

A STUDY OF THE COURSE OF ACTION NURSES SELECTED  
IN THE ADMINISTRATION OF SLEEPING MEDICATION

by

Jean Delk Bates, B.S.

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APPROVED:

[REDACTED]

Maxine Patrick, D. P. H., Professor of Nursing, Thesis Adviser

[REDACTED]

Lucile Gregerson, M. Ed., Associate Professor, First Reader

[REDACTED]

May Robinson, Ph.D., Assistant Professor, Second Reader

[REDACTED]

John Brookhart, Ph.D., Chairman, Graduate Council

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## TABLE OF CONTENTS

CHAPTER	PAGE
I. DEVELOPMENT OF THE PROBLEM .....	1
Statement of the Problem .....	1
Purpose .....	3
Methodology .....	4
References .....	8
II. REVIEW OF THE LITERATURE .....	9
Sleep Stages and Cycles .....	9
Effects of Age on Sleep Patterns .....	11
Sleep Deprivation .....	12
Effects of Drugs on Sleep Patterns .....	18
Clinical Implications of Sleep .....	22
Circadian Rhythms and Nursing Care .....	26
References .....	28
III. ANALYSIS OF DATA .....	30
Description of the Sample .....	31
Course of Actions .....	34
Correct Responses Related to Other Variables .....	47
References .....	55
IV. SUMMARY AND RECOMMENDATIONS .....	56
Summary .....	56
Recommendations .....	60
BIBLIOGRAPHY .....	61
APPENDICES	
A. Tool .....	64
B. Choices .....	72
C. Frequency Distribution of Correct Responses .....	73

## LIST OF TABLES

TABLE	PAGE
1.	Frequency Distribution of Respondents by Years Since Graduation ..... 31
2.	Frequency Distribution of Respondents by Educational Preparation ..... 32
3.	Frequency Distribution of Respondents by Number of Years Employed in Nursing ..... 33
4.	Frequency Distribution of Respondents by Present Position ..... 33
5.	Frequency Distribution of Respondents by Shift Currently Worked ..... 34
6.	Situation and Choice Selections, Choice 1 ..... 36
7.	Situation and Choice Selections, Choice 2 ..... 37
8.	Situation and Choice Selections, Choice 3 ..... 40
9.	Situation and Choice Selections, Choice 5 ..... 42
10.	Situation and Choice Selections, Choice 6 ..... 44
11.	Situation and Choice Selections, Choice 7 ..... 45
12.	Number of Correct Responses by Years Since Graduation ..... 48
13.	Number of Correct Responses by Type of Educational Preparation ..... 48
14.	Number of Correct Responses by Years of Employment ..... 49
15.	Number of Correct Responses by Present Position ..... 50
16.	Number of Correct Responses by Shift Currently Worked ..... 51

LIST OF TABLES (Continued)

TABLE		PAGE
17.	Frequency Distribution of Correct Responses by Severity of Illness .....	52
18.	Frequency Distribution of Correct Responses by Patient Behavior .....	53
19.	Frequency Distribution of Correct Responses by Patient Diagnosis .....	54

CHAPTER I  
DEVELOPMENT OF THE PROBLEM

Statement of the Problem

The administration of medications is among the many functions of the professional nurse. The practice of medicine encompasses the legal responsibility for the prescription of medications and the pharmacist has the responsibility for dispensing medication. Before the nurse carries out the physician's order to administer medications, she must make an evaluation of the patient's condition, review the medication order, have knowledge of the drug, and check whether or not the drug is fresh. The final decision to give routine medication and/or whenever necessary medications (PRN) is a nursing responsibility which requires judgment in determining the need for the medication.

A review of 282 records of medical-surgical patients in a general hospital in Ohio revealed that 52.0 per cent of the PRN medications that those patients received were analgesic, 23.0 per cent were sedatives, and 25.0 per cent were not described. The researchers also found that 50.0 per cent of these PRN medications



were given in the four hours between 8 p. m. and 12 midnight. (1)

Few studies of the decision making process of the nurse in relation to the administration of PRN medications were found. The study referred to above (1) had as its purpose to obtain information about nurses and PRN medications. Those researchers obtained the data from hospital records. They concluded that white males received fewer PRN medications than non-white males. White females had more PRN medications prescribed and received than white males. Patients age 51 to 60 years had more PRN medications prescribed than any other age group. As the length of hospitalization increased, the number of prescribed and executed PRN medication orders increased. Medical patients had fewer PRN medications given than surgical patients. It was difficult to ascertain from the report of the study if there was any difference in the PRN medications prescribed and given to private and clinic patients.

A study of 22 nurses on surgical units in a University Medical Center Hospital tested the hypothesis that there was an observable pattern of action taken by nurses prior to the administration of an analgesic. The analgesics studied were Darvon and Darvon Compound. The hypotheses was not supported. Overt nursing measures prior to the administration of PRN medications were limited. There was a minimum of critical thinking displayed by these nurses prior to the administration of the drugs. (2)

The author of a pharmacology text (3) discussed the use of PRN medications for sleep and sedation. It was stated that nurses are in a strategic position to influence the sleep their patients receive. They must exercise caution when making decisions about giving or repeating h. s. or PRN orders for a sleeping medication, hypnotic, or sedative. Nurses who resort immediately to administering a sleeping medication when a patient complains of being unable to sleep may be doing more harm than good. Authors of basic nursing texts (4) discussed the broad field of the nurses' duties in the administration of medications. They did not however, address themselves to the specific area of PRN medications.

The role of the nurse giving PRN medications and the process of decision making utilized in the administration of PRN medications has not been carefully studied. However, the giving of PRN medications is a professional and legal responsibility of the nurses. This study is interested in exploring one aspect of the decision making process used by the nurse when administering PRN medications.

### Purpose

The purpose of this study was to determine what course of action the nurses selected in administering sleep medications.

## Methodology

The tool developed for this exploratory study utilized situations involving hospitalized patients who had PRN medications for sleep. The situations that developed were based on the literature and past nursing experiences of the researcher. The situations were designed to represent a typical adult hospital setting. Each situation had certain identifying factors such as age, sex, general condition, diagnosis and an order for a PRN sleeping medication. Factors in the situations which were individualized to the patient included severity of disease, personality traits, response to the hospital situation, and behavioral manifestations associated with their illness. The final tool consisted of 31 items. See Appendix A.

The choice developed included many possible nursing actions which nurses could take in administering PRN sleeping medications. For the purpose of this study, choice of action was defined as the particular choice that was made for each situation. The choices included in the final tool were selected by pre-testing. The final seven choices were:

1. Give the ordered medication without asking the patient if he needs it.
2. Explain to the patient that a sleeping medication is ordered and advise the patient to take the medication.

3. Try other measures which might promote sleep before routinely giving the medication.
4. Wait until the patient asks for a sleeping medication and then give it.
5. Ask the patient if he wishes a sleeping medication.
6. Don't give the medication and don't ask the patient if he needs it.
7. Wait until there is evidence that the patient cannot sleep and then offer the medication. See Appendix B.

Persons who participated in the pre-testing also determined the correct choice of action in each situation. Of those 19 judges, 16 were nurses with Baccalaureate Degrees presently enrolled in a graduate program in a University and three had Master's Degrees. An arbitrary decision was made that the correct response was one in which 66 and two thirds per cent of the respondents selected the same course of action.

Additional information was obtained about each nurse who participated in the sample. This information included:

1. How long ago did you graduate?
2. What type of basic nursing education have you had?
3. How many years have you been employed in nursing?
4. What is your present position?
5. What shift do you work currently?

6. What shift have you usually worked?

The sample consisted of one hundred registered nurses employed in a general hospital on day and evening shifts, exclusive of the emergency room unit and the Pediatric unit. The researcher distributed the tool to each respondent. The tool was anonymous; however, as each tool was given to the respondent, her name was recorded. The respondents were requested to return the completed tool to the Nursing Office of the hospital in one week. Each respondent was also requested to check her name off the recorded list when she returned the completed tool. The researcher individually contacted those registered nurses on the list who had not returned the tool within the specified time. It was necessary to repeat this process for those who still had not returned the tool. Of the 100 tools given, 67 were returned and of those, 65 were usable.

The study was conducted in a 650 bed church supported general hospital. It is located in a core area providing service to persons representing a stratified socio-economic population. The services provided by this hospital included special care units such as an extended care facility, coronary care unit, intensive care unit and out-patient clinics in addition to the usual adult hospital services. This hospital is research oriented as evidenced by the employment of a full-time nurse researcher and on-going research projects. The attitude of Nursing Service and the nursing staff was one of interest in

the study and of cooperation. Following the lines of communication in this hospital, permission to do the study was obtained from the Director of Nursing Services by Deanna Pankrantz, R.N., M.S., Director of Nursing In-Service Education.

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## CHAPTER II

### REVIEW OF THE LITERATURE

The decision of the nurse to administer a routine or PRN sleep medication involves an evaluation of the patient and his particular situation. Essential to such an evaluation is not only knowledge of the patient, but also knowledge of the phenomenon of sleep itself. Studies and texts cited in the previous chapter indicated that little is available in the literature to support the overt or covert factors in the patient situation which influence the nursing decision. Therefore, pertinent literature regarding the sleep phenomenon was reviewed as a basis for the study and as a guide in the development of the tool. Areas included in the review were: sleep stages and cycles, effects of age on sleep patterns, sleep deprivation, effects of drugs on sleep patterns, clinical implications of sleep, and circadian rhythms and nursing care.

#### Sleep Stages and Cycles

The first indication that sleep might be something more than just a continuous period of complete inactivity occurred in the early



1950's. At that time the investigations of Aserinsky and Kleitman (5) led to the discovery that sleep consisted of a series of qualitatively different events recurring periodically throughout the night. Thus, sleep was divided into two major categories; rapid eye movement sleep (REM) and non-rapid eye movement sleep (NREM). NREM sleep is divided into four stages.

Rapid eye movement sleep, (REM) which was readily observable beneath the lids exhibited many phenomena opposed to previous popular and even scientific ideas relating to the nature and function of sleep. It is associated with temperature elevation, metabolic rate increases, and electrical patterns of the brain strikingly akin to those seen during the height of arousal. This is the dreaming stage of sleep when the brain and most of the body seem particularly active. Such findings prompted many to call REM sleep active or activated sleep as compared to the quiet sleep of the remaining sleep stages.

In a young adult, a typical night's sleep begins with NREM stage 1 and progresses into deepening sleep through stages 2, 3, and 4. When the individual reaches NREM stage 4, he reverses through the stages to NREM stage 2. At this point, which is 70 to 100 minutes after sleep onset, the individual enters the first REM period. From this REM period the individual again enters NREM stages 2, 3, and 4. He again reverses through the NREM stages to another REM period. The REM periods occur cyclically every 80 to 100 minutes. Thus, there are four to five periods of REM sleep, depending on the total

sleep length. The first three REM periods show progressive increases in length so that the longer periods of REM sleep occur later in the night. Another difference in the sleep cycle through the night is that the bulk of NREM stage 3 and stage 4 occur early, while in the latter part of the night NREM sleep is mainly stage 2. (7)

### Effects of Age on Sleep Patterns

Sleep cycle profiles have been determined for subjects in all age groups, from premature and full-term newborns to the aged. REM sleep has been observed in all mammals that have been studied, with the deepest levels of sleep noted in the neonatal period.

The percentage of time which people spent in bed awake remains low until middle age, then it begins to increase. This amount of time is presumed to be highly correlated with that of insomnia.

The amount of time spent in bed awake in the elderly document their frequent complaints of disturbed sleep. It should be emphasized that in spite of marked fragmentation of their sleep, aged subjects spend more time dozing than do young adults; thus their total sleep times are not greatly reduced. The frequent and prolonged interruptions of sleep in the aged also reflect a diminished intensity of the sleep process. In addition, clinical evidence suggests that such a diminution, when chronically present, indicates the existence of brain impairment, such as in chronic brain syndrome. The lack of sleep in the elderly has been found to be associated with poor performance on

tests of intellectual function. (8)

It has been suggested that the young need more dreaming sleep (REM) for maturation and that dreaming sleep serves as a stimulus to prevent long periods of sensory deprivation during sleep. As the person grows older, REM time may decrease because the central nervous system is more mature and needs less endogenous stimulation to prevent sensory deprivation. (9) These data were supported by Feinburg. (10) He studied 15 people who ranged in age from 64 to 96 years and found that the amount of REM sleep was positively correlated with independent estimates of functioning intelligence level. Total sleep time is highest in childhood, declines during adolescence, plateaus during middle age and declines again in old age.

### Sleep Deprivation

Probably the first formal study of sleep deprivation was that of Patrick and Gilbert (11) in 1896 when three instructors were deprived of sleep for 90 hours. The most striking finding was that one subject, a 28 year old professor described as nervous by the researchers, had what appeared to be hallucinations after the second night. The hallucinations disappeared completely with sleep and did not return.

Tyler (12) did a large study of 350 military subjects during World War II. The purpose of the study was to evaluate anti-fatigue agents, and because of the military implications, the behavioral changes were not reported until ten years later. The subjects ranged

in age from 17 to 35 years and were deprived of sleep for up to 122 hours, or nearly five days. Many subjects withdrew from the study because of fear of bad performance or of losing their minds. Tyler concluded that the subjects who withdrew were neurotic, and that the sample would be more stable if the subjects exhibiting neurotic behavior were not included. The incidence of psychotic reactions was unrelated to the drugs given. Over 70 per cent of the subjects reported visual or auditory misperceptions after 40 hours, with four experiencing true hallucinations. All subjects recovered completely after sleeping. There was no complete background history for these men and no follow up studies were done.

Bliss, et al., (13) kept seven medical students awake for 72 hours. In addition to misperceptions, the students reported feeling separated from others "in a strange way". None became psychotic during the study and all were reported to have recovered with sleep at the completion of the study.

Luby, et al., (14) kept 12 male subjects awake for 123 hours. The subjects ranged in age from 20 to 40 years. Depersonalization was a common occurrence that was reported. The researchers reported that although most of the subjects became paranoid, only one had systematized delusions.

Ross, (15) described a male high school senior who had been awake for 264 hours, (11 days). He became irritable and uncooperative after the fourth day. He then suffered hallucinations for the

duration of the study.

Berger and Oswald, (16) deprived six subjects of sleep for four days. Three of the subjects were reported to have had paranoid delusions. All of the subjects were reported recovered in one day after being allowed to sleep for eight hours.

Kollar, et al., (17) in 1967 studied four young adult men who were deprived of sleep for a total of 205 hours. The research design of the study was directed especially to the problem of evaluating the psychogenic potential of sleep deprivation. Psychophysiological, biochemical and neurological assessments were made. The four men were under continuous observation for two weeks on the research ward of the UCLA Neuropsychiatric Institute. During the first three days while the subjects became acquainted with the daily ward routine, the staff, and with each other, baseline psychological, physiological, neurological, and biochemical measurements were made. These measurements were repeated at six hour intervals during all subsequent periods of wakefulness including the three day recovery period. In addition, measurement of group interaction was made at 50, 100, 150, and 200 hours of sleep deprivation. Daily assessments of neurological status, general physical condition, memory, mood and general ward behavior were made. Intensive testing of logical thinking was administered before and after 150 hours of sleep deprivation. Personality testing was done before and after 200 hours of sleep deprivation.

The subjects quickly formed a group and manifested many of the dynamics described for groups attempting to adapt to stressful environments. Subjects experienced a gradual increase in fatigue and a decline in perceptual, cognitive and psychomotor capabilities with transient ego disruptive symptoms reported in previous studies. After the fifth day of deprivation, the subjects seemed to get a "second wind", which has been described as the "fifth day turning point" by other researchers. They experienced increasing moments or lapses during which there was a deterioration in performance, increase in misperceptions, hallucinations, and regressive behavior. However, in spite of these lapses and increasing fatigue, they were able to rouse themselves to perform tasks. The intervals between lapses, perceptual functions, thought processing, and general intellectual capabilities remained intact. The researchers stated that they found no evidence to support the claims of others that there is a psychosis of sleep deprivation. They also concluded that sleep deprivation per se is unable to produce psychopathological reactions which extend beyond the period of sleep deprivation.

Investigators have also been studying the effect of REM sleep deprivation. This has been accomplished by arousing subjects at the onset of REM periods. Although both human and animal subjects have been used, the most definitive studies have been performed on animals such as the cat. These studies have suggested an augmentation of drive-oriented behavior in REM deprived cats, as evidenced by

increased restlessness, hypersexual behavior, and ravenous appetites.

Clemens and Dement, (18) conducted a study to determine the presence of psychological changes as a function of REM sleep deprivation in human subjects and if the changes are in the area of drive augmentation. Six junior college students who ranged in age from 18 to 20 years were studied. They were not told of the nature of the experiment, only that it was to study disturbed sleep. The subjects were divided into two groups. One group underwent six nights of arousal during NREM sleep and on the following day were given the same battery of psychological tests. The other three subjects underwent the same procedure, only reversed in order. The psychological tests were selected to measure the following modes of behavior; 1) aesthetic preferences; 2) fantasy; and 3) self-report of moods.

The test results indicated there was a higher intensity of feeling and need under REM deprivation. This is congruent with previous animal research studies which showed heightened drive under similar deprivation conditions. Under heightened drive, subjects' perceptions, particularly in ambiguous situations, should be influenced more by internal clues than by situational demands. Results of this study were consistent with this expectation, for under REM deprivation, subjects showed increased deviant or autistic thinking, but decreased form appropriateness. Other results of testing indicated increased sensitivity to internal feelings and the freedom to let such feelings determine perception; as intensity of needs and feeling increased, there

was a reduction in critical facility under REM deprivation. There was also a reduced ability to control thoughts. The researchers felt that the effects of REM deprivation were subtle under experimental conditions. They appeared most readily in fantasy production in which social pressure for control are reduced. Whether longer periods of REM deprivation would hinder and obstruct cognitive functions enough to be measured by highly structured intelligence tests was not determined. The social context of the experiment would possibly affect the outcome. In this study the subjects were well paid and experienced a "supportive" atmosphere. This factor could assist the subject in coping with feelings of stress.

Many misperceptions, mostly visual, but also sensory and auditory occur with deep deprivation. Large numbers of normal subjects deprived of sleep for up to four or five days experienced these misperceptions, but only a few had psychotic experiences. Some patients seemed to have acute schizophrenic episodes secondary to sleep loss, generally transitory, but some with more lasting effects. Long deprivation, ten to eleven days, seemed invariably to produce true hallucinations. A five day turning point has been reported after which disorientation becomes more frequent and prolonged, first as to time, then place, and finally person. Delusions occur often, usually paranoid. At night patients may seem delirious, but in the day schizophrenic. The understanding of the chemistry of sleep and its loss is still fragmentary. A review of published reports reveal



striking differences between various studies, as well as some similarities. It seems that in some persons, anxiety and depression causing insomnia can establish a vicious cycle of sleep loss and increasing anxiety which may culminate in a psychological state closely resembling an acute schizophrenic reaction. (19)

#### Effects of Drugs on Sleep Patterns

Researchers at the Sleep Research and Treatment Facility, Department of Psychiatry and Brain Research Institute at the UCLA Medical Center (20) have done a number of short and long term studies in the relationship of sleep and hypnotic drugs. The short term studies are set up on a standard eight night schedule to determine if hypnotic drugs alter sleep patterns. The schedule was on nights one, two and three, placebos were given; on nights four, five and six drugs were given; and on nights seven and eight, placebos were repeated. The first two nights in which the placebos were given allowed the individual to adapt to the laboratory, while the third placebo night was used for obtaining baseline measurements. The fourth, fifth and sixth nights, the active drug was administered at "lights out" and the initial and short term cumulative effects of the drug on sleep patterns was measured. On the last two nights, placebos were again administered and withdrawal effects observed.

The results of a number of the short term studies utilizing this protocol showed that many drugs do produce significant alterations in

REM sleep. The researchers felt that the most important clinical correlations of REM sleep alterations relate to the increase in REM sleep following drug withdrawal (REM rebound). This REM rebound occurred in anxious subjects, those who have chronically taken hypnotic drugs and in whom withdrawal is often associated with nightmares and insomnia. These reactions which are associated with hypnotic drug withdrawal make it difficult for patients to renounce drug habits, thus leading to drug dependence.

The following hypnotic drugs and sedatives in the doses shown decreased REM sleep significantly and/or were followed by a rebound of REM sleep on withdrawal: glutethimide (Doriden), 500 mg.; secobarbital sodium (Seconal, 100 mg.; pentobarbital sodium (Nembutal), 100 mg.; methyprylon (Noludar), 300 mg.; and metaqualone (Quaalude), 300 mg. In contrast, the following drugs did not significantly alter REM sleep in the doses given nor were they followed by REM rebound on withdrawal of the drug: chloral hydrate (Noctec), 500 mg.; flurazepam (Dalmane), 30 mg.; and methaqualone (Quaalude), 150 mg.

In the long term studies, insomniac subjects were used in a 22 night protocol. Two purposes were identified, 1) to study the effectiveness of a hypnotic in inducing and maintaining sleep, and 2) to determine the length of effectiveness of the drug. The schedule was: first through fourth nights, a placebo was given in the laboratory; fifth through seventh nights, a drug was given in the laboratory; and

nights eight through fifteen, the subjects took the drug home. On nights sixteen through eighteen, drugs were given in the laboratory; and nights nineteen through twenty-two, a placebo was given in the laboratory. The first placebo night was for adaptation and nights two, three and four were for baseline measurements. The fifth to seventh nights allowed for measurement of the initial drug effects, while the 16, 17, and 18 nights were used to determine whether the drugs were still effective after two weeks of drug administration. The last four nights in which placebos were given allowed for measurement of any withdrawal effects.

The researchers found in these studies that sleep latency (time from "lights out" to sleep onset was significantly decreased on the initial set of drug nights (5-7) by the administration of chloral hydrate 1000 mg. or glutethimide 500 mg. Self evaluation of medications by the subjects during the portion of the study when they were at home, indicated that the effectiveness of these drugs diminished quickly. The second set of drug nights (8-15) showed that with both drugs, the sleep latency had returned to baseline levels. No consistent effect was found with either chloral hydrate or glutethimide in decreasing wake time after sleep onset or the number of awakenings. Flurazepam administration resulted in a significant decrease in sleep latency, wake time after sleep onset, and the total number of times the subject awakened. The favorable changes for both sleep induction and sleep maintenance were maintained throughout the two week drug

administration period as evidenced by the subjective reports while at home and the results of the second set of laboratory nights. Sleep latency, wake time after sleep onset, and the total number of awakenings were still decreased below baseline levels on the withdrawal nights indicating a carry-over effect of the drug.

The results regarding the presence or absence of sleep stage alterations were similar to those found in the short term studies. Neither chloral hydrate nor flurazepam produced any significant alterations in REM sleep either during the drug administration period or following withdrawal. Glutethimide markedly suppressed REM sleep and when withdrawal, a marked increase above the baseline levels associated with increased reports of dreams was reported. Flurazepam produced a marked decrease in stage four sleep NREM, which was maintained throughout the withdrawal period. No clinical adverse clinical correlations similar to those found with drug-induced REM suppression and REM rebound have been established for stage four suppressions. Results from these studies of the actual effectiveness of drugs in which the rigorous and objective techniques of the sleep laboratory were used provided data for the prescription of drugs. These data also have implication for nurses who are responsible for administering PRN sleep medications.

## Clinical Implications of Sleep

People frequently complain of difficulty in sleeping, especially when they are ill. This is often due to the fact that symptoms of their disease are prominent at night. For example, patients with a duodenal ulcer typically have pain at night due to the hypersecretion of gastric juice. A study (21) has extended this information by demonstrating that nocturnal gastric acid is secreted during REM periods. This pattern was very prominent in one of the five patients studied, while the others showed it to a smaller degree. Three normal subjects did not have detectable increase in gastric secretion during REM periods.

Nocturnal angina pectoris which was verified by EKG tracings was studied at Duke University (22). Four patients studied for 12 nights suffered 39 anginal episodes during this time. Thirty-two of those episodes occurred during REM sleep. A typical episode began a few minutes after the onset of a REM period, the EKG changed and the patient awakened with chest pain. This relationship was the most marked in one of the patients who had 27 of the 32 REM associated episodes. Inferences from this study indicate that the influence of REM sleep may be stronger in some patients than in others.

Patients with asthma do not sleep well, and usually have asthmatic episodes at night. Clinical evidence indicates the involvement of emotional factors with asthma, and it has been suggested

that the nocturnal attacks might be due to disturbing dreams. To investigate this idea, Kales (23) studied 12 adult asthmatic patients during 28 nights of sleep. The patients suffered 76 asthmatic incidents during the time. An asthmatic incident was defined as dyspnea that awakened the patient necessitating the use of the nebulizer with isoproterenol. The findings indicated that the episodes occurred throughout the night but with no discernible pattern. It was felt by the investigators that if the episodes were REM associated, they would predominate in the late hours of sleep during REM time, but this did not occur.

Changes in respiration, heart rate, and systolic blood pressure during sleep have been studied by Snyder (24). Twelve subjects were studied for a total of 30 nights. The results of the study indicated that the three measures showed consistent and significant changes over the whole night of sleep and periodic variations concomitant with the EKG cycle. Within each night of sleep, blood pressure fell 20.0 per cent to a minimum between one and one half and two and one half hours after beginning of sleep and then rose gradually over the remainder of the night to a level comparable with that of sleep onset. Respiration and heart rate fell from 5.0 to 10.0 per cent from sleep onset progressively throughout the night. The changes in average level of blood pressure and of both heart rate and respiration rate variability were more conspicuous during the later REM period of the night.

The results of studies at the UCLA Sleep Research and Treatment Facility and other laboratories of various clinical and experimental disorders and their effects on or association with sleep stages have been summarized by Kales in Sleep Research in Modern Medicine, page 6 (25).

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 CLINICAL DISORDERS AND THEIR RELATION TO SLEEP STAGES
 

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	REM SLEEP	NREM SLEEP
<b>SLEEP DISORDERS</b>		
Enuresis (bed wetting) and night terrors	Few episodes during REM sleep	Most episodes in NREM sleep
Somnambulism (sleepwalking)	No episodes during REM sleep	Virtually all episodes in stage 4 sleep
<b>MEDICAL DISORDERS</b>		
Bronchial asthma	Attacks in all stages of sleep, less in stage 4	
Coronary arteriosclerosis	Anginal attacks and electrocardiographic changes increase during stage REM	
Chronic brain syndrome	Decrease in stage REM which is proportional to decrease in intelligence quotient	
Duodenal ulcer	Gastric acid secretion is markedly increased during stage REM	
Epilepsy	Decreased frequency of seizures during stage REM	Increased fre- quency during NREM sleep
Hypothyroidism	No change in stage REM	Decreased stage 4 which in- creases with treatment
Narcolepsy-cataplexy	Cataplectic attack in REM sleep	
<b>PSYCHIATRIC DISORDERS</b>		
Schizophrenia	Early occurrence of first REM period, possible REM deprivation mechanism	Decreased stage 4 which in- creases with treatment
Depression	Decreased stage REM	Decreased stage 4 which in- creases with treatment

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## Circadian Rhythms and Nursing Care

Periodicity is the field of modern medical science concerned with the relationship between the physiology of an organism and its environment. Circadian rhythms, dealing with the sleep-wake cycle of the individual, are a physiological function of man.

Some medical aspects of circadian rhythms have been known for decades. A thorough analysis of delivery hours revealed a distinct peak incidence between 3 a. m. and 4 a. m. and a low number of deliveries between 5 p. m. and 6 p. m. There were no indications as to the reason these phenomena occur. (26)

Fass (27) posed the question of whether or not nurses through enforcing hospital routine, timing and giving medications, or giving sleeping medications, alter circadian rhythms of waking and sleeping or produce to any extent dream deprivation unknowingly in their patients. In view of the studies of periodicity and dream deprivation and disease, this consideration has relevance.

The study of body rhythms and their relation to environmental routine opens a new dimension to the use of nursing diagnosis and therapeutic intervention. Nursing research which has been done on psychobiologic parameters without reference to circadian rhythms may yield conflicting results and obscure significant relationships. (28)

In the future, with the progress of research in periodicity, definite physiologic parameters may help to individualize and time stressful surgery, treatments, or hospital routine with the patient's point of highest physiologic adaptation. Such an approach would require greater individualized care and consideration of the patient.

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### CHAPTER III

#### ANALYSIS OF DATA

The purpose of this study was to determine what course of action nurses selected in administering PRN sleeping medications. In meeting this purpose, a tool was designed and given to 100 nurses in a 650 bed, church supported hospital. The sample was limited to registered nurses employed on day and evening shifts, exclusive of the emergency unit and the pediatric unit. The tool was anonymous, however as each tool was given to the respondent, her name was recorded. The respondents were requested to return the completed tool to a designated place in one week's time. Each respondent was requested to check her name off the list as she returned the tool. The researcher contacted those registered nurses who had not returned the tool in the specified time on two separate occasions. Of the 100 tools given, 67 were returned and 65 of those were usable.

The directions to each respondent were that they were to select one choice from the seven possible choices which best represented their assessment of the situation. The directions meant what each nurse would do in the situation, or what she thought should

be done. After the tools had been returned, 10.0 per cent of the respondents were contacted and asked how they had interpreted the directions. One half of those respondents' questions indicated that they had answered it on the basis of what they thought should be done.

#### Description of the Sample

Of the 65 nurses in the study, 52.3 per cent (N-34) had graduated over 15 years prior to the study. Twelve (18.5 per cent) of the nurses had graduated between two and five years before the study. Nine (13.8 per cent) of the nurses had graduated less than two years prior to the study. See Table 1.

TABLE 1  
FREQUENCY DISTRIBUTION OF RESPONDENTS  
BY YEARS SINCE GRADUATION

Years Since Graduation	N	%
---2 years	9	13.8
2-45 years	12	18.4
6-15 years	6	9.2
11-15 years	4	6.1
15--+ years	34	52.3
Total	65	99.8*

\*This figure was due to rounding of per cent to the nearest whole number.

Most, 80.0 per cent (N-52), of the nurses were graduates of diploma schools of nursing. These data were consistent with what would be expected to be found in a hospital which was associated with a diploma school of nursing. This would be because they employed many of their own graduates. In Oregon, 75.0 per cent of all registered nurses are graduates of diploma schools of nursing. (29) The national average of diploma school graduates is 79.5 per cent. (30). Only 12.3 per cent (N-8) of the respondents had a Bachelor of Science Degree. This was less than the 20.0 per cent reported for Oregon and more than the 11.7 per cent reported for the nation. See Table 2.

TABLE 2

FREQUENCY DISTRIBUTION OF RESPONDENTS  
BY EDUCATIONAL PREPARATION

Educational Preparation	N	%
Diploma School of Nursing	52	80.0
Bachelor of Science Degree	8	12.3
Other	5	7.6
Total	65	99.9*

\*This figure was due to rounding of per cent to the nearest whole number.

Table 3 indicated that there was an even distribution of the respondents according to years of employment in nursing. More of the nurses 24.6 per cent (N-16) had been employed in nursing for over 20 years than in any other group.

TABLE 3

FREQUENCY DISTRIBUTION OF RESPONDENTS  
BY NUMBER OF YEARS EMPLOYED IN NURSING

Years Employed in Nursing	N	%
---2 years	11	16.9
2--5 years	11	16.9
6-10 years	8	12.3
11-15 years	11	16.9
16-20 years	6	12.3
20--+ years	16	24.6
Total	65	99.9*

\*This figure was due to rounding of per cent to the nearest whole number.

At the time of the study, 41.5 per cent (N-27) of the respondents were employed as head nurses, and 53.8 per cent (N-35) were employed in staff positions. Three of the respondents were employed in in-service. See Table 4.

TABLE 4

FREQUENCY DISTRIBUTION OF RESPONDENTS  
BY PRESENT POSITION

Present Position	N	%
Head Nurse	27	41.5
Staff Nurse	35	53.8
In-Service	3	4.6
	65	99.9*

\*This figure was due to rounding of per cent to the nearest whole number.



Two thirds of the respondents in the study worked the day shift, (14.6 per cent, N-42) compared with one third of the respondents who worked the evening shift, (35.3 per cent, N-23). This distribution was comparable to the total number of registered nurses employed in this hospital on the day and evening shifts. See Table 5.

TABLE 5  
FREQUENCY DISTRIBUTION OF RESPONDENTS  
BY SHIFT CURRENTLY WORKED

Current Shift	N	%
Day	43	64.6
Evening	23	35.3
Total	65	99.9*

\*This figure was due to rounding of per cent to the nearest whole number.

#### Course of Action

For the purpose of this study, the course of action was defined as the particular choice that was made for each situation. Correct responses to each of the 31 situations in the tool were determined by the judges. The total number of correct responses ranged from two to sixteen. See Appendix C.

The number of correct responses were arbitrarily divided into high number of correct responses, (9-16) and low number of correct responses (2-8). The division point was the mean. Of the 65

respondents, 32 had low scores (few correct responses) and 33 had high scores (most correct responses).

Choice number one was: Give the medication ordered without asking the patient if he needs it. This was the correct response to situations 8, 9, 22, and 25. This choice determined nursing judgment only; it did not involve the patient's needs. There was a high per cent of correct responses to situation nine, 55.3 per cent (N-36) and situation twenty-two, 63.0 per cent (N-41). There were fewer correct responses to situation eight, 8.0 per cent (N-5) and situation twenty-five, 13.8 per cent (N-9). See Table 6.

Choice number two was as follows: Explain to the patient that a sleeping medication is ordered and advise the patient to take the medication. This was the correct response for situations 1, 3, 7, 11, 19, 20, and 21. This choice determined a collaboration between the nurse and the patient. The decision to take the medication was ultimately the patient's. There was a high per cent of correct response to situation one, 49.2 per cent (N-28). There were fewer correct responses to situation twenty-one, 10.7 per cent (N-7). See Table 7.

All of these situations dealt with non life-threatening events. The patient's hospital stay would not be altered by whether or not he took the medication. Many of the respondents indicated that they would give the medication without asking the patient, rather than give the patient the choice of whether or not he wanted a PRN sleeping

TABLE 6

## SITUATION AND CHOICE SELECTIONS, CHOICE 1

SITUATIONS	CHOICES							CORRECT RESPONSE %
	1	2	3	4	5	6	7	
8. Mrs. Baker is a 78 year old patient with a fractured left hip. She has periods of respiratory distress and has orders for nasal oxygen as needed. Chloral Hydrate gr. 7 1/2 p. r. n.	5	4	25	2	1	16	9	8.0
9. Mr. True is a 75 year old disoriented patient in his third postoperative day. He had a cataract removed from the left eye. Chloral Hydrate gr. 7 1/2 p. r. n.	36	1	12	0	0	8	8	55.3
22. Mr. Aldritch is 88 years old, very confused and senile. He is usually put in restraints at night and is in a four bed ward. He is scheduled for diagnostic kidney tests in the a. m. Chloral Hydrate gr. 7 1/2 p. r. n.	41	0	12	0	0	8	4	63.0
25. Mr. Shane, 58 years old has a diagnosis of emphysema. He coughs frequently and becomes dyspneic and frustrated. His orders include the use of a positive pressure machine p. r. n. Seconal gr. 1 1/2 p. r. n.	9	14	20	4	5	5	8	13.8

\*Total does not always equal 65 because of failure of some participants to answer all situations. This applies to Tables 6, 7, 8, 9, 10, and 11.

TABLE 7

SITUATION AND CHOICE SELECTIONS, CHOICE 2

SITUATIONS	CHOICES							CORRECT RESPONSE %
	2	3	4	5	6	7	1	
1. Mrs. Jones is a 40 year old patient who appears uncooperative and demanding of the staff. She is scheduled for a cardiac catheterization in the a.m. Second gr. 1 1/2 p. r. n.	28	4	0	1	0	0	32	49.2
3. Mr. Royer is 49 years old and has been admitted with a diagnosis of a myocardial infarction. His medication includes Morphine Sulfate gr. 1/4 every 4 hours. Secondal gr. 1 1/2 p. r. n.	13	9	1	6	1	12	3	20.6
7. Mr. White is a 36 year old patient who is scheduled for a left lobectomy in the a. m. He is sleeping immediately after dinner. Secondal gr. 1 1/2 p. r. n.	19	0	7	0	3	21	15	29.2
11. Mrs. Boge, a 46 year old patient, is admitted to the ward from intensive care this afternoon. She has had open heart surgery. Secondal gr. 1 1/2 p. r. n.	25	3	0	3	2	8	23	39.0

TABLE 7 (Continued)

## SITUATION AND CHOICE SELECTIONS, CHOICE 2

SITUATIONS	CHOICES							CORRECT RESPONSE %
	2	3	4	5	6	7	1	
19. Mr. Wains, a 40 year old patient is in the acute stage of lymphatic leukemia. He appears very disturbed and is scheduled for a psychiatric consultation in the a. m. Second gr. 1 1/2 p. r. n.	17	5	1	1	3	1	36	26.5
20. Mrs. Swanson is 35 years old and scheduled for a D and C in the a. m. She has eight children at home and asks the nurse to call home for her frequently. She has been crying a great deal this evening. Second gr. 1 1/2 p. r. n.	17	7	0	1	0	0	39	26.5
21. Mrs. Jones is a 30 year old lady admitted with broken ribs and lacerations from a car accident in which her two children were killed. She was informed of their deaths this afternoon. Second gr. 1 1/2 p. r. n.	7	0	0	0	0	0	56	10.7

medication. On the basis of this information the nurses indicated that their professional judgment was superior to the patient's. Table 7 shows that none of the situations had a high per cent of correct responses, the range was from 49.2 per cent to 10.7 per cent.

Choice number three was as follows: Try other measures which might promote sleep before routinely giving the medication. This was the correct response to situations 4, 5, 6, 13, 18, 23, 28, 30, and 32. This choice determined that other nursing interventions would be selected in preference to administering sedatives. The patient was not involved in this choice. The highest per cent of correct responses was to situation 23 with 41.5 per cent (N-27). This situation deals with an older lady who is coughing, incontinent and confused. The range of correct responses for these situations was 41.5 per cent to 14.2 per cent. In these nine situations there were a variety of other choices selected. See Table 8.

Choice number five was as follows: Ask the patient if he wishes a sleeping medication. This was the correct response to situation number 12. This choice allowed the nurse to exercise her judgment of the patient's ability to act in his own behalf. There were 36.9 per cent (N-24) of the respondents who selected the correct response. This choice did not indicate what the nurse would do in regard to giving the medication. For this reason this situation was a poor choice for this study. See Table 9.

TABLE 8

## SITUATION AND CHOICE SELECTIONS, CHOICE 3

SITUATIONS	CHOICES							CORRECT RESPONSE %
	3	4	5	6	7	1	2	
4. Mr. Black, 78 years old, is a two day postoperative herniorrhaphy, he is alert responsive and enjoys a long nap after lunch. Chloral Hydrate gr. 7 1/2 p.r.n.	10	6	19	1	23	2	4	15.3
5. Mr. Brown is 88 years old and admitted with a diagnosis of skin cancer of the face. His hospitalization is a short term duration for radiation therapy. Second gr. 1 1/2 p. r. n.	14	2	14	4	16	6	7	22.2
6. Mrs. Green is a 38 year old patient with pneumonia. She is a quiet untalkative person. Second gr. 1 1/2 p. r. n.	10	0	33	1	8	3	10	15.3
13. Mr. Jims is a 60 year old patient with a mid thigh amputation of the left leg due to a traumatic wound. He is five days postoperative and complaining of phantom pains. Second gr. 1 1/2 p.r.n.	10	0	10	1	1	21	21	15.6
18. Mr. Castle is a 30 year diabetic with an infected toenail. He is upset with being in the hospital and does not take care of himself. He is usually careless in the administration of his insulin. Second gr. 1 1/2 p.r.n.	13	3	7	2	20	10	10	20.0

TABLE 8 (Continued)

## SITUATION AND CHOICE SELECTIONS, CHOICE 3

SITUATIONS	CHOICES							CORRECT RESPONSE %
	3	4	5	6	7	8	9	
23. Mrs. Allen is 78 years old, has pulmonary edema, coughs a great deal and becomes confused at sundown. She tends to be incontinent during the night. Seconal gr. 1 1/2 p. r. n.	27	1	1	14	8	11	3	41.5
28. Mr. Wilson is an 80 year old patient with a CVA. He is able to respond to requests from the staff in regards to taking his medication. He appears restless and confused. Chloral Hydrate gr. 7 1/2 p. r. n.	21	0	2	2	9	25	5	32.8
30. Mr. Yager, a 28 year old Heroin addict, has been admitted to the hospital for withdrawal from drugs. This has been done on a volunteer basis. His last heroin was 30 hours ago. Chloral Hydrate gr. 7 1/2 p. r. n.	9	4	5	9	10	17	9	14.2
32. Mrs. Gilbert, 55 years old, is an arthritic patient with difficulty in moving her lower extremities and a very unhappy lady. She rejects all attempts at conversation. Seconal gr. 1 1/2 p. r. n.	21	2	3	0	5	11	22	32.8



TABLE 9  
SITUATION AND CHOICE SELECTIONS, CHOICE 5

SITUATIONS	CHOICES				CORRECT RESPONSE %
	5	6	7	4	
12. Mrs. Jewel, 33 years old, is a three day postoperative patient. She has had an abdominal hysterectomy with a cystocele and rectocele repair. Second gr. 1 1/2 p.r.n.	24	0	7	2	36.9

Choice number six was as follows: Don't give the medication and don't ask the patient if he needs it. This was the correct response to situations 16, 17, 26, and 27. This choice allowed for complete control of the administration of the medication by withholding it. Seconal should not be given in these situations. It is contraindicated in patients with a concussion (situation 16). The drug is excreted through the kidneys and thus should not be given to a patient with renal failure (situation 17). Seconal is an antagonist to phenacetin and would be contraindicated in situation 26. Patients addicted to hallucinatory drugs would not be given seconal. See Table 10.

Choice number seven was as follows: Wait until there is evidence that the patient cannot sleep, and then offer the medication. This was the correct response to situations 2, 10, 14, 15, 24, and 31. This choice indicated that the nurse would wait before giving the PRN medication and provide the patient the opportunity to sleep on his own. If the patient did not sleep naturally, the nurse would offer the medication. The patient would have the final choice. These six situations contained a variety of age groups, severity of illness, diagnostic procedures and patient behaviors. There was no pattern of selection of incorrect responses. See Table 11.

Choice number four was as follows: Wait until the patient asks for a sleeping medication and then give it. This choice was not selected by the judges as a correct response for any of the situations. This choice was entirely patient oriented in that the nurse was

TABLE 10

## SITUATION AND CHOICE SELECTIONS, CHOICE 6

SITUATIONS	CHOICES					CORRECT RESPONSE %
	6	7	1	2	3	
16. Mr. Marks is 20 years old and was admitted with facial lacerations from a car accident and possible concussion. Seconal gr. 1 1/2 p.r.n.	32	13	5	2	11	1 49.2
17. Mrs. Cupp is a 38 year old pregnant lady in her seventh month of pregnancy with possible renal shutdown. Seconal gr. 1 1/2 p.r.n.	26	10	7	1	15	1 41.9
26. Mrs. Cantrell is a 38 year old black lady with acute sickle cell anemia. Her orders include phenacetin gr. 7 1/2 every four hours. Seconal gr. 1 1/2 p.r.n.	2	18	7	5	11	4 15 3.2
27. Betty is an 18 year old hallucinatory drug addict. She is very depressed and admitted with slash wounds to both wrists. Seconal gr. 1 1/2 p.r.n.	23	9	7	6	17	0 1 36.5

TABLE 11

## SITUATION AND CHOICE SELECTIONS, CHOICE 7

SITUATIONS	CHOICES						CORRECT RESPONSE %
	7	1	2	3	4	5	
2. Joan Smith is a 19 year old college student who has been hospitalized for four weeks with viral hepatitis. Second gr. 1 1/2 p. r. n.	20	2	5	12	6	14	5 31.2
10. Mr. Foote is a 45 year old alcoholic with advanced cirrhosis of the liver. He talks loudly and at great length with his room-mates and watched T. V. until 12:30 a.m. Paraldehyde 6 ml. p. r. n.	3	45	11	5	0	1	0 4.6
14. Mrs. Writer is 28 years old and has a congenital deformed disk and vertebra. She is in traction for a minimum of 7 days and complains of spasmodic pain in her back. Second gr. 1 1/2 p. r. n.	7	17	19	12	5	3	0 11.1
15. John is a 17 year old high school student in traction due to a whiplash injury. He will be in traction for at least two weeks and appears very restless. Second gr. 1 1/2 p. r. n.	7	18	19	16	1	4	0 10.7

TABLE 11 (Continued)

## SITUATION AND CHOICE SELECTIONS, CHOICE 7

SITUATIONS	CHOICES						CORRECT RESPONSE %	
	7	1	2	3	4	5		
24. Mrs. Wagner is a 30 year old lady who speaks Spanish. Her diagnosis is anemia. Second gr. 1 1/2 p. r. n.	27	9	1	18	5	4	0	42.1
31. Mrs. Davidson, an 80 year old woman, was admitted with second degree burns on her left hand from hot grease. She is very independent and enjoys reading at night. She takes several naps during the day. Second gr. 1 1/2 p. r. n.	17	6	7	4	14	13	3	26.5

dependent upon the patient requesting the medication. If this choice were selected by the nurse, it could indicate that she was not carrying out her role as a nurse which is one of giving medications, deciding who is to have medications, when and how. Of the 31 situations one or more respondents selected this choice for 11 of the situations. Situation 31 which deals with a patient who displays a great deal of independence and reads during the night was answered with choice four by 14 of the respondents. The correct response to this situation, according to the judges was choice number seven.

#### Correct Responses Related to Other Variables

There was very little difference between respondents who identified a high number of correct responses and those who identified a low number of correct responses by years since graduation. These data indicated that the respondents who graduated recently had a higher amount of correct responses than those respondents who had been graduated longer. See Table 12.

TABLE 12  
 NUMBER OF CORRECT RESPONSES BY YEARS  
 SINCE GRADUATION

Years Since Graduation	Correct Response	
	High	Low
---2 years	6	3
2--5 years	7	5
6-10 years	4	2
11-15 years	2	2
15--+ years	14	20
Total	33	32

There was little difference between nurses who were diploma graduates and nurses who were baccalaureate graduates and the number of correct responses which they selected. The variable of the kind of education preparation was not meaningful for this study due to the fact that the majority were graduates of a diploma school of nursing. See Table 13.

TABLE 13  
 NUMBER OF CORRECT RESPONSES BY TYPE  
 OF EDUCATIONAL PREPARATION

Type of Education	Correct Response	
	High	Low
Diploma	23	29
Bachelor of Science	6	2
Other	4	1
Total	33	32

Table 14 indicated findings similar to that of Table 12. The respondents who had been employed in nursing more years selected a lower amount of correct responses than those respondents who had been employed fewer years.

TABLE 14  
NUMBER OF CORRECT RESPONSES BY YEARS  
OF EMPLOYMENT

Years of Employment	Correct Response	
	High	Low
---2 years	8	3
2--5 years	5	6
6-10 years	5	3
11-15 years	5	6
16-20 years	5	3
20--+ years	5	11
Total	33	32

There was little difference between respondents employed as head nurses and those employed as staff nurses and the number of correct responses which they selected. Although only three respondents were employed in in-service position, they had the highest number of correct responses. This would be expected because these nurses who were employed in in-service had education beyond the baccalaureate degree and had graduated within the last five years. They were closer to the judges in amount of education and experience which could explain that they viewed nursing in the same way.

See Table 15.



TABLE 15  
 NUMBER OF CORRECT RESPONSES BY  
 PRESENT POSITION

Present Position	Correct Response	
	High	Low
Head Nurse	13	14
Staff Nurse	17	18
In-Service	3	0
Total	33	32

More, (59.5 per cent, N-25) of the respondents on the day shift had a higher number of correct responses than nurses on the evening shift (35.2 per cent, N-8). A study of PRN medication orders for Medical-Surgical patients (31) reported that 50.0 per cent of the PRN medication orders were given between 8:00 p. m. and midnight. Since more of the evening nurses in this study selected incorrect responses but probably gave many PRN medications, this would indicate a need for some in-service programs on this topic. An explanation of why these people selected incorrect responses could be due to the validity of the tool. The situations in the tool may not have been typical of those encountered by the evening shift. See Table 16.

TABLE 16  
 NUMBER OF CORRECT RESPONSES BY SHIFT  
 CURRENTLY WORKED

Shift Worked Currently	Correct Response	
	High	Low
Day	25	17
Evening	8	15
Total	33	32

Each of the 31 situations contained severity of illness, patient behavior and diagnosis. Severity of illness was subdivided into short term, long term, preoperative, postoperative, terminal and others. The per cent of correct responses ranged from 25.3 per cent (N-114) to 32.5 per cent (N-105). The lowest per cent of correct responses related to patients with short term illness and the highest per cent of correct responses related to the postoperative patient. See Table 17.

TABLE 17

FREQUENCY DISTRIBUTION OF CORRECT RESPONSES  
BY SEVERITY OF ILLNESS

Severity of Illness	Correct Response*	
	%	N
Postoperative		
Preoperative	32.5	105
Terminal	27.9	36
Long Term	26.6	17
Short Term	26.4	236
Other	25.3	114
	26.3	32

\*There were seven situations which dealt with short term illness: 1, 3, 6, 14, 15, 16, and 31. If all of the 65 respondents had selected the correct response to these seven situations the total would have been 445 (65 x 7). Some respondents failed to answer some of these situations resulting in a total of 450. The actual number of possible respondents who selected the correct response to all seven situations was 114 or 25.3 per cent. This procedure accounts for the variable N's.

The behavioral category was divided into: alert-cooperative, complaining, none exhibited, disturbed, repressed, demanding and confused. Nurses in this study identified more of the correct courses of action for patients who were demanding and confused. The per cent of correct responses by behavior ranged from 15.5 per cent (N-30) to 59.2 per cent (N-77). The lowest per cent of correct responses related to patients who were alert or cooperative. The highest per cent of correct responses related to patients who were classified as being confused. This could reflect the emphasis of educational programs on this type of patient manifested behavior. See Table 18.

TABLE 18  
 FREQUENCY DISTRIBUTION OF CORRECT RESPONSES  
 BY PATIENT BEHAVIOR

Patient Behavior	Correct Response	
	%	N
Confused	59.2	77
Demanding	43.1	28
Repressed	28.9	56
Disturbed	26.4	135
None Exhibited	25.3	177
Complaining	22.9	44
Alert-Cooperative	15.5	30

The diagnoses of the patients were divided into: orthopedic, metabolic, liver, respiratory, other, cardiovascular-renal, gynecology and drug addiction. The per cent of correct responses dealing with this category ranged from 16.5 per cent (N-74) to 36.5 per cent (N-23). The lowest per cent of correct responses related to orthopedic patients with 16.5 per cent (N-74). The highest per cent of correct responses related to cardiovascular-renal diagnosis with 35.1 per cent (N-157), gynecology diagnosis with 35.1 per cent (N-67) and diagnosis related to patients addicted to drugs with 36.5 per cent (N-23). The difference in the range of correct responses might be attributed to the recent emphasis in general as well as professional literature on cardiovascular-renal, gynecology, and drug addiction conditions. See Table 19.

TABLE 19  
 FREQUENCY DISTRIBUTION OF CORRECT RESPONSES  
 BY PATIENT DIAGNOSIS

Diagnostic Classification	Correct Response	
	%	N
Drug Addiction	36.5	23
Gynecology	35.1	67
Cardiovascular-Renal	35.1	157
Respiratory	21.2	55
Liver	17.7	23
Metabolic	17.2	22
Orthopedic	16.5	74
Other	33.8	109

Situations dealing with patient diagnosis had a higher per cent of correct responses as did the situations dealing with patient behavior. There seemed to be little range in the amount of correct responses dealing with severity of illness.

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## CHAPTER III

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## CHAPTER IV

### SUMMARY AND RECOMMENDATIONS

#### Summary

When people are ill, their sleep cycle may be disrupted. A common intervention is the prescription of sleep medication. The literature demonstrated that many of these medications influence the physiology of sleep. Since the administration of medications is among the many functions of the professional nurse, and since little research has been done to determine how a nurse decides on the administration of PRN sleep medications, this study was undertaken.

The purpose of the study was to determine what course of action the nurses selected in the administration of sleeping medications. A tool was constructed which consisted of 31 situations. Each situation had as patient variables, behavior, severity of illness, diagnosis, age, and sex. There were seven possible choices or courses of action from which the respondents selected the one they considered to be the best. A team of 19 judges was used to determine the correct choice for each situation.

The study was conducted in a 650 bed, church supported hospital. The sample consisted of registered nurses employed on day and evening shifts, exclusive of the emergency unit and the pediatric unit. The researcher distributed the tool to 100 nurses; 65 were analyzed.

Most of the respondents were graduates of diploma schools of nursing (80.0 per cent). Two-thirds (64.6 per cent) of the nurses were employed on the day shift and one-half (53.8 per cent) were staff nurses. There was a fairly even distribution of respondents by years of employment. They had worked from less than two years to more than 20 years. One-third of the nurses had graduated less than five years ago and 52.3 per cent had graduated more than 15 years ago.

Of the seven courses of action, three involved judgment by the nurse only in arriving at the decision to administer the drug. The choices were:

1. Give the ordered medication without asking the patient if he needs it.
3. Try other measures which might promote sleep before routinely giving the medication.
6. Don't give the medication and don't ask the patient if he needs it.

In the four situations (16, 17, 26, and 27) in which choice six was the correct choice, the PRN sleep medication was contraindicated. These situations had a high per cent of correct responses and dealt



with patient diagnoses, which also had a high per cent of correct responses in Table 19. If the assumption that current emphasis on these diagnoses is correct, such a similarity can be accounted.

In choice one and three, patient behavior appeared to be the determining factor in influencing the nurse's decision of whether or not to administer the drug. In the 13 situations in which choices one and three were correct, nine of the situations dealt with behavior other than being alert and cooperative. The per cent of correct responses was highest in situations where the patient was described as demanding and confused.

Three other choices involved the patient and the nurse in the decision of taking the PRN sleep medication. The choices were:

2. Explain to the patient that a sleeping medication is ordered and advise the patient to take the medication.
5. Ask the patient if he wishes a sleeping medication.
7. Wait until there is evidence that the patient cannot sleep, and then offer the medication.

Inspection of the situations in which choice two was correct indicated a wide range of response, but little to demonstrate any similarity to diagnosis, severity of illness or patient behavior. Choice five proved to be a poor choice for this study while choice seven showed no pattern of selection of incorrect responses.

Choice four was based entirely on the patient's request for PRN sleep medication. Although this choice was not selected by the judges as a correct response to any of the situations this choice was selected for 11 of the 31 situations.

The respondents who were employed on the day shift had more correct responses than those employed on the evening shift. The nurses who had graduated most recently and had worked fewer years had the highest number of correct responses. There was no difference between head nurses and staff nurses in the amount of correct responses.

Severity of illness was identified in each of the situations, however this was not related to the number of correct responses. Nurses identified the correct responses to more situations in which the behavior of the patient was described as demanding and confused. Only a small number of correct responses were selected for the patients who were described as alert and cooperative. The respondents identified a higher number of correct responses for situations in which the diagnostic category of the patient was cardiovascular-renal, gynecology or drug addiction. Situations in which the patient had an orthopedic condition had the lowest number of correct responses.

## Recommendations

This exploratory study illustrated the need for more studies in the area of PRN medications. Therefore the following studies are recommended.

1. This study should be replicated omitting choice four and five, directions should be specific to indicate what the nurse would or should do in each situation.
2. This tool could be used in nursing education as an evaluation of the unit on drug administration.
3. A study of the decision making process which the nurse uses in administration of all PRN medication orders.

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APPENDICES



## APPENDIX A

## DIRECTIONS

The purposes of this tool are to determine what criteria you use when making a decision to administer p. r. n. sleep medications, and information about your education and experience. The tool consists of thirty-two situations involving hospitalized individuals. Each situation has in common certain identifying factors such as age, sex, general condition, diagnosis and an order for a p. r. n. sleep medication. There are seven choices provided from which you may select your response. Please select only the one answer which best represents your assessment of the situation.

First answer the questions about yourself and then complete the tool in the following manner:

1. Read choices carefully. They are on a separate sheet, pull out and refer to as you select what you would do.
2. Read each situation on the tool, selecting only one appropriate response from the choices.
3. Upon completion, place tool and information sheet in the envelope provided.
4. It is not necessary to sign your name.

Thank you for your cooperation and help.

WOULD YOU PLEASE FILL IN THE FOLLOWING  
INFORMATION ABOUT YOURSELF

1. How long ago did you graduate?

- less than two years
- two to five years
- six to ten years
- eleven to fifteen years
- over fifteen years

2. What type of basic nursing education have you had?

- Associate Arts Degree
- Diploma
- Bachelor of Science Degree
- Other

3. How many years have you been employed in nursing?

- less than two years
- two to five years
- six to ten years
- eleven to fifteen years
- sixteen to twenty years
- over twenty years

4. What is your present position?

- Coordinator or Supervisor of more than one unit
- Head Nurse
- Charge Nurse
- Staff
- Other, please specify

5. What shift do you work currently?

- days
- evenings
- nights
- float
- other, please specify

6. What shift have you usually worked?

- days
- evenings
- nights
- float
- other, please specify

- \_\_\_\_\_ 1. Mrs. Jones is a 40 year old patient who appears uncooperative and demanding of the staff. She is scheduled for a cardiac catheterization in the a.m. Seconal gr. 1 1/2 p. r. n.
- \_\_\_\_\_ 2. Joan Smith is a 19 year old college student who has been hospitalized for four weeks with viral hepatitis. Seconal gr. 1 1/2 p. r. n.
- \_\_\_\_\_ 3. Mr. Royer is 49 years old and has been admitted with a diagnosis of myocardial infarction. His medication includes Morphine Sulfate gr. 1/4 every 4 hrs. Seconal gr. 1 1/2 p. r. n.
- \_\_\_\_\_ 4. Mr. Black, 78 years old, is a two day postoperative herniorrhaphy, he is alert, responsive and enjoys a long nap after lunch. Chloral Hydrate gr. 7 1/2 p. r. n.
- \_\_\_\_\_ 5. Mr. Brown is 88 years old and admitted with a diagnosis of skin cancer of the face. His hospitalization is a short term duration for radiation therapy. Seconal gr. 1 1/2 p. r. n.
- \_\_\_\_\_ 6. Mrs. Green is a 38 year old patient with pneumonia. She is a quiet untalkative person. Seconal gr. 1 1/2 p. r. n.
- \_\_\_\_\_ 7. Mr. White is a 36 year old patient who is scheduled for a left lobectomy in the a.m. He is sleeping immediately after dinner. Seconal gr. 1 1/2 p. r. n.

- \_\_\_\_\_ 8. Mrs. Baker is a 78 year old patient with a fractured left hip. She has periods of respiratory distress and has orders for nasal oxygen as needed. Chloral Hydrate gr. 7 1/2 p. r. n.
- \_\_\_\_\_ 9. Mr. True is a 75 year old disoriented patient in his third postoperative day. He had a cataract removed from the left eye. Chloral Hydrate 7 1/2 p. r. n.
- \_\_\_\_\_ 10. Mr. Foote is a 45 year old alcoholic with advanced cirrhosis of the liver. He talks loudly and at great length with his roommates and watched T. V. until 12:30 a. m. Paraldehyde 6 ml. p. r. n.
- \_\_\_\_\_ 11. Mrs. Boge, a 46 year old patient, is admitted to the ward from intensive care this afternoon. She has had open heart surgery. Seconal gr. 1 1/2 p. r. n.
- \_\_\_\_\_ 12. Mrs. Jewel, 33 years old, is a three day postoperative patient. She has had an abdominal hysterectomy with a cystocele and rectocele repair. Seconal gr. 1 1/2 p. r. n.
- \_\_\_\_\_ 13. Mr. Jims is a 60 year old patient with a mid thigh amputation of the left leg due to a traumatic wound. He is five days postoperative and complaining of phantom pains. Seconal gr. 1 1/2 p. r. n.

- \_\_\_\_ 14. Mrs. Writer is 28 years old and has a congenital deformed disk and vertebra. She is in traction for a minimum of seven days and complains of spasmodic pain in her back. Seconal gr. 1 1/2 p. r. n.
- \_\_\_\_ 15. John is a 17 year old high school student in traction due to a whiplash injury. He will be in traction for at least two weeks and appears very restless. Seconal gr. 1 1/2 p. r. n.
- \_\_\_\_ 16. Mr. Marks is 20 years old and was admitted with facial lacerations from a car accident and possible concussion. Seconal gr. 1 1/2 p. r. n.
- \_\_\_\_ 17. Mrs. Cupp is a 38 year old pregnant lady in her seventh month of pregnancy with possible renal shutdown. Seconal gr. 1 1/2 p. r. n.
- \_\_\_\_ 18. Mr. Castle is a 30 year old diabetic with an infected toenail. He is upset with being in the hospital and does not take care of himself. He is usually careless in the administration of his insulin. Seconal gr. 1 1/2 p. r. n.
- \_\_\_\_ 19. Mr. Wains, a 40 year old patient is in the acute stage of lymphatic leukemia. He appears very disturbed and is scheduled for a psychiatric consultation in the a. m. Seconal gr. 1 1/2 p. r. n.

- \_\_\_\_ 20. Mrs. Swanson is 35 years old and scheduled for a D and C in the a.m. She has eight children at home and asks the nurse to call home for her frequently. She has been crying a great deal this evening. Seconal gr. 1 1/2 p. r. n.
- \_\_\_\_ 21. Mrs. Jones is a 30 year old lady admitted with broken ribs and lacerations from a car accident in which her two children were killed. She was informed of their deaths this afternoon. Seconal gr. 1 1/2 p. r. n.
- \_\_\_\_ 22. Mr. Aldritch is 88 years old, very confused and senile. He is usually put in restraints at night and is in a four bed ward. He is scheduled for diagnostic kidney tests in the a.m. Chloral Hydrate gr. 7 1/2 p. r. n.
- \_\_\_\_ 23. Mrs. Allen is 78 years old, has pulmonary edema, coughs a great deal and becomes confused at sundown. She tends to be incontinent during the night. Seconal gr. 1 1/2 p. r. n.
- \_\_\_\_ 24. Mrs. Wagner is a 30 year old lady who speaks only Spanish. Her diagnosis is anemia. Seconal gr. 1 1/2 p. r. n.
- \_\_\_\_ 25. Mr. Shane, 58 years old has a diagnosis of emphysema. He coughs frequently and becomes dyspneic and frustrated. His orders include the use of a positive pressure machine p. r. n. Seconal gr. 1 1/2 p. r. n.
- \_\_\_\_ 26. Mrs. Cantrell is a 38 year old black lady with acute sickle cell anemia. Her orders include phenacetin gr. 7 1/2 q. 4 hrs. Seconal gr. 1 1/2 p. r. n.

- \_\_\_\_\_ 27. Betty is an 18 year old hallucinatory drug addict. She is very depressed and admitted with slash wounds to both wrists. Seconal gr. 1 1/2 p. r. n.
- \_\_\_\_\_ 28. Mr. Wilson is an 80 year old patient with a CVA. He is able to respond to requests from the staff in regards to taking his medication. He appears restless and confused. Chloral Hydrate gr. 7 1/2 p. r. n.
- \_\_\_\_\_ 29. Mr. Yager, a 28 year old Heroin addict has been admitted to the hospital for withdrawal from drugs. This has been done on a volunteer basis. His last heroin was 30 hrs. ago. Chloral Hydrate gr. 7 1/2 p. r. n.
- \_\_\_\_\_ 30. Mrs. Davidson, an 80 year old woman was admitted with second degree burns on her left hand from hot grease. She is very independent and enjoys reading at night. She takes several short naps during the day. Seconal gr. 1 1/2 p. r. n.
- \_\_\_\_\_ 31. Mrs. Gilbert, 55 years old, is an arthritic patient with difficulty in moving her lower extremities and a very unhappy lady. She rejects all attempts at conversation. Seconal gr. 1 1/2 p. r. n.



## APPENDIX B

## CHOICES

1. Give the ordered medication without asking the patient if he needs it.
2. Explain to the patient that a sleeping medication is ordered and advise the patient to take the medication.
3. Try other measures which might promote sleep before routinely giving the medication.
4. Wait until the patient asks for a sleeping medication and then give it.
5. Ask the patient if he wishes a sleeping medication.
6. Don't give the medication and don't ask the patient if he needs it.
7. Wait until there is evidence that the patient cannot sleep, and then offer the medication.

## APPENDIX C

## FREQUENCY DISTRIBUTION OF CORRECT RESPONSES

		Correct Response Frequency
	2	1
	3	3
	4	1
	5	7
	6	4
	7	10
	8	6
	9	14
	10	7
	11	5
	12	2
	13	3
	14	1
	16	1
Total	120	65

AN ABSTRACT OF THE THESIS OF

JEAN DELK BATES

For the MASTER OF SCIENCE IN NURSING EDUCATION

Date of receiving this degree: June 11, 1971

Title: A STUDY OF THE COURSE OF ACTION NURSES

SELECTED IN THE ADMINISTRATION OF

SLEEPING MEDICATIONS

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Of the seven courses of action, three involved a judgment only by the nurse in arriving at the decision to administer the drug. The choices were: 1. Give the ordered medication without asking the patient if he needs it; 3. Try other measures which might promote sleep before routinely giving the medication; and 6. Don't give the medication and don't ask the patient if he needs it.

In four situations in which choice six was the correct one, the PRN sleep medication was contraindicated. These situations had a high per cent of correct responses and dealt with patient diagnosis, which also had a high per cent of correct responses in Table 19.

In choice one and three, patient behavior appeared to be the determining factor in influencing the nurse's decision of whether or not to administer the drug. In the 13 situations in which choices one and three were correct, nine of the situations dealt with behavior other than being alert and cooperative. The per cent of correct responses was highest in situations where the patient was described as demanding and confused.

Three other choices involved the patient and the nurse in the decision of taking the PRN sleep medication. The choices were:

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- and 7. Wait until there is evidence that the patient cannot sleep, and then offer the medication.

Inspection of the situations in which choice two was correct indicated a wide range of response, but little to demonstrate any similarity to diagnosis, severity of illness or patient behavior. Choice five proved to be a poor choice for this study while choice seven showed no pattern of selection of incorrect responses.

The respondents who were employed on the day shift had more correct responses than those employed on the evening shift. The

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