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Bedtime Routines and Sleep-Rest Patterns of Elders

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Abstract

Changes in elders’ sleep patterns such as a decrease in sleep time, an increase in sleep latency, and changes in the sleep cycle often lead to sleep that is lighter, shorter, and interrupted (Foreman & Wykle, 1995). Studies in the past have suggested that the presence of a bedtime routine may enhance sleep, but only minimal research has been done. The purpose of this descriptive study was to further evaluate nightly bedtime routines and sleep-rest patterns of elders. Two research questions were generated: What are the bedtime routines of elders and what are the sleep-rest patterns of elders? Orem’s Self-Care Model served as the theoretical framework. The sample (N = 42) was recruited from an elder retirement community and a senior citizens center. The sample had a mean age of 77.8 years, was mostly female (88.1%), widowed (64.3%), and white (97.6%). A majority of the subjects (62%) reported having nightly bedtime routines. Also, elders who followed a nightly bedtime routine were more satisfied with their sleep. When questioned about their sleep-rest patterns,
the majority reported being calm (71.4%) and having a normal state of fatigue (64.3%) at bedtime. Bedtime routine included cleaning face, brushing teeth, praying, and watching television. An implication for nursing is to develop educational offerings for nurse practitioners which focus on the significance of sleep-rest patterns and nightly bedtime routines of elders. A recommendation for further study is replication with a more diverse sample, revised instruments, and a longitudinal design.
Dedication

This research is dedicated in loving memory of my grandfather,

    Audis Dearmon,

whom I miss more than words can describe. With both your actions and your words, you taught me what it means to be caring, compassionate, and a friend to all. Without your love, confidence, and support, I could have never accomplished so much. I do not think I would be where I am today if had not been for you.

    I love you, Papa
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To my “other parents,” Clatis and Bettye Jo Tew. Your belief that “there is no such thing as too much education” is part of the reason I am here today. I am very lucky to
be able to call you family. Thank you for helping to make this possible.

Finally, to my husband, Clay, thank you for your unconditional love, patience, and support. You stood by me throughout bad moods, temper tantrums, and trying times, and I know that without you I could not have completed this endeavor. I am very blessed to have you in my life.
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Chapter I

The Research Problem

Sleep has been determined to be a basic physiological need experienced by all human beings. Approximately one third of an individual’s life is spent asleep, and sleep is very important to an individual’s sense of well-being (Johnson, 1991). According to Foreman and Wykle (1995), sleep restores the body and maintains energy and health. Sleep is necessary for survival and has a renewing and replenishing effect, both physically and emotionally. Changes in sleep occur as people age. Changes, such as a decrease in actual sleep time, an increase in sleep latency, and changes in the normal sleep cycle, could lead to sleep that is lighter, shorter, and interrupted. Elders are particularly susceptible to sleep disturbances, and nightly bedtime routines may be successful in restoring adequate sleep-rest patterns. Thus, this research sought to identify and describe the bedtime routines and sleep-rest patterns of elders for the purpose of providing improved care to the elder population.
Establishment of the Problem

Complaints of sleeping difficulties increase with age (Ancoli-Israel, 1997). According to Schirmer (1983), the majority of people who suffer from sleep difficulties are over 50 years of age. Researchers have suggested that the prevalence of sleep disorders in individuals over age 65 is as high as 50% (Libman et al., 1998). Women find sleep disturbances particularly distressing, but men are not exempt from them (Johnson, 1991). There are many reasons why the ability to sleep decreases with age. Common complaints of elderly clients with age-related sleep disturbances include a decrease in the amount of actual sleep time, having difficulty falling asleep, waking up frequently during the night, and waking up too early in the morning (Beck-Little & Weinrich, 1998).

Although often overlooked by healthcare professionals and the elderly themselves, sleep disorders can have a significant impact on the health of elders. According to Foreman and Wykle (1995), disrupted sleep can cause physical, emotional, and behavioral disturbances. Sleeplessness can cause a breakdown in the body’s defenses, leaving an individual vulnerable to disease (Schirmer, 1983). The elder lacking sleep often presents
as lethargic, confused, and irritable (Beck-Little & Weinrich, 1998). An individual deprived of sleep is at risk of becoming irritable, apathetic, less alert, and increasingly sensitive to pain. If left untreated, sleeplessness may lead to decreased coping ability, increased anxiety, and confusion (Schirmer, 1983). Behavioral problems also can occur from sleep loss (Beck-Little & Weinrich, 1998). Behavior problems related to sleep loss were found to be the major influencing factor for families seeking institutionalized care for elderly people (Pollak & Perlick, 1991). In summary, the consequences of insomnia include an association with more health problems and hospitalizations, absenteeism, reduced cognitive and intellectual performance, a greater risk of traffic accidents, impaired performance and productivity, a strong association with nursing home placement, increased utilization of health care resources and greater costs, impaired mood and increased risk of psychiatric disorders, greater disposition to alcohol and drug abuse, and an incalculable effect on quality of life (Jacobs, Benson, & Friedman, 1996).

Several interventions have been implemented to assist individuals to overcome sleep disturbances. Medications
are often used, but researchers have shown that many times a drug rebound effect occurs, and the elder may have even more difficulty falling asleep and staying asleep (Schirmer, 1983). Alcohol is often used by older clients to help them fall asleep, and although alcohol does at first make a person sleepy, it causes insomnia later when the alcohol leaves the bloodstream (Ancoli-Israel, 1997).

An alternative to help sleep disturbances in elders may be the implementation of nightly bedtime routines. Bedtime routines are activities performed by individuals before bedtime to encourage sleep (Foreman & Wykle, 1995). According to Schirmer (1983), consistent nightly routines before retiring may help to prepare an individual mentally and physically for sleep. Johnson (1986, 1988, 1991) found that individuals who perform a nightly bedtime routine report more satisfying sleep patterns than those who do not follow a nightly bedtime routine. These findings suggest that pre-sleep activity is comforting to the individual and enhances sleep.

Although limited research has been done, there is a lack of research reflecting the significance of bedtime routines to older individuals. As a result, there is a lack of documentation to suggest that bedtime routines
enhance the sleep patterns of older adults. Therefore, the purpose of the study was to identify and describe the nightly bedtime routines and sleep-rest patterns of elders.

Significance to Nursing

Sleep-rest patterns change with age. Therefore, the nurse practitioner must be aware of potential physical, emotional, and behavioral problems and how to effectively deal with them. Nurse practitioners should be able to carefully assess elders’ sleep-rest patterns, the presence of any changes in these patterns, and how elders are affected by these changes. Nurse practitioners should be able to offer interventions to enhance sleep, one possibility being that of bedtime routines.

Also, the nurse practitioner should be aware of the importance of continuing client education and reinforcement of the information at each visit. For those elders already following a bedtime routine, the nurse practitioner should encourage its continued use. For clients who do not regularly follow a routine, nurse practitioners can help to identify activities that may be helpful to enhance sleep and educate clients and family
members on the importance of following a routine nightly. In an institutionalized setting where it is sometimes more difficult for clients to follow their usual routines, the nurse practitioner can work with staff members and administration to develop ways to help clients follow a routine. Helping clients to incorporate some of their previous routines that they followed before admission may also help them to adjust better.

Nursing research needs to continue to explore the sleep-rest patterns of elders and identify nonpharmacological interventions to enhance sleep satisfaction in adults. This study will increase the availability of nursing research on bedtime routines and the sleep-rest patterns of elders and hopefully will stimulate others to study and research this topic.

Theoretical Framework

The theoretical framework for this study was Orem’s Self-Care Model. This theory is composed of three related theories: the Theory of Self-Care, the Theory of Self-Care Deficit, and the Theory of Nursing Systems. The Theory of Self-Care describes how and why people care for themselves. Self-care involves the practice of activities
that individuals initiate and perform for themselves to "maintain life, health, development, and well-being" (Tomey & Alligood, 1998, p. 181). The Theory of Self-Care Deficit identifies limitations the client has in meeting self-care and how nursing could intervene. Self-care deficit occurs when a person's developed capabilities are not adequate for meeting his or her self-care demand. The Theory of Nursing Systems proposes that nursing is human action. Nursing systems are actions performed by nurses to assist clients to overcome their self-care deficit and meet their requirements for self-care (Tomey & Alligood, 1998). Orem believes that, "Health care is oriented to making adjustments and adaptations necessitated by the defect or undeveloped state and to supply the environmental conditions necessary to support life, facilitate integrated functioning, and contribute to present and future normalcy in daily living" (Orem, 1985, p. 200).

Within the framework of this study, an altered sleep-rest pattern in elders can be considered a self-care deficit. Bedtime routines can be considered a self-care activity that elders may perform to assist them in maintaining adequate sleep-rest patterns. Sleeplessness
can occur when elders are not knowledgeable or capable of performing activities to meet the universal self-care requisite of “maintenance of balance between activity and rest” (Tomey & Alligood, 1998, p. 177); therefore, nursing can intervene to teach, guide, and direct individuals’ self-care activities such as bedtime routines to “regulate human structural integrity, functioning, and development” (Chinn & Kramer, 1995, p. 179).

Assumptions

The assumptions of the study were as follows:

1. Elders have sleep disturbances.

2. Bedtime routines may contribute to improved sleep-rest patterns.

3. Elders, as self-care agents, are capable of initiating and performing activities in the interest of maintaining health and well-being.

Statement of the Problem

The purpose of this study was to identify and describe the nightly bedtime routines and sleep-rest patterns of elders.
Research Questions

The following research questions were explored:

1. What are the nightly bedtime routines of elders?
2. What are the sleep-rest patterns of elders?

Definition of Terms

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

Elders: men or women 60 years of age or older.

Bedtime routines: activities performed by individuals before bedtime on a consistent basis. They can include bathing, brushing teeth, hair care, watching television, listening to the radio, writing, reading, drinking, eating, taking medication, or any other activities perceived by individuals as a routine. They will be measured by the Bedtime Routine Questionnaire (BRQ).

Sleep-rest patterns: the behaviors that occur after falling asleep at night and before awakening in the morning. These behaviors can include waking up throughout the night, movement during the night, or perceived soundness of sleep. They will be measured by the Sleep Pattern Questionnaire (SPQ).
Chapter II

Review of Literature

Although much research has been done related to the sleep-rest patterns of elders, few studies have focused on interventions to decrease the prevalence of sleep disorders in this population. The following studies focused on sleep patterns and complaints in the elderly population, behavioral methods used to enhance sleep-rest patterns in adults and elders, and the use of bedtime routines by the elder population.

Sleep Patterns and Complaints

Maggi et al. (1998) sought to determine the prevalence rates of self-reported complaints and their association with health-related factors in an elder population. The researchers used a cross-sectional design and randomly sampled 2,398 noninstitutionalized individuals, aged 65 years and older, residing in five rural and four urban centers in the Veneto region of northeast Italy. Potential subjects were obtained from the
resident lists maintained by the municipalities, and a random sample was taken from each of five age strata. The final sample consisted of 867 men and 1,531 women. The mean age was 75.2 years for men and 76.9 years for women.

Extensive data were collected in the subjects’ homes. All subjects were administered a comprehensive questionnaire which obtained information on sociodemographic data, living arrangements, family, social, and income data, participation in social activities, self-reported history of medical conditions, self-reported health status, physical functioning, activities of daily living, health behaviors, and the use of health and social services. Brief physical examinations were conducted by physicians. The Established Populations for Epidemiologic Studies of the Elderly (EPESE) questionnaire was used to assess sleep disturbances. Four variables for sleep-disturbance syndromes were created from the responses to the questions which included insomnia, night awakeners, awakened not rested, and no complaints. The factors associated with two of the syndromes (insomnia and night awakening) were recorded and classified as physiological, psychological, environmental,
and unknown factors. Medication use and mental status also were assessed.

Data were analyzed using the SAS statistical analysis package. The association of the sleep complaints score as a continuous variable with other information obtained during data collection was assessed in a least squares general linear model. Also, odds ratios were collected for risk factors significantly related to the sleep complaints \((p < .10)\) from three separate logistic regression models with insomnia, awakening during the night, and not feeling rested in the morning as the dependent variables. Logistic regression analyses also were recalculated with all variables included in the model to verify the exclusion of some risk factors not associated with the sleep complaints score but related to the sleep disturbances.

Maggi et al. (1998) found that no sleep complaints were reported by 26% of the men and 21% of the women. Approximately 36% of the men and 54% of the women reported complaints of insomnia, and the prevalence of both insomnia and awakening not rested in the morning was significantly greater in women than in men \((p < .001)\) and did not increase with age. Also, the prevalence of having
trouble falling asleep and of awakening too early in the morning was significantly higher in women than in men (p < .001). Night awakening was the most common sleep complaints in both sexes. Significant odds ratios (OR) for insomnia were found for women (OR = 1.52, 95% CI: 1.3 to 2.1), arthritis (OR = 1.28, 95% CI: 1.1 to 1.6), varicose veins (OR = 1.29, 95% CI: 1.1 to 1.6), myocardial infarction (OR = 1.52, 95% CI: 1.1 to 2.2), COPD (OR = 1.26, 95% CI: 1.1 to 1.6), depressive symptoms (OR = 1.93, 95% CI: 1.5 to 2.5), low mental status score (OR = 0.76, 95% CI: 0.6 to 0.9), poor/fair self-rated health (OR = 1.32, 95% CI: 1.1 to 1.6), low level of education (OR = 1.43, 95% CI: 1.1 to 1.8), and use of sleep medication (sometimes: OR = 1.61, 95% CI: 1.2 to 2.2; always: 5.58, 95% CI: 4.3 to 7.3). Significant odds ratios for awakening not rested were found for hypertension (OR = 1.26, 95% CI: 1.1 to 1.5), ulcer (OR = 1.40, 95% CI: 1.1 to 1.8), and fractures (OR = 1.32, 95% CI: 1.1 to 1.7). Significant odds ratios for awakening not rested were found for COPD (OR = 1.26, 95% CI: 1.1 to 1.6), other respiratory symptoms (OR = 1.44, 95% CI: 1.1 to 2.0), any GI symptoms (OR = 1.34, 95% CI: 1.1 to 1.7), mobility disability (OR = 1.37, 95% CI: 1.1 to 1.8), ADL disability (OR = 1.67, 95%
CI: 1.2 to 2.3), and poor/fair self-rated health (OR = 1.56, 95% CI: 1.2 to 1.9). The most common reasons reported by both men and women for difficulty falling asleep were the inability to relax (13.3% and 15.3%, respectively) and thoughts (29.6% and 38.3%, respectively). The most common reason reported by both men and women for awakening during the night was the need to go to the toilet (73.3% and 57.8%, respectively). Finally, the most common reasons reported by men and women for awakening too early were the need to go to the toilet (13.5% and 9.3%, respectively) and thoughts (15.6% and 18.7%, respectively).

Maggi et al. (1998) concluded that sleep disturbances are highly prevalent in older Italians and are associated with a wide range of medical conditions and the use of sleep medications. The researchers also concluded that sleep disturbances were more prevalent in women than men with no trend with age, and participants with depressive symptoms were more likely to report sleep disturbances. The researchers also determined that the differences in the findings in this study from other studies may have been due to cross-national or cultural differences in the participants, misclassifications of the data by the
participants, low educational levels in the study population, lack of obesity within the study population, or the strong association with depressive symptomatology.

Maggi et al. (1998) recommended that future studies should be designed to help explain cross-national and cultural differences in the prevalence of sleep disturbances and their causes. The researchers also recommended that further longitudinal studies need to be done to investigate the causes and the negative consequences of sleep disturbances in older people.

This study was germane to the present research because it reinforces the belief that many elders often have sleep disturbances. A better understanding of the sleep-rest disturbances in elders may assist health care providers to provide interventions that will help them. The battle of some elders to fall asleep and to stay asleep may be won by incorporating nightly bedtime rituals into their lives.

Another study concerning elderly sleep patterns was conducted by Libman et al. (1998) which sought to compare changes in sleep quality in “younger” and “older” seniors, both longitudinally and cross-sectionally, over a 2-year period. The researchers also sought to identify predictors
of "vulnerability" and "resilience" for developing significant insomnia complaints. The following two questions also were addressed: "(1) As they age, what happens to older individuals who start out being good sleepers, poor sleepers, or somewhere in between? (2) Which older individuals are likely to experience deterioration or improvement in their sleep?" (Libman et al., 1998, p. 185).

The sample included 149 subjects derived from 266 individuals participating in a larger study on sleep and aging. Subjects participating had to be age 55 or greater, a community resident, and have sufficient intellectual and language skills to complete questionnaire measures. Approximately two thirds of the participants were female and all were voluntary subjects.

Data were collected regarding demographics, sleep parameters, aspects of daytime and nighttime psychological adjustment and lifestyle factors. All subjects completed the Background Information Form and the Sleep Questionnaire which provided the researchers opportunity to diagnose and classify subjects as good, medium, and poor sleepers. The questionnaires also provided researchers an opportunity to evaluate nine of the 11
measures of sleep parameters. Most participants also completed the following: Stanford Sleepiness Scale, Sleep Self-Efficacy Scale, Daytime Activity Record Form, Life Events Scale, Pre-Sleep Arousal Scale, Brief Symptom Inventory, Eysenck Personality Inventory, Satisfaction with Life Scale, Penn State Worry Questionnaire, Overall Thought Pleasantness Rating, Anxious Self Statements Questionnaire, and Cognitive Content Questionnaire.

Approximately 2 years later, Libman et al. (1998) attempted to contact all participants. Only 212 individuals were able to be contacted, and of those, 163 provided posttest information. These individuals completed a second set of questionnaires, including the Sleep Questionnaire and the Life Events Scale. Only 149 subjects provided sufficient data to allow the researchers to classify elders as good, medium, or poor sleepers. The sample was divided into "young old" (mean age = 64; range = 58-69) and "old old" (mean age = 75; range = 70-90) individuals.

Data were analyzed using descriptive statistics, t-tests, and discriminant function analyses. At pretest, 40% of participants were good sleepers (average = 7.05 hours), 18% Medium Quality Sleepers (average = 6.59
hours), and 42% were Poor Sleepers (average = 5.13 hours). There was relatively little change over time. At posttest, 39% of participants were good sleepers, 23% were medium quality sleepers, and 38% were poor sleepers. In addition, differences for “young old” and “old old” participants were not significant ($\alpha = .05$). Of the 90 elders who were classified as medium quality and poor sleeper subjects at pretesting, 28 improved and 62 remained unchanged. To determine which participants would improve, deteriorate, and remain unchanged from pretest to posttest, t tests and discriminant function analyses were performed. Three sets of pretest predictors, sleep parameters, psychological adjustment, and lifestyle, involving 41 variables, were evaluated. Eleven variables evaluated sleep parameters, 12 variables evaluated daytime and nocturnal psychological adjustment, and 18 variables evaluated various aspects of lifestyle and demographics. The discriminant function analysis using the 11 sleep parameter variables showed that only one variable, distress about one’s sleep problem, when entered into the equation distinguished between the two groups, $F(1, 41) = 6.55, p < .05$. Means show that the group which improved had lower distress scores than the group which remained unchanged. Distress,
r = .79, fatigue, r = .68, and low self-efficacy, r = .63, were variables that correlated strongly to the discriminant function. Using t-tests at the .05 alpha level five of the 11 variables emerged as significant in the direction of better sleep at pretesting in the improved group. However, none of the findings remained significant after a Bonferroni adjustment was applied. The discriminant analysis was employed to evaluate the 12 Psychological Adjustment measures. Two variables, neuroticism and nocturnal anxious self-statements together, were determined to distinguish between the two groups, $F(2, 26) = 6.04$, $p < .01$. Means indicate that the group which remained unchanged had more anxious self-statements and greater neuroticism than the group which improved. Neuroticism, $r = .70$, anxious self-statements, $r = .76$, a worrying personality style, $r = .70$, overall symptom severity, $r = .62$, and depression, $r = .63$, were variables that correlated strongly to the discriminant function. Four of the 12 t-test comparisons were significant at the .05 alpha level: neuroticism, anxious self-statements, overall symptom severity, and negative thought frequency. Cognitive arousal and a worrying personality style approached significance. However, none
remained significant after a Bonferroni adjustment of the alpha levels. Of the 26% participants who showed deterioration, neither the discriminant function analyses nor the series of t-tests revealed any significant findings (p > .05). Therefore, none of the 41 psychological adjustment, sleep parameter, or lifestyle variables were determined as predictors of deterioration. t-test comparisons on age showed no significant difference between deteriorated and unchanged groups either at pretesting [M = 71, M = 70, t(70) = .90, p > .05, or at posttesting (M = 73, M = 72, t(70) = .91, p > .05].

Libman et al. (1998) concluded that during a 2-year period, most individuals' sleep quality remained unchanged. The researchers also suggested that sleep disorders do not necessarily develop as a consequence of increasing age in elders. The predictors examined in this study could not significantly separate those subjects who deteriorated from those who remained unchanged. Findings on improvement suggested that people who improved their sleep had substantially better psychological adjustment, including less neuroticism, fewer negative worrying thoughts, and lower levels of anxious thoughts during wake times. The researchers suggested that often elders who
already sleep well only improve their sleep status rather than regress as they age. Finally, researchers concluded that lifestyle factors were unrelated to self-reported sleep quality in older individuals, but that those individuals who improved their sleep status were characterized by a less neurotic, anxious, and worrying personality style.

Libman et al. (1998) recommended that future research should be conducted investigating how poor sleep may be improved, how to preserve good sleep in elders, and how to reduce stress related to continued impaired sleep. The researchers also suggested that investigations should be implemented to determine if making changes in negative and anxious thoughts and behaviors before bedtime could impact sleep quality and distress related to insomnia.

The Libman et al. (1998) study was pertinent to the current research because, as Libman et al. suggested, more research should focus on pre-sleep activity and its effect on sleep quality and insomnia, which was one of the topics that the current researcher sought to explore.
Behavioral Interventions

Johnson (1993) conducted a study to determine the effect of progressive relaxation on the self-reported sleep patterns of healthy, noninstitutionalized men and women over age 65 years. The following research questions were answered:

(1) What are the self-reported sleep patterns of the healthy noninstitutionalized elderly? (2) Do these sleep patterns differ according to sex and age? (3) How does the use of progressive relaxation influence these subjective sleep variables in the healthy, noninstitutionalized elderly? (a) Time to sleep onset, (b) Number of nocturnal awakenings, (c) Total sleep time, (d) Soundness of sleep, (e) Movement during sleep, (f) Feelings of being refreshed on waking, (g) Satisfaction with sleep. (4) What effect do age and sex have on the aforementioned variables when progressive relaxation is used? (p. 32)

Johnson (1993) used a pretest-posttest same subject design. Subjects were recruited through newspaper advertisements and posters placed in local businesses and institutions. Potential subjects were screened for the use of certain drugs and illnesses which were known to interfere with sleep patterns. Those subjects who were using either prescription or over-the-counter drugs to promote sleep all underwent appropriate drug wash-out periods under medical supervision before taking part in
the study. The final sample consisted of 176 men and women over 65 years old. Ninety-six of the participants were women and all subjects lived in their own homes.

The design involved three stages: the pretest stage (Nights 1-3), the instructional and practice stage (Days 4-8), and the posttest stage (Nights 9-11). The Sleep Pattern Questionnaire (SPQ) by Baekland and Hoy (1971) was completed by the subjects during the pretest and posttest stages. The SPQ measured nighttime sleep patterns and consisted of two parts. Part I contained three questions to be completed immediately before going to bed at night and included questions about the perceived state of mind and fatigue of the respondent as well as the time the respondent went to bed that night. Part II contained seven questions that were to be completed immediately on arising in the morning and included questions about the perceived time of sleep onset, number of nighttime awakenings, total sleep time, soundness of sleep, movement during sleep, feelings of being refreshed in the morning, and satisfaction with sleep. Concurrent validity of the SPQ was established by Baekeland and Hoy and confirmed by other investigators. No coefficients were published. Test-retest reliability of the SPQ was established by Johnson
(1993) using 20 nursing home residents. Pearson product-moment correlation for Part I and Part II were .84 and .97, respectively, suggesting satisfactory test-retest reliability of the SPQ.

Subjects received instruction on progressive relaxation on Days 4 to 8 by a registered nurse. This instruction consisted of controlled breathing and alternating contractions and relaxations of muscle groups. Subjects also were given a tape guiding them through the process so they could practice at home.

Initial frequencies for the data were analyzed with the Pearson r to determine variable stability across the three data sets. The researchers determined significant correlations for all variables in the pretest stage (p < .001) and in the posttest stage (p < .002) of the study. Average initial frequencies were obtained, and using these averaged scores, data were analyzed using the correlated samples t test, analysis of variance (ANOVA), and correlation procedures.

The findings related to Research Question 1 suggested that during the pretest stage of the study all of the subjects perceived some disturbances in their sleep patterns. An ANOVA revealed some significant differences
according to gender (Research Question 2). Women reported
an average of 31.3 minutes to fall asleep, compared to
27.2 minutes for men, $F(1, 174) = 11.32, p < .01$. Women
reported an average of 4.4 nighttime arousals compared to
3.2 nocturnal awakenings for men, $F(1, 174) = 12.22, p <
.001$. Women also awakened earlier in the morning, $F(1,
174) = 9.79, p < .05$; and received less total sleep time
than men, $F(1, 174) = 12.56, p < .001$. Males tended to
have less movement while asleep, $F(1, 174) = 9.43, p <
.05$; feel more refreshed in the morning, $F(1, 174) =
10.76, p < .01$; and be more satisfied with their sleep,
$F(1, 174) = 10.64, p < .01$. After the introduction of
progressive relaxation, the correlated sample t test
revealed significant differences for five of the sleep
variables (Research Question 3): bedtime state of mind,
$t(175) = 3.54, p < .01$; time to sleep onset, $t(175) = 4.32$
$p < .001$; soundness of sleep, $t(175) = 2.35, p < .05$;
number of nighttime arousals, $t(175) = 2.54, p < .05$; and
satisfaction with sleep, $t(175) = 3.65, p < .01$. Further
analysis revealed that progressive relaxation influenced
the sleep patterns of men and women in different ways
(Research Question 4). Women reported feeling much calmer
at bedtime than men following its use, $F(1, 174) = 3.45,$
p < .001; and falling asleep more quickly, $F(1, 174) = 3.22$, $p < .001$. Men felt that they experienced fewer nighttime arousals, $F(1, 174) = 2.32$, $p < .01$; and less movement while asleep after progressive relaxation than women, $F(1, 174) = 2.25$, $p < .01$. Pearson product-moment correlations were interpreted and despite progressive relaxation, older subjects moved more and wakened more often than younger subjects, $r = .78$, $p < .05$, and $r = .69$, $p < .05$, respectively. There were also significant differences between the following variables: bedtime state of mind, $r = -.85$, $p < .01$; time to sleep onset, $r = -.78$, $p < .01$, and soundness of sleep, $r = -.81$, $p < .01$.

Johnson (1993) concluded that older, healthy, noninstitutionalized adults do report changes in their sleep patterns, such as lack of calmness at bedtime, increased time to sleep onset, increased number of nighttime arousals, increased movement while asleep, sleeping less soundly, and early morning awakenings. The researcher also found that elders and females experienced more problems with their sleep status. Finally, the use of progressive relaxation did improve the self-reported sleep patterns of the noninstitutionalized elderly regardless of sex. Johnson (1993) recommended that more research should
be done to identify other non-pharmacological alternatives to promote satisfactory sleep in older adults.

The conclusions of the Johnson (1993) study are germane to the current research that also explores the sleep patterns of elders. In addition, the current research also explores the use of bedtime routines by elders, which is another behavioral intervention that may improve their sleep patterns.

Jacobs et al. (1996) sought to assess the perceived outcome of patients spontaneously seeking treatment in a hospital behavioral medicine insomnia program that utilizes a multifactor behavioral treatment approach. The descriptive study used a clinical replication series and a sample of 102 individuals who reported insomnia presenting to a behavioral medicine clinic. The subjects were either self-referred or referred from health care practitioners. All required written referral to participate in the program. The subjects complained of sleep-onset, sleep maintenance, or mixed insomnia difficulties two or more nights per week, and met criteria for disorder of initiating or maintaining sleep not due to psychoses, apnea, periodic limb movements, or circadian disorders. Sixty-one subjects were female and 41 were male.
Several methods were used to collect data. All subjects were evaluated for disorder of initiating or maintaining sleep using the International Classification of Sleep Disorders. Symptomatic psychological distress was measured using the Symptom Checklist-90-Revised. Also, assessment of the subjects included a medical history obtained from a physician who evaluated the patient within the previous 6 months and a detailed semistructured interview involving a behavioral assessment of sleep using a sleep history questionnaire that assessed their sleep pattern, medication use, contributing behavioral factors, and medical history. Four weeks posttreatment and at a 6-month follow-up, questionnaires were used to assess the subjects’ changes in sleep, medication use, and psychological symptomatology.

The multifactor cognitive-behavioral intervention was structured and sleep-focused and consisted of seven components that were taught in sequential fashion in seven 2-hour group-based sessions over 10 weeks. Session one focused on sleep education and cognitive restructuring concerning sleep. Session two focused on medication withdrawal and taught good sleep hygiene techniques to be used nightly before bedtime. Session three concerned sleep
scheduling to improve sleep efficacy. Modified stimulus control, relaxation responses combined with stimulus control, cognitive restructuring for stress management, and maintaining and enhancing therapeutic gains were the focus of the last four sessions. Patients completed daily sleep diaries and a weekly compliance checklist during each week of the program.

Pretreatment, posttreatment, and 6-month follow-up data were analyzed using descriptive statistics. Posttreatment results indicated that 58% (n = 59) of patients rated their sleep as significantly improved, 33% (n = 34) rated their sleep as moderately improved, and 9% (n = 9) rated their sleep as slightly improved. No patients rated their sleep as unchanged or worse. Of the 68 patients who were using sleep medication at least once per month at pretreatment, 38% (n = 26) stopped using medication entirely at posttreatment, and 53% (n = 36) reduced the medication and/or increased the number of medication-free nights. Only 9% (n = 6) of the patients reported no decrease in medication use. No patients increased their use. At the 6-month follow-up, the researchers found that 47% (n = 33) of the patients rated their improvement as
enhanced, 43% (n = 30) rated their improvement as maintained, and 10% (n = 7) rated their sleep as worse.

Jacobs et al. (1996) concluded that chronic insomnia patients, including those with psychiatric comorbidity, and users of sleep medications perceived significant benefit from a multifactor behavioral intervention that consisted of medication withdrawal, regular sleep, scheduling, relaxation, stress management, and good nightly sleep hygiene. The researchers also suggested that maintenance of improved sleep over several months was significant clinically when compared to pharmacotherapy. Finally, the researchers concluded that patient-perceived outcome was an important clinical outcome measure and may even be more relevant of outcome than polysomnography or sleep diaries. The conclusion that behavioral interventions may benefit patients with chronic insomnia was germane to the current research which explores the use of bedtime routines by elders which is also a behavioral intervention.

**Bedtime Routines**

Johnson (1988) conducted a study which identified and described the self-reported nighttime sleep patterns.
and bedtime routines of women over the age of 65 years. The researcher also investigated the differences and relationships between those routines and patterns according to whether or not the subject was institutionalized. More specifically, Johnson (1988) sought to answer the following questions:

1. What are the self-reported sleep patterns and bedtime routines of aged institutionalized and noninstitutionalized women? 2. Is there a relationship between how much self-reported sleep patterns and bedtime routines change for aged women after institutionalization? 3. What is the relationship between the self-reported sleep patterns and bedtime routines in institutionalized aged women, aged women living in their own homes, and noninstitutionalized aged women who do not live in their own homes? 4. Are there differences among the self-reported sleep patterns and bedtime routines of the three groups of aged women noted in question 3? (p. 99)

Johnson used a descriptive design which included 87 ambulatory women. The institutionalized women were from a southwestern community nursing home. All female residents who met certain criteria for inclusion in the study were assigned code numbers. Forty-five of the 61 eligible residents were selected using a table of random numbers. The noninstitutionalized women were recruited from practices of six local physicians who cared for adult patients. Forty-two women from three practices were
selected using a table of random numbers. Of the 42 noninstitutionalized participants, 19 lived in their own homes and 23 lived with an adult child but had their own rooms and beds. Women with certain diseases that were known to affect sleep and women requiring treatment with certain medications that alter sleep patterns were excluded from the study.

Data for the study were collected with the Sleep Pattern Questionnaire and the Bedtime Routine Questionnaire. The Sleep Pattern Questionnaire measured nocturnal sleep patterns and was completed by the subjects immediately before going to bed at night and upon waking in the morning for 3 consecutive nights and days. The Sleep Pattern Questionnaire had concurrent validity and test-retest reliability, and coefficients were not published. The Bedtime Routine Questionnaire consisted of six questions that helped to obtain information concerning the importance of a bedtime routine to the subjects and activities involved in the routine. The questionnaire was completed on the first evening of data collection. The Bedtime Routine Questionnaire was determined to have satisfactory test-retest reliability, $r = .87$, $p < .01$, 
and adequate concurrent validity, \( r = .81, p < .01 \), for this study.

These data obtained from the Sleep Pattern Questionnaire were submitted to a Pearson product-moment correlation to determine variable stability across the three data collection times. Significant correlations for all variables across time were shown, and average initial frequency scores were obtained. Data were analyzed using descriptive statistics, correlational procedures, and analysis of variance. The Newman-Keuls procedure was used to determine which means differed after discovering that a significant difference among means did exist. The acceptable alpha level of significance for this study was set at 0.5.

Johnson (1988) found that all of the subjects perceived some disturbance in their nighttime sleep patterns. Of the 45 institutionalized subjects, 28 reported following a bedtime routine and 17 reported not following one. Thirty-seven of the 45 women reported that their routines had changed completely since admission and these changes were very disturbing to them. Of the nursing home residents reporting a bedtime routine, the majority brush their teeth (n = 31), wash their faces (n = 29),
pray (n = 39), and take their medications (n = 42). A total of 27 of the 42 noninstitutionalized subjects reported following a bedtime routine. Nine of the 12 noninstitutionalized women who lived with a relative indicated that they had followed a routine prior to moving in, but abandoned it because it was too time-consuming. Of the noninstitutionalized women reporting a bedtime routine the majority brushed their teeth (n = 27), took their medication (n = 22), bathed (n = 21), and prayed (n = 20). The researcher also found that institutionalized women reported less sound sleep, more movement while asleep, increased amount of time to fall asleep, earlier awakenings, and less satisfaction with their sleep after admission to the nursing home. Nursing home residents with a routine tended to wake less often, feel more refreshed on waking, and feel more satisfied with their sleep than those not following a routine. Noninstitutionalized subjects with a routine tended to feel calmer at bedtime, wake less often, have a shorter sleep onset latency, sleep more hours, move less while asleep, sleep more soundly, feel more refreshed on waking, and feel more satisfied with their sleep than those without a routine. There were significant differences among noninstitutionalized women
in their own homes, noninstitutionalized women living with relatives, and institutionalized women for sleep onset latency (25.20, 26.31, and 49.19 minutes, respectively) and for number of nocturnal awakenings (1.70, 1.80, and 3.68, respectively). Women living in their own homes and noninstitutionalized women living with relatives were significantly higher for time of morning wakening (M = 6.45 and 6.30, respectively), total sleep time (M = 7.10 and 6.81, respectively), and sleep satisfaction (M = 4.51 and 4.39, respectively) than they were for institutionalized women" (p. 105). Finally, Johnson found that the means for institutionalized women were significantly different from noninstitutionalized women for all variables in the Bedtime Routine Questionnaire. There were no statistical differences between women living in their own homes and other noninstitutionalized women.

Johnson (1988) concluded that older women do perceive changes in their sleep patterns, bedtime routines were important to the perceived sleep patterns of older women, and that sleep was less satisfying for the women who do not follow a routine. The researcher also found that institutionalized women reported the most disturbed sleep patterns, and the institutionalized women felt that the
more their routines had changed since admission, the more they reported disturbed sleep patterns. The author suggested that women who reside in their own homes report the least disturbed sleep patterns and the most consistent bedtime routines. Women who reside with a relative have slight or moderate changes in their routines and sleep patterns. Finally, bedtime routines did not have to be elaborate or complicated to promote sleep and comfort. All of these findings were germane to the current research which sought to further explore the sleep-rest patterns and bedtime routines of elders.

In another study, Johnson (1991) identified and described the sleep patterns and bedtime routines of elderly men and women who lived in a non-urban area in their own homes. The researcher also investigated the relationship and differences between those routines and patterns according to gender.

The design was nonexperimental and used a cross-section of 45 women and 42 men between the ages of 65 and 97 years. The sample was obtained from three family practices and three internal medicine practices. Those patients with certain illnesses and medications who were known to affect sleep and those who had complained of
chronic sleep problems in the past were excluded. The subjects for the study were then obtained using a table of random numbers.

Data for the study were collected using the Bedtime Routine Questionnaire and the Sleep Pattern Questionnaire. The Bedtime Routine Questionnaire measured the activities perceived by the subjects as a nightly routine and was completed by the subjects on the evening of data collection. The Bedtime Routine Questionnaire was determined to have concurrent validity, \( r = .81, p < .01 \), and adequate test-retest reliability, \( r = .83, p < .001 \). The Sleep Pattern Questionnaire measured nocturnal sleep patterns and consisted of questions that were completed immediately before going to bed at night and immediately after arising in the morning. This was done for three consecutive nights and mornings. The Sleep Pattern Questionnaire also was determined to have concurrent validity (\( p < .01 \)) and test-retest reliability (\( p < .05 \)).

All data were analyzed using descriptive statistics, correlation procedures, and analysis of variance. The acceptable level of significance was set at .05 alpha. An appropriate committee to protect human subjects reviewed and approved the procedures for this investigation.
Johnson (1991) found that all of the subjects who participated in the study perceived some sleep disturbance in their sleep patterns. Twenty-four of the 45 women and 23 of the 42 men reported following a bedtime routine. The results revealed that men with a routine had fewer sleep complaints. These men tended to feel calmer at bedtime, $F(3, 83) = 5.71, p < .05$; have shorter sleep onset, $F(3, 83) = 9.69, p < .01$; and have fewer awakenings, $F(3, 83) = 6.53, p < .05$, than older women with or without a routine and older men without one. They also perceived moving less while asleep, $F(3, 83) = 5.72, p < .05$; sleeping more soundly, $F(3, 83) = 8.23, p < .01$; and feeling more refreshed on awaking, $F(3, 83) = 9.27, p < .01$. Finally, older men with a routine reported being more satisfied with their sleep than subjects in the other three groups, $F(3, 83) = 15.23, p < .001$.

Johnson (1991) concluded that the elderly do perceive changes in their sleep patterns and that bedtime routines were very important to those subjects in the study that had one. Subjects with a routine had fewer complaints than those without a routine. More specifically, the author concluded that sleep was least disturbed in older men who followed a bedtime routine and older women without a
bedtime routine reported the most disrupted sleep. Also, Johnson suggested that because women perceive their sleep as more disturbed, it is possible that their routines are not as comfortable to them, but they do provide more satisfaction than women not having a bedtime routine at all. The purpose of Johnson’s (1991) study parallels the current research that also explored the sleep-rest patterns and bedtime routines of elders.

Summary

The reviewed articles were germane to the current research that explored the sleep-rest patterns and bedtime routines of elders. Libman et al. (1998) and Maggi et al. (1998) explored the sleep patterns and complaints of elders. According to Maggi et al. (1998), the prevalence of insomnia was 36% in men and 54% in women with increased risks for women, depression, and regular use of sleep medications. This increased incidence warrants further investigations into elders’ sleep habits. Libman et al. (1998) suggested that making changes in negative pre-sleep thoughts and behaviors merit therapeutic exploration and that investigation concerning the effects of such changes
on sleep quality and on distress related to insomnial are
needed.

Other researchers focused on behavioral methods to
improve the sleep-rest patterns of elders. In 1993, 
Johnson examined the relationship between progressive
relaxation and the sleep patterns of elders and
subsequently suggested that initiating non-pharmacological
methods such as progressive relaxation does improve the
sleep patterns of noninstitutionalized, healthy elders.
Jacobs et al. (1996) found a positive relationship between
behavioral modification treatment and an improvement in
the chronic insomnial of adults.

Finally, in 1988 and 1991, Johnson identified and
described the sleep patterns and bedtime routines of women
over age 65 and elderly men and women who lived in their
own homes. In both studies the researcher found that those
who participate in nightly bedtime routines have improved
self-reported sleep patterns.

All of these studies supported the current study’s
endeavor to develop a better understanding of the bedtime
routines and sleep-rest patterns of elders prior to
implementation of this research. Better understanding of
the relationship among these variables could assist nurse practitioners in providing improved care to their elderly patients.
Chapter III

The Method

The purpose of this study was to identify and describe the nightly bedtime routines and the sleep-rest patterns of elders. This chapter contains the empiricalization of the study. The design, population, sample, methods of data collection, instrumentation, procedures, and methods of data analysis are detailed.

Design of the Study

A descriptive design was used to identify and describe the nightly bedtime routines and sleep-rest patterns of elders. According to Polit and Hungler (1995), "the purpose of descriptive research is to observe, describe, and document aspects of a situation as it naturally occurs" (p. 178). Since the researcher's goal was to identify and describe, a descriptive design was suitable.
Setting

The setting was a senior citizens center and an elder retirement community in two rural communities in the southeastern United States. The senior citizens center was located in a small town of approximately 1,800 people. The area was an industrial and farming community. The participants at the center were fairly evenly split between lower, middle, and upper socioeconomic classes. Approximately 150 people were enrolled at the center, and daily attendance averaged 55 people. Participants at the center had to be 60 years old or greater to attend.

The retirement community was located in a college town of approximately 29,000 people. The community consisted of individual apartments for approximately 140 residents. Most of the residents were split between the middle and upper socioeconomic classes. In order to qualify for residency at the community, individuals had to be at least 62 years old.

Population/Sample

The proposed population was elders age 60 years and older of either gender. The sampling design was nonprobability, convenience and included elders who met
the inclusion criteria, agreed to participate in the study, and were either tenants of the retirement community or participants at the senior citizens center. The target sample was elders, age 60 years or older, both male and female. The actual sample was 42 subjects.

Instrumentation

Three instruments were used for data collection. The researcher-designed Demographic Data Sheet (see Appendix A), the Bedtime Routine Questionnaire (Johnson, 1986) (see Appendix B), and the Sleep Pattern Questionnaire (Baekeland & Hoy, 1971) (see Appendix C) were utilized.

The researcher-designed Demographic Data Sheet was used to gather information regarding age, gender, race, marital status, medication, medical problems, and recent life changes. Responses were either multiple-choice or open-ended. Scoring was on a question-by-question basis using frequencies and percentiles.

The Bedtime Routine Questionnaire (Johnson, 1986) consists of four questions designed to obtain information about the activities involved in the bedtime routine and the importance of a routine to the individuals. Johnson (1991) determined the validity, $r = .81$, $p < .01$, and
test-retest reliability, $r = .83, p < .001$, on a sample of elders.

The Sleep Pattern Questionnaire (Baekeland & Hoy, 1971) consists of two parts. Part I has three questions to be completed immediately before going to bed concerning the subject’s perceived degree of fatigue and state of mind. Part II consists of eight questions to be answered immediately upon arising in the morning concerning time of sleep onset, soundness of sleep, time of morning awakening, and total sleep. Concurrent validity ($p < .01$) and test-retest reliability ($p < .05$) were determined by Johnson (1991) on a sample of elders.

There was no established score for either the Bedtime Routine Questionnaire or the Sleep Pattern Questionnaire, so responses to the questions were an item analysis, and the analysis included the frequency in which the answers were chosen and the percentile of responses by the group. Both questionnaires consisted of multiple-choice and open-ended questions.

**Data Collection Procedure**

Prior to the implementation of the study, approval of the Committee on Use of Human Subjects in Experimentation
at the Mississippi University for Women was obtained (see Appendix D). A cover letter explaining the study was sent to all institutions involved (see Appendix E). Permission to conduct the study at the sites was obtained by written consent from the appropriate administration at each institution (see Appendix F). Appointments were made with the institutions for data collection times. On the appointed day of data collection, the researcher introduced herself, explained the study, answered any questions, and solicited participation from the potential subjects. The researcher had subjects sign an informed consent, and questionnaire packets were handed out to those who consented to participate. A number was assigned to each subject and that number was put on each of the questionnaires and left off the consent form to assure anonymity. The researcher collected the demographic and the Bedtime Routine Questionnaire before leaving that day and returned the following week to collect the Sleep Pattern Questionnaire. All consents and questionnaires were kept locked in the researcher’s home and were destroyed by the researcher after data analysis.
Data Analysis

Data were analyzed using descriptive statistics. Raw data were gathered and plotted for analysis. Answers were analyzed question by question using frequencies, and then data were reported as a group using percentiles. On Question 3 on the Bedtime Routine Questionnaire and on Questions 1 and 2 on Part I and 4, 5, 7, and 8 on Part II on the Sleep Pattern Questionnaire choices were ranked for the group. Any open-ended questions were analyzed using content analysis and common themes.
Chapter IV
The Findings

The purpose of this descriptive study was to identify and describe the bedtime routines and sleep-rest patterns of elders. Data were collected using a researcher-designed Demographic Data Sheet, the Bedtime Routine Questionnaire, and the Sleep Pattern Questionnaire. Data were analyzed using descriptive statistics. Additionally, the Pearson product-moment correlation was utilized to determine if there were any significant relationships between the variables under investigation. In this chapter, the sample is described, and findings from data analyses and limitations are presented.

Description of Sample

The target population was men and women, 60 years of age and older. The actual sample included 42 elders ranging from 62 to 90 years of age with a mean age of 77.8 years. Of these elders, 18 (43%) were selected from an elder retirement community, and 24 (57%) were selected
from a senior citizens center. All subjects resided in small towns located in rural areas of the southeastern United States. All subjects were of the Caucasian race except for one who was African American. The majority of the subjects (n = 37, 88.1%) were women. Participants were either married (n = 8, 19%), divorced (n = 7, 16.7%), or widowed (n = 27, 64.3%).

All of the subjects responded to an open-ended question regarding their health. These responses were categorized into five major classes. Five (11.9%) reported a diagnosis of cardiovascular disease, 17 (40.5%) reported hypertension, 6 (14.3%) reported diabetes mellitus, 9 (21.4%) reported arthritis/joint pain, and 5 (11.9%) reported having gastrointestinal problems. Only 5 (11.9%) elders reported not having at least one health problem.

Subjects also were asked about any major changes in their lives during the past year. Of the 42 elder participants, 8 (19%) subjects had experienced the loss of a loved one, and 8 (19%) had experienced a change in living status.
Results of Data Analysis

Research Question 1 was “What are the nightly bedtime routines of elders?” This question was analyzed from responses on the Bedtime Routine Questionnaire using descriptive statistics. Questions 1 and 2 focused on nightly bedtime routines. Twenty-four (57.1%) of the subjects had a usual time for going to sleep. The times ranged from 8:30 p.m. to 11:30 p.m. with the majority (n = 13, 56.5%) retiring between 10:00 and 11:00 p.m. Twenty-six (62%) of the participants reported nightly routines before going to bed. These routines included 15 variables. The range of specific bedtime routines performed nightly by the participants included 2 to 11 variables. The most common bedtime routines included cleaning face, brushing teeth, praying, and either watching television or reading (see Table 1 for specifics). Of the subjects who did report having a routine, 2 (40%) were men and 24 (64%) were women.
Table 1

Specific Bedtime Routine Variables of Elders Expressed in Frequencies and Percentages

<table>
<thead>
<tr>
<th>Variable</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean face</td>
<td>21</td>
<td>80.8</td>
</tr>
<tr>
<td>Brush teeth</td>
<td>20</td>
<td>76.9</td>
</tr>
<tr>
<td>Pray</td>
<td>20</td>
<td>76.9</td>
</tr>
<tr>
<td>Watch TV</td>
<td>19</td>
<td>73.1</td>
</tr>
<tr>
<td>Read</td>
<td>17</td>
<td>65.4</td>
</tr>
<tr>
<td>Bathe</td>
<td>13</td>
<td>50.0</td>
</tr>
<tr>
<td>Drink</td>
<td>7</td>
<td>26.9</td>
</tr>
<tr>
<td>Do Hair</td>
<td>7</td>
<td>26.9</td>
</tr>
<tr>
<td>Talk to someone</td>
<td>6</td>
<td>23.1</td>
</tr>
<tr>
<td>Eat</td>
<td>5</td>
<td>19.2</td>
</tr>
<tr>
<td>Listen to music</td>
<td>5</td>
<td>19.2</td>
</tr>
<tr>
<td>Take sleep medication</td>
<td>4</td>
<td>15.4</td>
</tr>
<tr>
<td>Write</td>
<td>3</td>
<td>11.5</td>
</tr>
<tr>
<td>Do relaxation exercises</td>
<td>3</td>
<td>11.5</td>
</tr>
<tr>
<td>Have a back rub</td>
<td>2</td>
<td>7.7</td>
</tr>
</tbody>
</table>

Note. n = 26 (62% of sample).
Questions 3 and 4 of the Bedtime Routine Questionnaire dealt with the importance of the nightly routine and the elders’ perception of self response when not getting enough sleep. Eleven (28.6%) elders believed bedtime routine was very important, and 11 (28.2%) did not believe that a bedtime routine was important. Subjects identified four major results of not getting enough sleep. Four (9.5%) subjects identified that they became irritable or upset, 29 (69%) identified that they felt sleepy or tired the next day, 1 (2.4%) felt sick the next day, and 13 (31.0%) had no identified problem after not getting enough sleep.

Research Question 2 was “What are the sleep-rest patterns of elders?” Data were collected using the Sleep Pattern Questionnaire which included two parts. The first section was filled out immediately before going to bed at night and included information regarding fatigue, state of mind, and time of getting into bed. Data were analyzed using descriptive statistics. The majority of elders \((n = 27, 64.3\%)\) reported having a normal state of fatigue at bedtime. Six (14.3%) participants reported feeling overtired at bedtime. Thirteen (31%) participants reported feeling exhausted, and 4 (9.5%) reported feeling wide
awake at bedtime. The majority of the participants (n = 30, 71.4%) rated their state of mind at bedtime as calm. Five of the elders (11.9%) felt tense and upset at bedtime, 4 (9.5%) felt excited and stimulated, and 3 (7.1%) subjects rated their state of mind at bedtime as somewhat worried.

The second section was filled out immediately after arising in the morning and included information on the time the subjects actually fell asleep, the time the subjects awakened, and the quality of the subjects’ sleep. Data were analyzed using descriptive statistics. All of the subjects rated their movement during sleep from the previous night. Twenty-five (59%) of the elders who filled out the questionnaire reported moving only a little while asleep. The rest reported either hardly moving at all (n = 6, 14.3%) or tossing all night (n = 11, 26.2%). When questioned about the soundness of the elders’ sleep, 17 (40.5%) participants reported light sleep. The rest either reported medium sleep (31%) or deep sleep (28.6%). The majority of participants (n = 20, 47.6%) felt refreshed upon awakening in the morning. Sixteen elders (38.1%) reported still being tired the next morning, and 6 (14.3%) felt more tired upon awakening than they did before they
went to bed. When questioned about their satisfaction with last night’s sleep, over half of the participants (n = 24, 57.1%) reported that they were either very satisfied or fairly satisfied with their sleep. Six participants (14.3%) reported being only slightly satisfied with their sleep, and the other 12 participants (28.6%) were either fairly unsatisfied or very unsatisfied with last night’s sleep. A majority of the participants (n = 27, 64.2%) reported awakening between one and three times per night. Also, 10 subjects (23.8%) reported awakening greater than five times nightly. The most common reason for awakening during the night was to go to the bathroom (n = 33, 79%). See Table 2 for frequencies describing the times elders went to bed, actually fell asleep, and awakened the next morning, and the number of awakenings reported by the participants.
Table 2

Sleep-Rest Patterns of Elders

<table>
<thead>
<tr>
<th>Sleep-rest pattern</th>
<th>Range</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time getting into bed</td>
<td>7:30 p.m. to 1:00 a.m.</td>
<td>10:00 p.m.</td>
<td>1.08</td>
</tr>
<tr>
<td>Time falling asleep</td>
<td>8:30 p.m. to 1:00 a.m.</td>
<td>11:12 p.m.</td>
<td>1.23</td>
</tr>
<tr>
<td>Number of awakenings</td>
<td>0 to 6</td>
<td>2.95</td>
<td>1.59</td>
</tr>
<tr>
<td>Time of morning awakening</td>
<td>4:50 a.m. to 8:00 a.m.</td>
<td>6:15 a.m.</td>
<td>.90</td>
</tr>
</tbody>
</table>

Note. N = 42.

Section II of the Sleep Pattern Questionnaire also included information regarding specific nighttime routines followed before going to bed. Each participant was asked to check all of the variables that they followed before retiring for that specific night. A space also was left for them to list any additional routines that were not present on the questionnaire. Of the 42 subjects responding, 31 (73.8%) reported following a routine before retiring for the night. The participants ranged from performing 2 to 11 routines the night before, with the most popular routines being brushing teeth (n = 26, 83.9%), praying (n = 23, 74.2%), cleaning one’s face.
(n = 20, 64.5%), and watching television (n = 18, 58.1%). Table 3 gives the specific routine variables.

Additional Findings

The researcher was interested in determining whether there were significant correlations between selected variables under investigation. Data were further subjected to Pearson product-moment correlation for analysis.

A significant correlation emerged between the presence or absence of a bedtime routine and satisfaction with last night’s sleep, $r(31) = .405, p = .004$. This finding was interpreted to mean that people who followed a bedtime routine were more satisfied with their sleep.

Two negative correlations were found. State of fatigue at bedtime and the time asleep were negatively correlated, $r(42) = -.144, p = .01$. According to this finding, the earlier that the elder went to sleep, the more they perceived themselves as fatigued. Also, a significant negative correlation was found between satisfaction with last night’s sleep and the number of times waking up, $r(42) = -.379, p = .01$, indicating that the more an individual awakened during the night, the less he or she was satisfied with sleep.
Table 3

Specific Bedtime Routine Variables of Elders (Reporting After Arising Regarding the Night Before) Expressed in Frequencies and Percentages

<table>
<thead>
<tr>
<th>Variable</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brush teeth</td>
<td>26</td>
<td>83.9</td>
</tr>
<tr>
<td>Pray</td>
<td>23</td>
<td>74.2</td>
</tr>
<tr>
<td>Clean face</td>
<td>20</td>
<td>64.5</td>
</tr>
<tr>
<td>Watch TV</td>
<td>18</td>
<td>58.1</td>
</tr>
<tr>
<td>Bathe</td>
<td>16</td>
<td>51.6</td>
</tr>
<tr>
<td>Drink</td>
<td>12</td>
<td>38.7</td>
</tr>
<tr>
<td>Read</td>
<td>12</td>
<td>38.7</td>
</tr>
<tr>
<td>Eat</td>
<td>8</td>
<td>25.8</td>
</tr>
<tr>
<td>Do relaxation exercises</td>
<td>6</td>
<td>19.4</td>
</tr>
<tr>
<td>Talk to someone</td>
<td>6</td>
<td>19.4</td>
</tr>
<tr>
<td>Do hair</td>
<td>6</td>
<td>19.4</td>
</tr>
<tr>
<td>Listen to music</td>
<td>3</td>
<td>9.7</td>
</tr>
<tr>
<td>Take routine medication</td>
<td>3</td>
<td>9.7</td>
</tr>
<tr>
<td>Write</td>
<td>2</td>
<td>6.5</td>
</tr>
<tr>
<td>Play with pet</td>
<td>2</td>
<td>6.5</td>
</tr>
<tr>
<td>Have a back rub</td>
<td>1</td>
<td>3.2</td>
</tr>
<tr>
<td>Take sleep medication</td>
<td>1</td>
<td>3.2</td>
</tr>
<tr>
<td>Exercise</td>
<td>1</td>
<td>3.2</td>
</tr>
</tbody>
</table>

Note. n = 31 (73.8% of sample).
Finally, there was a positive correlation between the subject's state of mind at bedtime and the time that the subject's fell asleep, $r(42) = .289, p = .044$. The researcher found that the calmer the subject at bedtime, the earlier the subject fell asleep.

Of special interest was that there was no significant correlation between age and satisfaction with sleep, $r(42) = -.162, p = .153$. This result led the researcher to believe that increasing age was not associated with less satisfaction with sleep.

Limitations

The researcher recognized certain limitations regarding generalization of the findings to other populations or settings. Due to the fact that the sample was taken from a rural setting in two states and the majority of subjects were Caucasian women, this may prevent generalization of the results. However, the sample characteristics of age and independence reflect national statistics related to elders. Another limitation was related to the tool that the researcher used in obtaining information from the subjects. The number of questions and occasional vague wording may have biased the responses of
the subjects which could have negatively or positively impacted the results. Yet, these two questionnaires have been used in earlier studies and were the only instruments available on this topic.
Chapter V
The Outcomes

Unsatisfactory sleep is a common problem that many elders experience. Changes in elders’ sleep patterns, such as a decrease in sleep time, an increase in sleep latency, and changes in the sleep cycle, often lead to sleep that is lighter, shorter, and interrupted. Studies in the past have suggested that the presence of a bedtime routine enhances sleep, but only minimal research has been done. In order to better serve the elderly population with sleep disturbances, nurse practitioners must have an understanding of the sleep-rest patterns of elders, including the presence or absence of bedtime routines.

The purpose of this descriptive study was to identify and explore the nightly bedtime routines and sleep-rest patterns of elders. Data were gathered with a researcher-developed Demographic Data Sheet, the Bedtime Routine Questionnaire, and the Sleep Pattern Questionnaire. Orem’s Self-Care Deficit Theory of Nursing served as the theoretical framework. Descriptive statistics were used to
analyze the data. This chapter presents a discussion of the findings and the conclusions, implications, and recommendations that resulted from these findings.

Summary of Findings

The sample population \((N = 42)\) ranged in age from 62 to 90 years with a mean age of 77.8 years. Forty-three percent of the subjects resided in an elder retirement community and 57% participated at a senior citizens center. Most of the subjects were female (88.1%), widowed (64.3%), and white (97.6%). Thirty-one percent of the subjects experienced a major change in their lives during the past year. All of the subjects except 5 (11.9%) had at least one health problem.

In response to the first question, "What are the bedtime routines of elders?" a majority of the subjects (62%) reported having nightly bedtime routines before going to bed. All of the subjects with a routine reported performing between 2 and 11 tasks before retiring for bed, with the most common tasks being cleaning one's face (80.8%), brushing teeth (76.9%), praying (76.9%), watching television (73.1%), and reading (65.4%). The majority of the subjects (57.1%) reported having a usual time for
going to sleep. Of the 42 subjects responding, 11 subjects (28.2%) believed that having a routine was very important, and 11 subjects (28.2%) felt that a bedtime routine was not important. Twenty-nine (69%) of the subjects identified that they felt sleepy or tired the next day if they perceived not getting enough sleep, and 13 (31%) had no identified problem after not getting enough sleep.

The second research question “What are the sleep-rest patterns of elders?” was answered by responses of subjects immediately before going to bed at night and immediately after arising in the morning. The majority of elders (64.3%) reported having a normal state of fatigue at bedtime. Also, a majority of the subjects (71.4%) rated their state of mind at bedtime as calm. Twenty-five (59%) of the elders reported moving a little while asleep. When questioned about the soundness of their sleep, most of the subjects (40.5%) reported light sleep. Almost one half of the elders (47.6%) felt refreshed upon awakening in the morning. The mean time that the subjects went to bed was 10:00 p.m., and the mean time that they actually fell asleep was 11:12 p.m. Most of the subjects (n = 27, 64.2%) awakened between one and three times a night. The reason that most of the subjects awakened (79%) was to go to the
bathroom. When questioned about their sleep, 57.1% of the elders reported that they were either very or fairly satisfied with their sleep. Of the 42 subjects responding, the majority (73.8%) reported following a bedtime routine before retiring for that specific night, with the most popular responses being brushing teeth (83.9%), praying (74.2%), cleaning one’s face (64.5%), watching television (58.1%), and bathing (51.6%).

The researcher noted several other additional findings. Elders who followed a bedtime routine were more satisfied with their sleep ($p = .004$). Negative correlations were found between state of fatigue at bedtime and the time the elder went to sleep ($p = .01$), and satisfaction with sleep and the number of times awakening during the night ($p = .01$), which indicated that the earlier the elder went to sleep, the more they perceived themselves as fatigued, and that more awakening times were associated with lower perceived satisfaction with sleep. Further, the researcher found that the calmer the subject at bedtime, the earlier the subject fell asleep ($p = .044$). Finally, it was noted that age and satisfaction with sleep were not significantly correlated ($p = .153$).
Discussion

The first research question was directed to explore the bedtime routines of elders. The researcher determined that the majority of the elders followed a nightly bedtime routine. These findings are similar to the conclusions of Johnson (1988, 1991) in which the majority of subjects reported following a nightly bedtime routine. The presence of a nightly bedtime routine by so many elders may be attributed to Orem's Self-Care Theory which postulates that self-care involves the practice of activities that individuals initiate and perform for themselves to "maintain life, health, development, and well-being" (Tomey & Alligood, 1998, p. 181). Elders may initiate bedtime routines to assist themselves in maintaining adequate sleep-rest patterns, thereby promoting their well-being. Schirmer (1983) stated that consistent nightly routines before retiring may help to prepare an individual mentally and physically for sleep which may further explain why so many elders in this study initiated a bedtime routine. Lastly, Johnson (1986, 1988, 1991) determined that individuals who perform a nightly bedtime routine report more satisfying sleep patterns than those who do not follow a nightly bedtime routine. These
findings are supported by the current study which found a significant correlation between the presence of a bedtime routine with an increased satisfaction with sleep.

The researcher further postulates that the high level of subjects following a routine may be due to habit or having one consistent way for doing certain things. Thus, these elders may not have employed a nightly routine to help them sleep, but just because that is the way they have always done it. Johnson (1991) states that many times individuals may be unaware that they even have a bedtime routine. However, even without this awareness, these acts may provide comfort and encourage sleep onset. Another possible reason that so many of the subjects had a nightly routine may be attributed to the sample characteristics as they were all ambulatory, independent, healthy, and living in their own homes. If these individuals were institutionalized or living with other family members or had chronic debilitating health problems, then following a routine might not have been so easy; therefore, the results of the study may have been different. Furthermore, there was a majority of Caucasian women in the study which may imply that Caucasian females are more apt to make preparation for sleep than African-American females. A
final explanation for the results may be attributed to the wording of the question and/or the ability of the participants to interpret the question. Bedtime routines were never specifically defined by the researcher and may have been construed differently by each subject which affected the responses.

Even though a high number of participants reported following a nightly bedtime routine, only 28.2% of elders believed that a routine was very important to them. The low percentages regarding importance could be due to the reason that often elders are unaware that they even have a routine; therefore they do not see it as important (Johnson, 1991). The researcher postulates that the subjects' nightly routines are so natural for them and easy to do that they do not seem as important to them as they would if they were not able to do them without difficulty as in the case of institutionalized elders.

The more that the participants awakened during the night, the less satisfied they were with their sleep. Furthermore, 69% of all participants felt that a lack of sleep made them tired or sleepy the next day. While these results may be expected, they support Foreman and Wykle's (1995) statement that disrupted sleep can cause physical,
emotional, and behavioral disturbances and Beck-Little and Weinrich's (1998) belief that the elder lacking sleep often presents as lethargic, confused, or irritable. This finding also promotes evidence of application for Orem's Self-Care Deficit Theory of Nursing. Orem believes that everyone has universal self-care requisites that have to be met through self-care or dependent care, and one of these is the maintenance of balance between activity and rest (Tomey & Alligood, 1998). If this requirement is continuously not met, then the elder may develop a self-care deficit.

The second research question reflected the sleep-rest patterns of elders. The majority of participants (71.4%) felt calm at bedtime and had a normal state of fatigue (64.3%). Due to the scant amount of research regarding how elders feel at bedtime, this finding could not be supported nor refuted by the literature. However, subjects lived in their own homes, were ambulatory, and were basically able to do what they wanted whenever they wanted, which probably helped their state of mind and fatigue at bedtime. Furthermore, according to Orem, humans require continuous deliberate input to themselves and to their environments to function naturally and remain in a
state of well-being (Tomey & Alligood, 1998). Therefore, the researcher postulates that participants may have initiated positive pre-sleep activity in order to remain calm and have a normal state of fatigue.

Libman (1998) concluded that as most people age their sleep quality remains unchanged. Maggi et al. (1998) concluded that sleep disturbances in elders were not related to age. These findings are similar to that of the current researcher as no significant correlation was found between age and satisfaction with sleep, indicating that older subjects may or may not be less satisfied with their sleep. Also, almost half of the participants (48%) reported feeling refreshed upon awakening, and 57.1% reported satisfaction with the previous nights sleep.

On the other hand, Ancoli-Israel (1997) stated that complaints of sleeping difficulties increase with age. These conflicting results could be due to several reasons. One reason may be the collection process which was cross-sectional. Perhaps, if the same sample was interviewed over several years as they increased in age, different results may have occurred. Also, the Sleep-Pattern Questionnaire used by the current researcher and by Johnson (1991) asked subjects to rate their satisfaction
with just a night's sleep, instead of satisfaction with sleep in general. Since everyone has both good and bad nights, answers may have been biased by a particular morning impression of the prior night's sleep. On the other hand, elders may truly believe that the quality of their sleep-rest patterns has not and is not changing with time. Subjects in this study were between the ages of 62 and 90 and were ambulatory and lived in the community. These statistics are representative of elders today.

According to the current study results, the subjects took an average of 1 hour and 12 minutes to actually fall asleep from the time that they got into bed. Furthermore, the majority of the subjects (64.2%) awakened between one and three times nightly. The majority of subjects (59%) moved at least a little during sleep, and 40.5% reported light sleep. Finally, the majority of subjects (61.4%) awakened early between 5:00 and 7:00 a.m. These findings are similar to Beck-Little and Weinrich (1998) who believe that common complaints of elderly clients with age-related sleep disturbances include a decrease in the amount of actual sleep time, having difficulty falling asleep, waking up frequently during the night, and waking up too early in the morning. Also, according to Foreman and Wykle
(1995), changes, such as a decrease in actual sleep time, an increase in sleep-latency, and changes in the normal sleep cycle could lead to sleep that is lighter, shorter, and interrupted.

When the subjects were asked about the presence of a bedtime routine for one specific night, the majority (73.8%) reported following a routine. This result is slightly higher than the percentage of elders reporting having a nightly bedtime routine on the Bedtime Routine Questionnaire. However, while the percentages are not exact, the most common tasks that the subjects reported performing nightly (brushing one’s teeth, praying, cleaning one’s face, and watching television) on the Sleep-Pattern Questionnaire are similar to the tasks reported on the Bedtime Routine Questionnaire as well as those reported by Johnson (1991). This finding, even though research on this subject is scarce, supports the importance of a consistent nightly bedtime routine by a large number of individuals.

According to the current research, the most common reason by both men and women for awakening during the night was to go to the bathroom (100% and 76%, respectively). This finding is supported by research by
Maggi et al. (1998), who found the same most common reason for elders getting up during the night (73.3%, 57.8%). The reason that such a high number of elders get up during the night to go to the bathroom may be related to health problems, such as prostate trouble or kidney disease, or due to medications such as diuretics. These elders may drink an increased amount of fluid before bedtime, thus causing them to get up frequently during the night.

In further explanation of the data, two significant correlations were found. The first correlation indicated that the more fatigued the subject, the earlier he or she went to sleep (p = .01). Also, the calmer the subject at bedtime, the earlier he or she went to sleep (p = .01). These findings can be explained by Orem’s self-care concepts. As stated earlier, Orem’s theory involves activities that individuals perform on their own behalf to promote their own health and well-being. Orem also postulates that the maintenance of balance between activity and rest is a universal self-care requisite that must be met in order to prevent a self-care deficit (Tomey & Alligood, 1998). By being able to go to sleep when they are fatigued, these individuals are preventing a potential self-care deficit and providing self-care. Furthermore,
the reason that these individuals are calm may be due to the fact that they perform pre-sleep activities to assist them to feel this way, thereby promoting sleep and maintaining balance between activity and rest. Another reason for these findings may be that these individuals are noninstitutionalized and fairly independent. They are able to initiate activities that assist them to be calm as well as go to bed when they want, according to their perceived levels of fatigue. Institutionalized individuals often do not have these options. They are often on a schedule but not one that they initiate or one in which they are accustomed; therefore, the results with this population may have been different.

Conclusion

In this study, the researcher determined that the majority of elders have a nightly bedtime routine and that a nightly bedtime routine is associated with an increased satisfaction with sleep. Although research is limited, the findings of this study supported other similar studies (Johnson, 1986, 1988, 1991, 1993) in that most elders have a nightly practice prior to retiring, and pre-sleep
activity often influences the sleep-rest patterns of subjects.

The researcher also found that some of the most popular tasks performed by elders before bedtime were cleaning one’s face, brushing one’s teeth, praying, watching television, reading, and bathing. Even though the percentages were not exact, the results were similar to the findings of Johnson (1991).

Even though a high number of elders reported having a nightly bedtime routine, only about one fourth actually felt very strongly about the importance of their routine. Due to the scarcity of prior research, these findings could not be supported or refuted, but, as Johnson (1991) stated, elders may not even be aware that they have a nightly routine, but the presence of one still may improve sleep-rest patterns.

Furthermore, the researcher concluded there was no significant correlation between age and satisfaction with sleep. Due to the limited amount of research on this subject as well as conflicting research (Ancoli-Israel, 1997; Libman, 1998; Maggi, 1998), this finding must be further studied.
Also, elders' sleep-rest patterns were characterized by an increased time to fall asleep, waking up several times during the night, light sleep, and early morning awakenings. These findings are similar to other conclusions regarding sleep-rest patterns of elders (Ancoli-Israel, 1997; Beck-Little & Weinrich, 1998; Foreman & Wykle, 1995).

Finally, the researcher determined that Orem's Self-Care Model was an appropriate theoretical framework for this study. In order for individuals to promote their own health and well-being, elders often are able to initiate activities to assist them to overcome a self-care deficit. For the purposes of this study, an altered sleep-rest pattern may produce a self-care deficit; therefore, positive pre-sleep behaviors, such as bedtime routines, can be activities that elders perform to achieve self-care and well-being.

**Implications for Nursing**

A number of implications emerged from this study. Implications for practice, education, theory, and research are discussed.
Nursing practice. The conclusions of this researcher can be utilized by nurse practitioners. By being aware of the importance of a bedtime routine and an increased satisfaction with sleep for those who have a routine, the nurse practitioner can educate clients and family members about the importance of following a routine to improve sleep-rest patterns of elders. Elder clients can be assisted by identifying activities that could enhance sleep if performed on a regular basis. For those clients who are institutionalized, nurse practitioners can help clients to incorporate some of their previous bedtime routines to help them adjust better to relocation. Also, the results of this study helped to provide an understanding of the sleep-rest patterns of elders as well as possible age-related sleep changes. By knowing this, nurse practitioners can gather a more accurate and efficient history of elders to identify problems with sleep-rest patterns and intervene with those who need support or identification.

Education. The results of this research can be used to educate nurse practitioners in practice by inclusion of offerings which focus on the significance of sleep-rest patterns and nightly bedtime routines of elders and the
importance of an accurate assessment and early intervention for those who may need assistance. The results also can be used to help with the development of a curriculum which focuses on the significance of bedtime routines and sleep-rest patterns to elders in programs of study preparing nurse practitioners.

Nursing theory. Theory is based on research. The appropriateness of using Orem’s Self-Care Model emerged with the findings of this study. According to Orem (1985), the Theory of Self-Care involves activities that individuals initiate and perform on their own behalf to promote their own health and well-being. This is exactly what individuals are doing when they perform nightly bedtime routines; the presence of a bedtime routine enhances sleep, thereby enhancing one’s well-being. Orem (1985) believes that health care involves making adjustments and adaptations to overcome a self-care deficit and contribute to normalcy in daily living. Orem’s theory is appropriate as a concrete framework for nurse practitioner practice. In practice, nurse practitioners can teach clients to initiate and perform nightly bedtime routines to enhance their sleep-rest patterns. Nurse practitioners can also help clients by teaching them what
to expect as they age, then help them to adapt to these changes and achieve self-care.

Nursing research. The findings of this research clearly indicate the need for additional research regarding bedtime routines and sleep-rest patterns of elders. Due to conflicting results regarding the changes of sleep-rest patterns with age, researchers need to identify the changes of elders’ sleep patterns over time, as well as how they are influenced by various factors, such as institutionalization or chronic debilitating health problems. Additional research will add to the body of knowledge and help health care professionals stay current with issues related to elders.

Recommendations

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

Research.

1. Replication of the study with a sample of institutionalized elders.

2. Replication of the study with a sample of nurse practitioners regarding their perceptions of elders’ bedtime routines and sleep-rest patterns.
3. Replication of the study with revised instruments which define more clearly the variables under investigation and which are more precise and easier to understand.

4. Replication of the study with a more diverse sample regarding age and gender.

5. Conduction of a longitudinal study with the same subjects to detect changes in sleep-rest patterns as subjects age.

Practice.

1. Implementation of elder history guidelines which includes information regarding elder sleep-rest patterns and the presence of bedtime routines.

2. Implementation of Orem's Self-Care Model as a framework for nurse practitioners who provide care for elders.

3. Development of educational programs for practicing nurse practitioners which reflect the importance of sleep-rest patterns and nightly bedtime routines of elders.

4. Inclusion of the significance of bedtime routines and sleep-rest patterns to elders in curricula preparing nurse practitioners.
REFERENCES
References


APPENDIX A

DEMOGRAPHIC DATA SHEET
Demographic Data Sheet

Instructions: Please read each of the following questions and give the best answer.

1. Age:______

2. Gender
   ___ Male
   ___ Female

3. Racial background
   ___ White
   ___ Black
   ___ Other (please specify):________________________

4. Marital status
   ___ Single, never married
   ___ Married
   ___ Divorced
   ___ Widowed

5. What health problems have you been diagnosed with?
   __________________________________________________
   __________________________________________________
   __________________________________________________

6. What medications do you take on a regular basis?
   __________________________________________________
   __________________________________________________
   __________________________________________________

7. In the past, have you experienced any of the following?
   ___ Loss of spouse, parent, child, good friend, etc.
     (Please specify):____________________________________
   ___ Loss of job
   ___ Change in living status (please specify):
     ____________________________________________
APPENDIX B

BEDTIME ROUTINE QUESTIONNAIRE
Bedtime Routine Questionnaire

1. a. Do you have a usual time for going to sleep?
   ____ Yes    ____ No

   b. If so, what is it?

2. a. Do you have a routine that you follow before going to bed?
   ____ Yes    ____ No

   b. If yes, what specifically do you do before going to bed? (Check all that apply)
   ____ (1) Bathe    ____ (10) Drink
   ____ (2) Brush teeth    ____ (11) Talk to someone
   ____ (3) Do hair    ____ (12) Pray
   ____ (4) Clean face    ____ (13) Do relaxation
   ____ (5) Watch TV    ____ (14) Have a back rub
   ____ (6) Read    ____ (15) Take medication
   ____ (7) Write
   ____ (8) Listen to
       Music
          to help you
              sleep
   ____ (9) Eat

   c. Other routine (please specify):

3. How important is your bedtime routine to you?
   ____ a. Not important
   ____ b. Fairly important
   ____ c. Slightly important
   ____ d. Very important

4. What happens to you when you don’t get enough sleep?
   ____ a. Become irritable or upset
   ____ b. Feel sleepy or tired the next day
   ____ c. Feel sick the next day
   ____ d. Nothing
APPENDIX C

SLEEP PATTERN QUESTIONNAIRE
Sleep Pattern Questionnaire

Part I.
TO BE FILLED OUT IMMEDIATELY BEFORE GOING TO BED AT NIGHT:

1. How would you rate your state of fatigue at this time?
   ____ a. Normally tired
   ____ b. Overtired
   ____ c. Exhausted
   ____ d. Wide awake

2. How would you rate your state of mind at this time?
   ____ a. Calm
   ____ b. Somewhat worried
   ____ c. Tense and upset
   ____ d. Excited and stimulated

3. What time did you get into bed tonight?

Part II.
TO BE FILLED OUT IMMEDIATELY AFTER ARISING IN THE MORNING:

1. What time did you fall asleep last night?

2. a. Did you follow any routine before going to bed last night?
   ____ Yes
   ____ No

   b. If yes, did you (check all that apply)
      ____ (1) Bathe      ____ (10) Drink
      ____ (2) Brush teeth ____ (11) Talk to someone
      ____ (3) Do hair      ____ (12) Pray
      ____ (4) Clean face   ____ (13) Do relaxation exercises
      ____ (5) Watch TV     ____ (14) Have a back rub
      ____ (6) Read         ____ (15) Take medication to help you
      ____ (7) Write        ____                       sleep
      ____ (8) Listen to Music
      ____ (9) Eat
3. How many times did you wake up during the night?
   ___ a. Not at all
   ___ b. Once
   ___ c. Twice
   ___ d. 3 times
   ___ e. 4 times
   ___ f. 5 times
   ___ g. More than 5 times

4. How would you rate your movement during sleep?
   ___ a. Hardly moved at all
   ___ b. Moved a little
   ___ c. Tossed all night

5. How would you rate the soundness of your sleep?
   ___ a. Deep sleep
   ___ b. Medium sleep
   ___ c. Light sleep

6. What time did you wake up this morning?

7. How did you feel when you woke up this morning?
   ___ a. Refreshed
   ___ b. Still tired
   ___ c. More tired than before you went to bed

8. How satisfied are you with last night’s sleep?
   ___ a. Very satisfied
   ___ b. Fairly satisfied
   ___ c. Slightly satisfied
   ___ d. Fairly satisfied
   ___ e. Very unsatisfied

9. If you awakened during the night, what was the reason?
   __________________________________________________________
   __________________________________________________________
APPENDIX D

APPROVAL OF THE COMMITTEE ON USE OF HUMAN SUBJECTS IN EXPERIMENTATION OF MISSISSIPPI UNIVERSITY FOR WOMEN
March 22, 1999

Ms. Leanne Lott Tew  
c/o Graduate Program in Nursing  
Campus

Dear Ms. Tew:

I am pleased to inform you that the members of the Committee on Human Subjects in Experimentation have approved your proposed research as submitted.

I wish you much success in your research.

Sincerely,

Susan Kupisch, Ph.D.  
Vice President  
for Academic Affairs

SK:wr

cc: Mr. Jim Davidson  
    Dr. Mary Pat Curtis

Where Excellence is a Tradition
APPENDIX E

LETTER TO INSTITUTIONS
Dear ___________________,

I am a registered nurse and a graduate nurse practitioner student at Mississippi University for Women. I am conducting a study on the bedtime routines and sleep-rest patterns of elders. This study will help nurses gain a better understanding of ways to improve the delivery of care to elders. This study has been approved by the University.

I would like to include subjects from your institution in this study. All information obtained will be kept strictly confidential and will be used only for the purpose of this study. Names will not be used, and the results will be reported as a group. Participation is completely voluntary, and participants and/or the institution may withdraw from the study at any time prior to data analysis. Information will be obtained by the use of questionnaires and involves no risks or personal resources and very minimal time of the participants. The findings of the study will be sent to you upon completion of the study at your request.

If you would like any further information, please feel free to contact me at (205) 459-2443. Thank you for your willingness to consider this request.

Sincerely,

Leanne L. Tew
APPENDIX F

INSTITUTION CONSENT FOR PARTICIPATION
Institution Consent for Participation

Title of Study
Nightly Bedtime Routines and Sleep-Rest Patterns of Elderly

Name of Institution

Study discussed with and explained to:

The nature and purpose of this study have been defined. I understand that all information will be kept confidential and that this institution may withdraw at any time during data collection.
APPENDIX G

PERMISSION TO USE INSTRUMENTS
From: Julie Johnson <jej@unr.edu>
To: leanne or clay tew <ltew1@tds.net>
Date: Wednesday, November 25, 1998 11:06 AM
Subject: Re: Bedtime Routine Questionnaire

Leanne, I am very flattered that you would like to use the Bedtime Routine Questionnaire in your research. You have my permission to do so. To the best of knowledge, the Sleep Pattern Questionnaire is in the public domain. Best wishes for the success of your project! Julie E. Johnson

On Tue, 24 Nov 1998, leanne or clay tew wrote:

> Dear Dr. Johnson,
> > My name is Leanne Tew, and I am a graduate nurse practitioner student at Mississippi University for Women in Columbus, Mississippi. I know that you have done much research on bedtime routines and this is an area of interest to me. My thesis is entitled The Influence of Nightly Bedtime Routines on the Sleep - Rest Patterns of Elders, and I would like your permission to use the Bedtime Routine Questionnaire that you developed for my research. I have no intention of editing it in any way. I also would like to use the Sleep Pattern Questionnaire developed by Baekeland and Hoy, and I thought that you could tell me if it was in public domain, and if not, how I could get permission to use it also. Any help in this matter would be greatly appreciated. My e-mail address is ltew1@tds.net. My home phone number is (205) 459-2443. Thank you so much for your time.
> >
> > Sincerely,
> > Leanne Tew
> >
APPENDIX H

INFORMED CONSENT OF PARTICIPANT
Informed Consent of Participant

I am a registered nurse and a graduate nurse practitioner student at Mississippi University for Women. I am conducting a study which explores the bedtime routines and sleep-rest patterns of elders. This study will help nurses gain a better understanding of ways to improve the delivery of care to elders. The elder may benefit from incorporating nightly bedtime routines. This study has been approved by the University.

In order for you to participate in this study, I need your permission. All information obtained during this study will be kept strictly confidential and will be used only for the purpose of this study. Names will not be used; however, a coding system will be used to help keep responses together as a unit, and the results will be reported as a group. Only the researcher and committee members at the University will have access to the data obtained. Your participation is completely voluntary, and you may withdraw from the study at any time prior to data analysis. The findings of the study will be sent to you upon completion of the study upon your request.

If you would like any further information, please feel free to contact me at (205) 459-2443. Thank you for your willingness to consider this request.

Sincerely,

Leanne L. Tew, RN

I have read the above letter. I understand the purpose of the study and the conditions. I agree to participate in the study.

_________________________   ________________________
Date                        Signature