Correlation of Patient Demographics and Emergency Department Use For Minor Illness By a Rural Population

Judith Caplinger
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CORRELATION OF PATIENT DEMOGRAPHICS AND EMERGENCY DEPARTMENT USE FOR MINOR ILLNESS BY A RURAL POPULATION

by

JUDITH CAPLINGER

A Thesis
Submitted in partial fulfillment of the requirements for the Degree of Master of Science in Nursing in the Division of Nursing Mississippi University for Women

COLUMBUS, MISSISSIPPI

AUGUST, 1993
Correlation of Patient Demographics and Emergency Department Use for Minor Illness by a Rural Population

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Abstract

Literature regarding utilization of emergency services has long supported the concept that a substantial portion of primary care received by the urban and rural poor, as well as the uninsured, is being administered through local emergency departments. This descriptive study sought to correlate selected demographic variables, health care resources, and perceived urgency of care to use of the emergency department by the rural client. Utilizing Roy’s Theory of Adaptation as a theoretical framework, the methodology is similar to a study conducted on urban clients by Shesser, Kirsch, Smith, and Hirsch (1991). Three research questions guided this study: What is the relationship between selected demographic variables and use of the rural emergency department for minor illness? What is the relationship between perceived urgency and use of the rural emergency department for minor illness? What is the relationship between health care resources and use of the rural emergency department for minor illness? A sample (N = 55) of ambulatory emergency department patients was selected from one rural hospital in a southeastern state. The subjects were given a self-report questionnaire at the time of registration, which was between the hours of 9:00
a.m. and 6:00 p.m. on weekdays. Records were reviewed retrospectively for inclusion in the study based on exclusion criteria developed by Shesser et al. (1991). Data were analyzed utilizing descriptive statistics, chi-square, and Pearson Product Moment Correlation. Results indicated a significant relationship between the demographic variables of gender, race, education, employment, method of payment, major sources of financial support, and income with use of the ED for minor illness. Perceived urgency was explored with a significant correlation between discomfort and perception of seriousness by the subject. Respondents expected to be treated within 24 hours of the onset of illness. Individuals chose the ED for care because it was either more convenient or they were unable to secure an appointment with a health care provider. The implication for nursing is that the nurse practitioner could play an important role in the ED as the health care provider for minor illness problems. Recommendations include replication of the study utilizing larger samples, alternate sites, and subjects across the age span.
Acknowledgements

I would like to express my heartfelt appreciation to my family, especially my husband, for his enduring patience and invaluable assistance. To my research committee, Lynn Chilton, Dr. Mary P. Curtis, and M. Kirkpatrick, my sincere gratitude for their guidance and suggestions. My genuine gratitude to Crosby Memorial Hospital in Picayune, Mississippi, for providing access to subjects and, last but certainly not least, to God be the glory, great things He has done!
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Chapter I
The Research Problem

The use of the emergency room (ED) for minor illness has been an increasing dilemma in hospitals nationwide. It has created a crisis in virtually all hospital emergency departments characterized by decreased access to care, fragmentation of care, and increased cost to the health care system. The General Accounting Office (GAO), in response to recent reports and studies alleging overcrowding and long waits, completed a study in January of 1993 which was presented to committees in the United States Senate. The study found there were nearly 100 million visits to the emergency room of local hospitals with 43% of those for nonurgent conditions (GAO, 1993). According to a survey by Inforum, 38% of all households in 1990 visited the emergency room for minor illness (American Hospital Publishing, 1991). The emergency department has been becoming the most popular health service available, but has also been nearing the end of its resources because of multiple demands (Friedman, 1992).

Those demands are being created by patients with nonurgent conditions, the elderly, and patients with serious illness (GAO, 1993). These problems have been particularly
an issue for rural hospital emergency departments who have attributed as much as 93% of their patient visits to nonurgent reasons. Thus, the purpose of this study was to correlate those individuals seeking care for minor illness in the rural ED with specific patient demographic variables. These variables included age, race, gender, income, employment, method of payment, major source of financial support, and education, together with perceived urgency (subjectively defined by the individual) and previously identified sources of health care.

Establishment of the Problem

The ED has become a guaranteed access point to the United States health care system because of the Consolidated Omnibus Budget Reconciliation Act of 1985 (COBRA). This Act required all hospitals receiving Medicare reimbursement to assess and stabilize all individuals requesting medical care regardless of their ability to pay (GAO, 1993). Approximately 34.4 million individuals and 82% of hospitals have reported that nonpayment by uninsured patients has created financial problems (GAO, 1993). In addition, medically indigent persons have been increasingly forced to obtain both urgent and routine health services in the ED because many private physicians refuse to accept Medicaid payment (Pane, Farmer, & Salness, 1991). The GAO reported that, of the 38 million nonurgent ED visits in 1990, 42% or 15 million were made because the patient had no primary care
provider. It has been estimated that the emergency department has provided primary care to 34.4 million individuals who were uninsured with very little choice about where to seek health care (Friedman, 1992). Likewise, Medicare patient visits increased 29% in 1990, and 81% of all hospitals surveyed by the GAO reported that Medicare reimbursement has had an adverse impact on the hospital's financial condition (GAO, 1993).

This dilemma unfortunately is not only the plight of the urban ED, which has seen an increase of 16.2% between 1980 and 1990, but also a problem for the rural ED which has experienced a 21% increase in that same period of time (Friedman, 1992). Dr. Jackson Allison, Jr., President of American College of Emergency Physicians (ACEP) and Chief of Emergency Services at Pitt County Memorial Hospital in Greenville, North Carolina, stated that in his community of approximately 44,000 people, there were 48,000 visits to the emergency department last year (Friedman, 1992). Even in the nation's smallest hospitals of less than 100 beds, ED visits rose 30% compared to 16% for hospitals of more than 300 beds (GAO, 1993).

In this situation of increasing use of the EDs nationwide, there have been disadvantages not only from the health care system's perspective, but also for the patients. An emergency physician quoted in the Sun Herald on October 11, 1993, stated that the backlog being experienced in
Gulfport Memorial Hospital's ED (Mississippi) was directly related to a 20% increase in patient volume that brought the average number of patient visits up to a level of 132 patients per day. This physician asserted that patients seeking care should be seen within 24 hours, but this increasing patient load was prohibiting patients from being seen by physicians in an appropriate amount of time.

Severe overcrowding of emergency medical systems was reported by an informal poll conducted by the American College of Emergency Physicians in 41 states. The Emergency Nurses' Association, in a straw poll conducted the same year, reported overcrowding in all 50 states (Friedman, 1992). A study conducted by Baker, Stevens, and Brook (1991) in a large urban hospital found waiting times of 6.2 to 6.4 hours in two study groups.

In addition to overcrowding, the emergency department has become the primary source of health care for certain segments of the population (Habenstreit, 1986; Stern, Weissman, & Epstein, 1991). Haddy, Schmaler, and Epting (1987) stated that this type of episodic health care was fragmented and did not provide comprehensive treatment. In the long run, this type of care was more expensive to the patient and to the health care system. That health care system, according to the American Hospital Association, provided $11.1 billion in uncompensated care in 1989 (Friedman, 1992). The average cost per visit in the
emergency room was approximately $140, and uninsured individuals were found in one study to be using those services at a 3.1 times higher rate than the insured individual (Stern et al., 1991). This use of the ED for minor illness has contributed to the escalating cost to the health care system (Ginzberg & Ostow, 1991). A general consensus of the literature supported the findings of Stern et al. (1991) that a majority of the patients admitted through the emergency department were likely to have low incomes, to be uninsured or underinsured, and were likely to use more resources than those admitted in other ways.

Purpose of the Study

A limited number of studies is found relating the use of the rural ED for minor illness with patient characteristics. Additionally, few studies were found that addressed the use of the ED for minor illness when other sources of health care were available. No studies were found that combined patient characteristics with use of the rural emergency department for minor illness when other primary care sources were available.

Therefore, the purpose of this study was twofold: (a) to determine how the characteristics of patients seen in the emergency room of rural hospitals might correlate with their use of that facility for minor illness and (b) to correlate the use of the ED for minor illness with other sources of health care available to these individuals.
Significance to Nursing

This study was significant to the practice of the nurse practitioner in several ways. In relationship to practice, this research attempted to help the practitioner identify who, why, and how often an individual seeks care for nonurgent illnesses.

It has been estimated that 50-90% of the activities performed by physicians could be delegated to nurse practitioners (McGrath, 1990). Derlet and Nishio (1990) found that 20% of the patients presenting to the University of California at Davis Medical Center emergency department did not require immediate evaluation by a physician. The implications of this use of the emergency department posed a real threat to anyone truly in need of emergency services according to these researchers. This use for minor illness also placed barriers to primary services for those uninsured individuals who were not seen elsewhere (Bindman et al., 1991).

In a study conducted by Powers, Jalowiec, and Reichelt (1984), two groups of subjects were treated in the ED by either a physician or a nurse practitioner. Results indicated no significant differences between those patients cared for by the physician or the nurse practitioner in terms of knowledge, comprehension, or satisfaction with care. Powers et al. (1984) concluded that utilizing nurses in the management of nonurgent problems in the ED or in an
ambulatory care clinic would be an option worth consideration based on economics and quality of care. The use of the nurse practitioner in the emergency department has been shown effective in reducing waiting time, increasing productivity, and increasing cost effectiveness of service (Simm & Whitecraft, 1991). One cost-effective formula was designed which proposed that one nurse practitioner does 63% of the work of a physician at 38% of the cost (McGrath, 1990).

According to McGrath (1990), the nurse practitioner is especially valuable in the delivery of primary and supplemental care in rural areas where programs have been lacking. Very little research has been done in the area of ED use and the rural client. Although 47% of EDs are located in rural areas, only 23 million of the estimated 99 million ED visits were to those facilities (GAO, 1993). Consequently, most research has been conducted in urban EDs. This study will attempt to profile the typical nonurgent user of the rural ED.

From a health care delivery viewpoint, one might assume that use of the ED for minor illness is inappropriate; however, if alternate forms of primary care are inaccessible or nonexistent, use of the ED becomes a logical choice (Kellerman, 1991). As previously stated, use of the ED cannot be inappropriate if no other health care facilities are available (Kellerman, 1991). Use of the ED could be
considered appropriate if no health care provider would see the patient because of their inability to pay (Friedman, 1992). Use of the ED would not be appropriate if the client perceived his/her illness to be severe (Habenstreit, 1986). Based on the incidence of minor illness, a nurse practitioner could be utilized to increase productivity and cost effectiveness (Powers et al., 1984). The information gathered in this study might be used to educate the health care consumer as well as the health care providers regarding more appropriate avenues of care which will provide better service at a lower cost.

**Conceptual Framework**

The Adaptation Model by Roy (1976) was the theoretical framework used for this research. Roy's theory has been based on the assumption that human behavior was an adaptation to environmental stimuli, and adaptation was that response which positively moved the individual into a state of wellness (Marriner-Tomey, 1989). The choices made by an individual in seeking health care (i.e., process of adaptation) were the central concepts applied to this research.

In defining the major concepts of her theory, Roy proposed that man is a biopsychosocial being in constant interaction with a changing environment, and the goal of nursing was to facilitate adaptation to man's environment by manipulating stimuli by "removing them, increasing them,
decreasing them, or altering them" (Roy, 1976, p. 19). These stimuli have been classified into three categories: (a) focal stimuli or those which are immediately confronting the patient who uses the ED, such as pain or fear; (b) contextual stimuli, which are environmental such as crowding or long waits; and (c) residual stimuli, which would include health beliefs, coping skills, experience, or traits of the patient using the ED.

In this research, all three categories have been examined. Subjects using the ED were asked what their perception of their discomfort might be, how long he/she had been experiencing discomfort, and how serious they perceived the condition to be (focal). They also were asked what other health care providers in the community they used and how frequently they used them (contextual). Additionally, they were asked how their health choices were affected by income, accessibility, and method of payment (residual) (see Appendix A).

According to Roy (1976), there are four types of adaptations that man has sought. They are physiologic adaptation, self-conceptual adaptation, role function, and interdependence.

The physiologic mode has been subdivided into needs, such as exercise and rest, nutrition, elimination, fluid and electrolytes, oxygen, circulation, and regulation of autonomic systems, such as temperature, senses, and
endocrine. A person can be analyzed by how well he/she is adapting to the deficits or excesses experienced in this mode (Roy, 1976). Subjects in this study were examined related to those behaviors employed to meet certain physiologic needs (e.g., pain or illness).

Interdependence has been defined as need related to man's social integrity. Roy (1976) referred to this as that "comfortable balance" (p. 13) between dependent behaviors and independent behaviors. Behaviors were identified as either help-seeking, attention-seeking, or affection-seeking. Independent behaviors involved initiative-taking and obstacle mastery. If and when the usual means for meeting these needs were altered, man must adapt to maintain social integrity or experience dysfunctional dependence or interdependence (Roy, 1976). Behaviors related to this mode were addressed in this research related to the choice of the health care provider and how quickly that provider was sought in relationship to the perceived illness.

The self-concept mode was identified by Roy as that "composite of feelings and beliefs that one holds about oneself at a given time" (Marriner-Tomey, 1989, p. 328). This mode was applied in this present study to the behavior related to the perception of illness and its perceived threat to self-concept.

Role function has been identified as that behavior which was performed based on the individual's position in
society. This concept was applied in this study to information about the demographics of patients using the ED (e.g., income, education, and race) and what effect that might have on choices for health care.

The constantly changing environment which Roy described as "all the conditions, circumstances, and influences surrounding and affecting development" (Marriner-Tomey, 1989, p. 330) has a profound effect on an individual's response. Roy sees health as a continuum from peak wellness to death. The factors that influence the direction an individual takes on that continuum were the focus of this research.

Assumptions

In addressing the factors relating to the decision to seek care in the emergency room, certain assumptions were postulated:

1. The emergency department is used for treatment of minor illness.

2. The use of the emergency department for minor illness is based on the individual's perception of urgency of need.

3. Perceptions are based on past experience of adaptation.
Statement of the Problem

Use of the emergency department for minor illness has been a problem not only from the perspective of the patient who is receiving fragmented, episodic care but also from the perspective of the health care system (Friedman, 1992). Specifically, there has been evidence of poor utilization of health care dollars and overcrowding of an area designed to meet the needs of individuals facing life or death situations (GAO, 1993). There has been little research regarding the type of patient who is most likely to use the ED for minor care when other sources of primary care were available. This study addressed the question: Do age, race, gender, income, employment, method of payment, major source of financial support, education, perceived urgency, and knowledge of other health care providers in the area affect the use of the emergency department in a rural area for minor illness?

Research Questions

Three research questions guided this study:

1. What is the relationship between selected demographic variables and use of the rural emergency department for minor illness?

2. What is the relationship between perceived urgency and use of the rural emergency department for minor illness?
3. What is the relationship between health care resources and use of the rural emergency department for minor illness?

Definition of Terms

Selected demographic variables: For the purposes of this study, patient age, income, gender, race, education, and method of payment were the variables explored based on responses to a self-report questionnaire.

Perceived urgency of care: Shesser, Kirsch, Smith, and Hirsch (1991) defined this as the patient's perception of the seriousness of his/her condition. For this study, the patients' perception of the problem and how much discomfort he/she was experiencing at the time of admission was determined by a visual analogue scale of exactly 10 mm in length. This scale was scored by a percentage on a continuum from 0% to 100%.

Health care resources: These are facilities which supply medical care and are defined by type, site, purpose, and frequency of use (Aday & Andersen, 1974). Available resources for health care were presented in this study as multiple-choice questions to explore the type, site, and frequency with which they were used in the previous 12 months. For example, individuals were asked if they had sought care previously in a public clinic, private clinic, Veterans hospital, military hospital, HMO, emergency department, or urgent care clinic.
Minor illness: The GAO report of January 1993 defined minor illness as nonurgent conditions or those which were not life-threatening, limb-threatening, or time sensitive. For the purpose of this study, participant exclusion criteria established by Shesser et al. (1991) were used to define those parameters that indicated non-minor illness and all others were classified as minor illness.

Rural emergency department: The General Accounting Office defined rural EDs as those emergency departments of hospitals with fewer than 100 beds and which were located in primarily rural areas. For the purposes of this study, the definition of rural EDS were those that were located in a hospital at least 18 miles from a city with a population of 20,000 or more, and a hospital bed count of less than 100.

Summary

Rural emergency departments have not been immune to the problems which plague their urban counterparts. Where overcrowding has not been a problem, the availability or adequacy of the medical staff has been (Bross, Wiygul, & Rushing, 1991). Information regarding utilization of the rural emergency department for minor illness will contribute to the knowledge about overall ED use.
Chapter II
Review of the Literature

In reviewing the literature concerning utilization of the emergency department (ED), most studies dealt with urban EDs. While it is true that most visits occurred in urban EDs (greater than 300 beds), one third of all hospitals have been identified as having fewer than 100 beds, and little research has been devoted to utilization of these rural EDs (GAO, 1993). Only one study reviewed was conducted in the rural area; however, this review included studies on urban ED utilization with the realization that generalization of findings to rural areas is uncertain. The selected research focused on the independent variables defined in this research: demographic variables, perceived urgency, health care resources, and the dependent variable of minor illness.

Stern et al. (1991) conducted a study of 20,089 patients admitted to five urban Massachusetts hospitals during a 6-month period of time. These researchers compared length of stay and charges for those individuals admitted through the emergency room as compared with those patients admitted via other routes. The relationship between the patients' socioeconomic status and their admission through the emergency department also was examined. The study had
two goals: to determine if the characteristics of those patients admitted through the ED differed from those of patients admitted via other routes and to examine the relationship between route of admission and resource utilization in the hospital as measured by length of stay and total charges of those individuals admitted through the ED. An attempt was made to correlate demographic, socioeconomic, and disease characteristics of patients utilizing the ED by studying the frequency of use in each of the five hospitals. To gauge the severity of disease, the researchers used DRGSCALE, which is a computerized system that analyzes discharge data and predicts resource utilization based on DRGs. No theoretical framework was addressed.

Results indicated that 60% of all patients entering the hospital through the ED were older than 65, with the next highest age bracket being between the ages of 18 and 44 at 46%. Males were admitted slightly more than females at 52%, and blacks or other minorities were admitted over whites by a ratio of 65 to 45. Income was statistically significant with 62% of patients admitted to the hospital making less than $10,000 annually. Education was also statistically significant with 56% of the patients having less than 11 years of formal education. Sixty-six percent of all patients were insured by Medicaid, 60% by Medicare, and 68% were uninsured. Half of all patients had no regular
physician; and of those patients admitted through the ED, 27% had longer length of stays, and 13% incurred higher charges than patients admitted via other routes.

The demographic profile of the ED user in this study was older, nonwhite, lower socioeconomic status, and uninsured. The researchers made the observation that no state provided supplementary payment to hospitals based on patient's route of admission. The greatest difference in resource utilization was noted among Medicaid insured individuals. The researchers suggested this lack of supplemental payment might encourage hospitals to organize their care to further discourage access to care by these individuals.

Stern et al. (1991) explored demographics of ED users and their subsequent use of hospital services after admission, while this current study was limited to nonadmitted patients seen in the ED for minor illness. However, like Stern et al. (1991), this study sought to explore demographics of ED users to establish the characteristics of this population.

Researchers Pane et al. (1991) conducted a study of stable walk-in ED patients at the University of California Irvine Medical Center to obtain data regarding delayed access of care. A quota of 1,000 consecutive patients was given a health access survey in both Spanish and English, which was designed to obtain data regarding demographics,
employment, income, insurance status, regular source of health care, delays in receiving health care, and refusal of health care by health care providers.

The questionnaire was subjected to prior review by ED physicians, ambulatory ED patients, and translators; however, no reliability or validity was established. No theoretical framework was addressed.

Results revealed that 80% of their patients were less than 40 years old, 52% were Hispanic, and nearly 70% had incomes less than $10,000 annually. Also, 25% of the patients surveyed used the ED as the routine source of health care. In addition, public aid or self-pay status was significantly associated with refusal of care by other health care providers and EDs. Thirty percent of all patients were covered by Medicaid.

Pane et al. (1991) suggested that medically indigent patients, as compared with higher income, fully insured individuals, were having significant difficulty in accessing the health care system and were out of necessity using the ED for routine basic health care needs. These patients also were significantly more likely to delay seeking health care. The researchers noted that the nation's health care system was at fault in this dilemma and a consensus on health care reform was desperately needed.

The present research explored not only the demographics as described in the Pane et al. (1991) study, but also
derived information regarding method of payment, use of other health care providers, and perceived urgency. The setting of the Pane et al. study (1991) was a large urban Level I teaching hospital with an annual patient census of 38,000 and 493 inpatient beds. There also was a large Hispanic population utilizing the ED that necessitated a bilingual survey as compared to this study which was conducted in a rural area of a southeastern state. The population of this southeastern state was demographically 35% black, but there was no language barrier in accessing the information. Statistical tests between the two studies were similar as both explored demographics and frequency of use.

A survey conducted by Scott (1991) in Rhode Island addressed the increasing use of the ED for primary health. This survey found that 2.1% of the respondents to the Health Interview Survey (estimated 21,000 individuals) used the ED as a first choice whenever they were sick or needed advice about health. This number of individuals represented an increase of 40% since their last survey in 1985. Also, the percentage of ED users who were Black, Asian, or Hispanic was three times larger than their representation within the state population.

The state Director of Health concluded that an increasing segment of the population of Rhode Island was relying inappropriately on the ED for routine medical care.
The researcher proposed that by using the ED in this manner, individuals were limiting their access to preventive care and were, in fact, receiving less overall ambulatory care than were patients in other settings.

Several comparisons have been made between the Scott (1991) study and this research study. Both studies examined demographic characteristics of ED users; however, information concerning other sources of medical care were ascertained in the present study. The Scott study (1991) was a survey of the entire state of Rhode Island and made no attempt to examine perceived urgency even though they characterized the care as routine.

Mississippi was chosen as the setting for a study to examine the typical patient load of the rural emergency department (Bross, Wiygul, & Rushing, 1991). Mississippi was chosen as the site for the research because 53% of the state was rural, which was twice the national average. The sample consisted of 52 EDs throughout the state which comprised 46.4% of the total emergency departments in the state. One third or 17 of these EDs were randomly selected for an on-site study which involved a retrospective review of the ED records. The 17 selected EDs were located an average of 52 miles from the nearest high-volume, broad-service ED and saw an average of 12 patients per day. Results were gathered four times during the year to correlate increased/decreased use by seasons.
Bross et al. (1991) found that 20% of users in the rural ED lacked any third-party payer (e.g., insurance, Medicare, or Medicaid). This self-payment rate was higher than those seen in urban areas according to the researchers. Also, the average of 12 patients a day was considered low volume for facilities which had previously been assumed to be primary care providers. The primary reason given by subjects for health services was injury (30%), followed by general symptom diagnosis and respiratory diseases based on IC-9-CM classifications. Differences in utilization by race or gender were not significant with 52% white patients and 54% female patients. Adults aged 20-39 years comprised 32% of the visits. Additionally, patients were seen more frequently on the weekends (18.2% on Saturday and 20.1% on Sunday) than weekdays and more frequently between the hours of 3:00 p.m. and 11:00 p.m.

These investigators concluded that findings in this study supported the hypothesis that patient diagnosis and dispositions were comparable between rural and urban EDs. They proposed three areas which were in need of further research: namely, studies to determine if EDs were cost-effective providers of primary health care, information about patient encounters which would compare with urban EDs, and information regarding physician training and staffing in the rural ED in light of treating/transferring seriously ill or injured individuals. The observation was made that rural
EDs may need additional resources to provide staffing in severe emergencies and that regionalization of emergency services may be an alternative to control health care costs.

Similar to this present study, Bross et al. (1991) examined patients in rural EDs throughout a southeastern state. Unlike the present study, these researchers sought to examine the patient load (frequency of visits) as well as the patient diagnoses. Descriptive statistics were used to identify proportions of individuals by age, gender, and race, but the research was not directed toward use of the rural ED for minor illness.

In another study, Neighbors (1986) compared the sociodemographic factors in the adult black American to his/her use of emergency departments for serious personal problems. The problems were classified as physical, interpersonal, emotional, death, or economic.

The researcher used a nationally representative cross-section of adult black individuals based on a 1970 census distribution. From this population, 76 primary areas were selected, and city blocks or groups of blocks were chosen for study. Households with identified black families were contacted, and one person from each household was randomly chosen to complete the interview which was conducted by trained black interviewers. This procedure resulted in 2,107 interviews during 1979 and 1980. Each person was asked to report a situation which had caused them a
significant amount of distress, and answers were categorized into the five previously mentioned problems.

Neighbors (1986) found strong empirical documentation regarding income, employment status, and age as predictors \((p = .001)\) of emergency use among black Americans. Rate of usage was highest among those individuals with physical health problems; however, 15-22% of black patients were being seen in EDs for psychological problems as well. Neighbors (1986) concluded that blacks and other minorities were more likely than whites to seek psychological services in the ED. Unlike most other studies, this investigator advocated use of the ED because of its comprehensive care and stated that hospitals should take steps to upgrade the quality of the ED as well as its outpatient departments. The observation was made that among black individuals, neighborhood health centers were perceived as providing lower level of care than the ED. Also, because of the fee-for-service arrangement with Medicaid, many low income individuals perceived their care as free because no out-of-pocket expense was incurred.

Neighbors' (1986) study was similar to the present study as both investigated the sociodemographic factors of ED use. The difference between the studies was related to patient population and setting as Neighbors (1986) included exclusively black households.
A similar study was performed regarding factors influencing ED use by black and Hispanic individuals (White-Means, Thornton, & Yeo, 1989). This study attempted to examine the relationship among sociodemographic factors, health problems, and ethnic (black and Hispanic) use of the ED for nonemergency health care. The data source used in this research was the National Medical Care Utilization and Expenditure Survey. The total sample included individuals (N = 17,123) who were interviewed at five different times during a 14-month period from 1980 to 1981. The representation of blacks and Hispanics in the survey was comparable to their representation in the nation. The sample population was those individuals (N = 142) who were seen in the emergency room at least one time during the year for a nonemergency medical condition. The research focused on the choice of the emergency room among several medical facilities and the perception of urgency by respondents.

Data were analyzed utilizing bivariate analysis and multivariate analysis with a level of significance at .05. Aday and Andersen's (1974) theoretical model of health service utilization was used in analyzing the perception of need. The researchers asserted that because of the use of an instrumental variable in the analysis of the data, the interpretation of the predisposing, enabling, and need factors were based on an unbiased estimate of their effect.
White-Means et al. (1989) found that use of the ED by blacks and Hispanics was related to the medical condition; however, regardless of the cause, black individuals were significantly more likely to use the ED than Hispanics. The researchers concluded that marital status, gender, age, and medical condition were significantly related to use of the ED for nonemergency conditions. The young age group (18 to 34 years of age) was six times more likely to use the ED than those individuals between the ages of 55 and 64 years; however, frequency of use increased sharply in the 65 and older group with a utilization pattern similar to the 35 to 54 age group. The existence of a physical impairment or a digestive disorder increased the use of the ED for health care. Additionally, blacks and Hispanics were twice as likely to use the ED for treatment of circulatory, respiratory, or arthritic conditions. Recommendations included the necessity of further research into the appropriateness of particular mental conditions and their treatment in the ED, as well as the influence of culture and age on ED use.

Not only did the White-Means et al. (1989) research explore the demographic characteristics of the ED user, but it also investigated the perception of the individual's need to be seen. These areas were also germane to this current research. Even though the White-Means et al. (1989) study was from a national sample, researchers were careful to
represent black/Hispanic patients based on their proportions nationally. The present study used a sample of convenience which yielded approximately 22% black patients who were seen in the ED for minor illness; this was only slightly higher (22% versus 14%) than the representation of black individuals in the county chosen for the setting. Also, White-Means et al. (1989) used Aday and Andersen's (1974) theoretical framework of health care access while the present study used this framework as a reference related to the definition of terms.

Previous health care resources and nonemergency use of the ED was the topic of research conducted by Haddy, Schmaler, and Epting (1987). A retrospective review of 1,003 randomly selected charts from St. Joseph Hospital in Flint, Michigan, was conducted over a 3-month period of time. Two groups were selected: 501 patients who identified having had a physician and 502 who listed no physician on record. Subjects' use of the ED for nonemergency visits was compared. Criteria determining the emergency and nonemergency diagnoses were developed by the researchers and were applied uniformly to both groups of patients. No specific data-gathering instrument was used, and records were reviewed retrospectively for inclusion in the study.

No theoretical framework was identified as a guide for the study. Data were analyzed utilizing chi-square. Haddy
et al. (1987) found that more patients without physicians presented to the ED for treatment of nonemergency conditions. Also there was a significantly higher proportion of patients without physicians in the 21- to 30-year-old age group ($p = .00006$). There was a significantly higher number of married patients in the group with physicians ($p = .01$). Additionally, there was a significant proportion of patients who smoked in the group without physicians ($p = .001$). Patients without physicians were significantly more prone to seek care for upper respiratory conditions than those individuals with a primary physician ($p = .03$). Insurance coverage was associated most with the group of subjects with physicians. It was further reported that use of Medicaid (55%) was associated with the nonphysician group.

The researchers concluded that patients with personal physicians tended to make fewer unnecessary emergency room visits. However, they cautioned against deciding whether a visit was appropriate or inappropriate because patient concerns about health, level of stress, and stressful life events were all contextual stimuli which, from the patient's perspective, made their visit appropriate. Comment was made, however, that if primary physicians were utilized more, there would be a reduction in medical costs as well as increased continuity of care. Haddy et al. (1991) concluded that the findings of this study supported the concept that
individuals with private physicians make fewer unnecessary emergency room visits. The Haddy et al. (1987) study provided direction to the present study as both sought to explore the patient's use of the ED versus a private physician. In the present study, questions were asked regarding the patient's primary physician and the frequency with which this service was used.

Shesser, Kirsch, Smith, and Hirsch (1991) conducted a study at George Washington University Hospital to compare the demographics and motivation of those patients seeking care for minor illness in the ED with those of the general ED population. A sample group of 325 adults, excluding geriatric and pediatric patients, were interviewed concerning demographics as well as identification of previous health care providers and perception of the seriousness of their illness. A control group (N = 224) of general ED patients randomly selected during two 24-hour periods was used for comparison.

The study was conducted during weekdays between the hours of 9:00 a.m. and 6:00 p.m. for the sole purpose of attempting to understand the motivation of patients using the ED when other health care sources were available. All subjects were administered a structured interview by a trained research assistant. The hospital had a minor care area so minor illnesses were able to be assessed
prospectively rather than retrospectively as in most other studies (Shesser et al., 1991).

Results indicated that demographic and social class parameters of the minor illness group were similar to those of the general ED population; however, a greater proportion of men (p = .012) and individuals with increased income (p = .059) was noted in the study group. Patients with lower socioeconomic status (incomes less than $20,000 annually) tended to use the ED because of no previously described health care providers and its convenience, whereas higher income patients (greater than $100,000 annually) used the ED because they could not quickly make an appointment with another health care provider or were away from home. Most of the patients expected to be seen within 24 hours of their decision to seek care (M = 20.8 hours), and most patients were comfortable with care received in the ED.

Of the study group, 82% stated they had no chronic medical problem, and 42% said their condition had originated within 24 hours of their decision to seek care. Only 13.9% of those interviewed stated the ED was their usual source of care. The ideal elapsed time according to the patient's perception of when he/she should see a physician should not have exceeded 20.8 to 26.1 hours.

Shesser et al. (1991) concluded that research was needed to demonstrate outcome of care between primary physicians versus ED care. Also, the delivery of timely,
reliable, quality care (within 24 hours) of an unanticipated minor illness needed to be researched by the medical system. The Shesser et al. (1991) study was used as a guide for this research. The questionnaire used by these researchers was utilized to gather information about the rural client using the ED for minor illness.

The Shesser et al. (1991) study differed from the present study by site and population. That study was conducted at a large urban hospital in Washington, DC, with a very diverse population demonstrated by wide variances in income and education levels. Elderly patients were included in this present study, while pediatric patients were excluded in both studies.

Minor illness and other sources of health care were the topics of qualitative research conducted by Habenstreit (1986). This researcher conducted interviews with 56 nonurgent patients in a large urban hospital in order to understand the motivation behind a patient's choice of the ED when other sources of health care were available in the community. Interviews were held on weekdays between 9:00 a.m. and 5:00 p.m. Interviews were loosely structured and conducted by one researcher over a period of 2 months. Interviews varied in length depending on the response of the participants. No standardized instrument was employed nor was any attempt made to utilize a theoretical framework. Data were analyzed using descriptive statistics.
Habenstreit (1986) found that 75% of those respondents interviewed used clinics and private physicians, but depending on the nature of their condition, cost, quality of care, and accessibility, the ED most suited their needs. Sixty-three percent of the respondents used the ED for primary care with physicians and clinics providing back-up care. Thirteen of the individuals reported having used the ED exclusively for health care. Discussion revealed the respondents were brought to the ED as children and now were bringing their children to the ED for health care. Of the 43 multiple source users, chart analysis revealed that the ED was used for routine illnesses and initial diagnosis and treatment. These respondents indicated that a physician was unaffordable for all their health needs; therefore, the ED was used for conditions that were considered relatively minor and/or temporary. Many respondents believed that the care was free because of billing procedures that allowed them to be seen without paying the money up front. If illnesses were perceived as serious or frightening, some individuals preferred physicians because of shorter waiting time and more personalized attention.

Habenstreit (1986) commented that physicians who derived their primary income from Medicaid had fewer credentials, fewer hospital affiliations, and were less likely to be board certified than community-based physicians who saw few Medicaid or no Medicaid patients. Consequently,
the conclusion was drawn that the low-income patient had few options regarding health care, and the emergency room may have been an appropriate choice.

In comparing the Habenstreit (1986) study to this present research, the purposes of both studies were similar in that both attempted to define the reasons for using the ED. The Habenstreit (1986) study differed by site, population, methodology, and data analysis. The Habenstreit (1986) study was in a large urban hospital with a large proportion of patients being foreign-born, while the present study utilized a rural hospital with few foreign patients.

The crisis situation now facing nationwide EDs was the subject of a recent study conducted by the General Accounting Office (1993). A stratified random sample of 1,025 hospitals was surveyed by questionnaire to collect data on conditions in EDs between the years of 1985 and 1990. The questionnaire was developed in a collaborative effort between the American College of Emergency Physicians, American Hospital Association, Emergency Nurses' Association, Joint Commission on Accreditation of Healthcare Organizations, and the National Public Health and Hospital Institute (GAO, 1993).

The principal findings of the report were that growth in ED use was attributed most to the uninsured, elderly, and seriously ill patients; however, 57% of all ED patients had an illness or injury that was neither an emergency nor
urgent. Forty-three percent of all patients had illnesses or injuries that were less serious and could have been treated in a less expensive setting, according to the investigators. Also, 88% of patients chose the ED for care even when there were alternative sources of nonurgent care available to them. Lack of a primary care provider was given as a reason for choosing the ED in 40% of nonurgent patients. Thirty-seven percent of uninsured individuals or individuals covered by Medicaid reported difficulty in finding a health provider willing to provide services. Consequently, nationwide increases in the ED by government payers amounted to a 34% increase in Medicaid patients, 29% in Medicare, and 15% by uninsured individuals. Eighty-nine percent of all patients were seen by physicians in a timely fashion regardless of the severity of their illness, according to this report. The larger the hospital (greater than 300 beds), the greater the wait for ED users, with 75% of EDs in large hospitals reporting some delay before patients were examined by a physician (GAO, 1993).

This study focused on changing use of the ED, different sources of payment for ED services, and ED timeliness in providing patient care. Many of the collateral findings in this study were the independent variables of the present research (i.e., use of the ED by demographics, perceived urgency, and health care resources).
The GAO (1993) study differed from the present study in methodology, site, and data analysis. The study was focused on utilization of the ED from a health care access viewpoint. Sites were varied from urban to rural, and surveys were completed by hospitals and not patients. No attempt was made to investigate perceptions or attitudes of the ED user in the GAO (1993) study.

In summary, the studies reviewed have investigated many factors related to patient use of the emergency department, demographics, insurance status, diagnoses, and other defined health care resources. The most extensive study reviewed was that done by the General Accounting Office (1993) which concluded that ED visits had risen dramatically nationwide and were found to be related to use of the ED for nonurgent conditions in Medicaid and uninsured patients. Demographics and patient use were significantly correlated by Stern et al. (1991), who found that age, race, income, education, and insurance status were significantly positively correlated with use of the ED. In contrast, Pane et al. (1991) found that the typical ED user was young, low-income, and used the ED for routine basic health care. Neighbors (1986) concluded that among the black population, age, income, and employment status were significantly associated with use of the ED. Also, among the black population, ED care was sought for physical illness as well as psychiatric disorders. These findings were supported by White-Means
et al. (1989) who proposed that black individuals were more likely to use the ED than Hispanics, but in both groups, marital status, gender, age, and medical condition were significantly related to use of the ED for nonemergency reasons. Shesser et al. (1991) was in contradiction to the above studies, with the conclusion that there were no differences in racial, educational, or economic backgrounds in a study group of individuals being seen for minor illness in the ED.

The use of the ED as a first choice for care or use of the ED in absence of a primary physician was investigated by several studies. Scott (1991) concluded in a study of ED use in Rhode Island that an increasing number of individuals was using the ED as a first choice for care. Haddy et al. (1987) reported that patients with personal physicians tended to make fewer unnecessary visits to the ED. Habenstreit (1986) found a significant number of the study population using the ED for primary care. Bross et al. (1991), which was the only study based in a rural emergency department, concluded that the EDs in rural areas were much busier when physician offices were closed. On review of diagnoses, rural EDs were seeing similar caseloads as those of their urban counterparts.

This study attempted to add to the body of knowledge regarding demographics of the ED client, perceptions of illness, previously identified health care resources, and
use of the ED in the rural area. Utilization of the emergency department is a complex problem; however, data gathered from every aspect of utilization can lead to some insights and solutions.
Chapter III
The Method

The utilization of emergency service departments of hospitals for minor illness and primary care has been established in the literature. The purpose of this study was to correlate those variables of demographics, perceived urgency, and previously identified sources of health care with use of the rural emergency department for minor illness. The empiricalization of the problem is described in this chapter including design of the study, method of data collection, and data analysis.

Design of the Study

A descriptive, correlational design was chosen for this study. The purpose of descriptive research is to gather information about the present status of a phenomenon. The phenomenon explored in this study was use of the ED for minor illness. This design was selected because the "aim of descriptive correlational research is to describe the relationship among variables rather than to infer cause-and-effect relationships" (Polit & Hungler, 1991, p. 181). In this study, relationships among the variables of demographics, perceived urgency, and previously identified
sources of health care were explored; therefore, a descriptive, correlational design was deemed appropriate.

**Variables**

As the purpose of this study was to identify variables which may have an impact on use of the ED for minor illness, the focus was to identify those variables of interest including demographics (e.g., gender, age, race, income, education) and method of payment (e.g., Medicare, Medicaid, commercial insurance, private pay). Additionally, perceived urgency (e.g., on a continuum from least serious to most serious in the patient's perception) and previously identified health resources (e.g., private physician, clinic) were correlated to the variable of minor illness (as identified by exclusion criteria) (see Appendix B). The extraneous variable of no available health care providers related to late hours or weekends was controlled by conducting the study only during business hours and on weekdays.

**Setting, Population, and Sample**

The proposed setting for this study was two rural hospitals located in a southeastern state. The hospitals were defined as rural by their bed size (less than 100 beds) and their proximity to a community greater than 20,000 people. The population was those individuals who were using
the rural hospital emergency departments for minor illness, and a sample size of 80 individuals was originally proposed. Cover letters were sent to both hospital administrators with an abstract of the proposed study and a request to conduct the study in their facility (see Appendix C). Only one administrator would allow the study to be conducted in that facility; therefore, the study was conducted in one emergency department of a rural hospital.

The population for the study was individuals seeking care in the emergency department during the daytime hours and on weekdays. A sample of 55 patients was selected by convenience sampling as they registered for care in the ED. No pediatric patients were included in the study because of the requirement of a self-report questionnaire. Confidentiality was protected because no names were used on the questionnaire. A letter of introduction was supplied in conjunction with the questionnaire explaining the research and a statement that completion of the study indicated consent to participate. Subjects also were informed that they could withdraw at any time from participation (see Appendix D). Approval was obtained from the Mississippi University for Women Committee on the Use of Human Subjects in Experimentation prior to the conduction of this study (see Appendix E).
Methods of Data Collection

Techniques/instrumentation. A questionnaire utilized by Shesser, Kirsch, Smith, and Hirsch (1991) was adopted for this study. The questionnaire was developed for use in a study (Shesser et al., 1991) that attempted to describe the motivation for emergency department use by clients with minor illness and to compare the demographics and social class parameters of these individuals with those of the general ED population. Permission for use of the questionnaire in the present study was obtained from R. Shesser (see Appendix F).

Content validity of the instrument was supported by experts in the fields of public health, medicine, and nursing. Reliability of the instrument was not established by test-retest; however, the questionnaire was administered to a group similar to the one in Shesser et al. (1991) study by virtue of the variable of minor illness in an emergency department.

The questionnaire was developed to include demographics of the ED population, method of payment, and perceived urgency. The wording of the questions was left basically unchanged. There were three questions deleted from the original questionnaire. One question dealt with identification of chronic illnesses, the second with identification of chronic medications, and the third with the choice of George Washington University Hospital as a
site for treatment. Information regarding chronic medical conditions and chronic medications was unable to be asked in a self-report questionnaire because of the unlimited number of responses. Information regarding use of a specific ED was not required for this study.

The questionnaire consisted of 18 closed multiple-choice questions and two visual analogue scales. The first 11 questions of the questionnaire dealt with the demographics of the patient seeking care. These included such variables as age, sex, race, marital status, employment, education, and income. The next six questions addressed the patient's choice of the ED for the present illness and his/her use of other health care services in the community. The final three questions explored the perception of the patient regarding his/her illness. Two visual analogue scales of exactly 100 mm in length were used to quantify the degree of seriousness and discomfort the individual felt they were experiencing. The final question dealt with the time interval between the onset of illness and medical intervention. Each patient was asked a range of time from one hour to one week.

Permission for participation was obtained from the participants by use of a cover letter which described the study and identified the researcher. Approval to conduct the study was obtained from the Committee on Use of Human
Subjects in Experimentation at the Mississippi University for Women.

Data were coded by frequency of attribute variables (e.g., number of males, number of whites) and precategorized data, such as race, marital status, method of payment, or other health providers, were preassigned a numerical code (e.g., 1-2-3-4). The visual analogue scale (VAS) is a "straight line, the end anchors of which are labeled as the extreme limits of the sensation or feeling that is being measured" (Polit & Hungler, 1991, p. 310). The scale is normally 100 mm in length and measurements are achieved by a simple measurement of the distance from one end to the patient's mark on the line. The VAS scale used in the original research was horizontal; however, Polit and Hungler (1991) suggested that the vertical line was easier for subjects to use. The vertical VAS was chosen for the present questionnaire.

Exclusion criteria established by Shesser et al. (1991) were adopted for use in this study. These criteria excluded any patient from participation if their ED visit resulted in hospital admission, if they were referred to the ED after evaluation by another health facility, or if they arrived by ambulance. Specific complaints of chest pain, bleeding lacerations, psychiatric crises, or shortness of breath were included among exclusion criteria which would also prevent a subject from participating in the study.
Procedures. The hospital was contacted by written communication advising the administrator of the researcher's desire to perform the study. An interview was then arranged for a face-to-face meeting with the administrator, director of nursing, or ED supervisor. The procedure for data collection was explained, and a sample questionnaire was distributed to these individuals. The procedure for data collection consisted of the ED clerk, researcher, or ED nurse handing out a questionnaire to all ambulatory ED patients registering in the emergency room between the hours of 9:00 a.m. and 6:00 p.m. on weekdays. If these patients consented to participate, they completed the questionnaire. After an individual had completed the questionnaire and had been seen by the ED physician, his/her ED medical record or ED log was reviewed retrospectively for exclusion criteria. If a criterion for exclusion had been met, that questionnaire was discarded. Further, any questionnaire returned by a patient unwilling to participate was discarded. The medical conditions described in the exclusion criteria were provided to the ED clerks and ED staff. If the patient described these as a chief complaint on registration or if these conditions were defined as a chief complaint on the ED medical record, these individuals were excluded from the study. Therefore, subjects were excluded from the study either at the time of the initial ED
registration or retrospectively after reviewing the ED medical record or ED log for exclusion criteria.

The questionnaire required only 1-3 minutes to complete avoiding any conflict with patients being seen promptly. The researcher was present in the waiting room of the emergency department for any questions posed by participants or staff.

Limitations. Polit and Hungler (1991) state that "ex post facto studies are especially susceptible to threats of internal validity" (p. 238) because of the inability to draw cause and effect between the independent and dependent variables. The study is clearly nonexperimental with no attempt made to manipulate any of the variables. Even though descriptive correlational research has a design weakness related to inability to randomize or manipulate the variables, it is strong on realism and enables the researcher to gather a large data base related to a particular phenomenon (Polit & Hungler, 1991).

It was possible that reasons for utilizing the ED for minor illness by any subject was not investigated by the questionnaire. The questionnaire had no stated test-pretest reliability. Validity was supported by experts in the field of medicine, public health, and nursing.

Further, the questionnaire was designed for information gathered by interview and not by self-report. Although the self-report questionnaire lends itself to elimination of
researcher bias, the questionnaire may not have been written simply enough to enable subjects to respond accurately. The visual analogue scale was used because it avoided the use of language for description of pain. This could, however, elicit confusion about what the subject was required to do (Polit & Hungler, 1991). The VAS scale directions were confusing in the questionnaire due to a printing error. External is that which is able to be generalized to other settings (Polit & Hungler, 1991). The external validity of this study was limited by the small sample (55 patients) and limited sites selected for study (one hospital).

**Methods of Data Analysis**

Three research questions were proposed in this study requiring data analysis from a variety of methods. The first research question involved the relationship between the demographic characteristics of the ED patient and use of the ED for minor illness. Within this research question, descriptive statistics were used to described the proportion or percentage of individuals seen within a category (e.g., age, race, income). This relationship was analyzed utilizing chi-square. This statistical analysis was chosen because data were measured mainly on nominal and ordinal scale with only the VAS measurement on ratio scale. Chi-square which measures "proportions of cases that fall into various categories" (Polit & Hungler, 1991, p. 446) was chosen as the best analysis for this data since it was
assumed previous to the testing that certain proportions of individuals would be found utilizing the ED more than others.

Pearson $r$ is a correlation index used when data are measured on an interval or ratio scale (Polit & Hungler, 1991). This statistical analysis measures the magnitude of the relationship between variables. The research question which dealt with ED use, based on the variables of demographics, perceived urgency, and previous health care resources, was subjected to the Pearson $r$ to demonstrate correlation between these variables.

**Summary**

A descriptive, correlational study design was chosen to correlate those variables of demographics, perceived urgency, and previously identified sources of health care with the use of the rural ED for minor illness. The setting, population, and techniques for data gathering were identified. Additionally, coding of raw data and data analysis were described. Limitations of the instrumentation and the study were discussed.
Chapter IV

The Findings

The problems created by inappropriate admissions to the emergency department for minor illness have been defined both from the perspective of the patient and the health care system. Several studies conducted in urban areas have identified certain variables: demographics, perceived urgency, and previously identified health care resources (e.g., primary physicians) associated with increased use of the ED. The purpose of this research was to examine these variables and their relationship to ED use in the rural setting. A descriptive, correlational design was chosen to examine this phenomenon. The purpose of this chapter is to summarize the findings of data analysis in relation to the research questions and sample.

Description of Sample

The subjects (N = 55) included in this study were principally inhabitants of one county in a southeastern state. Participants used the only hospital facility which provided care for a population of 38,714. Of the 19 males included in the study, 13 were white, 5 were black, and 1 was a Native American. Thirty-five females participated; 28 were white and 7 were black. The ages of subjects ranged
from 18 to over 65, with 63.4% of all individuals younger than 44 years.

Results of Data Analysis

Question 1. The relationship between demographic variables and use of the rural emergency department for minor illness was explored. Data were analyzed by descriptive statistics and chi-square statistics. Significant correlations emerged from the variables of gender, race, employment, method of payment, education, source of financial support, and annual income. The relationship of age to ED use approached significance, although marital status was irrelevant. A composite of the demographic findings are presented in Table 1.

Question 2. The second question guiding this study explored the relationship between perceived urgency and use of the rural emergency department. This relationship involved use of visual analogue scales to quantify perceived discomfort and perceived seriousness of respondents. This question resulted in a mean of a 64th percentile of seriousness related by females as opposed to a 49th percentile by males, with a mean of a 71st percentile of discomfort in both groups.
Table 1
Demographics and Use of the ED Utilizing Chi-Square Statistics

<table>
<thead>
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<th>Variable</th>
<th>n</th>
<th>M</th>
<th>$\chi^2$</th>
<th>P</th>
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</tr>
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<td>Over 65</td>
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<tr>
<td><strong>Gender</strong></td>
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</tr>
<tr>
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<td>Grade 1-8</td>
<td>12</td>
<td>7.86</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school</td>
<td>17</td>
<td>7.86</td>
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<tr>
<td>High school diploma</td>
<td>10</td>
<td>7.86</td>
<td></td>
<td></td>
</tr>
<tr>
<td>College</td>
<td>9</td>
<td>7.86</td>
<td></td>
<td></td>
</tr>
<tr>
<td>College degree</td>
<td>5</td>
<td>7.86</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Advanced</td>
<td>1</td>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>Major source of financial support</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self</td>
<td>18</td>
<td>9.00</td>
<td>17.33</td>
<td>.00</td>
</tr>
<tr>
<td>Parents</td>
<td>2</td>
<td>9.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public assistance</td>
<td>12</td>
<td>9.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spouse</td>
<td>9</td>
<td>9.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disability</td>
<td>5</td>
<td>9.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>9.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Yearly income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;$5,000</td>
<td>18</td>
<td>10.40</td>
<td>17.08</td>
<td>.00</td>
</tr>
<tr>
<td>$5,000-$10,000</td>
<td>13</td>
<td>10.40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$10,000-$20,000</td>
<td>14</td>
<td>10.40</td>
<td></td>
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<tr>
<td>$20,000-$50,000</td>
<td>6</td>
<td>10.40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$50,000-$100,000</td>
<td>1</td>
<td>10.40</td>
<td></td>
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</tr>
</tbody>
</table>
Patients also were asked about the duration of their current problem. Results were significant \( \chi^2(5, 54) = 15.78, p = .01 \), with 31% of female subjects reporting their problem originated within 1 to 6 hours (compared to 11% of male subjects) and 22% of males reporting that their problem had been present for more than one week.

Within the parameters of perceived urgency, subjects were asked how long they felt they should wait to seek medical care for the problem they were experiencing. The span of time ranged from less than one hour to more than one week. Results were significant, \( \chi^2(6, 47) = 17.49, p = .01 \), with 40% of males and 54% of females expressing that they should be seen within 24 hours of onset of illness.

**Question 3.** The final research question addressed the relationship between health care resources and use of the rural emergency department for minor illness. Subjects were asked questions related to the frequency with which they had sought medical care in the last 5 years, from where, and from whom. Seventy-one percent of subjects reported receiving care in a private clinic vis a vis public clinics, military hospitals, or HMOs. Frequency of visits ranged from 1 to 13 times, but responses to this question were very limited. Forty-two percent of males and 57% of female subjects reported having used the emergency department for their care within the last 6 months. Seventy-five percent of subjects between the age of 18 and 29 years reported
having no regular source of medical care, while 86\% of subjects over the age of 65 identified a regular source of medical care.

The motivation for choosing the emergency department for care was explored with the results presented in Table 2.

**Additional Information**

Pearson Product Moment Correlation was used to analyze correlation between the variables of discomfort, seriousness, length of time in seeking care, education, income, regular source of medical care, last visit to the emergency department, and age. A significant correlation, $r(43) = .50, p = .00$, was shown between perceived discomfort and perceived seriousness indicating that the more discomfort/pain individuals were experiencing, the more apt they were to perceive their condition as serious. A moderate correlation was shown between older individuals and regular sources of health care, $r(54) = .40, p = .00$, indicating that older individuals are more likely to have a regular source of health care.
<table>
<thead>
<tr>
<th>Reason</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No regular source of medical care</td>
<td>5</td>
<td>21.0</td>
</tr>
<tr>
<td>Males</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td></td>
<td>2.9</td>
</tr>
<tr>
<td>Unable to get appointment</td>
<td>22</td>
<td>18.0</td>
</tr>
<tr>
<td>Males</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td></td>
<td>51.0</td>
</tr>
<tr>
<td>Easier</td>
<td>20</td>
<td>47.0</td>
</tr>
<tr>
<td>Males</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td></td>
<td>31.0</td>
</tr>
<tr>
<td>Problem more than regular MD can treat</td>
<td>3</td>
<td>0.0</td>
</tr>
<tr>
<td>Males</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td></td>
<td>9.0</td>
</tr>
<tr>
<td>Away from home</td>
<td>1</td>
<td>5.0</td>
</tr>
<tr>
<td>Males</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td></td>
<td>0.0</td>
</tr>
<tr>
<td>Do not want to use regular MD</td>
<td>1</td>
<td>0.0</td>
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<tr>
<td>Males</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td></td>
<td>3.0</td>
</tr>
<tr>
<td>Referred by physician</td>
<td>3</td>
<td>11.0</td>
</tr>
<tr>
<td>Males</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Females</td>
<td></td>
<td>3.0</td>
</tr>
</tbody>
</table>

Note. \( \chi^2(6, 55) = 63.24, p = .00. \)
Summary

Descriptive statistics, chi-square, and Pearson Product Moment Correlation were used to analyze raw data gained from a self-report questionnaire. Each research question was analyzed and findings were described.
Chapter V
The Outcomes

Use of the emergency room for minor illness has been established as a health access problem in the United States. Many studies have been examined regarding this problem, but no studies were found which examined the problems of use in the rural emergency department by clients. The purpose of this research was to explore this phenomenon and relate use of the emergency department for minor illness with specific variables: demographics, perceived urgency, and previously identified sources of health care. Three research questions were generated relative to use of the emergency department and each specific variable. Roy's (1976) Adaptation Model provided the theoretical framework.

A self-report questionnaire was adapted from a study performed by Shesser et al. (1991). This questionnaire was distributed to a convenience sample of 55 ambulatory subjects registering for care in a rural emergency department in a southeastern state. Data were gathered between the hours of 9:00 a.m. and 6:00 p.m. on weekdays. Exclusion criteria adopted from Shesser et al. (1991) were used to eliminate those individuals with disorders that would be appropriate for an emergency setting. Pediatric
patients also were excluded from the study due to the self-report nature of the data. Data were analyzed utilizing descriptive statistics, chi-square, and Pearson Product Moment Correlation.

Summary of Findings

Use of the emergency department for minor illness was guided by three research questions which sought to examine the relationship between demographics, perceived urgency, and health care resources. Significance was found between the demographic variables of gender, race, education, employment, method of payment, major sources of financial support, and income with use of the ED for minor illness. Further, significance was determined between the onset of illness and the subject's decision to seek treatment. Subjects' perception of discomfort was strongly \( r = .50 \) correlated with their perceived seriousness of their disorder. The researcher further identified that a significant number of individuals chose the emergency department because of an inability to obtain appointments with health care providers or because they found it more convenient.

Discussion

Not surprisingly, use of the ED for minor illness was significantly related to certain demographic characteristics of gender, race, education, employment, method of payment,
major sources of financial support, and income. Gender difference in this study was an interesting finding as females were represented in the general population at 1:1, but their use of the ED for minor illness was 2:1. This result contradicts the Shesser et al. (1991) study which found males utilized the ED more often, although Shesser et al. (1991) concluded that the higher proportion of males found in their study was possibly related to the exclusion of the over 65 age group. The elderly were included in this study which may account for the reversal of these findings since females tend to outlive males. On the other hand, Bross et al. (1991) conducted research in a rural setting and found no significant differences between gender and ED utilization across the age span. One other possible explanation for increased use of the ED by women may be attributed to the time frame in which the study was conducted as unemployed women might utilize the ED earlier in the day than their employed male counterparts.

Race as a factor has been significant in most studies, with nonwhite individuals seeking care far more than whites (Stern et al., 1991; White-Means et al., 1989); however, this study found a much greater proportion of whites than blacks using the ED. A greater proportion of white subjects was expected as ED utilization mirrored the race demographics of the community. The only rural study
reviewed (Bross et al., 1991) found no significant difference between the races and utilization of the ED.

In this study, education (less than a high school diploma) emerged as a significant variable. This finding has not been significant in other studies involving demographics, such as Bindman et al. (1991), Neighbors (1986), and Shesser et al. (1991). However, Stern et al. (1991), in comparing admissions from the ED among six urban and community hospitals, found education (0-11 years) to be significant in five of those facilities. As this current sample eliminated all those individuals who were less than 18 years old, these education-age factors could not be substantiated.

Employment status also was a significant finding of this study. Unemployment status was found as a significant variable in many other studies examining use of the ED (Neighbors, 1986; Stern et al., 1991). The premise for this finding is related to the unavailability of health insurance, lack of money, and the subsequent lack of access to health providers.

Method of payment has been a volatile issue in utilization of the ED for minor illness among many studies. Most researchers have found that ED users for minor illness either have no insurance (self-pay) or are receiving government assistance (e.g., Medicare, Medicaid, Worker's Compensation). Sixty-nine percent of the individuals in
this study fell into this category as supported by other researchers (e.g., Bindman et al., 1991; Friedman, 1991; GAO, 1993). This finding documents the impact of economics on health access problems.

In further exploration of economic issues, a question was asked regarding the subjects' major source of financial support. Thirty-one percent of subjects in this study identified public assistance or disability as their major source of financial support. This finding is contradictory to the results of the study by Shesser et al. (1991), although that study was conducted in a large urban hospital in Washington, DC. Low income of participants was not an unexpected finding in this study. Sixty percent of all individuals using the ED for minor illness were found to have income less than $10,000 annually. Neighbors (1986) and Stern et al. (1991) had similar findings for their ED subjects. In the 1990 census for the county, the per capita income for the county was $9,418 annually. The creation of a rural health clinic for the low-income individuals in this community would certainly be appropriate to enhance access to health care for this population.

Roy's Theory of Adaptation (1976) describes role function as that behavior based on an individual's position in society. Independent behaviors defined by Roy were those which included initiative-taking. Application of these assumptions to this sample was appropriate as socioeconomic
status and educational achievement influenced health-seeking behaviors.

The second research question explored was related to perceived urgency of the client seeking care in the ED for minor illness. A significant number of individuals (37%) reported having suffered with the problem which caused them to seek care for less than 6 hours. These same individuals expected to be treated for that condition by a physician within 24 hours of its onset (57%). A strong correlation existed between the subject's perception of discomfort and seriousness of his/her condition. Other researchers have had similar findings (Haddy et al., 1987; Shesser et al., 1991; White-Means et al., 1989). Since pain/discomfort is dependent on such variables as culture, knowledge, and self-concept, it is unlikely that individuals view their condition as appropriate or inappropriate based on the objective data of the diagnosis (Roy, 1976; White-Means et al., 1989).

Absence of a health provider was a significant problem in studies by Habenstreit (1986) and Haddy et al. (1987). The choice to seek care in the ED was significant in that 76% of individuals in this study were either unable to obtain an appointment with a health care provider (e.g., physician) or found it more convenient to use the ED for treatment. This finding was supported by Habenstreit (1986), Shesser et al. (1991), and White-Means et al.
(1989). There are no urgent care clinics or rural health care clinics in this community. Most individuals were seen either in private clinics or the emergency department. The physician ratio in this county was 1:1249, resulting in busy private clinics unable to accommodate the individual with an acute illness.

An assumption was made in the study that perceptions of individuals were based on their adaptive mechanisms. Roy (1976) postulates that individuals will use help-seeking behaviors to obtain social reinforcement of being nurtured. Use of whatever facilities are available to them is supported by this theory.

Conclusions

The findings of this study revealed that patients are using the ED for minor illness. Statistically significant relationships were shown between certain demographic characteristics of gender, race, employment, major source of financial support, insurance, education, and income and use of the ED for minor illness.

Findings related to gender and race in this study revealed that females and whites tended to use the ED more frequently for minor illness. These findings were refuted by studies reviewed which found that males tended to use the ED more than females (Shesser et al., 1991) and blacks more than whites (Stern et al., 1991). Patients who used the ED for minor illness were found to have higher unemployment,
lower education (less than high school graduate), lower income (less than $10,000 annually), no insurance (or Medicaid), and more public financial support (disability or public assistance). These findings were supported in research (GAO, 1993; Neighbors, 1986; Stern et al., 1991).

Findings regarding use of the ED for minor illness in relationship to previously identified health care resources were supported by Habenstreit (1986), Shesser et al. (1991), and White-Means et al. (1989). This study found individuals using the ED either because they could not obtain an appointment with their usual health care provider or because it was more convenient for them.

Perceptions of the perceived seriousness of the illness and the length of time involved in seeking care were supported by Haddy et al. (1987), Shesser et al. (1991), and White-Means et al. (1989). Individuals participating in this study were found to have a strong correlation between their perceived discomfort and the seriousness with which they perceived their illness. Further, subjects expected to be seen within 24 hours of the onset of their illness (Shesser et al., 1991).

Roy's Adaptation Model provided the framework for evaluating the profile and health-seeking behaviors of the minor illness patient. Role function (demographics) is defined by Roy as an individual's position in society. Health-seeking behaviors and perceptions of illness are
based on an individual's adaptive mechanisms and support Roy's Theory of Positive Adaptation in the face of disequilibrium.

**Implications for Nursing**

Several implications for nursing were derived from this study. They include practice, research, and theory. The development of the nurse practitioner role in the emergency department or in a health care clinic adjacent to the emergency department, to provide access to health care, is a viable solution to improve misuse of the ED. This action could increase productivity and decrease cost for patients with minor illnesses.

Only one other study was found related to utilization of the rural ED. The role of the nurse practitioner in the rural community has been proposed as a solution to health access problems of medically underserved areas. Further research is needed to document and support findings from this study.

Roy's Adaptation Model was found to be an excellent theoretical framework from which to analyze data relating to health-seeking behaviors. Motivation about when and where to seek care has been largely ignored. Further research utilizing Roy's model is suggested.
**Recommendations**

Based on the findings of this study, several recommendations can be made:

1. Because of the small sample and limited setting, findings from this study cannot be generalized; therefore, further research utilizing larger samples and diverse sites is needed to further explore use of the ED for minor illnesses.

2. Since this study was conducted between the hours of 9:00 a.m. and 6:00 p.m. and excluded pediatric patients, it is postulated that even greater misuse of the ED could be documented if the study were replicated with no time constraints or limitations on sample by age.

3. In view of the fact that little research has been found on use of the rural emergency department for minor illness, it is recommended that more studies be published distributing findings.

4. Since this study was conducted only in an emergency department, predictive use of the ED could not be determined; therefore, it is recommended that this study be replicated utilizing alternate sites for health care in comparison.

5. Because theory is important to guide research, it is recommended that Roy's (1976) Adaptation Model be used in those studies analyzing health-seeking behaviors.
6. Because there are few health care resources available to subjects involved in this study, it is recommended that a nurse practitioner be considered for a collaborative practice with a physician in either a rural health clinic or outpatient clinic adjacent to the emergency department.
REFERENCES
References


poor and high-cost patients. *Journal of American Medical Association, 266*(16), 2238-2243.


APPENDIX A

DEMOGRAPHICS QUESTIONNAIRE
Demographics Questionnaire

Record Number: ______________________
Zip Code: __________________________

Directions:
Please check (✔) your answer of choice.

3. Age:
   ___ 18-29
   ___ 30-44
   ___ 45-65
   ___ Over 65

4. Sex:
   ___ Male
   ___ Female

5. Race
   ___ Black, non-Hispanic
   ___ White, Non-Hispanic
   ___ Hispanic
   ___ Native American
   ___ Asian
   ___ Other

6. Marital Status
   ___ Single
   ___ Married
   ___ Other

7. Employed
   ___ Yes
   ___ No
8. Method of Payment

___ Self-pay
___ Private insurance
___ HMO
___ Medicare
___ Medicaid
___ Workmen's Compensation
___ Other

9. Education

___ None
___ Grades 1-8
___ High school
___ High school diploma
___ College
___ College degree
___ Advanced degree

10. What is your major source of financial support?

___ Self
___ Parents
___ Public assistance
___ Spouse
___ Disability
___ Other

11. What is your yearly income level?

___ Less than $5,000
___ $5,001 - $10,000
___ $10,001 - $20,000
___ $20,001 - $50,000
___ $50,001 - $100,000
___ More than $100,000

Why did you choose the emergency department for your care today?

___ No regular source of medical care
___ Unable to get appointment with usual source of care
___ Easier to go to the emergency department
___ Problem is more than regular doctor/nurse practitioner can treat
___ Away from home
___ Do not want to go to regular doctor or nurse practitioner
___ Referred by my physician
How long have you had the current problem?

___ More than one week
___ 3 to 7 days
___ 1 to 3 days
___ 6 to 12 days
___ 1 to 6 hours
___ Less than 1 hour

Do you have a regular source of medical care?

___ Yes
___ No

If so, where?

___ Public clinic
___ Private clinic (physician)
___ Veterans Administration
___ Keesler
___ HMO
___ Emergency department
___ Urgent care clinic
___ Nurse practitioner/midwife
___ Other

How many times did you see a medical doctor or nurse practitioner in the last 12 months? Where did you go?

<table>
<thead>
<tr>
<th>No. of times</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Public clinic</td>
</tr>
<tr>
<td></td>
<td>Private clinic (doctor)</td>
</tr>
<tr>
<td></td>
<td>Veterans Administration</td>
</tr>
<tr>
<td></td>
<td>Keesler</td>
</tr>
<tr>
<td></td>
<td>HMO</td>
</tr>
<tr>
<td></td>
<td>Emergency department</td>
</tr>
<tr>
<td></td>
<td>Urgent care clinic</td>
</tr>
<tr>
<td></td>
<td>Nurse practitioner/midwife</td>
</tr>
<tr>
<td></td>
<td>Other</td>
</tr>
</tbody>
</table>

When was the last time you used an emergency department?

___ More than 5 years ago
___ 1 to 5 years ago
___ 6 to 12 months ago
___ 1 to 6 months ago
___ Less than one month
___ Never
The line below is a scale of how serious a medical problem is. The least serious medical problems are closer to the left side, such as a problem that some people might not even go to the doctor with. The right end of the line is the most serious, such as a problem that could kill or cripple you.

Place an X at a spot on the line where you feel your medical problem would be.

Least ________________________________________ Most Serious

The line below is a scale of discomfort. It describes how much discomfort or pain a person is in. Please place a mark at the spot on the line where you feel your discomfort is.

No discomfort ________________________________________ Severe discomfort

Thank you for your participation in this research. Please make sure your name is not on this questionnaire. I am only interested in your answers and want to protect your privacy.
APPENDIX B

EXCLUSION CRITERIA
Exclusion Criteria

Patients are excluded if:

1. Their visit results in a hospital admission.

2. They were referred to the emergency department after having been evaluated in any health care facility.

3. They arrive by ambulance.

4. Their chief complaint includes:
   - Chest pain in men over 35
   - Severe abdominal or flank pain
   - Persistent shortness of breath
   - Acute, active vaginal bleeding
   - Lacerations or chemical burns
   - Change in mental status
   - Hearing voices, major depression
   - Suicidal, homicidal

Their emergency room visit results in

- Treatment with an indwelling IV catheter
- Treatment with parenteral analgesic/sedative
- Evaluation with special radiological procedure (e.g., CT, IVP)
May 4, 1993

Dear Mr. ______________________,

I am a registered nurse and family nurse practitioner graduate student at Mississippi University for Women. I am conducting a research study examining the correlation of patient demographics with patient use of the rural emergency department for minor illness. I would appreciate the use of your facility for this research study. Subjects who are registering for treatment of minor illness and who are willing to participate will be included in this study. This study will not interrupt the daily routine of your facility. No names are identified, no risks are anticipated, and the subject's permission will be obtained prior to participation.

The benefits of this study will be an increase in the body of knowledge pertaining to use of the emergency department, as well as specific data pertinent to your facility and use of local health care providers.

I am enclosing an abstract of the proposed study along with a copy of the approval from the Committee on Use of Human Subjects in Experimentation from Mississippi University for Women. I would like to discuss conducting research in your facility at your convenience. I will call on May 7th to set up an appointment.

Thank you for your time and consideration.

Respectfully submitted,

Judith Caplinger, RN, BSN
19246 Highway 45
P. O. Box 53
Kiln, MS 39556
(601) 255-3421
APPENDIX D

INFORMED CONSENT
Dear Emergency Department Patient,

May I introduce myself. I am a registered nurse who is working toward a master's degree in nursing at the Mississippi University for Women. I am conducting research in the emergency service department of this hospital. This information will be provided to the hospital and other health care providers so that they might better meet your needs.

I would appreciate your participation in this study. Realizing that your time is limited, I am using a short questionnaire that should take no more than 10-15 minutes to complete. There are no risks associated with participation in this study and health care provided in the emergency department is not dependent on your participation in this study. Would you complete the attached questionnaire while you are waiting to be seen?

Although participants in this study will remain anonymous, I encourage you to call me about the study itself if you have any questions. I will also be available in the waiting room at the time you are completing the questionnaire to answer your questions. I will be happy to share the results of this research with you when it is completed.

I am only interested in your answers, but not your name, so please do not put your name on the questionnaire.

I will consider completion of this survey consent to participate. You may refuse to answer any questions and may withdraw from this study at any time. Thank you so much for your time!

Sincerely,

Judith Caplinger, RN, BSN
Kiln, MS
(601) 255-3421
APPENDIX E

APPROVAL OF MISSISSIPPI UNIVERSITY FOR WOMEN COMMITTEE ON USE OF HUMAN SUBJECTS IN EXPERIMENTATION
March 17, 1993

Ms. Judith Caplinger
c/o Graduate Nursing Program
Campus

Dear Ms. Caplinger:

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

I wish you much success in your research.

Sincerely,

Thomas C. Richardson
Vice President
for Academic Affairs

cc: Mr. Jim Davidson
    Ms. Jeri England
    Dr. Nancy Hill
    Dr. Rent
APPENDIX F

PERMISSION TO USE TOOL
October 15, 1992

Judith Caplinger R.N., BSN
PO Box 63
Klin, Mississippi 39556

Dear Ms. Caplinger:

Enclosed is a copy of the instrument used to collect our ED demographic data. I apologize for not having a clean copy, but I trust it will be useful for you.

If you have any further questions, do not hesitate to call or write.

Sincerely yours,

Robert Shesser M.D., M.P.H.
Vice Chairman, Department of Emergency Medicine
Professor of Emergency Medicine and Medicine
George Washington University