "other sleep time". They also went to bed and awakened earlier than did the non-hospitalized group. However, the groups did not differ in terms of the variables: sleep latency, number of nocturnal awakenings, soundness of sleep, movement during sleep and state of rest upon awakening. This study applies to the present study because it does lend some support to the concept that hospitalization may influence some aspects of the sleep pattern.

Sleep and Bedtime Routine

Johnson (1986) believed that in an attempt to ensure

receiving "a good night's sleep" most people follow a certain bedtime routine. She suggested that when these activities were neglected the individual's sleep was disturbed. The purpose of her study was to assess self-reported sleep patterns and bedtime routines of non-institutionalized elderly women. She wanted to determine if there was any difference between the self-reported sleep pattern of those who did and those who did not perceive having a bedtime routine. She further wanted to know if there was any difference in the routine if the subject lived in their own home or with an adult child. Johnson (1986) chose elderly subjects because she believed the performance of certain bedtime routines are particularly important to them due to the sleep pattern changes that occur with aging.

Johnson (1986) developed the Bedtime Routine Questionnaire to measure the habitual activities the subjects performed every night before going to bed. This tool consisted of questions asking if the subject has a usual time for going to sleep, a routine that is followed before going to sleep and if a routine is followed to check items in a list that were part of the bedtime routine. Johnson reported that the instrument had reliability and validity but did not explain further.

Johnson (1986) reported that all of the subjects perceived some disturbance in their nocturnal sleep pattern. Prolonged sleep latency (time to fall asleep),

frequent night time awakenings, and early morning arousal were characteristic of their sleep pattern. However, women (n = 27) with a perceived bedtime routine reported fewer subjective complaints than those subjects who did not report having a routine (n = 15). Women with a bedtime routine reported shorter sleep latencies, fewer awakenings, sleeping longer and more soundly, moving less often, and feeling more refreshed and more satisfied with their sleep. Subjects residing in their own homes reported going to bed earlier, awakening less often, sleeping more soundly, and feeling more refreshed on awakening compared to subjects who lived with an adult child. Subjects in their own homes also slept later and felt more satisfied with their sleep.

From her data Johnson (1986) concluded that the habitual performance of pre-sleep activities provided comfort and sleep that was less disturbed. She suggested that assessing if the client follows a bedtime routine at home should be part of the client's care in the hospital. If a routine is usually followed, its maintenance should be encouraged. If no routine is identified, the client should be assisted to establish one. These suggestions were directed by Johnson (1986) to community health nurses. However, they have applicability in many nursing settings. The present study will replicate aspects of Johnson's study with some variability, which will be presented in the Methodology Chapter.

Conceptual Framework

This study is based on the Adaptation Model developed by Roy (1984). The assumptions and concepts relevant to this study will be presented.

Roy (1984) proposes eight assumptions (Fawcett, 1985). Although all the assumptions are noteworthy, three are the basis for this study. The first assumption is that a person is in constant interaction with a changing environment. The second assumption is that to respond positively to environmental changes a person must adapt. The third assumption is a person has four modes of adaptation: physiological needs, self concept, role function, and interdependence.

Roy (1984) conceptualizes a person as an adaptive system who adapts to or copes with both internal and external environmental stimuli. As an adaptive system the person may be adapting either positively or ineffectively. Adaptive activity is manifested in four adaptive modes comprised of behaviors indicating physiologic function, self-concept, role function, and interdependence. This study will be examining one of the physiologic functions, sleep.

Environment is conceptualized by Roy (1984) as "all the conditions, circumstances, and influences surrounding, and affecting the development of an organism or group of organisms" (p. 39). The environment consists of both internal and external components but Roy (1984) does not

clearly define the components further (Fawcett, 1984).

The internal and external environment is the source of inputs or stimuli into the adaptive system. There are three classes of stimuli: focal, contextual, and residual. Focal stimuli immediately confront a person in a given situation for example, a myocardial infarction or job loss. In the present study the focal stimulus is the orthopedic surgery.

Contextual or background stimuli are all other stimuli present in a situation, such as sex, drugs, genetic makeup, and developmental stage. The contextual stimuli in the present study are the extraneous variables such as pain medications and sleeping medication. Residual stimuli have an immeasurable effect and are things such as beliefs and attitudes. Residual stimuli were not measured in the present study.

Health is the ability of a person to adapt and respond to environmental change. An adaptive response promotes the integrity of the person resulting in survival, growth, and self-mastery. Health is on a continuum ranging from maximum wellness to maximum illness.

Nursing is the process of analyzing and taking action related to the care of ill or potentially ill individuals. The person or adaptive system is the recipient of nursing care. The goal of nursing is to promote patient adaptation in all four adaptive modes during health and illness. The

anticipated patient outcome is that the person will be in an adaptive state and be able to respond to stimuli. The nursing process presented by Roy consists of the following six steps: assessment of client behavior, assessment of influencing factors, problem identification, goal setting, selection of intervention approaches, and evaluation.

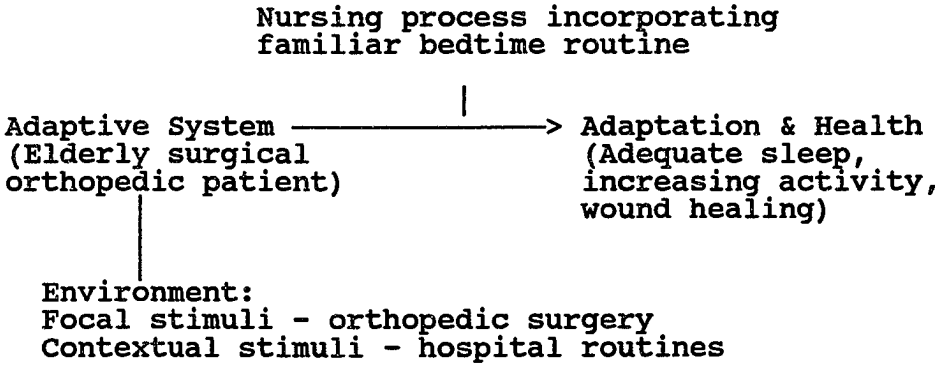
In Roy's book, An Adaptation Model (1984), Joan Seo Cho applies the nursing process based on the Roy Adaptation Model to the physiological need of sleep. She believes that the stresses experienced by hospitalized patients magnify the importance of providing an environment conducive to meeting their sleep needs. Seo Cho (Roy, 1984) states:

> As human beings require an average of one-third of their total lifetime for sleeping, each individual develops his or her unique ritualistic habits through the years. It is not unusual for an individual to experience difficulties in falling asleep or staying asleep if the usual sleep habits cannot be followed (p. 155).

During the assessment of client behavior, the nurse would assess the usual sleep pattern or client behavior, in the physiological mode of adaptation. In this study the client behavior in the physiological mode of adaptation, is his/her nocturnal sleep pattern, which is the dependent variable. During the assessment of influencing factors the nurse would assess the personal sleep habits and

environment. (See Figure 2.) In this study an influencing factor that affects patient behavior and responses could be the independent variable of maintenance of the bedtime routine in the hospital.

Figure 2. Major concepts of the Roy Adaptation Model of Nursing (Roy, 1984, p. 40)



The present study, in terms of the Roy Adaptation Model, will examine an aspect of the physiological mode of adaptation, sleep, and the influencing factor, bedtime routine, for an elderly adaptive system experiencing the focal stimuli of orthopedic surgery.

Research Questions and Hypothesis

The purpose of this study was to gain more knowledge about the relationship between the bedtime routine and the sleep pattern of hospitalized elderly. The study questions were:

What is the preadmission bedtime routine of the hospitalized elderly and to what extent is it

maintained in the hospital?

Which home bedtime routines were commonly perceived to be important by the elderly?

Was there a relationship between the self-reported nocturnal sleep pattern quality and performance of familiar bedtme routines of the hospitalized elderly?

The hypothesis for this study was that there was a relationship between performance of a familiar bedtime routine and the self-reported nocturnal sleep pattern quality of hospitalized elderly. The hypothesis was stated in terms of a relationship because there was a lack of existing studies describing sleep patterns and bedtime routines of the hospitalized elderly to support a directional hypothesis.

Operational Definitions

The following terms from the problem statement were presented with an operational definition: nocturnal sleep pattern quality, bedtime routine, and maintenance of the bedtime routine.

Nocturnal Sleep Pattern Quality

Pacini and Fitzpatrick (1982), and Johnson (1986) included sleep latency, number of nocturnal awakenings, sleep depth, movement during sleep, state of rest upon awakening, and nocturnal sleep time as the components of the sleep pattern. Richards (1985) measured sleep depth, nocturnal awakenings, and overall sleep quality along with the items of sleep latency and difficulty in returning to

sleep after a nocturnal awakening episode.

Since the present study examines the influence of the bedtime routine on nocturnal sleep, only those terms relative to nocturnal sleep quality were included in the definition of sleep pattern quality. The sleep pattern quality in the present study was measured by the Richards Campbell Sleep Questionnaire, which is described in the Methodology Chapter. The following are the components of the "sleep pattern quality" that were utilized in the Richards Campbell Sleep Questionnaire and were utilized in the present study. All components are based upon subjective determination by the subjects.

1. nocturnal awakenings - number of awakenings during the night.
2. sleep depth - the deepness of sleep
3. sleep latency - amount the time it took to fall asleep
4. returning to sleep - how easy or difficult it was to return to sleep after experiencing a nocturnal awakening
5. sleep quality - overall rating of sleep in terms of a "good" or "bad" night's sleep on a continuum.

Bedtime Routine

The bedtime routine was the activity or activities the subject routinely performed before retiring for the night. The bedtime routine was measured using the Bedtime Routine

Questionnaire. The following activities were included on the Bedtime Routine Questionnaire: listening to music; reading; watching television; talking on the telephone; writing letters; eating a snack; bathing; brushing teeth; combing, curling or washing hair; drinking; praying; having a backrub; doing relaxation exercises; taking bedtime medication. Because Johnson's (1986) definition for bedtime routine was applicable to the present study and was easy to implement in the hospital setting it was the definition that was used in the present study. A further explanation of the Bedtime Routine Questionnaire is presented in the Methodology Chapter.

Maintenance of Bedtime Routine

The subject was considered to have a routine if they identified any number of behaviors they routinely performed as part of their usual bedtime rituals. Each subject had a Bedtime Routine Activity score based on the percentage of home activities perceived by the subject as being important that were maintained in the hospital. The bedtime routine was measured using the Bedtime Routine Questionnaire.

CHAPTER 3

METHODOLOGY

Research Design

A descriptive correlational design was used in this study. This type of research design was utilized for two reasons. There were few existing studies describing sleep patterns and bedtime routines of the hospitalized elderly. Also it was unfeasible to have a control group in this situation. It would not have been ethical to withhold some nursing care, such as bathing, from individuals in a control group.

Sample and Setting

The study was conducted in a 410 bed private teaching hospital in Western Michigan. The subjects were on a 32 bed medical/surgical unit with the sub-specialty of orthopedics. In this setting the subjects were admitted to the orthopedic unit preoperatively. Prior to being in the study the subjects had undergone an orthopedic surgical procedure.

A non-probability convenience sample was used. Sample size was 30. Potential subjects were identified through discussion with the nursing staff and reviewing patient charts on the nursing unit. The criteria for subject

selection was:

1. Age 65 and over
2. Able to read, write, hear conversation, and speak English
3. Score of 2 or less on the Short Portable Mental Status Questionnaire (SPMSQ) (Pfeiffer, 1975)
4. Status post orthopedic surgery during the present hospitalization. Eating, and not receiving intravenous fluids or intravenous medication.
5. Score of E or higher on the Index of Activities of Daily Living (ADL).

Only subjects who could read, write and had no cognitive impairment were asked to be participants as they needed these abilities to use the study instruments. The author speaks only English, so people who did not speak English were excluded. Likewise those individuals who were functionally deaf were excluded as the investigator does not know sign language.

The incidence of acute confusion among elderly patients in hospitals is high (Williams, Campbell, Raynor, Mlynarczyk, & Ward, 1985). The Short Portable Mental Status Questionnaire (Pfeiffer, 1975) is a tool designed to determine the presence and degree of cognitive impairment. It was used as a screening tool in the present study. A score of two or less indicated intact intellectual functioning. The ADL scale was used as a screening device to assure that the participants were homogeneous in regards

to their ADLs. Patients with a known history of alcohol and/or drug abuse were excluded from the study due to the potential for sleep interference from withdrawal.

Antihistamines, narcotic analgesics, anxiolytics, and sedative/hypnotics are known to interfere with or influence the sleep pattern quality (Johnson, 1986; M. Melby, Pharmacist, personal communication, August 1, 1989). Data were collected regarding the study participants taking these types of medications. If the subject had been taking a medication from one of these pharmacological categories at home for at least three months the data were not analyzed.

After three months the blood level of any medication should have been within the therapeutic range and at a constant level. Therefore taking this medication in the hospital would not have been a change.

If the subject did <u>not</u> take a medication from one of these categories at home but did take it during hospitalization before and/or during the night of study, subject was included in the study. The usual duration of action time, or standard dosage interval, was used to determine if the medication could potentially have had an effect on sleep during the night of study. If the usual duration of action time passed prior to the time the subjects reported "falling asleep" the medication was not considered to have had an effect on the sleep pattern

quality that night. The duration of action time, i.e. standard dosage interval, was used as these times are based on the medication half-life (Blake, 1988).

For example, the duration of action time for Tylenol #3 is 4 hours. If the subject received Tylenol #3 at 9:30 p.m. the duration of action would be approximately until 1:30 a.m. (9:30 plus 4 hours). If the same subject reported "falling asleep" at 10:30 the subject was considered to have taken a narcotic analgesic during the night of study as the Tylenol #3 would still be considered to be in effect when the subject "fell asleep". If the duration of action had a time span of 4 to 6 hours, the longer amount of time was used as the time in this study, i.e., 6 hours. One of the normal physiological changes the elderly experience is decreased kidney function. This may reduce drug elimination and, therefore, the maximum duration of action time was used (Gerald & O'Bannon, 1988).

Appendix A contains the duration of action time for the oral narcotic analgesics, anxiolytics, and sedative-hypnotics the subjects took during the night of study that they did not take at home. None of the subjects took antihistamines or intravenous/intramuscular narcotic analgesics during the night of study.

Instruments

The instruments used were the Richards Campbell Sleep Questionnaire (RCSQ), (Richards, 1985, 1987; Campbell, 1986), the Bedtime Routine Questionnaire (BRQ), (Johnson,

1986), the Short Portable Mental Status Questionnaire (SPMSQ), (Pfeiffer, 1975), and the Index of Activities of Daily Living (ADL) (Katz, Downs, Cash, & Grots, 1970),

Richards Campbell Sleep Questionnaire

The Richards Campbell Sleep Questionnaire (RCSQ) was used to measure nocturnal sleep patterns of the subjects. The RCSQ was a 10-item visual analog scale (VAS) containing 2 sets of 5 items each (see Appendix B). The scale was designed to provide a tool to measure patients' sleep in the ICU. The questionnaire items were developed by Richards (1985) based on a literature review identifying sleep dimensions that were applicable to sleep in the ICU. The five dimensions were: sleep depth, falling asleep, awakenings, returning to sleep, and quality of sleep. The questionnaire items were correlated with polysomnographic data. As discussed earlier Pacini and Fitzpatrick (1982), Johnson (1986), and Richards (1985) all identified similar components of the sleep pattern even though they were studying different populations in different settings. Therefore the dimensions identified by Richards are applicable to the present study even though Richard's (1985) study involved males, age 50 to 69 years, and the present study involved males and females, age 65 and over.

The scaling technique involved a horizontal 100 mm line with extreme statements on either end. The subjects placed a mark on the answer line to indicate the statement that

best described their sleep. The score ranged from 0 (optimal sleep) to 100 (poorest quality sleep). The total sleep score was derived by taking the mean of the five individual scores.

In the present study the subjects completed an RCSQ scale in the morning immediately after wakening, rating their sleep of the night before. They completed a second RCSQ scale later in the day between 4 p.m. and 8 p.m. describing their usual sleep pattern quality at home. The "usual sleep pattern quality at home" was defined for the subjects as how they usually slept during the past three months at home.

Richards (1985) used the scale to collect 15 nights of sleep data from 10 patients. The content validity was established by using a panel of experts who determined that all five dimensions reflected content validity. Construct validity was evaluated using a convergent method. Each item on the RCSQ was correlated with polysomnographic data. For example, the RCSQ dimension for sleep depth was correlated with sleep Stages 3 and 4 as measured on the polysomnograph. Richards (1985) found a positive correlation between the two measurements for the dimensions of sleep depth, falling asleep, and overall sleep quality. No relationship was found for the dimensions of awakenings and returning to sleep.

Campbell (1986) examined reliability of the RCSQ through the use of Cronbach's alpha. Sample size for the

study was 30 patients in critical care units and 30 critical care nurses. Campbell (1986) reported that the reliability coefficient of the instrument was .67.

Cronbach's alpha was also used to analyze the internal consistency of the RCSQ in this present study. The alpha coefficients for the RCSQ I (hospital) and RCSQ II (home) were .71 and .67 respectively. These values are sufficient for a study such as the present one which compares groups (Polit & Hungler, 1987).

As part of this study a pilot study was conducted. The RCSQ (Part II) was self-administered to 14 senior citizens participating in activities administered by the local recreation department. Five of the subjects were ages 65 to 74 and nine of the subjects were ages 75 to 84. Eleven of the subjects were women and three were men. The tools were typed in large print for easy reading. The subjects had no difficulty following the directions or completing the RCSQ. Therefore no modifications were made in the tool.

Bedtime Routine Questionnaire

The Bedtime Routine Questionnaire (Appendix C) was developed by Johnson (1986) to measure the habitual activities subjects performed every night before going to bed. The tool consisted of a list of activities that were commonly believed to be part of people's bedtime routines. In the present study subjects were asked in the morning to

check those activities they or the nurses did for them as part of their bedtime routine the evening before (BRQ I). Between 4 p.m. and 8 p.m. the investigator returned and the subjects completed a second BRQ. This asked them to identify the activities they routinely did every night before going to bed during the past three months at home.

The BRQ as developed by Johnson (1986) had another question which using an ordinal scale asked subjects to indicate how important their routine was to them. For the purposes of this study the question was modified. On the second BRQ the subjects were asked to indicate if the activity they identified as being part of their usual bedtime routine was important or not important to them. This is pertinent for nursing in times of an acute nursing shortage. If the nurse has a limited amount of time, will it benefit the patient if only selected activities from the bedtime routine, perceived by the patient to be important, are performed? For the purposes of this study two additional open-ended questions were added to the BRQ to identify factors which the subjects perceived as promoting or hindering their sleep.

Johnson (1986) reports that the instrument has reliability and validity but does not further explain. To establish content validity for use in the present study the tool was reviewed by nine experts in gerontological nursing. Seven of the experts were master's prepared in nursing. The eighth expert had a doctorate in nursing

while the ninth expert had worked extensively with the elderly and was currently a nursing graduate student with the clinical focus of home health care of the elderly. The experts agreed that all items reflected content validity.

In this study, reliability was established using the test-retest method. The BRQ was also administered initially to the 14 individuals in the pilot study as described previously for the RCSQ. To establish reliability the tool was administered to the same group in the same setting two weeks later. Ten subjects, two males and eight females, participated in the re-test. Three of the subjects were ages 65 to 74 and seven were ages 75 to 84. The equivalence reliability coefficient for Column A (either "yes" they did the activity or " no" they didn't) was .77. For Column B (is the activity important or not important) the equivalence reliability coefficient was .72. Based on input from the gerontological nursing experts and subjects in the pilot study minor revisions in the wording of the BRQ were made.

Pain Scale

For the purposes of this study a sixth question was added to the RCSQ to examine the influence of pain on the sleep pattern quality. Pain often contributes to nocturnal awakenings (Schirmer, 1983) and could be an extraneous variable in the present study. The question was in the form of a visual analogue scale like the other questions of

the RCSQ. Visual analogue scales used in measuring pain have been found to have both validity and reliability. Downie et al. (1978) conducted a study to assess the validity of four pain scales. The four pain scales were the simple descriptive scale (SDS), the 0 to 10 numerical rating scales (NRS), and the visual analogue scale (VAS) used both horizontally and vertically. The visual analogue scale utilized a line 10 cm. in length. The study involved 100 patients with a variety of rheumatic diseases who were asked to score their pain levels on the four scales presented in random order one after the other. Moderate to high correlations were obtained when any two pairs of data were compared (SDS & NRS, $r = .68$; SDS & vertical VAS, $r = .71$; SDS & horizontal VAS, $r = .73$; NRS & vertical VAS, $r = .64$; NRS & horizontal VAS, $r = .62$; vertical VAS & horizontal VAS, $r = .91$). The investigators concluded that there was good evidence that the four scales were measuring the same underlying variable of pain.

Revill, Robinson, Rosen, and Hogg (1976) conducted a study to evaluate the reliability of the visual analogue scale as a measure of pain. The investigators used a line 15 cm. in length. The subjects consisted of 18 males and 21 females between the ages of 20 and 25 years of age. They were asked to recall a specific pain experienced in the past such as dysmenorrhea or a toothache and rate the pain by placing a vertical line between the two extremes on the line. Without warning, after five minutes filled with

other activity, subjects were asked to repeat the procedure. Again, without warning, 24 hours later the rating was repeated. There was a highly significant correlation between each subject's initial score and that at 5 minutes ($r = .99$; $p < .001$) and 24 hours ($r = .98$; $p < .001$).

Revill et al. (1976) used the terms " no pain at all" and "as much pain as the subject could imagine". Downie et al. (1978) used the terms "no pain" and "unbearable pain" as the verbal description of each extreme of the symptom to be evaluated. The present study used the terms "no pain" and "unbearable pain". The length of the line in the present study was 10 cm. which was the length of the line for the other five questions in the RCSQ.

Short Portable Mental Status Questionnaire

The Short Portable Mental Status Questionnaire (SPMSQ) (Appendix D) was developed by Pfeiffer (1975). It was a 10-item questionnaire, administered in a structured interview, used to detect the presence and degree of cognitive impairment in the elderly patient. It was scored by counting the number of errors. Zero to two errors indicated intact intellectual functioning. One more error was allowed if the subject had only a grade school education and another error was also allowed for Black subjects using identical education criteria. Pfeiffer (1975) reported that data suggest that both education and

race influence performance on the Mental Status Questionnaire.

The tool was found to have both validity and reliability (Pfeiffer, 1975). The tool was tested for validity in a study involving 133 subjects who were referred for clinical evaluations to the Duke University Older Americans Resources and Services Program. When the SPMSQ score and clinical diagnosis were compared there was 92% agreement when the SPMSQ indicated definite impairment and 82% agreement when the SPMSQ indicated no impairment or mild impairment. To determine stability of the instrument two groups of subjects (n = 30, n = 29) age 65 and over were given the SPMSQ twice at four-week intervals. The test-retest correlations were .82 and .83 for the two groups respectively.

In the present study this instrument was administered to the subjects during the initial interview. Administration and scoring of the test followed the protocol presented by Pfeiffer (Appendix D).

Index of ADL

The Index of Independence of Activities of Daily Living (Index of ADL) (Appendix E) was developed as a measure for objective evaluation of activities of daily living of the chronically ill and aging populations (Katz et al., 1970). This ordinal rating scale was used to evaluate the amount of assistance required in performing the functions of bathing, dressing, toileting, transfer, continence and

feeding. Although it was originally designed to measure the functioning of stroke and hip fracture patients it had been used and evaluated in many settings including acute care facilities. The type and amount of personal assistance required had been correlated with Index categories in several studies looking at reliability and validity. In one study 53 patients graded as independent according to the Index of ADL, were found to receive no assistance in performing their ADLs. Of 22 patients in the most dependent Index categories 21 were receiving non-family attendant care (Katz et al., 1970).

In the current study this instrument was completed by the investigator prior to the initial subject interview to determine eligibility for the study. Administration and scoring of the instrument followed the protocol presented by Katz et al. (1970) (Appendix E). To be included in the present study the subject had a score of E or higher. A score of E indicated the subject was dependent in bathing, dressing, going to the bathroom, and transferring. The subject was independent in the continence and feeding categories with the exception of requiring a foley catheter on a temporary basis.

Protection of Human Rights

Approval from appropriate human subjects review committees at the university and the hospital was obtained prior to beginning the data collection. There were

essentially no risks to subjects in this study. Subjects were asked to report activities they would be carrying out regardless of whether they were in the study. There was no experimental manipulation involved. The Human Subject Consent form was used to obtain "informed consent" from every subject involved in the study (Appendix F). To assure confidentiality each subject was assigned a code number and all data were coded accordingly.

Procedure

Potential subjects were identified through reviewing the patients' kardexes and medical records, and conversing with the nursing staff. This took place between 4 and 8 p.m. This time was chosen because physicians had routinely made rounds by then and any appropriate changes in the patients' care such as discontinuing the intravenous pain medication had taken place by that time. So patients who were not appropriate for this study at 8 a.m. were appropriate by 8 p.m.

Initial contact by the investigator with the patient was on the first evening the patient met the criteria for inclusion in the study. The contact was in the patient's room on the orthopedic unit. A brief explanation of the purpose of the study, methodology and the individual's right as far as confidentiality, risks, potential benefits, voluntary participation and the right to withdraw from the study at any time were given. The patients were asked to sign the consent form (Appendix F). To prevent

the instrumentation threat an attempt was made to follow a written script (Appendix G).

Using a structured interview the Short Portable Mental Status Questionnaire was administered. The patient's medical record was used to obtain data to complete the Index of ADLs and the demographic data (Appendix H).

The following morning the investigator returned between 8 and 9 a.m. The patients were asked to describe their sleep and pain of the previous night by answering the questions on the RCSQ. The investigator read the instructions aloud while the subjects read them silently. If there were any questions by the subject, the investigator attempted to respond in a noncommittal manner.

Next the subjects were asked to describe their bedtime routine the preceding evening by completing the BRQ. The investigator followed the same format as for the RCSQ.

The investigator returned later that day between 4 and 8 p.m. to administer the second RCSQ and BRQ. On these questionnaires the subjects described their sleep, pain and bedtime routine at home during the past three months. This information was collected after the subject had completed the RCSQ and BRQ for the night of sleep in the hospital to avoid influencing measurements on these tools for the night of study in the hospital.

CHAPTER 4

RESULTS

Data were collected over a 7 month period from October, 1989 to April, 1990. A total of thirty-four patients were considered for inclusion in the study. Two patients who were approached declined to participate in the study as they reported "not feeling well". Two patients exited from the study after the initial visit. One of these patients experienced an exacerbation of congestive heart failure during the night of study and subsequently was awake most of the night. This patient was a white male, age 73 years. The second patient who exited the study experienced hypertension during the night of study and was awakened frequently for blood pressure checks and medication administration. This individual was a 66 year old white male. A total of thirty patients gave consent to participate and completed the study.

Characteristics of Subjects

Table 1 illustrates the demographic data for sex, race, and marital status. The subjects were predominantly white and married with a little more than half being females.

Table 1

Demographic Characteristics (N = 30)

Characteristic	Frequency	Percent
Sex		
Male	12	40.0
Female	18	60.0
Race		
White	28	93.3
Black	2	6.7
Marital Status		
Married	22	73.3
Widowed	7	23.3
Divorced	1	3.3

The mean age of the subjects was 71 years with a range of 65 years to 89 years and a standard deviation of 1.1 years. The mean number of years of education was 13 with a standard deviation of 3.2. One subject had completed law school and another had a masters' degree in library science.

The type of surgery, number of days hospitalized preoperative and postoperative, and the type of hospital room the individual was in are shown in Table 2. All of the subjects had either hip or knee replacement surgery. The majority of subjects were admitted to the hospital the day of surgery. These individuals were

Table 2

Variables Related To Hospitalization (N = 30)

Variable	Frequency	Percent
Type of Room		
Semi-private	17	56.7
Private	13	43.3
Type of Operation		
Hip surgery	12	40.0
Knee surgery	18	60.0
Days Hospitalized Preoperatively		
None	23	76.7
One	7	23.3
Days Hospitalized postoperative		
One	18	60.0
Two	12	40.0

medically cleared for surgery and had the necessary laboratory tests completed as an outpatient. Patients were approached on their first or second post-operative day and participated in data collection on the second or third post-operative day, respectively. A little less than half of the subjects participated in the data collection on the third post-operative day. These individuals required intravenous medication for pain control an extra day and thus did not meet the criteria for inclusion in the study

until the second postoperative day resulting in data collection on the third day.

Table 3 illustrates information regarding the subjects' amount of naptime and hours of nighttime sleep in the hospital compared to home. Most subjects had more naptime in the hospital than at home. Approximately one-half of the subjects had more hours of sleep at night in the hospital compared to home with the majority of the other half reporting less sleep in the hospital. Data regarding hours of night sleep were only available for 25 of the 30 subjects. The remaining five subjects reported having no usual bedtime and/or time they awakened.

The Short Portable Mental Status Questionnaire criteria for study participation was a score of zero to two errors. This score indicated intact intellectual functioning. All of the subjects had a score of zero. The Index of Activities of Daily Living criteria for study participation was a score of E or better. This indicated the subject was dependent for bathing, dressing, going to the bathroom and transferring. The subject was continent for bowel and bladder and independent for feeding. For this study the exception was made for subjects who were continent of bowel but had a bladder catheter in place for what was anticipated to be a temporary situation. Four of the subjects had a bladder catheter in place. For all four of the subjects the nursing staff anticipated that the catheter would be discontinued the next day.

Table 3

Hours of Nap and Nocturnal Sleep at Home and in the Hospital (N = 30)

Variable	Frequency	Percent
	Naptime	
Less naptime in the hospital	4	13.3
Same	4	13.3
More naptime in the hospital	22	73.3
	Hours of nocturnal sleep	
Less in the hospital	10	33.3
Same in the hospital	2	6.7
More in the hospital	13	43.3
Unknown	5	16.7

Data were analyzed regarding selected medication categories known to alter the sleep pattern quality. Table 4 illustrates the frequency distribution for these medication categories. Five subjects reported taking no medication in the hospital, such as a pain pill or sleeping pill, to help them sleep. This is consistent with data collected from the medical record regarding medications administered by the nursing staff. Of the 25 subjects who reported taking medication to help them sleep, 22 received

Table 4

Sleep Altering Medications Taken at Home and/or in the Hospital (N = 30)

Type of medication	Frequency	Percent[a]
Medications taken at home but not at the hospital (n = 2)		
1. Sedatives/hypnotics	1	3.3
2. Narcotics (oral only)	0	0
3. Anxiolytic	1	3.3
Medications taken at the hospital but not at home (n = 25)[b]		
1. Sedatives/hypnotics	5	16.7
2. Narcotics (oral only)	20	66.7
3. Anxiolytics	1	3.3
Medications taken at home and at the hospital (n = 3)		
1. Sedatives/hypnotics	0	0
2. Narcotics (oral only)	2	6.7
3. Anxiolytics	1	3.3

[a]Percent was computed based on total number of subjects.

[b]One subject was in more than one category.

a medication from at least one of the following categories: sedative/hypnotic, oral narcotic analgesic and/or anxiolytic. One subject took a medication from one of the categories as well as taking an antidepressant. One

subject who reported taking medication to help with sleep did not receive a medication from one of the three categories but did take an antidepressant which she also took at bedtime every night at home.

One subject who reported taking medication at the hospital to help with sleep received no medications from any of the three previously mentioned medication categories. This individual did receive aspirin and heparin at bedtime. He reported not taking any medication for sleep at home. This subject was highly educated as he reported his educational level as having a graduate or professional degree. It is still possible, however, that he did not understand what he was receiving or he thought the purpose of the aspirin was to counteract pain when actually it was being administered for the anticoagulant properties. Because the BRQ is based on the subjects' perceptions, for the purposes of the BRQ statistics, his response was tabulated as he reported, i.e., that he did take some medication to help him sleep.

Bedtime Routines at Home and in the Hospital

The two research questions were: What was the preadmission bedtime routine of the hospitalized elderly and to what extent was it maintained in the hospital; Which bedtime routines were perceived by the elderly to be important?

Table 5 contains the frequency distribution for the bedtime activities performed at home and in the hospital.

Table 5

Bedtime Routine Activities According to Frequency At Home and in the Hospital (N = 30)

	Activity	Home n	Home %	Important n	Important %	Hospital[a] n	Hospital[a] %
1.	Bathroom	30	100.0	30	100.0	25	83.3
2.	Brush teeth	24	80.0	24	80.0	20	66.7
3.	Pray	24	80.0	24	80.0	21	70.0
4.	Clean face	24	80.0	22	73.3	23	76.7
5.	Talk	21	70.0	19	63.3	25	83.3
6.	Drink	21	70.0	14	46.7	22	73.3
7.	Watch TV	21	70.0	7	23.3	17	56.7
8.	Read	17	56.7	15	50.0	11	36.7
9.	Eat	15	50.0	6	20.0	7	23.3
10.	Do hair	11	36.7	11	36.7	13	43.3
11.	Bathe	9	30.0	9	30.0	8	26.7
12.	Music	9	30.0	8	26.7	4	13.3
13.	Medication	8	26.7	8	23.3	25	83.3
14.	Write	6	16.7	5	16.7	2	6.7
15.	Exercises	3	10.0	3	10.0	6	20.0
16.	Radio	3	10.0	1	3.3	2	6.7
17.	Backrub	1	3.3	1	3.3	24	80.0
18.	Nightcap	0	0.0	-	-	0	0.0

[a]Number and percentage of the elderly patients who perceived the activity as being important.

The activities are listed in order from those reportedly done most frequently at home to those performed least frequently. The table also shows the number and percentage of the elderly patients indicating that the home bedtime activity was important to them.

Home Bedtime Routine. The mean number of activities done at home for the sample was 8.3. The mean number of important activities performed by the subjects at home was 7.0. Of the 18 activities listed on the BRQ, going to the bathroom to urinate was the activity reported most frequently for home. Brushing teeth, praying, cleaning face, talking, drinking, and watching television were the next most frequently reported activities.

None of the subjects reported drinking a nightcap. Other activities that were in the bottom five least frequently reported for home were: writing, doing relaxation exercises, listening to a program on the radio that was not music, and having a backrub. Three subjects identified an activity under "other". The activities were meditation, organizing medications for the following day, and preparing the house for the night.

Hospital Bedtime Routine. The mean number of activities maintained in the hospital was 5.8 with the mean number of important activities performed in the hospital being 5.1. The most frequently reported activity for the hospital was going to the bathroom to urinate. Talking, taking medication to help with sleep, having a backrub and

cleaning the face were the next most frequently reported activities for the hospital. No one reported having a nightcap in the hospital. The activities that were the least frequently reported for the hospital were writing, listening to a program on the radio that was not music, listening to music and doing relaxation exercises. In the hospital twenty-five subjects reported going to the bathroom to urinate. Four of the five subjects who did not report this had bladder catheters in place.

Nocturnal Sleep Pattern Quality at Home and in the Hospital

In addition to answering the two research questions, data regarding the quality of nocturnal sleep at home and in the hospital were collected on the Richard Campbell Sleep Questionnaire (RCSQ). The mean, median, and standard deviation of the five components of the nocturnal sleep pattern quality measured on the RCSQ for at home and in the hospital are shown in Table 6. The score could range from 0 (satisfactory) to 100 (unfavorable). Table 6 also shows the mean, median, and standard deviation of the subjects' pain perception at home and in the hospital. The score could range from 0 (no pain) to 100 (unbearable pain).

The independent t-test was used to analyze the relationship between the RCSQ scores and if the individual took a sleep altering medication. The subjects were dichotomized into two groups, those who took a sleep altering medication (n = 22) and those who did not (n = 8).

Table 6

Nocturnal Sleep Pattern Quality at Home and in the Hospital (N = 30)

Sleep Pattern Component		Mean	Median	S.D.
		Hospital		
1.	Depth	54.27	48.50	29.28
2.	Latency	26.10	19.00	24.53
3.	Awakenings	68.13	73.50	25.50
4.	Returning to sleep	23.80	16.50	19.48
5.	Overall quality	33.37	26.00	25.65
6.	Pain	31.00	32.00	18.28
		Home		
1.	Depth	56.17	57.00	30.47
2.	Latency	27.00	14.50	24.07
3.	Awakenings	70.73	74.50	22.79
4.	Returning to sleep	40.93	44.00	29.86
5.	Overall quality	41.27	41.50	25.00
6.	Pain	40.17	50.00	31.70

There was no difference in the RCSQ scores for these two separate groups, $t(28) = .21$, $p > .05$.

Hypothesis

Table 7 depicts the frequency and percentage of important bedtime routine activities maintained in the

hospital. Subjects were dichotomized into two groups according to the degree of bedtime routine maintenance. The low maintenance group included the subjects who had less then 75% of their home bedtime routine activities perceived to be important maintained in the hospital. The high maintenance group had 75% or more maintained. The subjects were dichotomized for the purpose of statistical analysis to determine if maintaining the bedtime routine had any effect on the sleep pattern quality.

Table 7

Maintenance of Important Bedtime Routine Activities in the Hospital (N = 30)

Percentage of BR Maintained	Frequency	Percent
Zero - less than 25%	0	0.0
25% - less than 50%	2	6.7
50% to less than 75%	13	43.3
75% to 100%	15	50.0

Note. The mean for the percentage of important bedtime routine activities maintained was 74.1, with a median of 73.9, and a standard deviation of 18.4.

Extraneous Variables. Prior to hypothesis testing, the two maintenance groups were compared for their similarity in regards to the extraneous variables in the hospital of

pain, sleep altering medications, the type of room, and amount of nocturnal sleep in the hospital compared to home, as shown in Table 8. As described previously for the purposes of statistical analysis the subject was considered to have taken a sleep altering medication if the subject took a medication in the hospital not taken at home. There was no significant difference between the two groups for these variables.

Data were collected from the subjects regarding whether they had less, the same amount or more sleep in the hospital. However, the sample size was too small to perform a statistical analysis of the data. But, examination of the data suggested the two groups were similar in regards to this variable.

There were four subjects who had a bladder catheter in place. Three of these subjects were in the low maintenance while the fourth was in the high maintenance group. This may have been significant in that all subjects reported going to the bathroom as a routine activity at home. The three subjects who were in the low maintenance group reported sleeping better at home than in the hospital on the RCSQ. The subject in the high maintenance group reported sleeping better in the hospital.

Using two open-ended questions, the subjects were asked about factors affecting their sleep pattern quality at the hospital. Table 9 depicts comments from subjects regarding what they perceived as factors that prevented or

Table 8

Comparison of the Two Maintenance Groups in Regards to Extraneous Variables (N = 30)

Extraneous Variable	Maintenance Groups	
	Low (n = 15)	High (n = 15)
Pain[a]		
Mean	32.7	30.7
S.D.	15.0	21.5
Sleep Altering Medications[b] (frequency)		
Taken	12	10
Not taken	3	5
Type of Room (frequency)[c]		
Semiprivate	9	8
Private	6	7
Nocturnal Sleep in the Hospital Compared to Home		
Less Sleep in Hospital	5	5
Same Sleep in Hospital	1	1
More Sleep in Hospital	7	6
No Responce	2	3

[a] $t(28) = .29$, $p > .05$.

[b] X^2 (1) = .17, $p > .05$.

[c] X^2 (1) = .00, $p > .05$.

Table 9

Factors Influencing Sleep at the Hospital

Factor	Maintenance Groups		
	Low	High	Total
Preventing Sleep			
Unusual/strange environment	3	2	5
Nurses in & out doing things	3	1	4
Needed to urinate frequently	2	0	2
Noise from roommate	0	2	2
Uncomfortable position	1	1	2
Pain	3	1	4
Enhancing Sleep			
Pain Control	7	7	14
Being Relaxed	4	2	6
Being Tired	4	2	6

Note. Items included in unusual/strange environment are equipment noise, noise in the hallway, noise from a patient in another room, and the room temperature being too warm.

enhanced them to get a "good night's sleep" at the hospital. As illustrated in Table 9 environmental factors, which may have been an extraneous variable, were considered by some subjects to hinder their sleep. All of the factors perceived to prevent sleep were identified most frequently

by the low maintenance group except the factors noise from a roommate and uncomfortable position.

The factor of pain control, identified as promoting sleep, was identified by seven subjects in both groups. The low maintenance group more frequently reported being relaxed and being tired as enhancing their sleep.

Hypothesis Testing. Analysis of covariance (ANCOVA) was used to test the hypothesis: there is a relationship between performance of a familiar bedtime routine by hospitalized elderly and their self-reported nocturnal sleep pattern quality. ANCOVA was used to compare the mean RCSQ score in the hospital of the two Bedtime Routine Activity groups. The low and high maintenance groups were not statistically different in regards to the sleep pattern quality in the hospital when the the sleep pattern quality for home (RCSQ score) was used as the covariate. These scores are shown in Table 10. The hypothesis was not supported, $F(1, 27) = .72$, $p > .05$. (See Table 11).

Comparison of Sleep Pattern Quality in Hospital and at Home. As shown in Table 12 the paired t-Test was used to compare the nocturnal sleep pattern quality at home and in the hospital with respect to each individual RCSQ dimension and the total sleep pattern quality score. The total sleep pattern quality score was determined by adding the five individual component scores and dividing by five. It is acceptable to compare the quality of the sleep pattern at home and in the hospital for the total group of

Table 10

RCSQ Scores at Home and in the Hospital for the Two Bedtime Routine Activity Groups

	Maintenance Groups			
	Low (n = 15)		High (n = 15)	
Sleep Pattern Score	M	SD	M	SD
Home	47.12	12.65	47.32	21.60
Hospital				
Obtained	43.63	17.89	38.64	16.59
Adjusted	43.59		38.68	

Table 11

Analysis of Covariance for RCSQ Hospital Scores (N = 30)

Source of Variation	df	MS	F
Between groups	1	180.32	.72
Covariate	1	1524.88	6.0[a]
Within groups	27	252.34	

[a] $p < .05$

Table 12

Paired t-test of RCSQ Individual Components and Mean in the Hospital and at Home (N = 30)

	Home (N = 30)		Hospital (N = 30)		
Sleep Pattern Component	M	SD	M	SD	t
1. Depth	56.17	30.52	54.27	29.28	.24
2. Latency	27.00	24.07	26.10	24.53	.14
3. Awakenings	70.73	22.83	68.13	25.50	.38
4. Returning to sleep	40.93	29.86	23.80	19.48	2.69[a]
5. Overall Quality	41.27	25.00	33.37	25.65	1.09
Mean of # 1-5	47.22	17.40	41.13	17.14	1.14

[a] $p < .05$

all subjects because the maintenance of the Bedtime Routine Activities (BRA) did not affect the reporting of the RCSQ. There was no significant difference except on the fourth component dealing with returning to sleep after awakening. The mean score for home was significantly higher than for the hospital on that question ($p < .05$) suggesting that the subjects had more difficulty returning to sleep at home than in the hospital.

CHAPTER 5

DISCUSSION/LIMITATIONS/IMPLICATIONS

Discussion

Bedtime Routines at Home and in the Hospital

The two research questions regarding bedtime routines of the elderly patients were: What was the preadmission bedtime routine of the hospitalized elderly and was it maintained in the hospital? Which bedtime routines were perceived by the elderly to be important?

The most frequently identified activities performed at home in the present study were: going to the bathroom, brushing teeth, praying, cleaning face, talking, having something to drink, and watching television. Johnson (1986) also found brushing teeth, praying, cleaning face, and watching T.V. to be frequently reported activities. In addition, Johnson (1986)found bathing and snacking to be frequently reported.

All of the subjects had at least 25 percent of their home bedtime routine activities maintained in the hospital. For the majority of subjects (28 of 30) 50 percent or more of the routine was maintained. There is little in the literature addressing the maintenance of any home routines, including sleep, in the hospital. However, based on the

nursing shortage and the high acuity level of patients in acute care facilities the investigator anticipated that a smaller percentage of the subjects' bedtime routines would be maintained. A factor may have been that in the present study either the nurse or the subjects themselves may have performed the bedtime activity. The subjects were at a point in their recovery to perform some of the tasks themselves and able to use their nurse call button to ask for assistance with others. Also, many of the nurses on the nursing unit were aware that the study was being conducted. This may have increased their awareness of assisting the patient to perform their bedtime routine activities.

Hypothesis

In addition to answering the two questions related to bedtime routine a hypothesis was also investigated. The hypothesis for this study was that there was a relationship between performance of a familiar bedtime routine and the self-reported nocturnal sleep pattern quality of hospitalized elderly. Since all subjects reported having at least 25% of their important bedtime routine activities maintained at the hospital, the subjects were dichotomized into two groups (high and low maintenance) according to the percentage of bedtime routine activities maintained. There was no significant difference in the perceived quality of the sleep pattern between the high and low maintenance groups. That is, the finding of this study suggests that

the degree to which the bedtime routine was maintained may not have influenced the perceived the sleep pattern quality.

Johnson (1986) reported a significance difference between subjects with a bedtime routine and those without in terms of subjective sleep complaints. She found subjects with a bedtime routine tended to have fewer subjective sleep complaints than subjects without a routine. However, it should be noted that in Johnson's (1986) study she compared subjects who reported having no bedtime routine (n = 15) to those who reported having one (n = 27). In the present study all subjects reported having a routine. It is possible that some subjects in Johnson's (1986) study did not report a routine because of the instrument Johnson used. The Bedtime Routine Questionnaire used by Johnson (1986) was modified for the present study and includes some additional activities such as going to the bathroom. This activity was the most frequently performed both at home and in the hospital. Also, it was the only bedtime routine activity perceived by all subjects as being important. The subjects in Johnson's (1986) study may not have seen activities they normally do every night on the questionnaire and reported that they didn't have a routine.

In the present study the subjects were dichotomized into two groups based on what percentage of their routine

was maintained. As described previously the low maintenance group included subjects who had less than 75% of their home bedtime routine activities perceived to be important maintained in the hospital. The high maintenance group had 75% or more maintained. Because the point at which the groups were dichotomized is such a high percentage there really is little difference between the two groups. For example, an individual who had 3/4 of their activities maintained would have been in the high maintenance group while someone who had 2/3 would have been in the low maintenance group.

The conceptual framework used was the Roy Adaptation Model (Roy, 1984). When assessing the physiological need of sleep two levels of assessment occur according to the model. In the first level, assessment data are collected regarding the individual's usual sleep behavior or pattern. In this study the client behavior was assessed through the use of the RCSQ. The data for home were considered the covariate and the dependent variable was the RCSQ in the hospital.

In the Roy Model the second level assessment involves collecting data regarding other major factors affecting sleep. Joan Seo Cho (Roy, 1984) in her application of the Roy model to sleep identified three specific areas where this information would be collected. These three areas are: physical condition, change in sleep habits and environment, and psychological condition.

An attempt was made to control the influence of physical condition in this present study by requiring study participants to be at a certain level of recovery, assessed by the Index of ADLs. Data were not analyzed regarding the clients' other health problems. However, all subjects were medically stable with stable vital signs and not experiencing any complications as identified in the physician progress notes. Another physical condition factor could be pain. In the present study, however, no significant difference was found between the two BRA groups on their rating of pain on the RCSQ.

Environmental factors such as lights, room temperature, activity, noise, and nursing procedures may have been extraneous variables in the present study. Ten of the subjects did report on the open-ended questions on the BRQ or made anecdotal comments to the investigator that something in the environment was a factor in hindering their sleep at the hospital. Six of these subjects were in the low maintenance group and four were in the high maintenance group.

As discussed, attempts were made to control the influence of many of the extraneous variables identified by selecting subjects that were homogeneous in regards to medical diagnosis, nursing unit and general level of recovery. Those that were not controlled were a potential threat to internal validity. The two BRA groups were not

compared for similarity in terms of changed sleep habits such as: awakening earlier, going to bed later, or increased naptime.

No specific information was collected from the subjects regarding their psychological condition. Se Cho (Roy, 1984) suggested that stress can influence both the quantity and quality of the sleep pattern. It is known that depression in the elderly is associated with profound changes in sleep (Hoch, Buyse, & Reynolds, 1989). It is not known in the present study if the two BRA groups were similar in terms of psychological condition. In identifying factors that assisted them to have a "good night's sleep" five subjects made reference to being relaxed. One subject reported sleeping better at the hospital than at home because "it's behind me." She went on to say that she had known for one and a half years that her hip would eventually have to be replaced and that she had been worried about the "what if's". Another subject reported that "it was a tough decision to decide to have surgery and then I had to wait one month to have it. I am relieved it is over." This comment may explain why some subjects reported a better quality of the sleep pattern in the hospital compared to home.

Limitations

Several threats to internal and external validity existed in this study. Some threats to internal validity have already been identified. Other potential threats to

internal validity were selection bias, testing effect, and sample size. Selection bias was a potential threat as a convenience sample was used. In an attempt to control this threat the study group was homogeneous with regards to medical diagnosis and general level of recovery. Also the two BRA groups were analyzed for similarity in terms of their pain. However, there were many factors that were not controlled such as the presence of other medical conditions. To minimize the testing effect information regarding how the subjects slept at home was collected after the data related to hospital sleep were collected. The sample size was small which limits the power to detect the effect of the independent variable upon the dependent variable. Originally the investigator anticipated having a sample size of forty subjects. However due to subject availability the number of subjects was decreased to thirty. Because of the small sample size the results from the study should be interpreted with caution.

Other threats to internal validity were the reliability and validity of the instruments used and the data collection being retrospective. Subjects were asked to recall events that had occurred in their homes two to three days earlier and events that had occurred in the hospital up to 24 hours earlier.

Potential threats to external validity were the Hawthorne effect, measurement effect, and experimenter

effect. To minimize the experimenter effect, an attempt was made to limit dialogue to a verbal script. However, there were situations in which subjects proceeded to discuss questions. So there were some situations in which differences in instrumentation may have presented a threat.

In discussing generalizability, characteristics of the sample must be taken into consideration. The sample population may be somewhat typical of the target population. Ninety-three percent of the subjects were white and 6.7% were black compared with 90% of the general population being white and 8% being black. The median education of the sample was 12.0 years while the median education of the general older adult population is 12.1 years. Seventy-three percent of the subjects were married compared with 78% of the population. The ratio of men to women was the same in the study as in the general population (American Association of Retired Persons, 1989).

Many limitations of the present study have been identified. Some attempts to control extraneous variables and threats to internal and external validity were made. For those threats that could not be controlled attempts were made to critically evaluate the factors to determine the effects of the threats on the study results. These potential threats to internal and external validity must be kept in mind when interpreting the data.

Implications for Nursing Practice

Several implications for nursing practice become evident. The findings suggest that in many instances the patient's home bedtime routine is being maintained to a large degree in spite of the nursing shortage.

The activities performed most frequently by subjects at home and perceived by the subjects to be important were: going to the bathroom, brushing teeth, praying, and cleaning face. Nurses have significant roles in assisting patients to do at least three of these activities (going to the bathroom, brushing teeth, and cleaning face).

There were some trends among the factors identified by the subjects as promoting or hindering their sleep. Pain control was mentioned by fourteen subjects as promoting their sleep. This has major implications for nursing in terms of assessing patients' pain, implementing and evaluating pain relieving measures.

Recommendations for Future Research

This study should be repeated with a larger sample size to increase the power to detect the effect of the independent variable upon the dependent variable. It would be of interest to conduct a similar study with variance in sample, for example, pediatric instead of gerontology clients. Variations of the independent variable should be considered such as the relationship between the subjects' psychological condition and sleep pattern quality. The

study should also be repeated with two groups of subjects who are much different with respect to the number of bedtime routine activities maintained.

Data were collected using open-ended questions to identify factors promoting or hindering sleep. Although there appeared to be some trends in this information it would be of interest to collect more data regarding factors that subjects perceive as promoting or hindering their sleep.

The timing of the administration of the tools could be varied. Perhaps a significant difference would have been found between the two BRA groups if the tools had been administered on the second or third day after the intravenous or intramuscular pain medication was discontinued. Also other instruments to measure sleep quality should possibly be used. Perhaps the RCSQ was not a sensitive enough tool to measure a difference in the sleep quality at home as compared to the hospital.

Summary

The purpose of this study was to answer the following questions: What was the preadmission bedtime routine of the hospitalized elderly, and to what extent was it maintained in the hospital? Which bedtime routines were commonly perceived to be important by the elderly? Was there a relationship between the self-reported nocturnal sleep pattern quality and performance of familiar bedtime routines of the hospitalized elderly?

This research, while of an introductory nature, identified several findings of significance: 1) While the bedtime routine of the hospitalized elderly varied, the most frequently reported and most important activities identified by the subjects were: Going to the bathroom, brushing teeth, praying, and cleaning face; 2) Ninety-three percent of the subjects had fifty percent or more of their routine maintained while in the hospital; 3) The degree to which the familiar bedtime routine was maintained in the hospital was not related to the perceived sleep quality.

Certainly, many questions remain unanswered regarding the best method of promoting sleep for the hospitalized elderly. The study needs to be repeated with additional data collection and a larger sample size.

APPENDICES

APPENDIX A

Medication Half-Life and Duration of Action

Medication	Plasma half-life (in hours)	Duration of Action (in hours)
Anxiolytic:		
Ativan	10 - 20	8
Benadryl	2.4 - 9	3 - 7
Compazine	10 - 20	3 - 4
Meprobamate	6 - 16	*
Phenergan	10 - 20	2 - 8
Valium	20 - 50	3 - 4
Versad	1 - 12	2 - 6
Vistaril	unknown	4 - 6
Zantac	2 - 3	8
Antidepressant:		
Elavil	10 - 50	200
Ludiomil	27 - 58	*
Oral Narcotics:		
Darvocet n-100	6 - 12	4 - 6
Tylenol #3	2.5 - 4	4 - 6
Percocet	2 - 3	3 - 6
Vicodin	4	4 - 6

Note. * Not reported.

Medication Half-Life and Duration of Action (continued)

Medication	Plasma half-life Action (in hours)	Duration of (in hours)
Sedatives- hypnotics		
Dalmane	50 - 100	7 - 8
Chloral Hydrate	8 - 11	4 - 8
Halcion	1.6 - 5	8
Intramuscular or intravenous narcotics		
Dilaudid	2.6 - 4	4 - 5
Demerol	2.4 - 4	2 - 4
Morphine Sulfate	3 - 4	3 - 7

Half-life and duration of action based on data from:

Blake, G.J. (Ed.) (1988). Springhouse Drug Reference. Springhouse, Penn.: Springhouse Co.

Govoni, L. & Hayes, J. (1988). Drugs and Nursing Implications. Norwalk, Conn.: Appleton and Lange.

Kastrup, E.K. (Ed.) (1988). Drug Facts and Comparisons. St. Louis, Missouri: J. B. LIppincott.

Mc Evoy, Gerald (Ed.) (1988). Drug Information 88. Bethsada, Maryland: American Society of Hospital Pharmacists.

67-68, Richards Campbell Sleep Questionnaire
Part 1

University Microfilms International

APPENDIX C

ID_____
Date_____

THE BEDTIME ROUTINE QUESTIONNAIRE PART I

Some people have a bedtime routine. A bedtime routine is an activity or activities done every night before going to bed.

1. Do you routinely perform a certain activity or activities before going to bed each night? Yes_____ No_____

   If yes, did you follow any of your usual bedtime routine before going to bed LAST night? Yes_____ No_____

If yes, check all activities in the list below that you did or the nurse did for you last night. Be sure to respond to ALL items.

	Yes	No
Bathe		
Brush teeth		
Do hair		
Clean face		
Go to the bathroom to urinate		
Watch TV		
Listen to radio that is not music (for example: talk program, baseball)		
Listen to music		
Read		
Write		
Eat (for example, crackers or a snack)		
Drink a nightcap (for example: wine, beer)		
Drink something other than a nightcap (for example: milk, water)		
Talk to someone		
Pray		
Do relaxation exercises		
Have a backrub		
Take medication to help you sleep (for example: pain or sleeping pill)		
Other (please list)		

Note. The instrument administered to subjects was in large print.

ID_____

2. What time did you fall asleep last night? Time_____AM
PM

3. What time did you wake up this morning? Time_____AM
PM

4. Did you take any naps yesterday?
Yes_____ No_____ If yes, number of naps_____

How long were your naps?

Nap 1_____(minutes) Nap 2_____(minutes) Nap 3_____(minutes)

5. Did you have a "good night's sleep" last night?
Yes_____ If yes, answer 5a only.

No_____ If no, answer 5b only.

5a. If yes, what assisted you to get a good night's sleep?

_____
_____
_____
_____
_____

5b. If no, What prevented you from getting a good night's sleep?

_____
_____
_____
_____
_____

Note. From "Sleep and bedtime routines of non-institutionalized aged women" by J.E. Johnson, 1986, Journal of Community Health Nursing, 3(3), p. 124. Reprinted by permission.

ID_____

Date_____

THE BEDTIME ROUTINE QUESTIONNAIRE PART II

1. Do you have a usual time for going to sleep?
   Yes_____ No_____ If yes, time_____AM PM

2. Do you have a usual time you wake up?
   Yes_____ No_____ If yes, time_____AM PM

3. Do you usually take naps
   Yes_____ No_____ If yes, number of naps_____

   How long are your naps?

   Nap 1_____(minutes) Nap 2_____(minutes) Nap 3_____(minutes)

Note. From "Sleep and bedtime routines of non-institutionalized aged women" by J.E. Johnson, 1986, Journal of Community Health Nursing, 3(3), p. 124. Reprinted by permission.

Note. The instrument administered to subjects was in large print.

73, Pfeiffer Short Portable Mental Status Questionnaire (SPMSQ)

APPENDIX E

ID_____
Date_____
Score: _____
Ind____
Dep____

INDEX OF ACTIVITIES OF DAILY LIVING

BATHING - either sponge bath; tub bath, or shower

[] Receives no assistance (gets in and out of tub by self if tub is usual means of bathing)	[] Receives assistance in bathing only one part of the body (such as back or a leg)	[] Receives assistance in bathing more than one part of the body (or not bathed)

DRESSING - gets clothes from closets and drawers - including underclothes, outer garments and using fasteners.

[] Gets clothes and gets completely dressed without assistance	[] Gets clothes and gets dressed without assistance except for tying shoes	[] Receives assistance in getting clothes, in getting dressed, or stays undressed

TOILETING - going to the BR for elimination; cleaning self after elimination, and arranging clothes

[] Goes to BR cleans self & arranges clothes without assist. (may use walker or wheelchair)	[] Receives assist. in going to BR or in cleansing self or in use of night bedpan or commode	[] Doesn't go to the BR for elimination

TRANSFER

[] Moves in & out of bed & chair without assist. (may use object for support)	[] Moves in & out of bed or chair with assistance	[] Doesn't get out of bed

CONTINENCE

[] Controls elimination by self	[] Has occasional "accidents"	[] Supervision helps keep elimination control; catheter is used or is incon.

FEEDING

[] Feeds self without assistance	[] Feeds self except for getting assist. in cutting meat or buttering bread	[] Receives assist. in feeding or is fed by tubes or IVs

Note. From "Progress in development of the Index of ADL" by S. Katz, T. Downs, H. Cash, R. Grots, 1970, The Gerontologist, 1. p. 21. Reprinted by permission.

APPENDIX F

INFORMED CONSENT FOR HUMAN RESEARCH PROJECT

I,_____, agree to participate in the investigation of bedtime routines and sleep patterns under the supervision of Marie Vander Kooi. The investigation aims to develop more knowledge of these activities to promote sleep for hospitalized patients. The procedure to which I will be subjected involves questionnaires. There are no expected risks.

I understand that confidentiality will be protected, that I am free to withdraw from participation in the investigation at any time, and that I will obtain the best care otherwise available.

I have read and fully understand the foregoing information.

_____

Date Subject's Signature

_____

Date Investigator's Signature

Address if interested in receiving results of the study:

Street:_____

City:_____

State:_____ Zip Code_____

APPENDIX G

VERBAL SCRIPT

I'm Marie Vander Kooi. I've been a nurse for several years. I am currently going to school to receive a master's degree in nursing. I'm conducting a study on sleep. Your participation would involve about 20 minutes today and 10 minutes tomorrow morning. If you choose to participate I will help you now to fill out two short questionnaires.

The first is about your sleep at home and the second about activities you do to prepare yourself for going to bed. Then tomorrow morning I will return and you will fill out a questionnaire about your sleep tonight and activities you did before going to sleep tonight. I will explain the questionnaires and assist you until I have answered all your questions.

There are no expected discomforts or risks from participation. You will be contributing to new knowledge which may benefit patients in the future.

Your participation is strictly voluntary. You may withdraw your consent and discontinue participation at any time. Your decision to participate or not participate, or to discontinue participation will not influence your care. Whatever your decision, you will receive the best care available.

If you choose to participate all information will be kept confidential. The questionnaires will have only a number identification code on them.

You will be encouraged to ask any questions you may have. Do you have any questions now? Are you interested in participating in the study?

Yes - Proceed

No - Thank-you for you time and consideration. I wish you well in your recovery.

APPENDIX H

DEMOGRAPHIC DATA

I.D.#_____ Sex M_____ F_____

Age_____ Semi-private___ Private__

Race:_____

Marital Status: S____ M____ D____ Sep___

Hospital Day #_____ Post-op Day #_____

Surgical Procedure_____

Medical Diagnosis_____

Highest grade or year of school:

None	00							
Elementary	01	02	03	04	05	06	07	08
High School	09	10	11	12				
College	13	14	15	16				
Some Grad school	17		Graduate or professional degree		18			

Past Medical History: (Acute or chronic illnesses, duration)
(Must have had medical disorder x 3 months)

_____

_____

_____

_____

Past Surgical History:

_____

_____

_____

_____

Medications at home: (Must have taken med x 3 months)

Medication	Dosage	Time	Length of time on

Medications during hospitalization:

Medication	Dosage	Most recent time received	Half-life/ four half-life	Nite *

*Indicate if the med will be administered during the night.

LIST OF REFERENCES

LIST OF REFERENCES

American Associaton of Retired Persons. (1989). A Profile of Older Americans. Washington, DC: Author.

Baekeland, F., & Hoy, P. (1971). Reported vs recorded sleep characteristics. Archives of General Psychiatry, 24, 548-551.

Berkman, B., & Abrams, R. D. (1986). Factors related to hospital readmission of elderly cardiac patients. Social Work, 31, 99-103.

Blake, G.J. (Ed.) (1988). Springhouse Drug Reference. Springhouse, PA: Springhouse Co.

Campbell, C. (1986). A comparative study of ICU nurses' and patients' perceptions of sleep and identification of sleep disturbing factors. Unpublished master's thesis, Northwestern State University, Nathitoches, LA.

Davignon, D., & Bruno, P. (1982). Insomnia: Causes and treatment, particularly in the elderly. Journal of Gerontological Nursing, 8, 333-336.

Dlin, B., Rosen, H., Dickstein, K., Lyons, J., & Fischer, H. K. (1970). The problems of sleep and rest in the intensive care unit. Psychosomatics, 12, 155-163.

Downie, W. W., Leatham, P. A., Rhind, V. M., Wright, V., Branco, J.A., & Anderson, J. A. (1978). Studies with pain rating scales. Annals of the Rheumatic Diseases, 37, 378-381.

Fawcett, J. (1984). Conceptual Models of Nursing. Philadelphia, PA: F.A. Davis.

Gambert, S. R. & Duthie, E. H. (1981). Sleep disorders: Coping with a waking nightmare. Geriatrics, 36, 61-66.

Gerald, M. C., & O'Bannon, F. V. (1988). Nursing Pharmacology and Therapeutics (2nd ed.). NJ: Appleton & Lange.

Goodemote, E. J. (1985). Sleep deprivation in the hospitalized patient. Orthopaedic Nursing, 4, 33-35.

Govoni, L. & Hayes, J. (1988). Drugs and Nursing Implications. Norwalk, CT: Appleton and Lange.

Hayter, J. (1983). Sleep behaviors of older persons. Nursing Research, 32, 242-246.

Hoch, C., Buysse, D., & Reynolds, C. III (1989). Sleep and depression in late life. Clinics in Geriatric Medicine, 5, 259-274.

Hoch, C., & Reynolds, C. III (1986). Sleep disturbances and what to do about them. Geriatric Nursing, 7, 24-27.

Johnson, J. E. (1986). Sleep and bedtime routines of non-institutionalized aged women. Journal of Community Health Nursing, 3, 117-125.

Kastrup, E.K. (Edl) (1988). Drug Facts and Comparisons. St. Louis, MO: J. B. Lippincott.

Katz, S., Downs, T., Cash, H., & Grotz, R. (1970). Progress in development of the Index of ADL. The Gerontologist 1, 21-30.

Lerner, R. (1982). Sleep loss in the aged: Implications for nursing practice. Journal of Gerontological Nursing, 8, 323-326.

Mc Evoy, Gerald (Ed.). (1988). Drug Information 88. American Society of Hospital Pharmacists.

Munro, B. H., Visintainer, M. A., & Page, E. B. (1986). Statistical methods for health care research. Philadelphia, PA: J. B. Lippincott Company.

Pacini, C. M., & Fitzpatrick, J. J. (1982). Sleep patterns of hospitalized and nonhospitalized aged individuals. Journal of Gerontological Nursing, 8, 327-332.

Pfeiffer, E. (1975). A Short Portable Mental Status Questionnaire for the assessment of organic brain deficit in elderly patients. Journal of the American Geriatrics Society, 23, 433-441.

Polit, D., & Hungler, B. (1987). Nursing Research (3rd ed.). Philadelphia, PA: J. B. Lippincott Company.

Revill, S. I., Robinson, J. O., Rosen, M. & Hogg, M. I. (1976). The reliability of a linear analogue for evaluating pain. Anaesthecia, 31, 1191-1198.

Richards, K. (1985). A description of sleep patterns in the intensive care unit. Unpublished master's thesis, University of Arizona Medical Center, Tucson, AZ.

Richards, K. (1987). Techniques for measurement of sleep in critical care. Focus on Critical Care, 14, 34-40.

Roy, C. (1984). An Adaptation Model (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall.

Schirmer, M. (1983). When sleep won't come. Journal of Gerontological Nursing, 9, 17-21.

Seo Cho, J. (1984). Activity and rest. In C. Roy (Ed.), An Adaptation Model (2nd ed.). (pp. 138-158). Englewood Cliffs, NJ: Prentice-Hall.

Simonson, W. (1984). Medications & the Elderly. Rockville, MD: Aspen.

Tomlinson, K., Westrope, R. A., & Wolverton, C. L. (1988). Preparing for the future: A prospective stance in acute stroke care. Nursing Management, 19, 66-76.

Webb, W. B. (1982). Sleep in older persons: Sleep structures of 50- to 60-year-old men and women. Journal of Gerontology, 37, 581-586.

Williams, M. A., Campbell, E. B., Raynor, W. J., Mlynarczyk, S. M., & Ward, S. E. (1985). Reducing acute confusional states in elderly patients with hip fractures. Research in Nursing and Health, 8, 329-337.