AUDIENCE INTEREST IN MASS MEDIA MESSAGES ABOUT BEACH HEALTH AND SAFETY AT GALVESTON ISLAND STATE PARK, GALVESTON, TEXAS

A THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF MASTER OF SCIENCE

IN THE GRADUATE SCHOOL OF THE

TEXAS WOMAN'S UNIVERSITY

COLLEGE OF NURSING

BY

NORMAN H. PATRICK, B.S.N.

DENTON, TEXAS

MAY 1979

The Graduate School

Texas Woman's University

Denton, Texas

April 27, 1979

We hereby recommend that the thesis prepared under our supervision by Norman H. Patrick entitled Audience Interest in Mass Media Messages About Beach Health and Safety at Galveston Island State Park, Galveston, Texas

be accepted as fulfilling this part of the requirements for the Degree of Master of Science.

Committee:

Mary Elizabeth Benedict
Chairman

Helen A. Garrison

Langston E. Hawkins

Accepted:

Phyllis Bridges
Dean of The Graduate School

ACKNOWLEDGMENTS

Grateful acknowledgment is made to the following for their personal and professional assistance during the course of this learning experience:

Edith Wright, RN, whose professionalism promoted this student's creativity and whose teaching style encouraged his potential.

My committee, Mary Elizabeth Benedict, Dr. Helen Gaevert, and Dr. Douglas Haskin for their efforts to help me make this study a comprehensive, complete and pragmatic investigation and not just an "ivory-tower" activity.

Dr. Helen Ptak, Dr. Shirley Steele, Dr. Stephanie Farley Pardue, Dr. Patricia Beare, Dr. Candace Lockhart and Dr. Russell Bennett.

Mr. Peter Peltier, Director of the Galveston Island State Park, Texas State Park officials and staff for their willing assistance.

Claire M. Svrcek, RN, MSN, for her many helpful suggestions, words of encouragement, and peer validation.

Officers and enlisted members of the Galveston OJT Site of the 4005th U.S. Army Hospital Augmentation (1000B), U.S. Army Reserve.

Dr. Dorothy M. Damewood, Dean, University of Texas School of Nursing at Galveston, UTMB, for the support and professional freedom afforded me during my graduate studies.

Rosa Lee Bachtel, for her expert typing, meticulous assistance and many words of encouragement.

The study's existence reflects the encouragement, support, assistance and faith of my wife, Vicki, who insisted that some day I would be writing the acknowledgments, when I doubted it, and whose contribution cannot be expressed here.

TABLE OF CONTENTS

Chapter

LIST OF TABLES

Table

Table

Table

Table

LIST OF FIGURES

Figure

CHAPTER 1

INTRODUCTION

The professional nurse, as a health teacher, attempts to help each client reach his maximum health potential by considering the total person and his environment. The community health nurse seeks identified target populations and assists in the planning, implementation and evaluation of health education programs. While considering the "total person" the community health nurse asks these questions concerning the potential health education of a target population: What do the people want to learn? What is important for them to learn? What would activate the audience's motivation to change their attitudes and behavior? Perhaps even more fundamental: What messages containing information and health motivation principles will be of interest to them (Worden, Sweeney, & Waller, 1978)?

When the professional nurse involves oneself in health education on an individual basis, in a group, or in the community at large, one is concerned with purposes and processes designed to answer questions concerning the target populations (Grout & Watkins, 1971). There is a need to initiate health education measures designed for the special tourist population utilizing the Galveston beaches in order to reduce

the number and severity of preventable accidents ranging from minor jelly-fish stings to the loss of lives through drownings. The relevance of such educational needs can be measured by the evidence of the large number of visitors (4,451,450 estimated in 1976) and the morbidity and mortality data concerning tourists visiting the beach (Galveston Chamber of Commerce, 1977). Morbidity and mortality data were compiled using records of the Galveston City and County Health Departments, City of Galveston Emergency Medical Services, the Beach Patrol and treatment records of two graduate nurses employed to assist the beach patrol in 1976. These data indicated most tourist accidents are related to the beach environment and a high percentage of these involve visitors to Galveston County. For example, 68 out of 87 water fatalities from 1971 to 1974 involved persons living outside Galveston (Galveston County Health District, 1975).

Personnel providing emergency and protective services for tourists in Galveston and the Galveston Island State Park agree that the visitor requires a better understanding of certain health and safety hazards and regulations designed to prevent beach related injuries. Anderson (1973) stated that the unaware recreationist has a higher probability of being involved in accidents. Becker and Maiman (1975), developing their model of predicting compliance behavior, mentioned studies of health behavior that have yielded

positive correlations between relatively high levels of perceived vulnerability and subsequent compliance with medical recommendations. Identification of the tourists' needs and the importance tourists attach to what they receive as accident prevention health information will provide input from the target population that can be utilized to guide a community assessment process and to aid in the planning of successful health education programs.

Statement of the Problem

The present knowledge of beach recreationists' interests in beach health and safety concepts was too limited to enable the health education planner to assess and prescribe an appropriate and acceptable health education program.

Statement of the Purpose

The purposes of this study were:

1. To describe demographic, attitudinal, and situational variables of the visitor population of Galveston Island State Park.
2. To identify selected subgroups of visitors to the Galveston Island State Park based upon demographic, attitude, and situational variables.
3. To measure a select group of park visitors' levels of interest in 14 selected health and safety message concepts.

4. To determine if there are significant relationships between levels of interest in health and safety messages and subgroup affiliations.

Background and Significance

Resort beaches continue to be a popular vacation and recreational area for an American population in pursuit of relaxation. The beaches of the Gulf Coast of Texas are generally an unsupervised area attracting millions of tourists annually (Harris, 1976). The facilities of Galveston Island State Park (GISP) are well planned, fully developed and controlled by a staff of park administrators and attendants. The park, located on the west end of the island, generated over 21,000 camping permits from September 1977 to August 1978. The main attraction to the park tends to be the well-developed campsites adjacent to the beach and a vehicular free beach (Schwartz, 1977). Campgrounds are congregated in several small sites with a central concession area. No first aid facilities or health education programs are presently provided by the park and provision for emergency medical services is complicated by the park's distance from major medical facilities. The results of a survey of interest in health and safety on the beach may influence fund providers to finance preventive activities (largely educational) and limited secondary interventions (first aid).

Morbidity and mortality data concerning tourists visiting the beach suggest that beach health and safety measures to protect beach visitors are needed. Two nurses were employed in 1976 by the City of Galveston Health Department to assist a pre-existing 19 member Beach Patrol. Their purpose was to administer first aid to injured beach tourists. The Beach Patrol treated 1,485 patients in 1976. Of the injuries, 90% were for jelly-fish stings (Scott, 1977). During peak months of May to August, 1976, 61% of the professional nurses' interventions were for treatments of jelly-fish stings. Other treatments were administered for problems such as splinters, lacerations, abrasions, puncture wounds, foreign bodies in extremities, heat exhaustion, severe sunburns, near drownings and other medical problems.

Of all city ambulance dispatches during the peak tourism month of May 1977, 35% were for injured tourists. Ten of the 11 drowning victims in 1977 were visitors from outside the City of Galveston. There have been 87 drownings from 1971 to 1974 in Galveston. Of these, 68 involved persons living outside Galveston (Galveston County Health District, 1975).

During informal discussions held with city, county, and health officials concerned with jurisdiction and safety of beach visitors and property, six subjective factors

predominated. Perceptions of the officials regarding the tourists include:

1. Lack of knowledge of potential hazards of outdoor, water related activities.
2. Low priority on accident prevention set.
3. Lack of knowledge of preventive health measures that could be used to prevent injuries from accidents.
4. Generally careless attitude during the pursuit of recreation.
5. Generally non-compliant behavior concerning specific regulations of the city and county that are designed to protect beach visitors.
6. Lack of orientation to modes of entry into "out-of-town" health care systems.

A limited community health survey conducted by the researcher in the Fall of 1977 concerning tourists visiting the beaches of Galveston, Texas failed to reveal any health education activities or programs directed toward this population. Tourism figures of the resort city indicated an estimated four and one-half million visitors in 1976, which is 72 times the 1970 population of the City of Galveston. A Junior Chamber of Commerce survey (1966) indicated that 90% of those surveyed who visit Galveston do so to enjoy the beaches. When considering subjective and objective facts of beach hazards, the number of visitors and the morbidity/mortality

figures of accidents occurring on the beach, the tourist population is a target group which needs health programs.

The limited community health survey identified variables of health status of tourists. Mortality statistics from the City Health Department (1975) indicated that 86% (73) of the accidental deaths for that year occurred to visitors from out of town. The highest percentages of accidental deaths occurred from various accidents and drownings. Data indicated certain subgroups experienced more health problems than did others. Severe jelly-fish stings occurred more frequently in the younger population than in the older age group. Drowning rates were significantly high in the 21 to 35 age group. Rates of morbidity/mortality of individuals from certain places of residence tended to correspond with overall visitation trends.

Significantly different types of injuries occurred to those individuals depending upon their activities while visiting Galveston. Subjective interviews indicated that those who had experienced a health hazard were more opinionated on the subject than those who had a carefree trip. Those who had visited Galveston many times tended to be more health conscious than first time visitors. Subgroups of the visitors to GISP can be identified with the community assessment data and demographic data from camping permits and questionnaires. Combined with a determination of the level of interest on

health and safety concepts, the data provides an objective description of the beach tourist target population and data concerning the tourists' health education needs and interests.

Research Questions

This study addresses the following research questions:

1. What are the subgroups of the visitor population of GISP as based upon demographic (age, sex, state of residence, education, income, occupation), attitude (need for beach health and safety classes, attendance of classes, susceptibility to beach health hazards), and situational variables (previous encounters with beach hazards, park activities, purpose for park visit, affiliation)?
2. What are the park visitors' levels of interest in 14 selected health and safety message concepts?
3. Are there any significant relationships between levels of interest in health and safety messages and subgroup affiliation?

Definition of Terms

The following terms are defined to allow for a common understanding:

1. Hazards--selected health risks unique to the beach environment identified as environmental epidemiological causes of beach accidents.

2. Health--"a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity" (WHO, 1946, p. 3).

3. Health and safety education--"process that bridges the gap between health information and health practices" (President's Committee on Health Education, 1973, p. 17).

4. Interest--"an attitude, a relatively stable set or disposition, and not a form of overt behavior" (Haskins, 1960, p. 552).

5. Interest ratings--a specific empirical designation derived from Haskins' thermometer-like scale of 0-100 where zero equals "extremely sure I would not like to hear more" to 100 which equals "extremely sure I would like to hear more."

6. Safety--activity designed to prevent accidents and sudden episodic health problems in the beach environment.

7. Subgroups--identified sample data arranged in categories according to selected demographic, attitude, and situational variables.

8. Variables, attitude--identified sample data reflecting attitudes of the sample concerning the need for beach health and safety classes, attendance of "on-the-beach" classes, and susceptibility to beach health hazards.

9. Variables, demographic--identified sample data reflecting age, sex, type of park permit, education, income, occupation characteristics.
10. Variables, situational--identified sample data reflecting previous encounters with beach hazards, park activities, purpose for the park visit, group size, and affiliation.

Limitations

The limitations of the study include:

1. The park permit contains only the name of the group member completing the permit, therefore the sample was limited only to those individuals named on the permit.
2. Factors other than those under study may influence interest ratings; variables were not controlled.
3. The applicability of the results of the study were limited to GISP visitors who had filled out camping permits.

Assumptions

The assumptions of this study include:

1. An individual completing a camping permit was also a beach user.
2. The sample population was able to read and to comprehend the English language.

Summary

Various factors are important for the planning of mass media programs in health education. Community health nurse specialists must consider in program planning what is important for the target population to know and what will be of interest to them. The purposes of this study were: (1) to identify selected subgroups of visitors to GISP, (2) to measure the sample's level of interest in beach health and safety messages, and (3) to determine if significant differences exist in the level of interest between the subgroups. The study provides objective data about the beach tourist population in regard to health and safety education program planning.

Chapter 2 includes a review of the literature concerning the professional nurses' involvement in mass media health education, recreational safety health education approaches, mass media target population identification, and community assessment implications concerning the tourists visiting the beaches of Galveston, Texas. In addition, related studies concerning recreational safety and population characteristics and secondary versus primary prevention for beach tourists are included. Chapter 3 consists of a detailed presentation of the methodology used in the study. Chapter 4 is an analysis of the data which includes an interpretation of the statistical findings. Chapter 5 summarizes the study,

recapitulates the steps that have proven to be helpful or less than helpful, and enumerates or discusses implications to the nursing profession. Recommendations for use of the data and for further studies to scientifically describe the beach tourist population for health education programs are included.

CHAPTER 2

SURVEY OF THE RELATED LITERATURE

The research presented in this study directly concerns identification of the level of interest in health education of a transient beach visitor population. Present knowledge of the beach visitors' interests in beach health and safety concepts is too limited to enable the health education planner to assess and prescribe appropriate and acceptable health education programs. In an effort to successfully develop concepts pertinent to the process of health education planning for specific target populations, both manual and computer searches of the related literature were conducted. The following areas are considered in this chapter: (1) beach tourists at risk, program planning and the community health nurse; (2) primary or secondary health intervention for beach toursits, (3) health education: a community health nursing role; (4) mass media and health education including issues concerning health education and the mass media and implications for the community health nurse; (5) target population identification for health education, including populations' attitudes and beliefs and interest predictions; (6) recreational research; and (7) concepts of recreational safety education.

The health education planner is faced with an insufficient understanding of the levels of interest of specific health and safety concepts by beach tourists and of specific educational planning implications for the beach tourist population. The current deficiency in understanding the specific needs and desires of beach users may be a result of the various motives and activities concerning recreational uses of the beach. Perhaps the activities and needs of beach users may be "too commonplace" to deserve special attention (Schwartz, 1978, p. 10). "Going to the beach" enjoys a long tradition in the history of American recreation, therefore health education implications may seem to those in the health professions as commonplace. The health professional would anticipate that the judicious use of "common sense" would be all that is required to prevent the morbidity and mortality associated with beach usage. Whatever the assumptions of the health professional, tourists continue to be seriously injured and killed as a result of beach hazards (Strasser, Aaron, & Bohn, 1964).

The literature indicated the health education planner produces effective programs when the target population is included in the planning process. The health educator has recognized that early identification of the needs of consumers is a time saving and more acceptable approach to health education. Understanding the need to plan with

clients and to identify relevant needs has encouraged studies seeking definitions of pertinent characteristics of the target population.

Beach Tourists at Risk, Program Planning and the Community Health Nurse

Because a community includes many different categories of people, community health nursing seeks to include them all in its service. In an effort to maintain distributive care for the community, the Master's prepared community health nurse is qualified to undertake the task of identification, assessment and program planning and evaluation for special groups at risk. Community health nursing focuses on nursing the community rather than nursing in the community (Robischon, 1971). It is in the context of the community as a patient that this study addresses a special population at risk which is not readily associated with the nursing profession. Tourists who visit our nation's beaches represent a unique and relatively neglected special population group which continues to experience severe morbidity and mortality as a result of a multitude of beach related health hazards. Community health nursing should include recreating beach tourists as a group at risk which needs nursing intervention.

If primary prevention means to keep people well, then the community health nurse may be expected to work outside traditional health care settings. The community health nurse

is challenged to take risks and move outside the "security" of health care institutions and even outside the traditional nursing role (Hitchcock, 1970). Working with individuals not labeled as patients has been shown to enable the community health nurse to intervene effectively in promoting health and preventing illness. Hitchcock (1970) advised that the new setting and its rewards raises more issues that must be addressed. One such issue is that the community health nurse must spend more time becoming better acquainted with those with whom he/she must provide service. The concept of meeting clients' various needs "as they request them," rather than just telling them what they need, is an uncomfortable and time consuming approach to which the nurse is not accustomed. The community health nurse is often so involved in supplying supposedly "needed" services that the nurse neglects to hear clients stating that the way services are offered render those services useless for clients' needs (Hitchcock, 1970).

Nursing as a profession has discussed for years the concept of primary illness prevention. Yet, the literature discussed relatively few research projects that deal with the prevention concept. Nursing practice has tended to focus much more on the more tangible secondary and tertiary services. Highrighter (1977) reviewed the status of community health nursing research and found that the studies were

primarily concerned with service delivery and evaluation for health problems. She stressed the need for improvement in research concerning program evaluation and for types of programs such as prevention that have yet to be studied.

Innovative and creative nursing approaches will assist the community nurse in delivering therapeutic care in expanded settings. There is more to community health nursing than "family-oriented care" delivered outside the hospital. Community health nursing can be more accurately defined as the delivery of nursing care focused on group health problems in contrast to individually oriented care. Williams (1977) described a "conceptual and semantic muddle" when discussing what is meant about community health nursing. Williams (1977) concluded that there is a renewed interest in providing increased amounts of personal health services through community based settings. She questioned, however, whether or not these services are being planned, delivered, and evaluated in a manner consistent with public health philosophy. She also reminded the educator that, to resolve some of the confusion about the foci of community health nursing, an effort must be made to distinguish between medicine/nursing practice and public health practice. Nursing or medicine concentrates on the individual patient or family as the focus of care, whereas the thrust of public health practice is upon population groups or aggregates as found in a community. In

nursing education, too little attention has been made on defining problems and assessing impact on a group level (Williams, 1977).

Skrovan, Anderson and Gottschalk (1974) discussed the role model of the community nurse practitioner. An academic program was developed for the Community Nurse Practitioner (CNP). The CNP was described as a professional nurse who is involved in a chosen community as both an observer and a participant. The CNP helps the community to help itself by developing and implementing nursing solutions to health problems collaboratively with the community.

The CNP role emerged in part as a result of three health issues. The first issue is that of fragmentation. Services to the community can be described as multitudinous with "no one in charge and no one talking to each other" (Skrovan et al., 1974, p. 848). Even worse, the community's health does not seem to be the primary objective of any of the community health organizations. The second issue is the primary emphasis of services for diagnosis and cure. Too little attention is given to preventive services and even less to health promotion. The final issue is one of access. Services are provided for groups who have gained access by overcoming certain barriers (cost, language, distance, and so forth). More understanding must be gained concerning "populations at risk"

and the impact of services upon these identified groups (Skrovan et al., 1974).

A growing demand for citizen participation in health planning was described by Skrovan et al. (1974); health consumers demand to become a "piece of the action" (p. 848). The public health nurse is considered by most consumers to be a part of the establishment or system. A CNP role objective is to reverse this image so consumers see the effectiveness of the professional nurse as an ally and an advocate in the control of community health problems. A principal way to achieve this objective is for the CNP to sustain citizen participation and to strive to gain more understanding of consumers' needs and interests (Skrovan et al., 1974).

The role of the CNP, as recommended by Skrovan et al. (1974), should not be viewed as an "expanded or extended role" but rather as an aspect of community health nursing "that has not been fully implemented" (p. 849). The emphasis upon community self-help and total community care helps to differentiate the role from other nursing roles. The CNP helps to discover the community's health priorities, the resources available, and acceptable effective nursing approaches to the identified problems.

The Master's prepared community health nurse is equipped to identify groups with needs or risks of developing problems in any setting (Skrovan et al., 1974). In the Galveston

County Health Department, program planners were discussing methods to counter increasing morbidity and mortality problems experienced by visitors to the Galveston beaches. Local emergency departments were experiencing dramatic increases of treatments for beach related injuries. Drowning statistics were continuing to rise. The tourist population was growing. As a nursing consultant and co-developer of a new county wide health education by telephone (Tel-Med) program, this investigator completed a limited community health assessment and discovered that the visitors to the beaches of Galveston were a legitimate group at risk, therefore needing primary prevention nursing intervention. In developing a health education approach for this population, it was discovered that health education planning for tourists was not recorded in the literature. No data was found telling the local health department that tourists wanted or needed this type of approach. No data were found that described, for health education purposes, the tourist population. No data were found that described interests of tourists in beach health and safety concepts. The lack of the above data indicated that a more thorough needs assessment and population description were necessary before a specific health education approach could be planned. If, for example, the population proved disinterested, despite spirited publicity, in health and safety during their trip to the beach, then they could not be expected to take time out

to listen to a recorded phone message. This study was conducted in an effort to provide needed data so that nursing intervention in the form of primary prevention would be relevant to the needs and interests of the risk group. Clearly, the preceding example demonstrates nursing intervention utilizing systematic community health practice in the area of personal health services. The study, therefore, is a conscious focus on aggregates or subpopulations, and the data presented will serve to direct county health department services.

Primary or Secondary Health Intervention for the Beach Tourist

Considered an essential area of concern for this literature review was the basic question: Should money be put into hiring more lifeguards (beach patrols) or providing more health education? In other words, should Galveston health planners provide more protection for beach visitors or more information so that consumers can protect themselves? To provide insight into this problem, the literature review included queries to major national and local organizations and a search of the literature for relevant citations. Statistically, the most severe health problem facing visitors to Galveston beaches is the possibility of drowning. Accidental death by drowning becomes a natural priority of concern

for the community health nurse involved in program planning for the beach tourist target population.

Much time, effort, interest and funds have been spent in the development of various swimming programs, lifeguard systems and "drown-proofing" techniques. All of these efforts have made valuable contributions to the conservation of human lives. Despite these prevention efforts, approximately 6,000 people drown in our country during an average year (Strasser, et al., 1964). The National Safety Council (1978) reported drowning deaths for 1973 to be 7,152; 1974 to be 6,453; 1975 to be 6,640; 1976 to be 5,645; and accidental deaths by drowning for 1977 was up by 4% to 7,100. These figures include all drownings in boat accidents and those resulting from swimming, playing in the water, or falling in.

In the years 1971 to 1974, 87 deaths by drowning were reported to the Bureau of Vital Statistics in the City of Galveston Department of Health. The number of drownings increased from year to year--the number of drownings in 1974 was exactly double the number in 1971 (Figure 1). Drowning victims were concentrated in the age group 10 years through 29 years; 62% (54 deaths) of all cases fell within these ages. The greatest number of drowning victims were males (81.6%)(Galveston County Health District, 1975).

With regard to location, 67.8% of the 87 drownings took place within Galveston city limits while 29.9% took place

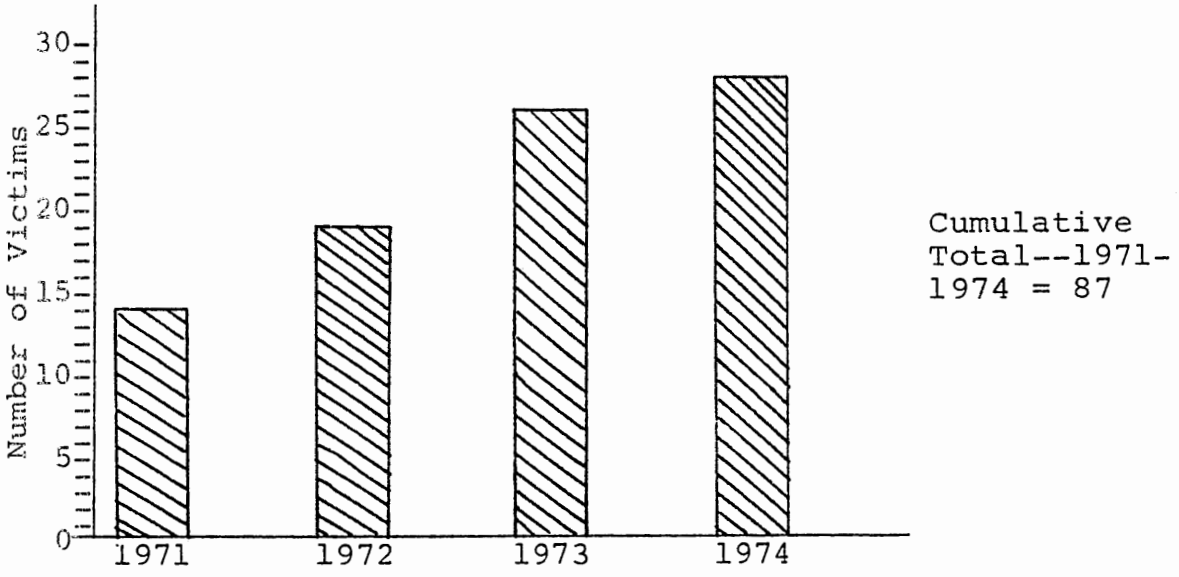


Figure 1. Total Drownings Reported by City of Galveston, Texas, per Year--1971-1974

outside the city limits. Most drownings took place in the spring and summer months. The six months of April through September accounted for 85.2% of all drownings in 1971 to 1974. May, June, and July (the peak tourism months) were the three months with the highest proportion of drownings (57.7% of the 87 drownings), and June was the single month with the highest proportion (27.6% of all drownings). Galveston residents were a minority (21.8%) of the drowning victims in 1971-1974. Residents of Texas City plus other Galveston County cities constituted 29.9% of all victims. Houston residents made up a large proportion of drowning deaths (40.2%)(Galveston County Health District, 1975).

In 1977 the City of Galveston's Beach Patrol reported 16 water related deaths and 24 near drownings (City of

Galveston, 1977). The Beach Patrol's 1977 mortality figure does not reflect deaths reported by the City of Galveston's Emergency Medical Services. Deaths by drowning statistics for 1977 and 1978 had not been calculated at the time of this writing (City of Galveston, 1977). The Beach Patrol division of the City of Galveston's Police Department is responsible for beach safety along with the majority of the beaches on the Island. The division's responsibility includes patrol of the beaches and the placement of strategically located lifeguards along the entire beachfront. The lifeguards are on duty from nine o'clock in the morning to seven o'clock in the evening seven days a week during the summer season. Some Beach Patrol members work as soon as the early weekends in April while the entire force (approximately 30) begins work in early June through Labor Day. The 30-man force is responsible for 50 miles of Galveston beaches (City of Galveston, 1977).

Harris (1976) reviewed the purposes and accomplishments of the Galveston Beach Patrol. Harris's article described a typical weekend on Galveston Island where several thousand people would be visiting six miles of Galveston's Gulf Coast beach between East Beach and 61st Street. The heavily populated beach was protected by 22 members of the Galveston Beach Patrol. As of June 26, 1975, Harris reported there had been 10 drownings in Galveston during 1975. Two of these

drownings occurred within areas manned by the Beach Patrol. Beach Patrol members observe swimmers, enforce glass container and dog leash ordinances, look for lost children, advise people about water conditions, and furnish any first aid required. Officer Bill Scott, Beach Patrol Supervisor (quoted in Harris, 1976), stated:

> Regular surfers are not much problem: they can take care of themselves. However the area around the 27th Street groin is one of the worst because tourists or novice surfers who use the area do not know how to handle themselves and often get into trouble. (p. 10)

Some suggestions offered by Dodson and Beckman (1975) for program planning involving prevention of drowning included:

> Since almost all of the 125 drownings in the past 8 years on Galveston Island were accidents, it is reasonable to assume that all these were avoidable or preventable. The fact that 50% of this loss of life is due to drownings that occurred while swimming speaks out for the need for a strong program of water safety on Galveston Island. (p. 6)

The authors indicated that the best plan would be water safety education for all school children. They noted however that the most obvious need is not at the local level but rather the out-of-town visitor who is not familiar with the peculiarities of Galveston waters.

Dr. Harry Rosenberg, Chief, Mortality Statistics Branch, Division of Vital Statistics, National Center for Health Statistics (NCHS), was interviewed by this investigator on October 16, 1978, concerning his knowledge of any statistical

evidence in mortality that would provide insight to the questions of more lifeguards versus health education programs. Dr. Rosenberg stated that mortality statistics on drowning are available in published form only for the United States as a whole (Vital, 1977). Unpublished data are available on request for states. (See Appendix A)

> To get even more detailed information as to the local place in which the drowning occurred, it would be necessary to go back to the original death certificates, a process that is feasible but both costly and time-consuming. (Rosenberg, 1978)

Dr. Rosenberg indicated he was not aware of studies:

> . . . that provide evidence of the relation between drowning and preventive programs such as educational programs or increased protection. Such studies could be pursued only with great difficulty because of . . . problems associated with acquiring data on the specific location of drownings.

Dietz and Baker (1974) considered host factors in the preimmersion phase of the drowning process to consist of preventive measures mainly of education and training. During the process of their research, they noted the lack of demographic and other identifying factors of drowning victims:

> The problem of identifying segments of the population with the greatest exposure to the hazard of drowning has not yet been surmounted in drowning research. (Dietz & Baker, 1974, p. 308)

This lack of data is an inpingement toward identification of etiological factors, but not a problem for educational programs (Dietz & Baker, 1974):

> For example, even if one group were shown to have greater exposure and/or more deaths than a second group, higher drowning rates among the second group would indicate that they are most in need of water safety instruction. (p. 308)

Advantages of secondary or primary programs to provide water safety are rarely reported in the printed literature. Brown (1961) suggested that approaches to make Americans safe in the water might be called the three E's of water safety--"Engineering, Enforcement, and Education." He pointed out the need for more emphasis on education because enforcement in all instances is impossible. He noted:

> There are those persons who are either not sufficiently aware of the dangers existing in water activity or who ignore such dangers and get into trouble. The need is for more and more public education in water safety. Education, then is the first big "E" of the program for water safety. (p. 233)

Through the efforts of water safety programs, the rate of accidental deaths by drownings has tended to stabilize. Strasser et al. (1964) suggested that for there to be a significant decrease in the annual toll of lives, preventive efforts (including teaching the general public about safe water practices) must be increased. The authors emphasized that man is by nature a land animal and therefore must be acclimated to the water environment by being taught how to swim. Teaching the skill, however, is not sufficient; the skill must be supplemented with an adequate understanding of water safety. "The growing interest in water activities

calls for an increased program of public education to curb a potential multiplication of drownings" (Strasser et al., 1964, p. 290).

Dietz and Baker (1974) analyzed accidental drownings to determine their relationship to age, race, alcohol, and pre-existing disease. They discussed drowning on an epidemiological basis. They reviewed drownings that occurred in the State of Maryland in 1972. A total of 133 drownings occurred in the state and the researchers studied a group of 117 cases. Their study included identification of demographic data (season, body of water, activity prior to drowning, pre-existing illness, head trauma and rescue and resuscitation). Dietz and Baker restated the common belief that a drowning person will surface three times and then disappear. Among 34 of the cases about which the group had information, none surfaced three times; one surfaced twice, three surfaced once, and 30 did not surface at all. Eighty-eight of the drownings were witnessed (usually by friends and relatives). Resuscitation was attempted in 19 of the cases studied, but it was difficult for the researchers to determine whether or not rescue efforts had been attempted. Dietz and Baker viewed the drowning experience in pre-event, event and postevent stages. The "events" were renamed by Dietz and Baker (1974, p. 308): (1) preimmersion--preventive measures that would prevent an involuntary or hazardous immersion; (2) immersion--

those actions that prevent drowning once immersion occurs; and (3) postimmersion--those events that relate to the reversal of fatal events by rescue and resuscitation.

In consideration of the host factors in the epidemiology of drowning, Dietz and Baker (1974) discussed preventive measures necessary during the preimmersion phase. They suggested that demographic data, such as the fact that males and blacks are two groups that have the highest drowning rates, will help to direct federal or state funds to schools with the greatest enrollment of high risk groups. The authors emphasized that their study indicates the need for an increased health education emphasis on the hazard of aquatic sports for those who have been drinking. Preexisting illness tended to predispose some groups to be at risk, particularly in the bathtub. Dietz and Baker (1974) illustrated the host, agent, vehicle and environment stage in a framework that included the preimmersion, immersion and postimmersion phases. Their framework is presented below for consideration:

	Preimmersion Phase	Immersion Phase	Postimmersion Phase
Host (person)	Alcohol Education	Life Jackets	Visible Swimwear
Agent (water)	No swimming pool	Shallow baths	Underwater Lights
Vehicle (Boat)	Stable Watercraft	Flotation	Boat Lights
Environment	Barriers	Lifelines	Rescue System

(p. 309)

In their list of possibilities for prevention, Dietz and Baker (1974) included water safety instruction for high risk groups, development of highly visible swimwear, and environmental modifications. They challenged health professionals to direct their efforts toward effective leadership of communitywide campaigns to prevent drownings. The authors have described both preventive and secondary efforts that might prove helpful in preventing drownings.

Thirteen national organizations thought to have insight into the question of health education versus protective services were contacted by written correspondence (see Appendix A). The organizations were informed of the purpose of the study. Each organization was asked to respond to the following question: Should money be put into hiring more lifeguards or providing more safety education? Each organization was asked if they were aware of any research and/or information that would help program planners to decide if future programs should provide more protection for the consumer or more information so the consumer can help himself. Organizations written to were: The National Recreation Association, American Alliance for Health, Physical Education and Recreation, National Recreation and Park Association, American Camping Association, North American Family Campers Association, National Campers and Hikers Association, The U. S. Forest Service, The National Park Service of the

U. S. Department of the Interior, National Water Safety Council, National Surf Life Saving Association, National Safety Council, National Parks and Conservation Association, and The American Red Cross. After one month only the last four organizations responded to the written inquiry.

The National Parks and Conservation Association responded that the organization had no information on the subject. The National Surf Life Saving Association sent two photoreproductions of four pages from the organization's March, 1975, and March, 1976, official publication, Ocean Lifeguard. The publication reports that 33,833 persons were rescued from the oceans by members in 1974 (estimated 108,919,543 beach visitors in 1974) and 24,970 persons were rescued in 1975 (estimated 99,316,589 beach visitors in 1975). The statistical report of this organization for the years 1974 and 1975 is summarized in Table 1.

Table 1

Summary of Rescue Statistics of National Surf Life Saving Association for 1974-1975

Types of Actions	1974	1975
Total Rescues	33,833	24,970
Medical Aids	49,642	41,841
Preventive Actions	783,890	320,426
Drownings Guarded Beaches	12	5
Drownings Unguarded Beaches	34	24
Lost Children Returned	11,316	8,598
Resuscitations	452	393

Sources: 108 Million, 1975; 99 Million, 1976.

The data are represented in detail by specifying the city or county in which the reporting member agency is located. Twenty organizations reported in 1974 (three from Florida and 17 from California) and 14 organizations reported in 1975 (one from Florida and 13 from California). The organization noted that its members have been complimented by many civic and governmental leaders "for their outstanding record of providing safety services in the marine environment" (99 Million, 1976, p. 1).

Orin H. Myers, Director of Water Safety, The American Red Cross wrote from the national headquarters in Washington, D.C. that the question of the merits of education versus more lifeguards "could be debated endlessly." Myers stated that the combination of education programs and lifeguards and/or boating safety patrols is "the most effective long range approach in reducing aquatic accidents." Myers seemed to have some knowledge of Galveston beaches as he described the typical weekend as having a large influx of bathers/ swimmers and boaters on weekends. He stated that the "racial make-up and educational backgrounds of the tourists are varied." He was aware that there was an alcohol problem that was a contributory factor. Myers emphasized that reaching varied populations such as tourists was a real challenge. He also noted that there is a nationwide problem of getting people to enroll for formal courses of instruction. He stated

that non-formal educational approaches such as films, talks, and demonstrations are effective. His letter seemed to indicate that poor mass media support is to blame for the public's lack of knowledge concerning the availability of these programs. If lack of mass media support is not the problem, he continued then the "population choses not to participate." Myers stated that national agencies such as the Red Cross and the YMCA, who have long been involved in aquatic programs, "know that a multi-approach is the most effective in reducing/preventing accidents." He stated that until Galveston can produce an on-going educational program in health and safety "the problems created by beach tourists on Galveston Island, will probably be best met with expanded lifeguard/boat patrol services" (Myers, 1979) (see Appendix A).

Ben Harris, Manager, Public Safety Department of the National Safety Council, wrote that he agreed that the "more lifeguards or more health education question" was "most important and most complex." He stated that the question had become a legal, economic, and environmental, as well as a "compassionate" issue. He responded to the question by stating, "all things considered, . . . a comprehensive accident prevention program . . . would have an immediate and positive effect on reducing life threatening immersion accidents." He could not respond to the effectiveness of "water safety education programs because," he stated, "few exist." He

eluded to the states', counties', and organizations' responsibility to "protect" water environment users. He stated (see Appendix A),

> The "swim at your own risk" concept has been questioned. The answer seems to be, "reasonable protection" must be afforded, a vague answer at best.

Harris emphasized that water safety services must be as complete and comprehensive as economic conditions allow. "Safety education programs, as untested as they are, must supplement these supervisory services" (Harris, 1979).

The director of the local county health district, a paramedic and director of the local county emergency medical services, and the supervisor of the City of Galveston Police Department-Beach Patrol were asked by this investigator what present on-going health education activity was being provided for visitors to the beaches of Galveston. All three men described a two-sided card showing an abandoned dog on a leash looking wistfully out to the sea while he sits upon his master's beach blanket. The caption reads, "Please, come back." On the reverse side are seven basic swimming safety tips and the emergency number 911 for the Beach Patrol, Ambulance, Police or Fire Department. The pamphlet is made available to local establishments and the Visitor's Bureau by the Galveston Hotel and Motel Association and the Galveston Beach Patrol. None of the men knew the total distribution nor could they comment on the pamphlet's impact.

With an understanding that the most effective preventive programs in water safety include an emphasis on all three levels of prevention--primary, secondary, and tertiary, the community health nurse must be knowledgeable of the concept of health education as a primary prevention role.

Health Education: A Community Health Nursing Role

Griffiths (1972), a major contributor to the development of health education in this country, stated:

> Health education attempts to close the gap between what is known about optimum health practice and that which is actually practiced. The target group comprise the focus for health education; first, individuals who lack adequate health knowledge and, second, individuals who possess adequate knowledge but for many reasons do not practice recommended health behavior. (pp. 7-8)

Mico and Ross (1975) have summarized four main principles concerning health education. Health education is: (1) an "educationally oriented process"; (2) focused on the individual even with mass media approaches; (3) focused on an identified gap/interest between what is known to be good for health and actual practices; and (4) concerned with behavior, forces of need, motivations and perceptions. Mico and Ross (1975) stated that health education is inextricably involved with the learning process. The learning process leading to a change in behavior is the primary interest of health

educators. A World Health Organization Expert Committee (1954) has stated:

> The aim of health education is to help people achieve health by their own actions and efforts. Health education begins therefore with the interest of people improving their conditions of living, and aims at developing a sense of responsibility for their own health betterment as individuals, and as members of families, communities or governments. (p. 4)

Traditionally, health education was considered to be the same as all education, i.e., a system for the transmission of knowledge. The health educator "fulfilled his role when he passed on to others his superior knowledge or wisdom" (Grout & Watkins, 1971, p. 248). The limitations of the above description of health education are apparent when discussing safety and accident health education needs. Accident prevention and the provision of a safe recreational and "away from home" environment are recognized as an individual responsibility, singularly or collectively.

Today, health education is considered to be a dynamic process where individuals are developed to think for themselves and make wise decisions when faced with alternative decisions (Grout & Watkins, 1971). The President's Committee on Health Education, convened on September 14, 1971, identified the major purpose of health education as practiced today to be:

> . . . a process that bridges the gap between health information and health practices. Health education motivates the person to take the information and do something with it. . . . to keep himself healthier by

> avoiding actions that are harmful and by forming actions that are beneficial. (President's Committee, 1973, p. 17)

Grout and Watkins (1971) succinctly identified the series of decisions involved in the learning process that are required before the individual acts upon new information:

> Facts have to be gathered and analyzed, persuasive techniques may have been used, but except under extreme coercion, the individual will decide for himself what information he will use and what course of action he will take. (p. 249)

Comprehensive health education planning includes relevant theory. "Any effective meeting of the minds between the educational wing and the informational wing of health education must have some basis of shared theory" (Mico & Ross, 1975, p. 53). The community health nurse can benefit from the "need approach" theory of curriculum development in planning for health education programs. Nurses, in addition to professional educators, have learned to reject programs that are based upon: (1) tradition, (2) administrative preference, and (3) teaching content that does not interest the target population. Modern educators generally support the "Dewey philosophy that the participant's interest and curiosity principally motivate his learning" (Starpoli & Waltz, 1978, p. 16).

Starpoli and Waltz (1978) further defined an educational need as a "lack, deprivation, or deficiency that can be satisfied by means of a learning experience" (p. 22). The

need approach system allows the educator to develop learning experiences that are designed to address problems of difficulty in the client system. Thus, they defined an "educational problem" as a "condition of human deficiency" that is (1) supported by "systems" that the client cannot achieve "expectations," and (2) a problem that can be resolved by some type of educational program. For example, morbidity and mortality data indicated a large number of Galveston beach tourists do not realize their vacation goal in having a care-free outing. Analysis of community health assessment data indicated safety procedures are not being practiced and careless activities by tourists are readily observable. Community assessment data further revealed that health education programs are not presently being employed and significant health education projects are not being developed.

To qualify as a legitimate educational need, Starpoli and Waltz (1978) identified the following required characteristics:

> 1. The need must be required or mandatory to attain a desired objective or state of affairs. (In this case, tourist and family safety and relaxation is the desired objective.)
>
> 2. The need must be determined to be lacking or deficient by the target population. (Morbidity and mortality data are available in local health district statistics, hospital ED records, beach patrol records, and city morbidity (drowning) statistics.)
>
> 3. The need depends directly upon the institution's or agency's obligation to achieve the objective. (The

> community health nurse has an obligation to provide for the large number of beach visitors.)
>
> 4. The need must be capable of being satisfied by means of a program designed to provide appropriate knowledge, attitudes or skills. (It is apparent that health education measures are required to help protect the beach tourist.) (pp. 22-23)

In the need approach to curriculum design for health and safety education, the educational needs and interests of the learner in relation to the environment and the nursing profession's role as educator are used as the bases for planning, implementation, and evaluating health education programs. An additional theoretical implication noteworthy in program planning resulted from Cartwright's (1949) research which formulated four basic "Principles of Mass Persuasion." Cartwright's (1949, pp. 253-255) principles can be summarized in four main points:

1. Messages must meet the audience's sense organs. This is where the message is accepted or rejected based upon general characteristics.
2. The audience must accept the message as a part of its total cognitive structure. Three categories of acceptance/rejection are: (a) a total rejection, (b) distortion so as to fit the cognitive structure; or (c) change in the cognitive structure.
3. Messages must be seen as a part of a person's goals. The path to the goal also must be a part of the cognitive structure.

4. Motivational structure may be activated by placing the person in a situation that requires a take or not to take decision concerning an action within the structure.

The community health nurse attempting to determine beach and park tourists' interests in beach health and safety messages might benefit from the application of Cartwright's theory of mass persuasion. An instrument must be developed to bring message concepts "to the sense organs" of the population. General impressions can be gained by tourists reading the title and related concept of a selected topic. The titles and concepts should be worded so as to meet tourists' individual and family goals (i.e., beach health and safety compete with other recreational goals). Finally, tourists must be asked to give their opinions of beach health and safety topics during or after they have experienced the "situation" (i.e., a visit to the beach).

Education has long been considered a function of the professional nurse. The community health nurse provides health education services for the community setting. As the nurse provides direct care for the community, he/she helps the community learn skills of self-care and helps the community to find and use information necessary to maintain high level wellness. The nurse searches for and reaches out to clients and their families. Wherever clients are, in the home, clinic, school, hospital or community, the nurse teaches

principles necessary to maintain a state of wellness. The community health nurse focuses his/her skills in observation, assessment and nursing diagnosis, in an educational point of view, to help solve health problems. Depending on the situation, the nurse is prepared to use different methods of teaching (Grout & Watkins, 1971).

Redman (1976) admitted some confusion concerning the nurse's role in health teaching. She believed that nurses have yet to fully define their role and function in health teaching. Lack of a clear, independent teaching role for any of the health professionals undoubtedly has led to a state of disarray in the client. Attempting to redefine the professional nurse's role in health teaching, Redman stated the nurse "must become proficient at helping patients identify their own needs" (p. 48). The author reminded the nurse that learning requires motivation. Realistic goals cannot be finalized unless the educator considers the learner's desires and interests. As Redman stated, "Individuals who are not convinced that they need to learn will resist efforts to teach them" (p. 49).

The professional nurse, in recognition of an ever present responsibility and accountability to teach clients, realizes that clients found in large numbers at our country's various recreational areas are a powerful untapped resource. As Winslow (1976) has so aptly stated:

> . . . by using that powerful untapped resource--the patient--only by giving him the knowledge and responsibility to care for himself, can we convert our present "illness care" system and assure optimal health to the greatest number of people. The educated patient will prove to be an ally. (p. 213)

In order to reach the consumer resource as described by Winslow (1976), the community health nurse must take advantage of modes of mass media for dissemination of health education.

Mass Media and Health Education

The profession of nursing has long believed and has scientifically researched the benefits of health planning with the individual in order to provide comprehensive service (Congress for Nursing Practice, 1964). The community health nurse specialist will initiate health education program planning in a variety of ways. Grout and Watkins (1971) illustrated this prime point by providing an example of a busy clinic nurse whose first step may be to convince program administrators that a learning need exists. The nurse responsible for meeting the learning needs of the larger community will most likely attempt to analyze the specific characteristics of the target population to include a determination of the level of learning interest. The community nurse then will investigate various modes of mass communication. The nurse's role in mass media is basically nonexistent when a review of the literature is made.

By not taking advantage of the various forms of media, the nurse is failing to reach the community in a way that is historically the most effective form of communication (Barnum, 1975). Mass media is effective in the promotion of products and services to consumers. Therefore media can be equally effective in the dissemination of health information.

The literature is sparse in mentioning nurse controlled and motivated media for the public. One significant project is reported by Barlow and Bruhn (1973). This Oklahoma project was a statewide educational television presentation of a series of 20 minute role plays. Each of the 16 programs provided an actual nursing situation that portrayed various types of appropriate or inappropriate nurse behavior. Over 250 nurses who participated in small groups watched the program, heard an expert discuss the role play, and then participated in a discussion. The effectiveness of role-play in helping practicing nurses learn and solve patient care needs can be extended to include useful programming for many types of audiences. While this project was produced to meet certain in-service educational needs of nurses, it did provide for the needs of many other health groups. The public at large, who happened to tune in to the public television station, also benefitted. This project is but one example of how innovative nurses can provide for large gaps in consumer and professional health education.

The federal government's Public Health Service (1975) mentioned many applications for public health education using media of various formats. Their booklet stated a high priority will be given to the development of primary prevention programs underlying the causes of diseases. In reviewing the major health problems of the country, the Public Health Service pointed to the need for an understanding of the health education requirements of the public.

Lack of pertinent literature concerning the nurse's use of mass media points to a need for the community health nurse to understand concepts of mass communications. The literature indicated various issues concerning the use of mass media for health education that require familiarity of the community health nurse program planner.

Issues Concerning Health Education and Mass Media

"'Medical Center' and an aspirin commercial--that's about the length and breadth of it as far as televised health education is concerned," begins an article by Mark (1976). Mark stated that network programs concerning serious approaches to health care are few in number and under-financed. Most of the programs appear before 8 a.m. on Sundays in order to fulfill a station's public service requirements. Interestingly enough, this seems to be a nation of people who think they know much about medicine and

health care but in reality much of that assumption is because the people see many "prime time dramatic shows about heroic doctors" (Mark, 1976, p. 31).

Commercial television, which has put forth many dollars and much production time in the area of commercial medicine programs, actually has made little progress in closing the "information gap" described by Mark (1976). For example, a "Marcus Welby, M.D." program costs $825,000 per episode. The program then deals with rare diseases or very complex situations. Mark asked, "Has Marcus Welby ever cured a simple cold?" Mark noted that the "Marcus Welby" program was really more entertainment than conventional health education:

> Such a series can be interesting and sometimes they are informative, but their major function is to deliver millions of people to the advertisers' messages--medical information is incidental. (p. 31)

Health education endeavors are poorly financed, and are usually expensive documentary films that do well on public television but soon "die a speedy, unnoticed death" (Mark, 1976, p. 31).

The explanation for the demise of these health education programs is described by producer and moderator Jack Righeimer of "Consultation," an interview show about a single medical subject:

> We talk about everyday problems people want to understand --bad backs, stomachaches, blood pressure, hemorrhoids.

> People want to know basic things from a television medical series such as ours. They want to know what is wrong, who do they see to get it taken care of, and how much will it cost me. (Mark, 1976, p. 32)

Is the one minute radio or television public health message effective? Epstein, Magrowski and McPhail (1975) insisted the provision of background information does not necessarily alter attitudes and habits. These authors held that individuals must desire change in order to bring about change, therefore the effectiveness of present messages in changing attitudes and beliefs is very subjective.

In discussing the role of radio and television spot announcements, Epstein et al. (1975) contended there are three ways that motive can influence attitudes: (1) by relating the present with the past; (2) by group or peer identification; and (3) by building self-worth. Three ways of influencing health actions are identified: (1) requiring an outcome which demands a change in behavior; (2) enabling people to make their own decisions; and (3) providing self-directed learning situations.

Epstein et al. (1975) stated that a real frustration is the fact that most of mass media's preventive dental health input is from various commercial companies (toothpaste companies, whose primary aim is not education). They concluded with the plea that mass media should not continue to be "wasted and abused, rather it should be utilized as an

integral part of a system designed to deliver better health care" (Epstein et al., 1975, p. 397).

Kinder (1975) discussed some effects of the mass media. The use of radio, television and other means of media has long been promoted to be the most plausible means of inducing attitudinal change. General surveys reported by Kinder tend to show a large amount of variability in the degree to which the public uses information provided by the mass media in changing attitudes and gaining knowledge about various types of drugs. Kinder mentioned studies which showed that those programs with more exposure by the mass media in general fostered more acceptance of drinking. Therefore, there are differences in the alledged usefulness of mass media in drug and alcohol abuse programs. One of the most significant issues discussed by Kinder (1975) is the effectiveness of the media on strong proponents of an individual's value system. Values involving some sort of deep commitment do not seem to be significantly affected by the mass media.

Mendelsohn (1973), in addition to Kinder, agreed that the mass media by itself may be relatively powerless to bring about attitude change. He stated that social science research can make the media more effective by determining which audiences need and want the knowledge and particular motives which can be influenced by particular approaches.

Many times when media campaigns fail, the blame for the campaign failure is frequently that of "public apathy." Mendelsohn (1973) uniquely stated, "when the communications 'hypodermic needle' fails, the patient is to blame." He insisted that the social researcher must work side by side with the practitioner so that preplanning determines proper objectives and motives. He also believed that the "communication practitioner" should pay more attention to what campaigns create rather than what they do not create.

Mendelsohn (1973) presented a particularly important issue for the community health nurse who plans to idealistically embark on the new role as a "communication practitioner." While the nurse has an excellent knowledge of man's uniqueness and how he reacts to wellness or illness, the nurse can gain much information and save valuable time and effort by taking advantage of social research.

Without this fundamental social research, many mistakes can be made. Brill (1973) pointed out a problem that surely will occur. The health worker with a poor understanding of social systems will tend to impose his/her own values on the clients. This seems to be particularly true when viewing the values of cleanliness, conformity, social behavior and hard work. A necessary requirement for the nurse is to remember that our objective is to help clients be effective in the society in which they live. An additional requirement

during the initial assessment of communities' educational requirements is to establish the individual's capacity for self-determination and for decision-making which lead to action. Along with pertinent issues, the literature also provided a framework for the community health nurse incorporating the unique services of the mass media for health education purposes.

Implications for the Community Health Nurse Utilizing the Mass Media

Of all the mass media, television and radio have the potential for reaching the largest number of people at the same moment. Whether the results have made all the efforts worthwhile is questionable, but the facts still are clear--the mass media provides the ability to get the health message to many people and better yet repeat it over and over (Neal, 1962).

How can the motivated nurse, once dominated by the requirement to get physician approval before counseling or teaching the client, find an effective and result-obtaining role in mass communications? Health brought about as a result of social change becomes a means to an end rather than a goal itself. In this concept, clients, whether individuals, family or community, choose the goals they want and then they create and utilize the health resources to help reach the goals (Ford, 1977). The new orientation of people as a

source of capital and an investment has required an examination of traditional labels. Today, the clients are the consumers. Those who do not follow physician's orders are non-compliant. The health professional is now referred to as the "providers" (Ford, 1977).

The nurse, understanding these dynamic changes, has learned that he/she must be a responsible provider. The nurse, involving himself/herself with an unlimited audience through the mass media, will undertake a very real responsibility. It is the opportunity for the professional nurse to accept, explain and publicize accountability.

One additional issue which will have a direct influence on present and future applications of educational approaches is the concept of self-care for the consumer. Ford (1977) discussed this concept:

> The purposeful undertaking of people in self-care is based on the realization that the most potent provider of care is the individual and his family. The highest level of care given is really care provided by oneself. (p. 19)

If self-care is a possible purposeful outcome of nursing activities, the strategies for care and roles for nurses must be directed toward influencing health values and behavior.

At times the nurse will enter into on-going community-wide education programming. Side by side with other health professionals and community leaders, the nurse may become

involved in the study, planning, and action programs. Though the nurse's role will vary with circumstances, the role in such situations may be that of a resource person who brings pertinent information on health needs, conditions or resources. The nurse may join in determining the educational components which should be built into the program, including ways to distinguish the target population. For example, if the team was doing a television tape on the nutritional status of the community, the nurse, with knowledge of the family, may be particularly interested in how to reach the parents with the new knowledge. Further, the nurse can be instrumental in seeing that those for whom the program is intended have a voice in determining the program's content (Grout & Watkins, 1971).

Today's professional nurse without specialized training is hardly equipped to solely undertake a health education series. The nurse is most equipped, however, to realize the needs, to note the interests and gaps in present health information, and to observe clients' never-ending struggles to obtain entrance to the health care system. Educational, communication, public health experts, and authorities stand ready to guide new and innovative projects under the influence of the community health nurse.

The day of believing that the physician is the health professional with the greatest potential as health educator

is quickly vanishing. Modern specialization has caused the physician to be "too busy" to take on the extra burden of health educator. Many lack the inclination and the general knowledge to do the job effectively (Somers, 1971).

Some areas in which the nurse can presently provide an effective message and appropriate media input are similar to those which coincide with the recommendations that a permanent high-level National Council on Health Education be established to formulate national policy (Somers, 1971).

1. National goals with respect to health education. This can be accomplished through political and direct influences by the nursing profession on the general public and political leaders.
2. Teacher training for health education courses and curriculum. The nurse can take a direct interest in school health programs in media production, research and evaluation. The nurse educator teaching secondary teachers to be health educators is a role in which television can play an important role (Somers, 1971).
3. Programs for adult education. Many of these needs are now consumer oriented and consumer motivated. Media programs concerning preventive care and health maintenance (self-care) are ideally suited and in need of professional nurse input and direction.

4. Programs for the mass media. Health care agencies, institutions, insurance companies and many federal projects are actively involved in production of materials for television and radio. The nurse, if not able to take an active role in the production itself, should provide professional opinions and evaluations. The public must be provided with factual knowledge that leads to effectiveness and not to detriment.
5. Health education in hospitals and other public or publicly supported institutions. From inservice educations programs for fellow nurses to venereal disease information for clients sitting in the waiting room, today's nurse can implement innovative and useful programs.
6. Consumer participation in health care programs as a technique of health education. The day is here when consumers should be considered the captains of the health care ships. This may be a role that many do not want but it is clear that the consumers must be prepared to play a role. Consumers should be involved in the planning and evaluation of media productions. The old saying of "ask us what you want us to know" is never so true.

Future implications for health education and the mass media are provision of information and cultivation of the

public's sense of responsibility towards their own health and that of the community. Futuristic planning carries special implications for the community health nurse of today and tomorrow. Through the use of social research, and the nurse's special insight into communities' needs, interests, and values, innovative media input can provide factual and authoritative information to advance the concepts of preventive health maintenance among the population.

The community health nurse desiring to reach specific high risk groups must thoroughly assess the population in order to identify relative needs, interests and characteristics. The literature provided protocols for target population identification, an essential step in the nursing process for community health.

Target Population Identification for Health Education

Against the background of knowledge concerning the role and future of health education, the nurse continues to assess the "teaching needs and readiness of particular clients" (Redman, 1976). With an understanding of the needs, interests and knowledge concerning what the population wants to know, the nurse is able to develop teaching objectives that are likely to be attainable.

MacQueen (1975) stated health education is misunderstood because there are many educators who believe one can teach

"if you are articulate and know your subject" (p. 94). MacQueen also identified a challenge that will help clear a misunderstanding concerning health education. The challenge is to have knowledge of the beliefs, interests, taboos, and prejudices of the person being taught. He believed it is also necessary for the health educator to understand the "socioeconomic and cultural pressures" of the target population "that make him responsive or resistent to a particular subject or approach" (p. 94).

Byler (1970) related a story of a student who was asked what should be taught about health. The student wrote the following opening sentence in his paper: "Don't teach us what you want to teach; teach us what we want to know" (p. 252). Byler reported a survey completed in the Connecticut schools on health concerns, interests and problems of over 5,000 boys and girls from kindergarten to grade twelve. The curriculum committee of the school system felt the "real index of need lay within the students" (p. 252). The survey was not a controlled experimental study and responses from the students were gained by several methods: observation, listening-in, natural life situations, dramatizations, discussion, writing and role-playing. The major topics of interests expressed by the students seemed common to all the students regardless of their home environment. The "depth and intensity" of interest in a topic tended to reflect the students' scope of

experiences with the subject. The most popular topics listed by the students were the body, the heart, food and nutrition, exercise and physical education, first aid and safety, interests and concerns relating to mental health, sex education, diseases and accidents, alcohol, drugs and smoking. Byler agreed the topics "sounded familiar" but she also noted that the various age levels phrased their questions and interests uniquely different. Those differences noted in the responses would be influential in determining the way one would plan to meet the target audiences' concerns. Byler succinctly summarized the importance of the target audience survey in the following paragraph:

> We do see this Survey Report as a true source book about today's boys and girls. We do see it offering some ideas and techniques which could help to make health education more realistic and valuable. We do think it points up to the extreme importance of planning <u>with</u> students rather than for them. (p. 254)

A target population is people. Tinkham and Voorhies (1972), in discussing analysis of data and identification of community needs, reminds the nurse that facts and information concerning identified target populations are available. Information and data concerning identified target populations, the population's way of life and health can be assembled, studied and analyzed. The authors suggested the process of data analysis involves:

1. Analyzing the data for relationships and clues to the communities' health status and concerns.
2. Determining the health problems.

3. Identifying nursing needs.
(Tinkham & Voorhies, 1972, p. 222)

Descriptive information concerning specific target populations and the community being studied immediately gives the community health nurse the "feel of the community and a frame of reference within which to proceed" (Tinkham & Voorhies, 1972, p. 222).

Tinkham and Voorhies (1972) also reminded the community nurse "no one group can be all things to all people" (p. 234). After the analyses of community resources and descriptions have been completed, community health nursing must decide which needs "it can and should do something about" (p. 235). The community nurse along with other health professionals are admonished to be "more skillful in setting priorities and limits as to what it can do, what it can do best, what it can help others to do" before efficient care can result (Tinkham & Voorhies, 1972, pp. 234-235).

Freeman (1970) provides the community nurse with many applicable concepts that lead to an accurate identification and assessment of specific target populations. The development of a "full-scale appraisal" of the target population involves not only many kinds of data but also input from both health professionals and consumers. It was noted that "it is increasingly apparent that community health assessments should involve the recipients of service" (p. 253).

Freeman (1970) additionally stated identification of the number and location of vulnerable or special risk groups is vital to the assessment process. Freeman defined special risk groups as:

> Groups that do not have a disease or other condition requiring medical care but that are nevertheless at the mercy of some personal, environmental or social condition that makes them unusually susceptible to illness or lowers their capacity to deal with disease or disability. (p. 255)

Freeman (1970) continued that it is vital to know in which subgroups of the community the deaths occur, particularly the untimely deaths. The nurse must also be aware of the special characteristics of the health behavior manifested by the target group because such knowledge may have a bearing on the prevention of the untimely deaths. A thorough analysis of the pertinent characteristics of specific subgroups will provide a strong base for nursing action.

Leahy (1977) stated that the ordering of needs or objectives as part of the nursing process in the community is primarily setting priorities to focus upon the most important health needs of the community first.

> When a health issue is selected that represents the citizen's wants, commitment and action will be secured early with minimum prompting from any health expert. People have always known of health <u>needs</u> which would be beneficial for them, but few individuals respond to "You should have this" or "You need this" unless they <u>want</u> it. (Leahy, 1977, p. 84)

Leahy agreed with other authors discussing community health nurse assessment and implementation. The health professional working within the community must identify "at risk" populations, priority problems affecting the population, and must include the populations' perceptions, interests and attitudes concerning not only the problem but also proposed remedial programs.

Target Population Identification for Health Education (Attitudes and Beliefs)

The Health Education Project Advisory Committee (1975) of the American Public Health Association stressed the importance of participation and involvement of the identified target population in order to achieve success in an educational program. Controlling one's own destiny is an acceptable way of action in our democratic society. Motivation is more easily achieved because the target population's aspirations and goals have been considered. The Committee (1975) phrased a question most health professionals ask:

> "How do we adapt program ideas and services to the concerns, interests, ways of doing things, vocabulary, values and customs of our consumers?" The easiest and most efficient way is to involve the people themselves in providing the guides and pathways for doing this. . . . Program planning and implementation must include all persons who are responsible for carrying out any part of the program including the consumer who will benefit. (p. 13)

Jenkins (1966) reported a method of quantifying public perceptions of disease. Jenkins' study was intended to

provide data about beliefs and attitudes concerning disease and to investigate the effects of group membership on those perceptions. To fully describe the community, the study asked the following questions:

> Do the various social classes view tuberculosis differently? Do memberships of different ethnic groups have different ideas about the disease? What qualities or attributes of tuberculosis are interpreted differently by adults in various categories? (p. 417)

The findings indicate the group perceptions and differences in perceptions are related to that group's experience with the morbidity and mortality of tuberculosis. Also, the three ethnic groups studied--Negro, Latin and Anglo--approached the disease tuberculosis in a different manner. Factor analyses showed that the three ethnic groups differed in their "structures of meaning" both quantitatively and structurally. The study added to the body of knowledge regarding the influence of the collective experience of the group in shaping individual beliefs and feelings. Jenkins (1966) stated in conclusion that he hopes there will be less assumptions made about culturally influenced content and more scientifically made descriptions of target populations.

A notable early study identifying and describing a target population's interests and perceptions was reported by Dodge (1969). Dodge reported studies that show the more the patients know about their conditions, the more likely they will be compliant. Her study was designed to identify some

of the factors influencing the likelihood that clients will have an adequate understanding of their conditions. Dodge stated that "a knowledge of the kinds of information the patient wants and the importance he attaches to what he does get should provide a key to increasing the patient's medical understanding" (p. 502). The aims of the study were to determine patients' perceptions of their cognitive needs, in their own situations, and to determine the influence of various personal factors on their perceptions. A total of 127 interviews were conducted at the Geneva General Hospital in Geneva, New York. Patients were interviewed midway in their hospital experience regarding the kinds of information patients thought should be given and the perception of how important that information was to them. Findings of the study indicated the patients did express "case-relevant information needs" and they placed a higher priority on some topics than they did others. The findings also indicated there were significant differences in the perceptions among the three main variables studied: education, nature of involvement, and term of involvement. Dodge (1969) succinctly indicated the need for further research of this type in order to improve health education techniques.

> By increasing our awareness of what patients do and do not feel it is important to know, the study adds to our knowledge of why patients do not always attend to the information given to them and suggests areas of patient education which might need special handling. (p. 512)

In a study of 300 families in Kentucky (Carlton, 1977), community research was shown to be effective in establishing health education programs. The "family health study" indicated that the target population perceived sickness and disability as an important part of its lifestyle. The study showed the population to be discouraged, pessimistic and displeased concerning their health, without any understanding of what to do to improve it. The survey indicated a significant interest in and an urgent need for health education. Carlton (1977) defended the use of a scientific survey of the target population as an initial part of program planning.

> Carefully planned studies of population's health attitudes, knowledge, perceived needs, and resources can be used to establish the need for scientifically sound health education. (p. 12)

Professionals in mass media have recorded in the literature useful methodology for predicting target populations' interests. By taking advantage of mass media survey methods, the community health nurse can more objectively predict audience interests in health education messages.

Interests Predictions

The procedure of predicting audience interests in mass media campaigns has traditionally been a subjective process (Haskins, 1960). Haskins has developed a validated tool that is a method for pre-testing message concepts and ideas which predict readership with a high degree of accuracy.

Haskins' method was noted to be effective in predicting audience interest in media campaigns (i.e., television or radio spots, newspapers or magazine articles, and so forth) from data derived from the target audience ratings of a title and two sentence concept ratings of proposed messages (Feinburg & McLaughlin, 1969; Stevenson, 1973; Worden, Sweeney, & Waller, 1978). Worden et al. (1978) stated the pretest using Haskins' instrument saves time and expense during pre-production, validates existing audience needs and prevents producing materials that might otherwise be unsuccessful.

Haskins (1960) described a method for measuring readership interest and predicting readership in "title ratings." Haskins developed a title-rating method which consists of having a representative sample of the target population give ratings to concepts of certain pre-selected items. The interest ratings are expressed numerically in terms of "degrees of interest" on a thermometer-like scale ranging from zero (low interest) to 100 (extremely interested). There are four statements associated with the numerical scores on the thermometer. Haskins' instrument was developed for use with national magazines but he stated the instrument is useful for any researcher desiring to "scientifically pinpoint the interest of the whole audience, or special groups within larger populations" (p. 224).

A thermometer scale is a simple rating process for the target population to use. Haskins (1960) stated that although it is a "simple process," the development and validation of the tool "was both lengthy and complex extending over a two year period and involving thousands of interviews" (p. 225). The basic assumption underlying the methodology of the instrument is prospective voluntary readers exposed to a subject (i.e., magazine article) either accept or reject the subject on the basis of "cues" to content contained in the "display factors." While there are many "display factors," Haskins chose to simplify the procedure and use only written display elements (i.e., titles, subtitles (or concepts), author's name, and so forth). The procedure, as the author explained, eliminated the use of "non-writable" display factors.

A pilot test was conducted by Haskins (1960): (a) to determine the empirical variance in reader-interest scale measurements as a result of reading display items and item serial positions (i.e., test scale determination); (b) to test if scale measurements were related to actual readership, and (c) to determine the experimental design. A verbal scale in addition to a thermometer scale was used for measuring reader interest in test items. Two intervening sessions followed the pretesting; one to obtain title ratings in advance of the publication and second (four to six weeks

later) to determine readership. There existed a perfect rank relationship between title rating measurements and actual amount of readership. During pilot testing the scales did tend to discriminate among the main variables, individuals and items (Haskins, 1960).

A national sample field validation study (Haskins, 1960) was completed using the procedures refined during the pretest. A control group existed to detect any conditioning effects of the "before interview" of the test group. No conditioning effect was statistically evident. Fifty-four sampling points throughout the nation were randomly divided into two groups to achieve similar population characteristics. One group was exposed to the six-point scale and the 100-degree thermometer scale. Validity was tested statistically by comparing the scores on the scales with the number of individuals "professing readership" (Haskins, 1960, p. 557).

On the thermometer scale there are 100 possible "cutting points," but the respondents gave their answers in multiples of five. Haskins (1960) stated: "out of more than 7,000 individual thermometer judgements only one was not a multiple of five" (p. 558). The verbal scale did not predict rank order relationships of item readership, whereas the thermometer scale yielded highly significant rank relationships particularly on the "read all" measure of the post interview.

To further validate the instrument, Haskins (1960) cross-validated the tool four times under varying conditions. In all cases, national samples were employed. He discovered item readership can generally be "predicted" with an average error of 7%.

Haskins' instrument has been used successfully by Worden, Sweeney and Waller (1978). This study pretested audience interest in 25 potential health education messages and concepts which were later to be used in a mass media campaign designed to educate and cause behavior change concerning lung disease. A group of 150 respondents from specific target populations (smokers, older persons, and so forth) rated each concept on the basis of a title and a two sentence description using Haskins' 0-100 "Thermometer Scale." The results showed different interests for the various groups within the target population. The study also showed concepts offering "positive and straightforward advice" proved to have higher ratings than those with "negative, cute or satirical approaches." The authors recommended the approach as an effective way of providing objective data concerning the needs and interests of populations during the design phase of educational campaigns. Haskins' instrument and a methodology similar to Worden, Sweeney and Waller (1978) was used to determine tourists' interest in beach health and safety concepts by this investigator.

A computerized ten year search of the literature failed to reveal any exploratory survey concerning interests in beach health and safety concepts of tourists. The literature abounds with descriptions of programs and activities designed to protect beach visitors. The literature does not support the contention that the protective programs and health education attempts have been designed to meet identified cognitive, motivational and interest needs of populations. Because this study addressed health education planning for a recreational area, the literature was searched for studies pertinent to the assessment of tourists' needs and behaviors.

Recreational Research

The community health nurse attempting to plan programs for recreational areas benefits from a review of pertinent studies of recreational area investigators. Burdge and Field (1972) deduced from reviewing various studies of outdoor recreation that there are many "aspects of behavior essential to understanding the dynamic dimensions of leisure patterns as they occur in an outdoor setting" (p. 63). The three basic assumptions identified by the authors are:

1. Outdoor recreation is a behavior that is culturally influenced
2. Participants and the nature of participants is undergoing a continuous process of change
3. Other concepts and theories derived from the study of human behavior do apply when researchers explore emerging patterns such as leisure. (p. 64)

Brown, Dyer and Whaley (1973) contended that most recreational research cannot stand the question, "So what?" Among the criticisms of past recreational research are:

1. The research has not addressed the "real problems."
2. The research has only dealt with small segments of comprehensive problems.
3. Recreational research has dealt solely with "prediction" and has not dealt with "understanding."
4. The research has not dealt with recreational activities in the context of man's total lifestyle.
5. No theoretical orientation has been applied.
6. The research has been undertaken by those "poorly prepared" in multidisciplinary research.

Brown et al. (1973) emphasized the need to consider individual aspirations in determining what is the "desired state" in recreational areas. They outlined two important tasks: (1) one must assess individual aspirations, and (2) one must monitor whether or not actions taken result in a "desired state." While the authors gave an example of park users telling the park officials what they would like to see on a sepcific land unit as an example of "assessing individual aspirations," one can readily interpret that recreational planners also desire to identify and describe their "target populations." The authors stated:

> If the original state and the desired state are accurately described and the decision process understood, the desired state should always be reached by modifying the process. (Brown et al., 1973, p. 23)

In addition to meeting the desired state of preferences and behavior, Brown et al. (1973) stated two other desired states which must be met: (1) resource capabilities and environmental inputs, and (2) nature and dynamics of institutions designed to meet goals. The authors insisted that these two conditions must be considered in the original state, process, and desired state segments of recreational planning before recreational research and planning "can be lifted above the realm of, 'So what?'" (p. 23).

Crandall and Lewko (1973) indicated that past recreational research has been fragmented and has interfered with a systematic development of knowledge about leisure. The study described contemporary researchers and their studies and obtained future directions for leisure research. The survey showed marked differences between current research interests and proposed directions for future research. The three most common current "interests" were: conceptual-historical interests, sociology of leisure, and sports. The three most common "proposed directions for future research" were: antecedents and consequences of leisure behavior; planning and service delivery; and the development of measurement methodologies. Crandall and Lewko concluded that the field of leisure research is diverse in types of investigators,

geographic locations and types, and areas of research currently being pursued. Because of this diversity it was suggested that a multidisciplinary approach to research be initiated in this context.

When program planning for the recreational population, the community health nurse needs to understand "the recreational experience." A nurse is familiar with decisions that must be made by consumers to effect health behavior changes. The community health nurse must rely upon recreational research to identify models of activities and changes of the recreationists. Mercer (1971) reviewed the role of perception in the recreational experience by using Clawson's five stage model of the recreational experience. Clawson's (1963) five stage model involves five distinct but interacting "decision packages": (1) an anticipation phase; (2) travel to the site; (3) on the site activity; (4) return travel; and (5) a recollection phase. The final, recollection phase of the recreational experience is reportedly the most important. The recollection phase is the phase employed by beach/park users completing the questionnaire designed for this present thesis.

The recreational sites may have been satisfactory for the visitors but the environment through which the visitors had to pass may have not been satisfactory. Visitors might visit the site again but they would likely choose a different

time or route to get to the site. Mercer (1971) also stated that the opposite might be true: "the travel phase may be perceived has having been enjoyable and the site experience not, and so on"; whatever the visitor recollects of the experience, a "feedback into future decisions is inevitable" (p. 272). Health education endeavors for beach visitors must consider this "recollection experience" as it has implications for a change in future health behaviors if the visitors recollect either significant health messages or an unfortunate experience with a beach health hazard.

Few recreational studies are reported in the literature investigating the characteristics of beach visitors. Hecock (1970) investigated beach users. Ninety interviews were obtained from three different beach areas and this information was subsequently sampled. Visitors to Cape Cod beaches revealed significant relationships between patterns of beach visitors and conditions existing at the three sites. Higher attendance was associated with the availability of beach facilities and the development of nearby areas. Beach location was shown to be important to beach "day-users" but a different criterion was named by overnight users. Visitors' socioeconomic characteristics and places of origin are related to the settings of the three beaches. Teenagers were attracted to the beaches having food facilities and the teenage population was the only identified group that tended

to be influenced by beach crowds. Hecock's findings indicated beach populations can be identified into relevant subgroups and the subgroups can be shown to have explainable significant relationships to certain variables.

Schwartz (1977) identified useful population and sampling parameters which will be partially incorporated in this present thesis. Schwartz described important methodological considerations and opportunities in a thesis that was designed to understand the beach users at Galveston Island State Park. Schwartz (1977) utilized camping permits which are necessary documents that are completed for those park visitors who have: (1) Annual Permit--purchased in lieu of the daily entrance fee; (2) Restricted Annual Permits, or (3) Parklands Passports. Once visitors leave the park, the permits are stored by the month for future auditing.

> The availability of recent permit data identifying a population of campers can also be used to identify probable beach users and achieve the objectives of this thesis because of: (1) the formalized registration and permitting procedure required for all campers; (2) the proximity of camping and beach facilities; and (3) the demographic information sited on the permits. (pp. 24-25)

This present study uses Schwartz's (1977) identification of demographic data to understand characteristics which are to be observed in the study population. During the winter months of November, December and January most visitors are from out-of-state. Most out-of-state visitors come from

those states which border the Gulf of Mexico, the Midwest states, and the Great Lake states. Of the sample, 62% were Texas residents. Visitors from Texas predominantly represent counties around Houston, Austin, Dallas and Galveston.

The minimum group size in Schwartz's study was one individual and the maximum was nine. The mode for the study population was two individual which represented 44% of the sample; 50% had some type of yearly permit; and 57% of the group with a Parklands Passport were from out-of-state and over 65 years of age since the "Parklands Passport" is only available to senior citizens. Schwartz determined senior citizens have the greatest percentage of park attendance during the winter months.

Schwartz (1977) also identified the motivations of visitors to GISP and considered them in relation to selected hypothesized variables thought to have an effect on the motivations. Subgroups of the population were also identified. Ten basic motives of beach users were identified using a factor analytic computer program. Diversion, family togetherness and experiencing nature were the most important motives followed by outdoor adventure, solitude, physical fitness, affiliation and beach activity. Opportunities for self-awareness and status were the motives least important to the study group. Further analysis of the data identified variability between in-state and out-of-state visitors and

significant differences between the following independent variables: (1) group affiliation, (2) park activity, (3) importance of the beach, and (4) the extent of planning for the last park visit.

Schwartz's (1977) data provided the present thesis a precise foundation for further study of this unique beach visitor population. Schwartz stated:

> Further testing, verification and refinement of the conceptual foundations are suggested for further research. It is hoped that this research design will be applied to other coastal locations and with other groups of beach users so that broader generalizations pertaining to beach users can be made. (p. v)

Schwartz's (1977) identification of many of the characteristics of GISP visitors has assisted in the selection and refinement of Haskins' (1960) instrument to determine a similar population's interest level in beach health and safety messages. The instrument utilized in this present study incorporated similar methods for identification of visitor characteristics as used by Schwartz. Identification of the target group's characteristics will enable the population to be separated and studied as subgroups for correlation of interests in beach health and safety concepts and subgroup affiliation. The review of recreational research, discussed in the preceding section, indicates a need for more interdisciplinary investigative approaches. The next section will review concepts in interdiscipline recreational safety education.

Concepts of Recreational Safety Education

Licht (1970) stated education has not made the areas of safety and accident prevention relevant. Licht suggested health educators are "particularly guilty of this sin of ommission" (p. 259). Licht also mentioned three "hard realities" that must be considered by the health educator: (1) we do not know really what the accident situation really is; (2) we do not know what teaching methods work best, particularly for young children; and (3) we do not know whether safety education does any good nor do we know how to make it do some good. Licht suggested an in-depth reporting system is needed to accurately describe accidents so that meaningful comparisons can be made.

In discussing curriculum development and research in safety education, Mayshark (1976) stated that the development of any curriculum should be influenced by the findings of two areas--first, to discover the "parameters of knowledge to be learned." Mayshark acknowledged the findings in the first area will vary with the learners' perceptions of the subject matter and ages and experience levels of the learners. Secondly, the curriculum builder must determine how the learning takes place. Mayshark (1976) listed the six steps necessary in the development of a relevant safety education curriculum:

1. Start with a study of the community
2. Identify goals and objectives

3. Test against district philosophy
4. Study the learner
5. Identify the appropriate content
6. Result: an appropriate curriculum. (p. 29)

Mayshark stated that there remains a "pivotal question" confronting those who build curriculums for safety education. The question is, "What knowledge is of most worth to students who will mature in an uncertain and unstable society?" Mayshark restated two assumptions in response to the above question:

1. Our dynamic environment contains a potential for injury that is inevitable.
2. Injuries can be reduced through effective education and the intelligent manipulation of the environment. (p. 29)

Mayshark (1976) cited an editorial by Waller (1974) that included a statement to be considered with the above assumptions: "the prevention of undesirable energy transfer (or so-called accidents) depends both on an adequate level of human performance and on a task that is not too demanding" (p. 29). Mayshark reported the success of epidemiological research using the host-agent-environment model verifies the use of this approach to the problem of injury control. Waller and Mayshark both advocated the use of the traditional model in all aspects of safety education curriculum building.

Macnicol (1975) helps to put the use of the host-agent-environment model in perspective for health education:

> Educational techniques that have proved successful in the schools cannot be applied unmodified to the adult

> sector whose values have changed and whose attitudes have hardened. The old will respond even more poorly to education of the "host," so that manipulation of the "agent" and the "environment" offers the greatest success. (p. 310)

Macnicol stated the best course for education in health and safety is an emphasis towards "the interaction of man with his fellows and his environment" (p. 310). He also insisted that accident prevention education should start early in life "so that the lessons of survival become innate" (p. 310).

Thygerson (1974) outlined specific precautions of safety health education. Thygerson listed three common practices which have led to unsatisfactory results: (1) use of statistics, (2) use of scare tactics, and (3) use of rules. He admitted statistics "are not all bad" but suggested that educators use proportional statistics (rates or ratios) rather than quoting numbers or figures. Scare tactics tend to produce short term effects, work adversely by causing excess worry and anxiety and too much use of scare techniques can cause a "calloused" audience. Concerning the use of rules, Thygerson stressed that influencing a person's behavior "is to help him develop clear concepts of the objects and events which make up his world." "Good thinking" is a result of "clear concepts" (p. 509).

Woodruff (cited by Thygerson, 1974) referred to a series of studies that have led to the recognition of concepts as what Woodruff terms "the major mediating variable in human

decision making and purposive behavior" (p. 510). Thygerson continued by giving an example of changing a safety rule to a conceptual statement:

Safety Rules	to	Conceptual Statements
1. Clean up litter and junk at home, so it won't accidently catch on fire.		1. Fires start when some- to burn (i.e., litter), something hot (i.e., children playing with matches), and air come together.
2. Wear a life jacket while water skiing.		2. Life jackets support a person who may be a poor swimmer who may be in tiring water situations (i.e., water skiing). (p. 510)

Schaplowsky (1973) considered the behavioral aspects of accident prevention as he stated that behavior can be modified by increasing knowledge, improving skills or changing attitudes. He stressed that "knowledge, skills and attitudes" are interrelated. As an example of Schaplowsky's point, clients with a lack of knowledge will show a difference in their attitudes, beliefs and behaviors. Schaplowsky (1973) reinforced his point by relating that people once were convinced that various diseases were caused by "bad air, evil spirits" and other superstitutions. The beliefs were soon to be gone as the true causes of disease were discovered and understood.

> As more specific information about the actual causes of various kinds of accidental injuries become known and understood, people will be less likely to blame them on luck or chance. (p. 253)

With the understanding that educational programs can be effective, Schaplowsky (1973) also emphasized educational programs for accident prevention must be managed to be effective. Schaplowsky stated:

> The intended recipients of communication and the behavior desired must be carefully defined so that the message content and methods of tranmission can be planned and implemented. (p. 254)

Individuals engage in "selective perception" particularly in the case of mass media. The mass media can effectively raise interests but actual communication results from a more "personal-interpersonal" communication. Schaplowsky (1973) listed three conditions that must be present before an individual will modify his behavior in order to avoid an accidental injury:

> He must believe:
>
> 1. that he or members of his family are susceptible to the particular accidental injury;
> 2. that having the injury would have serious consequences for him or his family; and
> 3. that the behavior modification recommended will be effective in reducing the likelihood of the event occurring. (p. 254)

Schaplowsky emphasized it is the individuals' own perceptions and beliefs concerning susceptibility to and seriousness of hazards and possible remedies that are important--"not the public health manager's view of them" (p. 254).

A noted accident prevention researcher and educator in Great Britain, Fraser-Moodie (1976), has stated:

> The concept of accident prevention is communicated to us all in the home by television and radio and to some of us individually, as on the factory floor, by the safety officer or foreman. Only a few people learn by the experience of others, however; but accident prevention is a lesson in human survival and should be taught to everybody, energetically, attractively and with ingenuity. (p. 75)

The community health nurse is fully prepared to accept the above challenge by providing planned health education programs including the tenets of health education, mass media, recreational research and a basic principle of all health education planning--to include knowledge of the needs, desires, interests and expectations of specific target populations.

Summary

The survey of the related literature indicated carefully planned and innovative educational approaches which consider the characteristics, needs and interests of learners can help learners to modify their behavior in order to avoid an accidental injury. Further, the literature emphasized the professional who plans educational programs in the recreational setting can benefit from the numerous lessons that have been documented and studied. Recreational research, in particular, was shown to be more effective if it is done in a more multidisciplinary approach.

The community health nurse's use of the community assessment and nursing process can effectively delineate and

set priorities for specific target groups. The literature also supported the professional nurse's use of the mass media which has been shown to be most effective in health education.

The literature has provided several examples of the scientific description of selected target populations. The procedure of objectively predicting audience interests in mass media messages has been shown to be a prerequisite to successful program planning and management.

The literature and professional experts supported the inclusion of a well planned health education component in a comprehensive and coordinated program of accidental injury control that incorporates all three levels of prevention.

CHAPTER 3

METHODOLOGY

Introduction

Descriptive data were collected for the survey through administration of a written questionnaire. Surveying a transient population, such as beach tourists, necessitated a research design providing input from the target population. Camping permits from Galveston Island State Part (GISP) were stratified by month and a proportional random sample of 350 was selected to provide a study sample for identification of selected subgroups, description of variables and measurement of the level of interest in beach health and safety concepts.

Setting

Galveston Island State Park opened as a component of the Texas State Park System on January 23, 1976. The park's location has enabled the "natural environment to be protected which otherwise may have been destroyed by the encroachment of beach homes or commercial establishments" (Schwartz, 1977, p. 20). Galveston Island, with its 32 miles of coastal environment, has become a major resort and vacation area for Texans and for many out-of-state tourists. The park is accessible to the tourist by good instate and interstate highways.

Galveston Island State Park is located approximately 12 miles west of the City of Galveston in an area known as West Beach (Appendix B, page 178). The Park which contains 1,950 acres, spans the breadth of Galveston Island and provides one and one-half miles of sand beach on the Gulf of Mexico (Appendix B, page 179).

Near the beach, on the land side of the "dunes" are 180 multi-use campsites providing both recreational vehicle and tent camping. Additional recreational opportunities in the park include fresh water fishing, a nature trail and an amphitheater that presents outdoor dramas depicting Texas history. While the amphitheater productions encourage many people to visit the park, the "most evident" reasons are the traffic free beach and the well developed campsites (Schwartz, 1977).

Study Population

The population studied consisted of individuals who filled out a camping permit and subsequently camped at GISP during September 1977 to August 1978. Schwartz's (1977) identified demographic data (seasonal visitation trends, location and age group trends) were used to describe the characteristics of the sample. According to Schwartz's (1977) study, visitors from Texas predominately represent counties surrounding Houston, Austin, Dallas and Galveston. During

winter months of November, December, and January, most visitors are from out of state, coming from those states that border the Gulf of Mexico, the Midwest states, and the Great Lakes states. Schwartz determined senior citizens have the greatest percentage of park attendance during the winter months.

Written permission to pursue the study was obtained from officials at Galveston Island State Park. The State Park Department required the cover letter state the results of the study were not for use by the Parks Department and names on the official camping permits were obtained pursuant to the Texas Open Records Act (Appendix C). Unconditional approval to pursue the study was granted by the Human Research Advisory Committee at Texas Woman's University (Appendix C).

The population of 21,403 GISP camping permits were arranged in sequential order by month and date. The permits from September 1977 to August 1978 were obtained by park officials at GISP. Once the permits were in sequential order, a proportional, stratified random sample was drawn in the following manner:

1. The number of total permits per month was identified.
2. The percentage by month of the total number of permits (21,403) was identified.
3. A total sample size of 350 was drawn.

4. A sampling ratio of 1 in 60 was chosen as it achieves each month's portion of the sample in the same proportion as the month's percentage of the total population (Appendix D).

Instrument

The instrument used in this study was designed according to procedures outlined by Haskins (1960). Haskins' method was effective in predicting audience interests in media campaigns (i.e., television or radio spots, newspaper or magazine articles, and so forth) and was validated from data derived from the target audiences' ratings of a title and two sentence concepts of proposed messages (Feinburg & McLaughlin, 1969; Stevenson, 1973; Worden, Sweeney, & Waller, 1978).

Worden et al. (1978) stated the pretest using Haskins' instrument saves time and expense during pre-production, validates existing audience needs, and prevents production of materials that might otherwise be unsuccessful.

Haskins (1960) described a method for measuring readership interest and predicting readership in "title ratings." Haskins developed a title rating method which consists of having a representative sample of the target population give ratings to concepts and titles of certain preselected items. The interest ratings are expressed numerically in terms of "degrees of interest" on a thermometer-like

scale ranging from zero (low interest) to 100 (extremely interested). There are four statements associated with the numerical scores on the thermometer. Haskins' instrument was developed for use with national magazines, however, the author stated the instrument is useful for any researcher desiring to "scientifically pinpoint the interest of the whole audience, or special groups within larger populations" (p. 224).

Validity of Haskins' instrument was tested statistically by comparing rank score correlation with the number of individuals "professing readership." The validity coefficient was above .78 in all but one of the nine predictions in the "read all" category. The one item had a rank correlation of .77. The statistical relationship of the prediction at each of the ten thermometer scale points was compared with each of the three degrees of readership (saw, read part, read all). Five of the items achieved a rank correlation of .90 or higher (Haskins, 1960, p. 561).

To further validate the instrument, Haskins (1960) cross validated the instrument four times under varying conditions. In all cases, national samples were employed. He discovered item readership generally can be "predicted" with an average error of 7%.

Individualizing Haskins' Instrument for the Beach User

Preliminary data from a limited community health survey of the beach tourist population of Galveston, Texas, provided objective and subjective data assisting in determining relevant needs and general characteristics. No objective data concerning the tourists' perceptions of needs and interests of beach health and safety education existed. Haskins' instrument was modified and adapted for the beach population to provide objective data useful for successful program planning. A total of 14 message titles and concepts for further testing were developed in a series of discussions with community and public health officials responsible for safety on the beach. The titles and concepts are delineated and are depicted in the content portion of the instrument. The instrument was individualized for the beach user by including several questions designed to identify subgroups of the sample. In addition to asking the sample basic demographic data (age, sex, income, education, occupation) not found on the camping permit, each subject was asked to indicate his primary activity while visiting the park, purpose for visiting the park, and his visit affiliation (himself, friends, family). The instrument was broadened to collect data concerning previous health and safety problems, attitudes concerning health education at a state park, desire to attend or not attend

"on the beach" classes, and a scale to detect the user's perception of his susceptibility to beach health and safety hazards (Appendix E).

Validity

The content validity of this instrument was the jury decision of four professional nurse researchers. They were provided an explanation of the study. Each juror's written consent to act as a juror was obtained (Appendix E). One of the jury was a doctorally prepared nurse researcher; two jurors were doctorally prepared nurses whose specialty includes evaluation and instructional design. The fourth juror was a doctorally prepared nurse whose specialty is clinical and educational research.

Data Collection

Camping permit data identifying the potential beach user permitted the use of a mail questionnaire. The sample of subjects was sent: (1) an introductory cover letter explaining the study, the questionnaire, an explanation of the attached code number, and a quarantee of the subject's anonymity; (2) a written consent form, and (3) a self-addressed pre-stamped written questionnaire. If subjects did not respond within two weeks, a single follow-up letter was sent along with an additional self-addressed, pre-stamped questionnaire (Appendix E).

Respondents were asked to rate each title and concept on a range of 0-100 "Thermometer Scale." The second half of the questionnaire determined basic demographic data (age, sex, income, education, occupation). Other demographic data (state of residence, county of residence, city of residence, group size, type of yearly permit) were available from the camping permit. Also, the sample was asked to indicate their primary activity while at GISP (to use the beach, to camp, to fish, to observe nature, to picnic, and a place for "other"), their purpose (vacation or short trip) and with whom did they come (self, family, friends). The activity, purpose, and association questions were used by Schwartz (1977) and data obtained was found to be useful in determining subgroups of the population. The sample was asked to indicate what beach and health safety problems they have encountered while visiting GISP (jelly-fish stings, sunburns, foreign objects in feet, cuts, scrapes, falls, burns, and a place for "other"). Also indicated on a 5-point Likert-type scale was their attitude of the necessity of GISP offering beach health and safety classes, "not at all necessary" to "extremely necessary." Also a similar scale was used for the sample to indicate how susceptible one thinks himself in relation to beach health and safety hazards, "not at all susceptible" to "extremely susceptible." Completion time for

the questionnaire was estimated to be 10-12 minutes for most subjects.

Subgroup Identification

To answer the research questions of this study, subgroups of the sample were determined. The subgroups identified from the questionnaire and used as independent variables were based on the following 12 categories:

1. Purpose of trip to GISP: (a) vacation, (b) short trip.
2. Affiliation (with whom): (a) myself, (b) family, (c) friends.
3. Reason for visit: (a) beach, (b) to camp, (c) other.
4. Feelings concerning necessity for beach health and safety classes: (a) not necessary, (b) slightly to moderately necessary, (c) very--extremely necessary.
5. Projection of attendance at beach classes: (a) yes, (b) no.
6. Number of encounters with beach hazards: (a) none, (b) one encounter, (c) two to three encounters, (d) over three encounters.
7. Feelings of susceptibility concerning beach hazards: (a) no susceptibility, (b) slightly to moderately susceptible, (c) very--extremely susceptible.
8. Age: (a) less than 35 years, (b) 35-49 years, (c) 50 years and over.

9. Sex: (a) male, (b) female.

10. Education: (a) less than high school graduate, (b) high school graduate, (c) college.

11. Income: (a) under $10,000, (b) between $10-$20,000, (c) over $20,000.

12. Occupations: (a) blue collar, (b) white collar, (c) homemaker, (d) retired.

The variable considered from the permit data to define subgroups was:

State of residence: (a) instate address, and (b) out-of-state address.

All identified subgroups were displayed on an appropriate graph and tables with an indication of frequency distribution. Other demographic data displayed from the park permits were: (1) length of stay; (2) group size; (3) type of park permit: parklands passport, restricted annual permit, annual permit, and daily permit.

Treatment of the Data

The study findings were analyzed using nonparametric statistics. The Kruskal-Wallis One-Way Analysis of Variance was used to test for significant relationships at $p \leq .05$ level of interest ratings and subgroup affiliation based upon affiliation, reason for visit, feelings about beach classes, type of beach health hazard encounter, feelings of

susceptibility, age, occupation, income, education, in-state versus out-of-state residence, purpose of park visit, and sex. To determine significant difference location between and among independent variables (subgroup affiliation) and the dependent variables (interest ratings), the Multiple Confidence Interval Procedure for the Kruskal-Wallis test as defined by Marascuilo and McSweeney (1977) was used to determine significant pair-wise contrasts.

The cross-tabulations of questionnaire responses for identified subgroups and categories for type of encounter, feelings of susceptibility and feelings of necessity for beach classes were displayed and tested for significant relationships ($p \leq .05$) with the Chi-Square Test using Contingency tables. The statistical analysis and frequency report of the collected data utilized the capabilities of the computerized Statistical Package for the Social Sciences (SPSS)(Nie et al., 1976) and the Executive Statistical Analysis System (SAS)(SAS Institute, Inc., 1976).

Summary

Camping permits obtained from visitors to Galveston Island State Park, Galveston, Texas, made possible the proportional stratified random sampling from a one year population of over 22,000 permits. The proportional stratified sampling technique produced a study sample of 350 which contained more

items for heavily visited months and fewer items for those months with less visitation.

Haskins (1960) designed a title rating scale reported in the literature to be useful for any researcher to pinpoint audience interest in the whole audience or special groups within larger populations. A written questionnaire was designed by the investigator utilizing Haskins' title rating methods to determine audience interest of beach health and safety messages of the random sample of park visitors. The questionnaire also collected various demographic data that would assist in the identification of subgroups. After a six weeks length of time and one follow-up letter and questionnaire, the completed responses were prepared for data analysis. The nonparametric test of Kruskal-Wallis was used to determine the degree of relationship between the independent variable (subgroup affiliation) and the dependent variables (interest ratings). A multiple comparison technique was employed for significant $\underline{H}$ scores ($\underline{p} \leq .05$). Cross tabulated data were tested for relationships with the Chi Square Test.

In the following chapter, the major statistical and descriptive techniques used in this study will be explained. In those sections where analysis occurs, further discussion is provided.

CHAPTER 4

ANALYSES OF DATA

Introduction

This study was concerned with the following research questions: (1) What are the subgroups of the visitor population of Galveston Island State Park (GISP) as based upon demographic, attitudinal and situational variables? (2) What are the park visitors' levels of interest in 14 selected health and safety message concepts? and (3) Are there any significant relationships between levels of interest in health and safety messages and subgroup affiliation?

This chapter is a discussion of the analyses and interpretation of data collected from a proportional, stratified random sample population of 350 GISP visitors who completed camping permits. The analysis of data obtained from a written questionnaire and selected permit data assisted in answering the above research questions by describing the GISP visitor sample in terms of relative needs, interests and characteristics.

Questionnaire Response

Three weeks after the initial mailing, 39.4% of the questionnaires had been returned and a follow-up questionnaire package consisting of a cover letter and pre-stamped questionnaire was sent to the sample non-respondents. After another three weeks time lapse, data analysis began. The three week periods allowed sufficient time for mail delivery and questionnaire response.

Of the total 350 sample questionnaires mailed, 188 (54%) were completed and returned. Eight (2%) questionnaires were received after data analysis procedures were completed and, therefore, were not included in the analysis. Three questionnaires were returned but not completed. Twenty-six questionnaires (7%) were returned by the U.S. Postal Service as non-deliverable. Addresses for non-deliverables were checked in telephone directories and information services without success. The remaining 136 individuals (39%) presumably received questionnaires but failed to respond. Overall, 177 (51%) questionnaires were used for data analysis.

Check for Homogeneity of Respondents and Non-Respondents

To detect potential study bias as a result of a skewed sample, a content analysis was conducted on the sample of GISP permits for both respondents and non-respondents. To

determine whether non-respondents were different than respondents, the permit data from the 180 respondents were organized into Stratum 1 and similar permit data from non-respondents were compared in Stratum 2. Stratum 2 included the eight questionnaires received after data analysis began.

As a result of the stratified sampling technique, those months with higher visitation of park visitors were more heavily sampled than those with less visitation. The sampling strategy was important to note because the pattern of monthly visitation for non-respondents closely resembles that of questionnaire respondents (Figure 2).

The visitation figures indicated May, June, July and August were the heavy visitation months. July was the most heavily utilized for both respondents and non-respondents. The normally distributed visitation pattern tended to indicate that a sample bias based upon month of visit was probably not present.

Homogeneity of Park Permit Data

Comparisons between respondents and non-respondent samples were made based upon other data found on the camping permit. Regarding group size, the sample mode for respondents and non-respondents was 2 individuals, while the mean group size was 2.74 and 2.78 individuals, respectively. Regarding length of stay the mode length of stay was one day and the

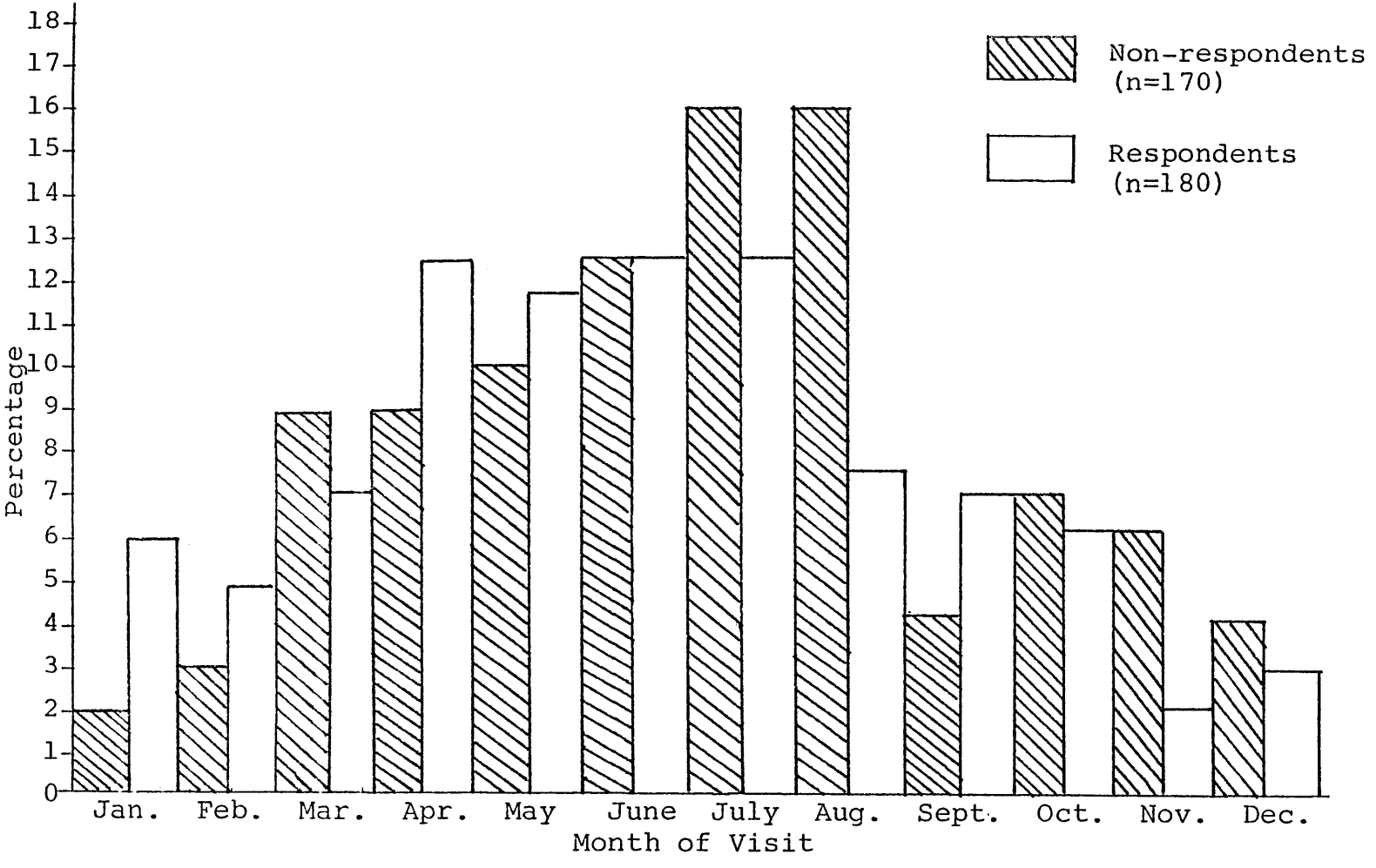


Figure 2. Graph of Respondents and Non-Respondents by Percentage of Total Sample (n=350) and by Month of Visit Indicating Homogeneity

mean length of stay for respondents was 1.65 days and 1.64 days for non-respondents. Demographic comparisons of non-respondents to respondents indicated less than a 5% difference for types of permits, total permits, and in-state versus out-of-state residences (Table 2).

Utilization of the Chi-Square Test for two or more samples indicated no significant difference ($p \leq .05$) between respondents and non-respondents in respect to type of park permit. There was a significant difference ($p \leq .05$) between respondents and non-respondents in respect to state of residence (instate versus out-of-state).

Comparisons between respondents and non-respondents indicated only minimal variances between the two groups. In consideration of the similar comparisons, the investigator concluded the two groups are homogeneous in respect to available park permit data.

Description of the Sample

The study sample was described by analyzing and interpreting data from both the park permit and written questionnaire. Demographic data which helped to identify characteristics of the park visitor and subgroup affiliation were obtained from both sources.

Table 2

Demographic Comparison of Respondents to Non-Respondents for Type of Permit and Instate and Out-of-State Residences Indicating Homogeneity (n=350)

Demographic Item from Permit Variables	Stratum 1 Respondents		Stratum 2 Non-Respondents		Totals	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Type of Permit						
Parklands Passport	31	8.8	28	8.00[a]	59	16.80
Annual Permit	21	6.0	30	8.57[a]	51	14.57
Restricted Annual Permit	17	4.8	22	6.29[a]	39	11.09
Daily Permit	111	31.7	90	25.70	201	57.40
Total	180	51.3	170	48.60	350	100.00
State of Residence						
Instate Addresses	95	27.0	106	30.00[a]	201	57.00
Out-of-State Addresses	85	24.0	64	19.00[a]	149	43.00
Total	180	51.00	170	49.00	350	100.00

[a]Stratum 2 differs 5% or less.

Demographic Permit Data

Park permit data used to describe the sample were: state of residence, month of visit, length of stay, number in party and type of park permit. The sample represented 32 states and Canada. The distribution of the sample by states is displayed in Table 3. Visitors were primarily from the State of Texas (201, 57%). Other states representing 2% or more of the sample were: California, Indiana, Kansas, Michigan, Missouri, and Oklahoma. Over 3% of the sample were from Canada. Table 4 indicated an almost equal distribution of instate versus out-of-state residences for those who responded to the questionnaire.

The sample population (both respondents and non-respondents) are displayed in Table 5 according to month of visit and instate versus out-of-state residence. Instate permits tended to predominate in September, May, June, and August. Out-of-state permits were more numerous in October, November, January, and March.

Park permits were stratified by date and systematically selected during sampling for the study. Therefore, a full 12 month park visitation was proportionally represented from the total population of over 21,000 permits. Using stratified sampling technique, those months which had higher visitation were sampled more than those with less visitation. The highest month for visitation was July which represented

Table 3

Distribution of Sample Galveston Island State Park Visitors Based on State of Residence

State	Number of Permits	Percent
Arizona	1	.29
Arkansas	3	.86
California	9	2.57
Colorado	3	.86
Connecticut	2	.57
Florida	6	1.71
Georgia	4	1.14
Illinois	6	1.71
Indiana	7	2.00
Iowa	5	1.43
Kansas	10	2.86
Kentucky	1	.29
Louisiana	6	1.71
Maine	1	.29
Michigan	13	3.71
Minnesota	6	1.71
Missouri	17	4.86
Maryland	1	.29
Nebraska	4	1.14
New Hampshire	1	.29
New Jersey	2	.57
New Mexico	2	.57
New York	4	1.14
North Carolina	3	.86
Ohio	3	.86
Oklahoma	11	3.14
Pennsylvania	2	.57
Tennessee	2	.57
Texas	201	57.40
Virginia	1	.29
Washington	1	.29
Wisconsin	1	.29
Canada	11	3.14
Total	350	100.00

Table 4

Permit Data: Frequency Distribution of Sample Respondents by Instate Versus Out-of-State (n=177)

Response	Frequency	Percent
Instate	92	52
Out-of-State	85	48
Total	177	100

Table 5

Sample Populations Frequency Distribution of Instate and Out-of-State Visitors According to Month of Visit (n=350)

Month/Year	Sample Size		Instate		Out-of-State	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Sept. 1977	19	5	14	74	5	26
Oct. 1977	23	7	8	35	15	65
Nov. 1977	15	4	5	33	10	67
Dec. 1977	12	3	6	50	6	50
Jan. 1978	13	4	1	8	12	92
Feb. 1978	14	4	3	21	11	79
Mar. 1978	37	11	13	35	24	65
Apr. 1978	38	11	20	54	18	46
May 1978	40	11	35	88	5	13
June 1978	46	13	39	85	7	15
July 1978	51	15	25	49	26	51
Aug. 1978	42	12	32	77	10	23
Total	350	100	201	57	149	43

15% (51) of the sample. The spring and summer months of April, May, June, July and August represented 62% (217) of the sample.

As indicated earlier, a park visitor possessed one of four types of user permits: (1) daily permit--purchased at the time of visit and valid for specified day(s); (2) annual permits--purchased and used in lieu of the daily entrance fee; (3) restricted annual permit--allows annual entrance privileges to any one state park as designated by the purchaser at the time of purchase; and (4) parklands passport permit--exempts persons 65 years of age and over from having to pay an entrance fee. Table 6 shows the sample's distribution of types of park permits according to month of visit. As expected, the majority of the sample (57%, 201) visited the park with only a daily permit. This finding indicated the park was frequented by tourists who are not routine campers/visitors to Texas state parks. Of the visitors, 43% (149) possessed one of the three special permits. The largest group of special permit holders, 17% (59), consisted of visitors with Parklands Passport permits contributing to the popularity of the park for retired persons. Of the sample, 15% (51) were considered as "avid" park visitors as they held an annual permit which enabled a visit to any Texas state park without paying a separate fee. Of the

Table 6

Sample Populations Frequency Distribution of Type of Park Permit According to Month of Visit (n=350)

Month/Year	Daily		Annual		Parklands Passport		Restricted Annual		Total
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent	
Sept. 1977	11	58	2	11	5	26	1	5	19
Oct. 1977	13	57	3	13	3	13	4	17	23
Nov. 1977	8	53	4	27	1	7	2	13	15
Dec. 1977	6	50	2	17	3	25	1	8	12
Jan. 1978	8	62	0	0	5	38	0	0	13
Feb. 1978	3	21	4	29	7	50	0	0	14
Mar. 1978	20	54	2	5	12	32	3	8	37
Apr. 1978	24	63	2	5	10	26	2	5	38
May 1978	29	73	3	8	4	10	4	10	40
June 1978	29	63	11	24	2	4	4	9	46
July 1978	28	55	10	20	5	10	8	16	51
Aug. 1978	22	52	8	19	2	5	10	24	42
Total	201	57	51	15	59	17	39	11	350

Note: Special permits which accounted for 43% (149) is derived from the distribution of Annual, Parklands Passport, and Restricted Annual Permits.

sample, 11% (39) possessed a restricted annual permit which indicated a smaller number of individuals frequent GISP, enough to consider it their park of choice. The winter months of December, January, February and March attracted the largest proportion of campers with Parklands Passport permits. Retired persons visiting GISP during the winter months are frequently referred to as "snow-birds" by local Galveston residents and park officials. The so-called "snow-birds" come to Texas to escape severe winters. No other type of permit by month of visit trends was noted. Analysis of the data obtained from the four types of park permits described the sample as transient, in-frequent campers who stayed at the park for less than two days with less than three persons. There was almost an equal distribution between Texas and non-Texas residences.

Demographic Questionnaire Data

Demographic data obtained from the written questionnaire described the respondents' ages, income, education, purposes of park visit, affiliations during park visit (i.e., with whom they came), and activities during park visit. Age distribution of the sample, summarized in Table 7, indicated 27% (48) were less than 35 years of age, 36% (64) were 35 to 49 years of age, and 37% (65) were age 50 and over. Of the respondents, 69% (123) were male and 31% (54) were female.

Table 7

Questionnaire Response: Frequency Distribution of Age Groups by Sex (n=177)

Sex	Age Groups (Years)						Total	
	Less than 35		35-49		50 and over			
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Male	26	21	43	35	54	44	123	69
Female	22	41	21	39	11	20	54	31
Total	48	27	64	36	65	37	177	100

The breakdown and relationship of the sample by age and sex is depicted in Table 7. As evidenced, the age group 50 years and over predominated in males whereas the younger age group of less than 35 years predominated in the female sample. The totals for the three age groups do not vary more than 10%. The large proportion of male responses was probably because a male's name appeared on the camping permit.

The middle and upper income bracket represented almost 80% (140) of the respondents, as shown in Table 8. The sample also indicated a relatively high educational level with 68% (96) reporting some college and above. Table 9 indicates the frequency distribution of level of education.

Table 8

Questionnaire Response: Frequency Distribution of Sample by Income (n=177)

Response	Frequency	Percent
Under $10,000	35	20
$10-$20,000	76	43
Over $20,000	64	36
No Response	2	1
Total	177	100

Table 9

Questionnaire Response: Frequency Distribution of Sample by Education (n=177)

Response	Frequency	Percent
Less than high school	3	2
Some high school	10	6
High school graduate	46	6
Some college	41	26
College graduate	28	15
Postgraduate studies	49	27
Total	177	100

The six broad occupational categories indicated by the sample are shown in Table 10. Professional occupations predominated; 31% (55) of the sample was found in this category. Of all job categories, professional and non-skilled occupations combined predominated the sample (56%--99 respondents).

Table 10

Questionnaire Response: Frequency Distribution of Sample by Occupation (n=177)

Response	Frequency	Percent
Retired	38	21
Housewives	19	11
Skilled Craftsmen	9	5
Professional	55	31
Sales	12	7
Non-skilled	44	25
Total	177	100

Answers to Research Questions

Park permit and written questionnaire data were tabulated to provide descriptive demographic data which was previously presented. The demographic data were studied to determine if sizeable subgroups of the sample existed which

would be amenable to further study. In addition, the written questionnaire provided data used to describe other subgroups concerning the visitors' attitudes and experiences (situations) with health and safety hazards while at the park. The questionnaire included a thermometer rating scale (0-100 degrees) for scoring 14 pre-selected beach health and safety titles and concepts. The rating thermometer scale, designed by Haskins (1960), corresponded to printed labels where "0" equaled "extremely sure I would not like to hear more" to "100" which equaled "extremely sure I would like to hear more."

Subgroups identified for further study were compared to each other on the basis of the mean ranks of the rating scale score. The Kruskal-Wallis One-Way Analysis of Variance was used to identify significant relationships of subgroup affiliation and interest ratings for each of the 14 title concepts. If an obtained H-score was significant for more than two subgroups ($p<.05$), then a Multiple Confidence-Interval Procedure for the Kruskal-Wallis Test as described by Marascuilo and McSweeney (1978) was used to determine which subgroup was significantly different. To determine if any other significant relationship existed, demographic, attitudinal and situational variables were cross tabulated and tested with the Chi-Square Test using Contingency tables ($p<.05$).

Analysis of the data was performed to answer the three research questions of the thesis: (1) What were the subgroups of the sample? (2) What was the level of interest in the 14 title/concepts? and (3) Were there any significant relationships among subgroups and among subgroups and mean ranks of interest scores? The data were analyzed in order to provide more knowledge concerning beach visitors' interests in beach health and safety concepts.

Research Question 1

The first research question formulated for the purposes of this thesis was: What are the subgroups of the visitor population of GISP based upon demographic, attitudinal and situational variables? Identification of subgroupings of the visitor sample allowed for further analysis for significant relationships.

Demographic variables determining subgroups. Demographic data presented in the previous section indicated the following subgroups for further study:

Age:	less than 35 years	(n=48)
	35-49 years	(n=64)
	50 years and over	(n=65)
Sex:	Male	(n=123)
	Female	(n=54)
State of Residence:	Instate addresses	(n=201)
	Out-of-state addresses	(n=149)

Education:	<high school graduate	(n=13)
	High school graduate	(n=46
	College and above	(n=118)
Income:	<$10,000	(n=35)
	$10,000-$20,000	(n=76)
	>$20,000	(n=64)
Occupation:	Blue collar	(n=53)
	White collar	(n=67)
	Homemaker	(n=19)
	Retired	(n=38)

Attitudinal variables determining subgroups. Data from the attitudinal questions (feelings concerning necessity for health and safety classes, attendance of beach classes, feelings of susceptibility, preference of health education approach) were analyzed. Results from the questions indicated the sample's attitudes and opinions concerning beach health education. Analyses also indicated subgroups based on attitudes of the sample to be used for further study.

The frequency distribution of responses concerning the sample's feelings about GISP offering beach health and safety classes is depicted in Table 11. The question based on a Likert-type scale ranged from "not necessary" to "extremely necessary" and was included to discover how the sample felt about the park's involvement in health and safety education.

Most of the respondents (53%) indicated a slight to moderate necessity for GISP to be involved with health and

Table 11

Questionnaire Response: Frequency Distribution of Feelings About Safety Classes at GISP (n=177)

Response	Frequency	Percent	Groupings	
Necessity				
Not necessary	19	11	None	11%
Slightly	26	15	Slight/ Moderate	53%
Moderately	67	38		
Very	51	28	High	5%
Extremely	12	7		
No Response	2	1		
Total	177	100		

safety education classes. The moderate response indicated the sample was not convinced that "classes" were the best mode for dissemination of health and safety education. A "class" was a concrete term that suggested a commitment that would have been in competition with recreational activities.

Even though 53% indicated a slight to moderate necessity of classes at GISP, 58% (103) indicated positively on a question concerning attendance of actual on the beach classes (Table 12). A perceived lack of activities while camping at GISP may have contributed to the positive response.

Table 12

Questionnaire Response: Frequency Distribution of Would Attend Beach Classes (n=177)

Response	Frequency	Percent
Yes	103	58
No	69	39
No Response	5	3
Total	177	100

The "beach class" would have offered a family activity for an early evening hour after the evening meal.

The sample was asked how susceptible they felt concerning the possibility of injury as a result of beach and health hazards. The sample indicated how they felt by scoring a Likert-type scale ranging from "not at all susceptible" to "extremely susceptible." The sample's feelings of susceptibility are displayed in Table 13. The largest percentage of respondents, 81% (144) felt they were only slightly to moderately susceptible to beach and health hazards. Only 9% felt they were very or extremely susceptible. The sample therefore indicated they felt minimally vulnerable to health risks while visiting the park.

Table 13

Questionnaire Response: Frequency Distribution of Feelings of Susceptibility Concerning Beach Hazards (n=177)

Response	Frequency	Percent	Groupings	
Not at all susceptible	14	8	None	10%
Slightly susceptible	69	39	Slight/ Moderate	81%
Moderately susceptible	75	42		
Very susceptible	14	8	High	9%
Extremely susceptible	2	1		
No response	3	2		
Total	177	100		

Analysis of data from the attitudinal questions indicated the following subgroups based on attitudes of the sample to be used for further study:

Feelings Concerning Classes

None (n=19)
Slight/Moderate (n=93)
High (n=63)

Attend Classes

Yes (n=103)
No (n=69)

Susceptibility

None (n=14)
Slight/Moderate (n=144)
High (n=16)

Situational variables determining subgroups. Data from situational based questions (type of beach health hazard encounter, park activities, purpose for visiting the park, and association with others during park visit) were analyzed to describe the sample and delineate pertinent subgroups for further study.

The sample's response to the type of beach health hazard encountered during their visit to GISP is shown in Table 14. The checklist-type question included a space for "other" beach health hazard encountered.

Table 14

Questionnaire Response: Frequency Distribution of Type of Beach Health and Safety Hazard from Individuals Reporting Encounters (n=90)

Response	Frequency	Percent[a]
Sunburn	54	60
Cuts/Scrapes	37	41
Jelly-fish	34	38
Glass/Splinter	27	30
Other marine life	16	18
Burns	2	2
Other	38	42
Total (Reported Hazard)	208	

[a]Percent of sample reporting hazards.

As evidenced by the large number of encounters (208) from the 90 visitors who reported having an encounter with one of the listed hazards, many of the visitors experienced more than one health and safety problem. Sunburns, which must be the most thought of beach health problem, headed the list with 60% (54) of the 90 respondents who indicated one or more encounter. Despite a well-established anti-glass beach ordinance, 41% cut themselves on various sharp objects. Jelly-fish stings were the third highest problem indicated by the visitors. Statistics from the Galveston Beach Patrol indicate jelly-fish stings to be the most reported beach health problem. Other marine life wounds accounted for 18% (16) of the sample. The category includes stings from man-of-wars, sting-rays, catfish barbs, and various sea urchins.

The "other" blank associated with the hazards encountered question resulted in 38 listings. The reported hazards are depicted in Table 15.

The frequency of the number of reported encounters with beach health and safety hazards from those reporting no encounter, only one encounter, 2-3 encounters, and over three encounters is shown in Table 16. Of the sample, 51% experienced some type of health problem while visiting GISP. Judging from the frequency of reported problems by this random sample, health hazards not only exist at GISP

Table 15

Frequency Distribution of Other Health Hazards Listed by Park Visitor Respondents

Other Health Hazards	Frequency	Percent
1. Sand burrs	8	21
2. Tar/oil	7	18
3. Mosquitos	5	13
4. Unleashed dogs	3	8
5. Ant bites	2	5
6. Sand fleas	2	5
7. Rattlesnakes	2	5
8. Speeding cars	2	5
9. High winds	2	5
10. Dead marine life	1	3
11. Unclean beach	1	3
12. Cold weather	1	3
13. Salt H_2O in cuts	1	3
14. Texas Sunday Blue Law	1	3
Total	38	100

but are frequently a causation of an injury and/or illness of the GISP visitor.

The sample was asked for preference in regard to types of health education approaches. Specifically, the

Table 16

Questionnaire Response: Frequency Distribution of Number of Reported Encounters with Beach Health and Safety Hazards (n=177)

Responses	Frequency	Percent
No encounter	87	49
1 encounter	43	24
2-3 encounters	40	23
Over 3 encounters	7	4
Total	177	100

sample was asked, "Which of the following methods of health and safety education would you prefer to participate in?" The responses are depicted in Table 17.

Table 17

Questionnaire Response: Frequency Distribution of Preference of Type of Health Education Approach (n=177)

Responses	Frequency	Percent
Printed handout	78	44
Display	41	23
Informal classes	44	25
Other	8	5
No preference	6	3
Total	177	100

The largest percentage, 44% (78), indicated a preference for "printed handouts." Presumably the sample would prefer reading about health problems in a booklet at their leisure. Eight respondents indicated the following "other" preferences: "have films at night," "campfire with park ranger," "have nature study groups and include health and safety."

The questionnaire asked the sample the main purpose of the park visit, with whom they came, and why they visited the island park (Table 18).

Table 18

Questionnaire Response: Frequency Distribution for Purpose of, Association during, and Reason for Park Visit (n=177)

Responses	Frequency	Percent
Purpose of Park Visit		
Vacation	111	62.7
Short trip	65	36.7
No response	1	0.6
Total	177	100.0
Association during Park Visit		
With family	133	75.0
With friends	28	16.0
Alone	11	6.0
No response	5	3.0
Total	177	100.0
Reason for Park Visit		
Camp	102	58.0
Beach	54	30.5
Other	19	11.0
No response	2	0.5
Total	177	100.0

The largest majority of the respondents, 75% (133) came with their families. A vacation was the reported purpose of the visit by 62.7% (111), and 58% (102) reported they came primarily to camp.

Analysis of the situational variables resulted in determining the following subgroups of the sample:

Association during visit:		Purpose of park visit:	
Myself	(n=11)	Vacation	(n=111)
Friends	(n=28)	Short Trip	(n=65)
Family	(n=133)		
Why did you visit?		Encounter:	
Use beach	(n=54)	None	(n=87)
To camp	(n=102)	Sunburn	(n=54)
Other	(n=19)	Cuts/scrapes	(n=37)
		Jelly-fish	(n=34)
		Glass/splinter	(n=27)
		Other marine	(n=16)

Research Question 2

The second research question formulated for the purposes of this study was: What are the park visitors' levels of interest in 14 selected health and safety message concepts? This question incorporated the main thrust of the study to determine how interested the sample was in certain pre-selected health and safety concepts. The titles and concepts were selected for the questionnaire by studying the most reported health problems experienced by beach visitors, data from a limited community health survey, and contributions of community and public health officials. Some of the concepts

reflected primary and secondary prevention aspects. The titles/concepts were analyzed individually in order to objectively order and select topics for purposes of health education planning.

Thirteen titles with the thermometer scores are displayed in Table 19. Concept Number 8 was omitted from further analyses due to a questionnaire printing error. The titles were ranked in order of the highest to lowest percentage of scores in the "sure I would like to hear more (50-99)" and "extremely sure I would like to hear more (100)" categories. The ranks indicated the priority the sample placed upon hearing more about each particular title/concept. Concepts concerning Jelly-fish stings and dangerous marine life were the top three title/concepts of interest. Concepts on cuts/scrapes, sunburns and campfire burns were concepts of least interest. There seemed to be no trend indicating more interest in secondary concepts and/or primary prevention concepts. The largest percentage of the scores, 44% (1018), were found in the more moderate "sure I would like to hear more (50-99)" category. The concept awarded the largest percentage of 100 scores ("extremely sure I would like to hear more") was emergency medical services. The concept awarded the largest percentage of 0 scores ("extremely sure I would not like to hear more") was campfire burns.

Table 19

Frequency Distribution and Rank Order of Thermometer Scores by Concept Titles 1-13[a]
2,301 Total Scores Reported

RANK	CONCEPT TITLE	EXTREMELY SURE I WOULD NOT LIKE TO HEAR MORE (0)		SURE I WOULD NOT LIKE TO HEAR MORE (1-49)		SURE I WOULD LIKE TO HEAR MORE (50-99)		EXTREMELY SURE I WOULD LIKE TO HEAR MORE (100)		n	DISTRIBUTION OF SCORES (50-100)	
		freq	percent	freq	percent	freq	percent	freq	percent		freq	percent
1.	How to Prevent Jelly-fish Stings	6	3	8	5	83	47	80	45	177	163	92.1
2.	Dangerous Marine Life	6	3	9	5	70	40	92	52	177	162	91.5
3.5	Emergency Medical Services	9	5	11	6	64	36	93	53	177	157	88.7
3.5	Water Safety in the Gulf	9	5	11	6	79	45	78	44	177	157	88.7
4.	First Aid for the Drowning Person	13	7	14	8	62	35	88	50	177	150	84.7
5	Where do I go if I get sick?	17	10	14	8	68	38	78	44	177	146	82.4
6.	Beach Rules and Individual Rights	11	6	22	12	83	47	61	34	177	144	81.3
7.5	Where is it Safe to Swim in the Gulf?	17	10	19	11	75	42	66	37	177	141	79.6
7.5	Heatstroke	17	10	19	11	80	45	61	34	177	141	79.6
8.	Prevention and Care for Cuts	21	12	28	16	101	56	27	15	177	128	72.3
9.	How to Prevent Sunburns	27	15	23	13	82	46	45	25	177	127	71.7
10	What to do for Sunburn	26	15	27	15	77	44	47	27	177	124	70.0
11	Campfire Burns	33	19	23	13	94	53	27	15	177	121	68.3
n=13	Total	212	9.21	228	9.90	1018	44.2	843	36.6	177	1834	79.70

[a]Concept Number 8 was omitted due to a questionnaire printing error.

Research Question 3

The third research question formulated for this study was: Are there any significant relationships between levels of interest in health and safety messages and subgroup affiliation? The data allowed analyses of relationships between interest and subgroup affiliation and among subgroups themselves. Subgroups identified as a result of answering Research Question 1 were statistically analyzed according to each health and safety title/concept. The Kruskal-Wallis One-Way Analysis of Variance utilizing the Statistical Package for the Social Science (Nie, et al., 1976) produced significant H scores at the $p<.05$ for subgroups reported in Table 20. Significant variations ($p<.05$) in interest ratings among subgroups were the only variations reported in Table 20.

Certain titles/concepts produced significant H scores following the Kruskal-Wallis test. To determine specific subgroup significance, a multiple confidence interval procedure (Marascuilo & McSweeney, 1977) was used to determine significant pair-wise contrasts. The difference among K subgroups can be identified by considering all confidence intervals of interest with the formula for pair-wise comparisons (see Appendix F).

Table 20

Mean Ranks and Kruskal-Wallis H Scores Between and Among Subgroups on Beach Health and Safety Concepts 1-14

Number and Title of Concept	Significant Subgroups with Mean Ranks	H Scores Corrected for Ties
1. How to Prevent Jelly-fish Stings	Feel (None=66.17; Slight/Moderate=88.91; High=103.94)	12.035**
	Sex (Female=99.97; Male=84.18)	3.938*
	Why (Beach=110.77; Camp=83.85; Fish=49.36; Other=85.32)	10.733*
2. How to Prevent Sunburns	Feel (None-68; Slight/Moderate=85.98; High=108.10)	13.287**
3. Emergency Medical Services	None	
4. Prevention and Care for Cuts and Scrapes	Sex (Female=104.42; Male=82.23)	7.179**
	Feel (None=73.48; Slight/Moderate=85.25; High=105.87	9.239*
	Occup (Retired=99.09; Homemaker=110.68; Blue Collar=76.53; White Collar=75.89)	10.772*
5. Water Safety in the Gulf	Feel (None=71.86; Slight/Moderate=87.14; High=103.48)	8.648*
6. Dangerous Marine Life	Sex (Female=100.63; Male=83.89)	4.667*
	Feel (None=69.95; Slight/Moderate=90.24; High=99.07)	7.674*
	Occup (Retired=82.07; Homemaker=111.13; Blue Collar=79.20; White Collar=91.75)	12.305*

Table 20 (Continued)

Number and Title of Concept	Significant Subgroups with Mean Ranks	H Scores Corrected for Ties
7. Where is is Safe to Swim in the Gulf	Feel (None=69.62; Slight/Moderate=87.67; High=103.96)	9.668**
	Occup(Retired=78.41; Homemaker=98.71; Blue Collar=85.32; White Collar=88.83)	11.809*
9. Where do I go if I get sick	Feel (None=77.88; Slight/Moderate=81.68; High=109.55)	12.784**
10. What to do for Sunburn	Feel (None=69.35; Slight/Moderate=87.09; High=105.20)	10.338**
11. Beach Rules and Individual Rights	Suscept (None=99.82; Slight/Moderate=84.05; High=118.53)	8.704**
12. First Aid for Drowning Person	None	
13. Campfire Burns	Feel (None=67.95; Slight/Moderate=87.28; High=105.75)	11.340**
	Why (Beach=77.01; Camp=107.02; Fish=47.93; Other=73.29)	
14. Heatstroke	None	

Note: Because of printing error, Concept 8 was a repeat of Concept 1; therefore, it was omitted from analysis.

*$p<.05$

**$p<.01$

Simultaneous post hoc confidence intervals for the pair-wise comparisons were displayed with the description of titles/concepts found to be significantly related to subgroup affiliation. Pair-wise contrasts found not to include "zero" within the confidence interval were those holding the significant difference. Gibbons (1976) stated the investigator "may find that none of the pairs differs significantly [by using a multiple comparison interval procedure] . . . even though when calculated as a group [i.e., the overall H score] the populations are found to be different" (p. 183). The post hoc multiple comparison procedure was performed to pinpoint the interests indicated by specific subgroups.

Title/Concept Number 1

The title/concept "How to Prevent Jelly-fish stings" produced significant H scores for subgroups as related to: (1) degree of feelings concerning the necessity for health education classes at GISP, (2) sex, and (3) type of activity while at GISP. The multiple confidence interval procedure results for the "feeling" question are displayed in Table 21.

For Title/Concept Number 1 there was a significant difference ($p<.05$) between those of the sample who felt that there was no need for beach health and safety classes (n=19, 11%) and those who felt a high necessity for such classes at

Table 21

Multiple Confidence Interval Comparisons for Feeling of Necessity for Classes and Title/Concept Number 1

Contrasts	Estimate	Lower Limit	Upper Limit
None-Slight/Moderate	-22.74	-48.14	2.6689
Slight/Moderate-High	-15.03	-36.88	6.82
None-High	-37.77	-65.78*	-9.7539*

*Significant at $p<.05$

the state park (n=63, 37%). The difference indicated the expressed need for such classes is related to the interest in certain topics. Although not found to be significant those in the age group of 50 years and over reported a greater need for classes than younger age groups. Those in the age group 35-49 years were the largest group expressing "no need" for beach health and safety classes.

A significant difference ($p<.05$) also was found among subgroups based upon activities during the park visit and Title/Concept Number 1. The multiple confidence interval procedure results are displayed in Table 22. The post hoc test indicated those who visit GISP to primarily use the beach (n=54, 31%) are more interested in learning more about how to prevent jelly-fish stings than the group who came to GISP to primarily camp (n=102, 58%). Those who visit the beach may consider themselves more vulnerable to jelly-fish

Table 22

Multiple Confidence Interval Comparisons for Activity During Park Visit and Title/Concept Number 1

Contrasts	Estimate	Lower Limit	Upper Limit
Beach-Camp	26.92	3.11*	40.73*
Beach-Fish	51.41	-5.07	108.73
Beach-Other	15.45	-29.66	60.56
Camp-Fish	34.49	-20.73	89.71
Camp-Other	-1.47	-44.60	41.66
Fish-Other	-35.96	-102.92	31.00

*Significant at $p<.05$.

stings and therefore more interested in preventing the encounter.

Significant difference ($p<.05$) also was found between males (n=123) and females (n=54) on title/concept Number 1. Females had a greater interest in how to prevent jelly-fish stings.

Title/Concept Number 2

The title/concept entitled "How to Prevent Sunburns" produced a significant H score for the subgroup related to the degree of feelings about the necessity for beach health and safety classes at GISP. The multiple confidence interval procedure results for the "feeling" question are displayed in Table 23.

Table 23

Multiple Confidence Interval Comparisons for Feeling of Necessity for Classes and Title/Concept Number 2

Contrasts	Estimate	Lower Limit	Upper Limit
None-Slight/Moderate	-17.98	-43.38	7.4289
Slight/Moderate-High	-22.12	-43.97*	-0.0270*
None-High	-40.10	-68.12*	-12.0830*

*Signigicant at $p<.05$.

For Title/Concept Number 2 there was a significant difference between those of the sample who felt no necessity for beach and health classes and those who felt a slight to moderate and a high necessity for such classes at GISP. Those in the sample that expressed little or no need for safety classes at the state park tended to show little interest for hearing more about the well known concepts such as "sunburns."

Title/Concept Number 3

No subgroups differed significantly at $p\leq.05$ for the concept "Emergency Medical Services." The concept was ranked as the third most interesting topic by the total sample. The scores tended to be consistently high.

Title/Concept Number 4

The title/concept entitled "Prevention and Care for Cuts and Scrapes on the Beach" produced significant H scores for subgroups relating to sex, degree of feeling concerning the necessity for health education classes at GISP, and type of occupation. Once again the female portion of the sample indicated a higher interest in the concept ($\bar{R}$=104.42) compared to males ($\bar{R}$=82.23).

The multiple confidence interval procedure results for the "feeling" question are displayed in Table 24.

Table 24

Multiple Confidence Interval Comparisons for Feeling of Necessity for Classes and Title/Concept Number 4

Contrasts	Estimate	Lower Limit	Upper Limit
None-Slight/Moderate	-11.77	-37.17	13.638
Slight/Moderate-High	-20.62	-46.00	4.788
None-High	-32.39	-57.79*	-6.980*

*Significant at $p<.05$.

For Title/Concept Number 4 there was a significant difference ($p<.05$) between those of the sample who felt that there was no need for health and safety classes at the park and those who felt a high need for such classes. Once again overall sample attitude tended to dictate level of interests for even

a better known topic such as number 4. Those with a high feeling concerning the necessity of classes on the beach were significantly more interested in how to prevent and care for cuts and scrapes.

The subgroups based upon type of occupation also showed a significant H score for Title/Concept Number 4. The multiple confidence interval procedure results for type of occupation are displayed in Table 25.

Table 25

Multiple Confidence Interval Comparisons for Type of Occupation and Title/Concept Number 4

Contrasts	Estimate	Lower Limit	Upper Limit
Retired-Homemaker	-11.590	-51.800	28.620
Retired-Blue Collar	22.565	-7.815	52.945
Retired-White Collar	23.200	-5.820	52.220
Homemaker-Blue Collar	34.160	6.386*	61.934*
Homemaker-White Collar	34.790	1.540**	68.040**
Blue Collar-White Collar	0.635	-25.635	-26.905

*Significant at $p \leq .25$.

**Significant at $p \leq .10$.

In regard to Title/Concept Number 4, homemakers significantly differed at the indicated alpha levels from both white collar (skilled, professionals, sales) and blue collar (non-skilled) occupations. The findings indicated

that homemakers were more interested in how to prevent and care for cuts and scrapes.

Title/Concept Number 5

The subgroups who felt different about the necessity for beach health and safety classes showed a significant H score in regard to Title/Concept Number 5, "Water Safety in the Gulf." The multiple confidence interval procedure results for the feeling question are displayed in Table 26.

Table 26

Multiple Confidence Interval Comparisons for Feeling of Necessity for Classes and Title/Concept Number 5

Contrasts	Estimate	Lower Limit	Upper Limit
None-Slight/Moderate	-15.28	-40.68	10.128
Slight/Moderate-High	-16.34	-38.19	5.510
None-High	-31.62	-59.63*	-3.603*

*Significant at $p<.05$.

The none to high contrast is once again significant indicating the attitude about having beach and health classes influences the interest rating.

Title/Concept Number 6

The title/concept entitled "Dangerous Marine Life" produced a significant H score for the feeling, sex, and

occupation categories. Table 27 indicates that the significant pair-wise contrast for feeling was between the none to high subgroups.

Table 27

Multiple Confidence Interval Comparisons for Feeling of Necessity for Classes and Title/Concept Number 6

Contrasts	Estimate	Lower Limit	Upper Limit
None-Slight/Moderate	-20.29	-45.698	5.1189
Slight/Moderate-High	-8.83	-30.680	13.0200
None-High	-29.12	-57.130*	-1.1030*

*Significant at $p<.05$.

Females indicated a higher interest in the topic than males. Occupation subgroups differed significantly on the topic. The post hoc multiple confidence interval procedure results on type of occupation showed none of the pairs to be significant at $p\leq.25$. The occupations must be considered as a total group in order for the H score to be significant. Although not significant the estimates of the differences between the mean ranks were consistently higher for those pair-wise comparisons that included homemakers. The homemaker group tended to show more interest in the title/concept concerning dangerous marine life.

Title/Concept Number 7

Subgroups related to feeling and occupation showed significant H scores for the title/concept entitled "Where is is Safe to Swim in the Gulf?" Pair-wise comparison displayed in Table 28 showed the none to high category to have the significant difference.

Table 28

Multiple Confidence Interval Comparisons for Feeling of Necessity for Classes and Title/Concept Number 7

Contrasts	Estimate	Lower Limit	Upper Limit
None-Slight/Moderate	-18.05	-43.458	7.358
Slight/Moderate-High	-16.29	-38.14	5.560
None-High	-34.34	-62.356*	-6.323*

*Significant at $p<.05$.

The post hoc multiple confidence interval procedure for types of occupation showed none of the pairs to be significant at $p\leq.25$.

Title/Concept Number 8

Title/Concept Number 8 was omitted from further analyses because of a printing error on the final questionnaire sent to the sample. Title/Concept Number 8 was mistakenly printed the same as Title/Concept Number 1.

Title/Concept Number 9

The title/concept entitled "Where do I go if I get Sick?" was significant for the subgroup related to feeling of necessity for beach health and safety classes. The multiple confidence interval procedure results for the "feeling" question are displayed in Table 29.

Table 29

Multiple Confidence Interval Comparisons for Feeling of Necessity for Beach Classes and Title/Concept Number 9

Contrasts	Estimate	Lower Limit	Upper Limit
None-Slight/Moderate	-3.80	-29.208	21.608
Slight/Moderate-High	-27.87	-6.02	15.830
None-High	-31.67	-59.68*	-3.653*

*Significant at $p<.05$.

The subgroup with no to low feelings of necessity was significantly different than the subgroup with high feelings.

Title/Concept Number 10

The title/concept entitled "What to do for Sunburn" was significant for the subgroup related to feelings about need for beach classes. The multiple confidence interval procedure results are displayed in Table 30.

Table 30

Multiple Confidence Interval Comparisons for Feeling of Necessity for Beach Classes and Title/Concept Number 10

Contrasts	Estimate	Lower Limit	Upper Limit
None-Slight/Moderate	-17.74	-43.148	7.6689
Slight/Moderate-High	-18.11	-39.960	3.7400
None-High	-35.85	-63.866*	-7.8340*

*Significant at $p<.05$.

Title/Concept Number 11

Subgroups related to level of susceptibility to beach health hazards produced a significant H score for the title concept entitled "Beach Rules and Individual Rights." The multiple confidence interval procedure results are displayed in Table 31. The group which expressed a high level of susceptibility to beach health and safety hazards had a significantly higher level of interest in topic 11 than the subgroup that did not feel susceptible. Perhaps the more susceptible feeling group obeyed the rules and therefore expressed more interest in the "individual rights" topic.

Title-Concept Number 12

No subgroups differed significantly at $p\leq.05$ for the concept entitled "First Aid for the Drowning Person." The

Table 31

Multiple Confidence Interval Comparisons for Level of Susceptibility to Beach Health Hazards and Title/Concept Number 11

Contrasts	Estimate	Lower Limit	Upper Limit
None-Slight/Moderate	15.77	-19.26	50.80
Slight/Moderate-High	-18.71	-62.92	25.50
None-High	-34.48	-65.10*	-3.86*

*Significant at $p<.05$.

concept rated, as the fourth most interesting topic by the total sample, tended to receive consistently high scores among the subgroups.

Title/Concept Number 13

The title/concept entitled "Campfire Burns" produced significant H scores for subgroups related to feelings about the necessity for health and safety classes at GISP, and activity during park visit. The multiple confidence interval procedure for the feeling question resulted in values displayed in Table 32. The multiple confidence interval procedure resulted in pair-wise comparisons for subgroups based upon activities during park visit as displayed in Table 33. As might be expected, the subgroup based upon those who came to GISP to use the beach differed significantly from the

Table 32

Multiple Confidence Interval Comparisons for Feeling of Necessity for Beach Classes and Title/Concept Number 13

Contrasts	Estimate	Lower Limit	Upper Limit
None-Slight/Moderate	-19.33	-44.738	6.0780
Slight/Moderate-High	-18.47	-40.320	3.3800
None-High	-37.81	-65.820*	-9.7939*

*Significant at $p<.05$.

Table 33

Multiple Confidence Interval Comparisons for Activity During Park Visit and Title/Concept Number 13

Contrasts	Estimate	Lower Limit	Upper Limit
Beach-Camp	-30.01	6.20*	53.82*
Beach-Fish	29.08	-27.70	85.86
Beach-Other	-9.33	-54.44	35.78
Camp-Fish	49.09	-6.13	104.31
Camp-Other	10.68	-32.45	21.36
Fish-Other	-38.41	105.37	28.55

*Significant at $p<.05$.

subgroup who camped on the topic concerning "Campfire Burns." Although the title/concept was rated as the least interesting by the total population, campers were still more interested than beach users.

Title/Concept Number 14

The title/concept entitled "Heatstroke" was not determined to be significantly more or less interesting by any specific subgroup of the population. As the topic was ranked seventh by the sample, the scores tended to be consistently low.

The post hoc multiple comparison tests following the Kruskal-Wallis Test helped to describe the visitor sample in more detail. Analyses of the 13 studied titles/concepts indicated the sample was influenced in part by their respective sex, occupation, activity while visiting GISP, feelings concerning beach classes, and level of susceptibility. The most prominent relationship was the degree of necessity the sample placed upon GISP becoming involved with beach health and safety classes. A consistent comparison was evidenced. The subgroup based upon a high (extremely to very) feeling of necessity for beach classes rated a higher mean rank than the subgroup based upon a low (not at all necessary to slightly necessary) necessity for the beach classes. Beach visitors

were more interested than campers in hearing about jelly-fish stings.

Female respondents were significantly more interested in hearing about injuries caused by marine animals. Homemakers were significantly interested in cuts and scrapes, dangerous marine life, and where it is safe to swim in the Gulf. The subgroup that felt they were most susceptible to beach hazards tended to be more interested in how beach rules might affect individual rights. Those in the sample who visited the park to camp were significantly more interested in how to prevent campfire burns than those who visited the beach. Age, education, income, projected attendance at beach classes, association during visit, purpose of park visit, type of beach hazard encounter, instate residences versus out-of-state residences subgroups did not seem to significantly influence interest ratings.

Cross-Tabulations of Data

Demographic, attitudinal and situational variables thought to be pertinent for health education planning were selected for cross tabulation and testing for significance ($p \leq .05$) with the Chi-Square Test. Variables indicated in Table 34 were cross-tabulated.

Table 34

Cross Classification of Selected Variables to Three Major Variables

	Major Variables	
Type of Encounter 1-6	Feeling of Necessity for Beach Classes	Level of Susceptibility
Selected Variables		
Susceptibility	Occupation	Occupation
Park Activity	Purpose of visit	Purpose of visit
Purpose of visit	Association	Association
Age	Age	Age
Education	Attend classes?	Feeling of necessity
	Sex	Education
Feeling of necessity	Education	
Instate/out-of-state	Instate/out-of-state	
Sex	Park Activity	

The following section will discuss those cross-classified variables found to be significantly ($p \leq .05$) related.

Major variable: type of encounter. Chi square analyses were performed investigating the relationships of variables with types of beach health hazard encounters. Table 35 indicated that for Encounter No. 1 (Jelly-fish Stings) the 36-49 years of age group had significantly more encounters than other age categories. The older age group had significantly fewer encounters with Jelly-fish.

Table 36 indicated the lower age group (less than 35 years) to have encountered a sunburn significantly more than other age groups. The older age group (greater than 50

Table 35

2x3 Contingency Table for Encounter 1 by Age

	Less Than 35 Years	36-49 Years	More Than 50 Years	Total
No encounter	40	43	59	142
Jelly-fish encounter	10	17	7	34
Total	50	60	66	176[a]

Note: $\underline{X}^2=6.357$, 2 $\underline{df}$, $\underline{p}<.05$

[a]1 missing observation not included.

Table 36

2x3 Contingency Table for Encounter 3 by Age

	Less Than 35 Years	36-49 Years	More Than 50 Years	Total
No Sunburn	23	44	55	122
Sunburn	27	16	11	54
Total	50	60	66	176[a]

Note: $\underline{X}^2=19.333$, 2 $\underline{df}$, $\underline{p}<.0001$

[a]1 missing observation not included.

years) indicated significantly fewer problems with sunburn (encounter 3).

Encounter number 3 (sunburn) also was found to be significantly related to state of residence and level of susceptibility. Table 37 indicated the relationship of state of residence and reported encounter with sunburn.

Table 37

2x2 Contingency Table for Encounter 3 by State of Residence

	Instate	Out-of-State	Total
No Sunburn	54	69	123
Sunburn	38	16	54
Total	92	85	177

Note: $\underline{X}^2=9.498$, 1 $\underline{df}$, $\underline{p}<.001$.

Those visitors from the state of Texas suffered more sunburns than out-of-state members of the sample. There was a more-than 50% difference between the two subgroups.

A 2x3 contingency table, Table 38, depicted the relationship between level of susceptibility and those in the sample reporting no-low, slight-moderate and high levels of susceptibility. Sunburns were the more frequently reported beach health hazard.

Table 38

2x3 Contingency Table for Encounter 3 by Level of Susceptibility

	Low Susceptibility	Slight/Moderate Susceptibility	High Susceptibility	Total
No sunburn	14	97	12	123
Sunburn	0	47	7	54
Total	14	144	19	177

Note: $\underline{X}^2=6.8141$, 2 $\underline{df}$, $\underline{p}<.05$.

Table 38 indicated the primary subgroup having reported an encounter with a sunburn was the subgroup defined as having a slight to moderate feeling of susceptibility. The cross-tabulation indicated that those with a low feeling of susceptibility were not the group that experienced the most reported encounter. The data suggested the feeling of susceptibility might be influenced by an encounter with a beach health hazard.

Another significant relationship existed between sex and encounter number 5 (Cuts or Scrapes) which is shown in Table 39. Significantly more males than females suffered from cuts and scrapes while visiting GISP. The data do not indicate the cause of the accident. Encounter 5 also was significantly related to the age of the sample, as shown in Table 40.

Table 39

2x2 Contingency Table for Encounter 5 by Sex

	Male	Females	Total
No Cuts, Scrapes	94	52	146
Cuts, Scrapes	29	2	31
Total	123	54	177

Note: $\underline{X}^2$=8.9295, 1 $\underline{df}$, $\underline{p}$<.01.

Table 40

2x3 Contingency Table for Encounter 5 by Age

	Less Than 35 Years	36-49 Years	More Than 50 Years	Total
No Cuts, Scrapes	43	42	60	145
Cuts, Scrapes	7	18	6	31
Total	50	60	66	176[a]

Note: $\underline{X}^2$=10.097, 2 $\underline{df}$, $\underline{p}$<.01.

[a]1 missing observation not included.

The age group 36-49 years accounted for significantly more cuts and scrapes encountered by the sample.

Major variable: level of susceptibility. Chi square contingency tests were performed investigating the relationship of variables with the level of expressed susceptibility. Table 41 indicated the only significant relation found for the susceptibility variable and age groups of the sample.

Table 41

3x3 Contingency Table for Level of Susceptibility by Age Groups

	Less Than 35 Years	36-49 Years	More Than 50 Years	Total
Low	2	2	10	14
Slight/Moderate	41	54	49	144
High	7	4	7	18
Total	50	60	66	176[a]

Note: $X^2=9.29439$, 4 df, $p<.05$.

[a]1 missing observation was not included.

The table indicated that the slight to moderate feeling of susceptibility was consistent for all three age groups. The middle age group (36-49 years) had the most individuals reporting a slight-moderate feeling of susceptibility.

Major variable: feeling of necessity for beach health classes. Chi square tests were performed on the contingency

tables investigating the effects of variables with the level of feeling about the necessity for GISP to be involved with health and safety classes. Significant relationships were noted in cross classifications by association, projected attendance of beach classes, and education. Table 42 indicated the significant relationship between feelings of necessity and association during the GISP visit.

Table 42

3x3 Contingency Table for Feeling by Association

	Myself	Family	Friends	Total
No necessity	5	10	4	19
Slight to moderate necessity	4	78	9	91
High necessity	1	39	8	48
Total	10	127	21	158[a]

Note: $\underline{X}^2=18.1667$, 4 $\underline{df}$, $\underline{p}<.005$.

[a]19 missing observations were not included.

The table indicated a significantly higher feeling of necessity for those in the sample who attended GISP with their families.

A significant relationship was noted between those in the sample who indicated they would attend on the beach

classes and the reported feeling of necessity for beach classes, as indicated in Table 43.

Table 43

3x3 Contingency Table for Feeling of Necessity for Beach Classes with Interest in Attendance

	No Response	Would Attend	Would Not Attend	Total
No necessity	1	1	17	19
Slight to moderate necessity	2	51	40	93
High necessity	1	43	7	51
Total	4	95	64	163[a]

Note: $\underline{X}^2=41.406$, 4 $\underline{df}$, $\underline{p}<.001$.

[a]14 missing observations were not included.

The table indicated there existed a significant relationship between an expressed necessity for the classes and an indication of attendance of beach classes on a future visit.

A significant relationship between level of education and expressed necessity for beach health and safety classes is indicated on Table 44. It was indicated that more highly educated individuals in the sample (some college and above) felt a higher need for beach health and safety classes.

Table 44

3x3 Contingency Table for Level of Education and Necessity for Classes

	Less Than High School	High School	College	Total
No necessity	1	4	14	19
Slight to moderate necessity	3	20	70	93
High necessity	8	16	27	51
Total	12	40	111	163[a]

Note: $\underline{X}^2$=10.998, 4 $\underline{df}$, $\underline{p}$<.02.

[a]14 missing observations were not included.

Cross-tabulated data between major variables of type of encounter, feeling of necessity for beach health and safety classes, and expressed level of susceptibility indicated significant relationships among variables pertinent to health education planning. The middle age group had more encounters with Jelly-fish, the lower age group suffered more from sunburns. Those in the sample over 50 years of age had significantly fewer problems with these two encounters. Those from out-of-state had fewer problems with sunburns than those from Texas. Those who had encounters with sunburns indicated a significantly higher level of susceptibility to beach health

hazards. Males and the age group of 36-49 years encountered more cuts and scrapes while visiting GISP. The three age groups (less than 35 years, 36-49 years, and more than 50 years) expressed an almost uniform slight to moderate feeling of susceptibility to beach health hazards. Those in the sample who came to the beach with their families felt a greater need for beach health and safety classes than those who came by themselves or with friends. Those who expressed a higher necessity for GISP to have beach classes significantly indicated that they would attend on the beach classes on a future visit.

Summary

Chapter 4 presented data collected during this survey designed to measure interests in mass media messages about beach health and safety at Galveston Island State Park (GISP). Three research questions were introduced and data were presented to answer each question. Data were compiled from park permits and mailed written questionnaires. After one follow-up mailing, 54% (188) of the questionnaires were returned. Overall, 51% (177) of the questionnaires were usable for data analysis. Respondents and non-respondents did not significantly differ ($p \leq .05$) in regard to available park permit data (except for state of residence) and therefore were considered homogeneous. Analyses of the

demographic, situational and attitudinal data from the park permits and written questionnaires described a typical visitor of the population to be a male, transient and infrequent camper, who stayed at the park on a vacation for less than two days, with less than three people, and usually with his family. The visitor primarily came to the park to camp out. The most frequent income reported was $10,000 to $20,000 a year. The visitor was highly educated with predominately having had some college or was a college graduate. The sample most frequently reported a professional and non-skilled occupation. The typical member of the sample indicated a slight to moderate necessity for GISP to become involved with beach health and safety classes and this group responded positively about attending such a class in the future. The typical visitor expressed only a slight to moderate susceptibility to beach hazards. The typical visitor reported most frequently problems with sunburns, cuts and scrapes and jelly-fish. The visitor expressed a greater preference for printed handouts than other types of health education approaches.

The visitor was primarily interested in hearing more about how to prevent jelly-fish stings, dangerous marine life, emergency medical services, water safety in the Gulf and first aid for the drowning person. The visitor was least

interested in how to prevent and care for cuts, scrapes, sunburns and campfire burns.

The Kruskal-Wallis test produced significant H scores for subgroup categories based upon certain titles/concepts. A post hoc multiple confidence interval test helped to pinpoint the level of interest in specific subgroups. Significant relationships were found for subgroups based upon activity during park visit, feeling of necessity for safety classes, level of susceptibility, occupation and sex. The most prominent relationship found to be significant was a higher degree of necessity for safety classes related to subsequently higher level of interests in titles/concepts. Another significant relationship identified by those females and homemakers in the sample was a high interest in problems that might affect family members (marine life injuries, unsafe places to swim, and cuts and scrapes). Cross tabulated data indicated certain age groups had more or less encounters with health hazards. Visitors who came to GISP with their families felt a significantly greater need for GISP to have beach health and safety classes than those who came alone or with friends.

Analyses of the data increased the present level of knowledge about the level of interest in beach health and safety health education concepts of a sample of visitors to GISP. Descriptive data and identification of significant

relationships helped to assess and prescribe an appropriate and acceptable health education program discussed in Chapter 5.

CHAPTER 5

SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Knowledge concerning the level of interest of the beach recreationist in health and safety concepts was too limited to enable a comprehensive approach to health education curriculum building and planning. The purpose of this study was to conduct an audience interest survey designed to identify the level of interest of a sample of Galveston Island State Park (GISP) visitors in beach health and safety concepts. Answers to three research questions provided data which helped to better describe the potential target population in terms of subgroup affiliation, levels of interest in selected titles/concepts, and determination of any significant relationships among the descriptive data. This chapter includes a summary of the entire study, a discussion of all the conclusions that can be derived from the study, the implications of the conclusions for the community health nurse, and recommendations for use of the findings and suggestions for further study.

Summary

Community health nurses identify target populations as groups at risk and are prepared to plan, implement and evaluate nursing action designed to increase the self-care abilities of the target group and therefore increase the risk group's lines of resistance to certain health stressors. One such approach identified to meet the visitors of GISP need for prevention and protection against beach health and safety hazards was a form of health education disseminated through creative use of mass media. Mortality and morbidity data indicated the visitors to GISP need information to help reduce the number and severity of preventable accidents ranging from jelly-fish stings to loss of lives through drownings. To develop an appropriate and acceptable health education curriculum for the transient visitor population, this study concentrated upon identification of the needs, the attitudes and the importance the visitors attach to what the group receives as accident prevention health education. The data were gathered to complete a community assessment process as an aid to the planning and development of successful health education programs.

Additional purposes of the study were to describe the demographic, attitudinal and situational variables of the visitor population of GISP and to identify relevant subgroups based upon variable characteristics. The sample was asked to

rate 14 selected beach health and safety titles/concepts according to levels of interest. The last purpose of the study was to seek significant relationships between the levels of interest and specific subgroup affiliations in order to better describe the sample. Three research questions were developed to meet the purposes of the study: (1) What were the subgroups of the visitor population of GISP? (2) What were the park visitors' levels of interest in 14 selected beach health and safety titles/concepts? (3) What were the significant relationships between interest, rating and subgroup affiliation.

Chapter 2 reviewed the literature pertinent to health education planning by the community health nurse for a targeted group at risk utilizing forms of mass media. The literature survey also included a discussion of relevant benefits of either health education and/or secondary prevention services for the most serious beach health hazard, drowning. Chapter 2 also reviewed relevant recreational and recreational-safety literature and research.

Chapter 3 outlined the methodology for performing the survey. Galveston Island State Park was described as the setting and the population studied consisted of individuals who had filled out a camping permit and subsequently camped out for period of time during September 1977 to August 1978. The population of over 21,000 permits was arranged in

sequential order by month and date and a proportionally stratified random sample of 350 was drawn with a sampling ratio of 1 in 60. Months with higher visitation of park visitors yielded more subjects than did those months with less visitation. The sample was sent an instrument designed to obtain demographic, attitudinal and situational variables of the visitors. The instrument also included a thermometer-like rating scale, designed from methods validated by Haskins (1960), to measure the visitors' interests in 14 selected titles/concepts. The titles/concepts were formulated from data derived from a limited community health survey which indicated health hazards most frequently responsible for morbidity and mortality among the visitor population. The final instrument was validated by a jury of four doctorally prepared nurses.

The data were analyzed utilizing nonparametric methods of the Kruskal-Wallis One-Way Analysis of Variance Test, followed by a post hoc multiple comparison test known as a Multiple Confidence Interval procedure as defined by Marascuilo and McSweeney (1977). Certain subgroups were selected for cross tabulation in order to detect other significant relationships with use of the Chi Square Test using contingency tables.

The analyses and interpretation of the data were discussed in Chapter 4. A typical park visitor was described

in terms of demographic, attitudinal and situational variables. Titles/concepts that were ranked as most and least interesting were identified. Significant relationships were found among certain subgroups based upon activity during park visit, feeling of necessity for health and safety classes, level of susceptibility, occupation and sex. The Multiple Confidence Interval Procedure helped to pinpoint the interests of specific subgroups. Cross-tabulated data produced significant Chi Squares that identified specific subgroups as more vulnerable to certain health hazards, a greater need for beach health and safety classes, and more interest in certain titles/concepts.

Conclusions

Conclusions from the literature review in Chapter 2 can be outlined according to the organization of the sections of the chapter. Responses from health and safety officials and the review of literature investigated the question: "Should money be put into hiring more life guards (beach patrols) or providing more health education?" The answers supported a need to provide a comprehensive injury control program of water safety which includes a well-planned health education component. The sources indicated the most effective preventive programs in water safety include all three levels of prevention.

The literature supported the community health nurse's use of the community assessment and nursing process in order to selectively and effectively delineate needs and to set priorities for specific target groups at risk. It can be concluded from the literature review that the groups at risk must be sought outside of the traditional medical care settings. The Community Health Nurse Practitioner as described by Skrovan, Anderson, and Gottscalk (1974) outlined the role of community health nurse providing community oriented nursing care in a comprehensive fashion.

Theories of need approach and mass persuasion provide practical foundations for the community health nurse performing a role as a health education planner. The role of health educaiton was concluded to be an important role of the community health nurse.

The literature supported the use of mass media in the dissemination of health education messages. However, it can be concluded that use of media requires a scientific description of selected target populations. The procedure of objectively predicting audience interests in mass media messages was shown to be an important prerequisite to successful program planning and management.

The literature emphasized the professional who plans educational programs in a recreational setting can benefit from numerous lessons that have been documented and studied.

Recreational research was concluded to be more effective if it is done in a more multidisciplinary approach.

Conclusions from the presentation and analysis of data found in Chapter 4 were numerous and generally descriptive in nature. This study indicated subgroups of the target population did exist and the subgroups differed in regards to interests in beach health and safety concepts. Since the patterns presented in data appear to be consistent across several concepts, general conclusions include:

1. The feeling of need for GISP to be involved with beach health and safety classes was significantly related to interests in certain titles/concepts.
2. The sample as a whole only felt slight to moderate levels of susceptibility. The visitor pouplation at the state park is apparently not aware of the health hazards that exist and the resulting morbidity and mortality problems.
3. Those in the sample who could be identified as "parents" were most concerned with topics that might effect siblings and other family members. Rationale for learning more about certain topics must include reasons why learning more about the concept will benefit the well-being and safety of the family group.
4. Campers were more interested in "camping topics" and beach users were more interested in "beach only" topics.

5. The sample preferred printed handouts as a means for disseminating health education messages.
6. The target group primarily visits the park to camp, on a vacation for only one or two days.
7. A majority of the sample reported having completed some college or above.
8. A majority of the sample indicated they would attend a beach health and safety class.
9. A majority of the sample encountered one or more beach health and safety hazards.

Implications

Visitors to a state park closely associated with a Gulf Coast beach cannot be considered a target group within the traditional health care setting. However, documented morbidity and mortality data concerning this target group shows this group to be at risk. This status therefore brings beach visitors within the interest and concern of the community health nurse, who is devoted to providing comprehensive preventive care so that well individuals can be kept well. While the conclusions of this study cannot be generalized to other beach areas, the data is most important for health education planning by the local Galveston County Health District.

The same transient status of the population that led to considerable difficulty in sampling for this study also

indicated some difficulty can be expected in reaching the population with effective health promotion and accident prevention messages. Even if the sample expresses very high interest in a certain topic, the means to deliver the message can be most crucial. The sample indicated they would most prefer printed handouts. Such a document which discusses in detail the most interesting title/concepts may be an effective means of dissemination. The printed handout would have to be pretested and evaluated for its appeal, content and effectiveness.

For planning purposes, which is not always a sequential process because of its complex nature, the community health nurse should evaluate the usefulness and validity of the community assessment data. Further planning should include a process evaluation of all subsequent steps. The determination of the level of interests in beach safety titles/concepts and relevant characteristics of the target group as described by this study must become only a preliminary step to successful program planning. Many other steps must be involved in the assessment and evaluation of subsequent health education delivery systems. Knowledge of the data presented in this study should provide a base (needs assessment) for an evolving process to provide effective park accident prevention programs. Program planning which considers the needs, interests and

desires of the target population has been shown to save much time and effort in the planning process.

The most obvious implication for the community health nurse is that innovative and creative methods must be devised, implemented and evaluated in order to meet the interest and health needs of the visitor population at GISP. Health education measures, whether printed handouts, attractive permanent displays in the visitor office, recorded health messages via a Tel-Med health education telephone system, radio or television public service announcements, or more traditional on-the-beach campfire-type classes, must include the identified needs, interests and relevant characteristics of the target group as identified by this study. The success of the delivery system relies heavily upon meeting the conclusions of this study in order to meet the needs, interests, and characteristics of specific subgroups of the visitor population of the state park.

Specific conclusions reported earlier have specific implications for the professional planning health education programs for the visitor population at Galveston Island State Park:

1. Planning efforts should be ordered and selected upon the expressed interests of the sample population. The target group expressed an interest in prevention of jelly-fish stings and injuries from dangerous marine life which

accounts for the most reported hazard occurring to visitors to the beaches of Galveston. Emergency services of Galveston County reported being over-loaded from patients complaining of non-complicated jelly-fish stings which can be treated by simple self-care measures (e.g., Adolph's unseasoned meat tenderizer and alcohol). The sample also expressed interest in dangerous marine life which includes injuries from the man-of-war animal whose sting always results in bacterial infection and must be given medical treatment. The sample rated the title/concept "Emergency Medical Services" as a high priority. GISP is many miles from the nearest medical facility. Emergency medical services take time in reaching stricken victims at the remote park. Knowledge of first aid techniques must be emphasized in realization of the emergency medical service restrictions.

2. The sample expressed only a slight to moderate necessity for the park to become involved in health education classes. Likewise the sample expressed only a slight to moderate susceptibility in regard to exposure to health and safety hazards while visiting the beach. Health messages produced to meet existing needs and interests must include a clear statement of rationale. The sample must consider themselves more vulnerable and therefore interested in certain concepts. The sample must understand

why it is important to learn about beach health and safety hazards and the prevention of possible injuries. Simple statements of statistical facts should be more effective than scare tactics.

3. Health education measures in the recreational setting should be "family-centered." The results of this study indicated a relationship between homemakers and level of interest in certain health hazards. Also the predominate proportion of the sample visited with their family and the scores for all of the selected titles/ concepts were skewed to the "sure I would like to hear more" and "extremely sure I would like to hear more" side of the scale. Health education materials should emphasize the needs for family safety which would include not only children but also the spouse.
4. The health planner should consider different approaches for the visitor to the beach versus those who come to GISP to camp. Perhaps displays in view of beach visitors could emphasize more beach related problems such as jelly-fish stings and sunburns. Other displays could be located within the campground proper. Public Service announcements on local radio stations can reinforce safety concepts for both types of park visitors.
5. Health education delivery systems must be designed to meet the educational needs of a generally well-educated

population. Messages must be developed that are intellectually stimulating and visually or aurally attractive. Methods for disseminating even low interest topics such as "prevention of sunburn" should be developed in such a way so as to induce behavior change without belittling or intimidating. Low interest topics, such as sunburn, should be accompanied with even stronger rationales for learning.

Recommendations

The recommendations set forth in this study should be combined with other information concerning the needs, restrictions and man-power limitations on health education delivery at the Galveston Island State Park and elsewhere. It is recommended that the instrument used for this study be further validated and tested for reliability for other beach areas. The concern for health education planning for the Galveston County Health District includes all of Galveston Island and surrounding areas; therefore the study should be replicated for all beach areas in Galveston County. Interests and characteristics of the non-state park beach visitors should be compared to the results of this study to help in planning a comprehensive health and safety education program. The comprehensive beach health education program should be combined with a comprehensive secondary prevention health

program in order to prevent and limit morbidity and mortality problems associated with a beach visit. A permanently established beach patrol at GISP could assist in disseminating health and safety education.

Specific recommendations for the community health nurse are based upon an assumption that the nurse involved in community planning should not restrict him/herself to traditional health care settings. Specific nursing measures should be implemented to target groups shown to be at risk by community assessment data wherever the setting. Primary prevention measures such as health and safety education would tend to be more effective if delivered to the client, where and when the client needs the information. In regards to the delivery of such education to visitors to the beach, more research should be conducted establishing whether health education can compete with recreational needs and diversion. Health and safety concepts are descriptive of reality (injury and death). Presumably, many visit the beach to "escape" from just such reality.

Nurses involved with the task of designing and implementing a health and safety education program for visitors to the GISP should consider the following recommendations:

1. Produce health education materials to meet the interest needs of the target population. The top five most

interesting titles/concepts were: (1) How to Prevent Jelly-fish stings, (2) Dangerous Marine Life, (3) Emergency Medical Services, (4) First Aid for the Drowning Person, (5) Where do I go if I get sick?

2. Explain the rationale for providing the information and thereby attempt to increase the feeling of necessity for GISP to be involved with health and safety.
3. Raise the level of felt susceptibility to beach health hazards by informing the population along with the message of the health hazards that exist and the probable consequence of an encounter.
4. Develop materials that are "family centered" and relate to safeguarding the family unit and members.
5. Develop health education materials to meet the educational needs of a generally well-educated population (college and above).
6. Disseminate health education messages in a way that consumes the shortest possible amount of time. Health education will be competing with recreational interests of a visitor who visits for only one or two days.
7. Develop health education materials for "sunburn" despite the low interest because of the high rate of occurrence among the sample.
8. Develop health educational materials concerning "cuts and scrapes" on the beach because of the high rate of occurrence among the sample.

9. Involve methods and evaluations of health education messages and delivery systems developed for GISP in the planning process to assist in the development of a comprehensive preventive health and safety program.

APPENDIX A

CORRESPONDENCE

5 January 1979

Dear Sir:

I am presently pursuing research pertaining to the interests of tourists to the beach concerning beach health and safety education topics. I wish to include in my literature review data indicating the benefits of either 1) health and safety education or 2) life guard protection concerning the prevention of beach related injuries and drownings.

To be more specific, my research committee is asking the question--"Should money be put into hiring more life guards (beach patrols) or providing more health education?" In other words, should we provide more protection for the consumer or more information so that the consumer can protect himself? If you have any insight or research into this problem, please enlighten me. I think this is a very important question to answer.

I would appreciate any advice or assistance that will help me to correlate what tends to be the best primary or secondary intervention to prevent accidental drownings on our nation's beaches.

May I hear from your organization soon? I am anxious to complete this research to aid program planning for the beach morbidity and mortality problems that we experience on Galveston Island. Please advise if I cannot use your information in my Appendix.

Thank you for your assistance.

Sincerely,

Norman H. Patrick, R.N.
1503 Newport Blvd.
League City, Texas 77573

National Safety Council

172

Norman H. Patrick, R.N.
Director Learning Resource Center
University of Texas, Galveston
School of Nursing
Galveston, TX 77550

January 11, 1979

Dear Mr. Patrick:

Your more lifeguards or more health education question is most important and most complex. The safety considerations have become as legal, economic and environmental as they are compassionate.

To answer your question directly, all things considered, I would definately say that a comprehensive accident prevention program including highly trained lifeguards, up-to-date rescue equipment, modern communication systems and efficient emergency medical procedures would have an immediate and positive effect on reducing life-threatening immersion accidents.

I cannot refer to experience with the effectiveness of water safety education programs because few exist. Present learn-to-swim programs offer participants no risk recognition references, no hazard avoidence techniques and few skills by which they might mitigate life-threatening immersion difficulties. Most people are taught to "swim" in an 80-degree, calm, clear pool where serious threat to one's health is minimal. Fewer than 10 percent of the instructees become sufficiently proficient to be considered safe in all water environments.

To what extent are states, counties, communities, organizations and individuals obligated to "protect" water environment users? The "swim at your own risk" concept has been questioned. The answer seems to be, "reasonable protection" must be afforded, a vague answer at best.

I would say that water safety services must be as complete as economic conditions allow. Safety education programs, as untested as they are, must supplement these supervisory services.

Since it is impossible to adequately supervise all water areas, selected areas can be designated as "official" swim areas.

Sincerely,

Ben Harris

Ben Harris, Manager
Public Safety Department

444 North Michigan Avenue
Chicago, Illinois 60611

THE AMERICAN NATIONAL RED CROSS

NATIONAL HEADQUARTERS

WASHINGTON, D.C. 20006

173

January 18, 1979

Mr. Norman H. Patrick, R.N.
1503 Newport Blvd.
League City, Texas 77573

Dear Mr. Patrick:

Your letter poses two challenging questions regarding the best way to prevent aquatic recreation accidents at beaches. The merits of more education vs. more lifeguards could be debated endlessly.

I tend to believe that more and better lifeguards may be the best immediate solution for the problems being experienced on Galveston Island. I'm also aware that expanding this type of service is becoming increasingly difficult to provide in some areas of the country because of recent enacted legislation, such as Proposition 13 in California.

The combination of education programs and lifeguard and/or boating safety patrols is the most effective long range approach in reducing aquatic accidents. National agencies, such as the Red Cross and the YMCA, who have long been involved in aquatic education programs, know that a multi-approach is the most effective in reducing/preventing accidents.

It is my understanding that the problems being experienced on Galveston Island involve a large influx of bathers/swimmers and boaters on weekends. The racial make up and educational backgrounds of these tourists are varied. The excessive use of alcohol apparently is a contributory factor to the problems.

Reaching such a varied population with effective educational programs is a constant challenge. Nationwide, it is difficult to entice adults to enroll in formal courses of instruction, such as in swimming, lifesaving, and boating. Non-formal educational approaches such as film showings, talks, demonstrations, and exhibits are effective. Unfortunately, the vast majority of our population is either unaware of the availability of these programs or choose not to participate. The use of public service time on radio and TV is limited. The same situation seems to prevail with most metropolitan newspapers.

The use of all of the above approaches to reduce accidents should continue to be expanded and improved. In the meantime, the problems created by beach tourists on Galveston Island, will probably be best met with expanded lifeguard/boat patrol services.

I hope the above information will prove useful for your research project.

Sincerely,

Orin H. Myers
Director
Water Safety

OHM/ceh

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
OFFICE OF HEALTH POLICY, RESEARCH, AND STATISTICS
HYATTSVILLE, MARYLAND 20782

175

NATIONAL CENTER FOR
HEALTH STATISTICS

March 12, 1979

Norman H. Patrick, R.N.
1503 Newport Boulevard
League City, Texas 77573

Dear Pat:

This is in response to your letter of February 26, 1979, requesting additional information on the availability of data on accidental drowning. I have enclosed a modified version of the material you sent to me. I hope this is useful to you in the completion of your thesis.

Best wishes.

Sincerely yours,

Harry M. Rosenberg, Ph.D.
Chief, Mortality Statistics Branch
Division of Vital Statistics

2 Enclosures

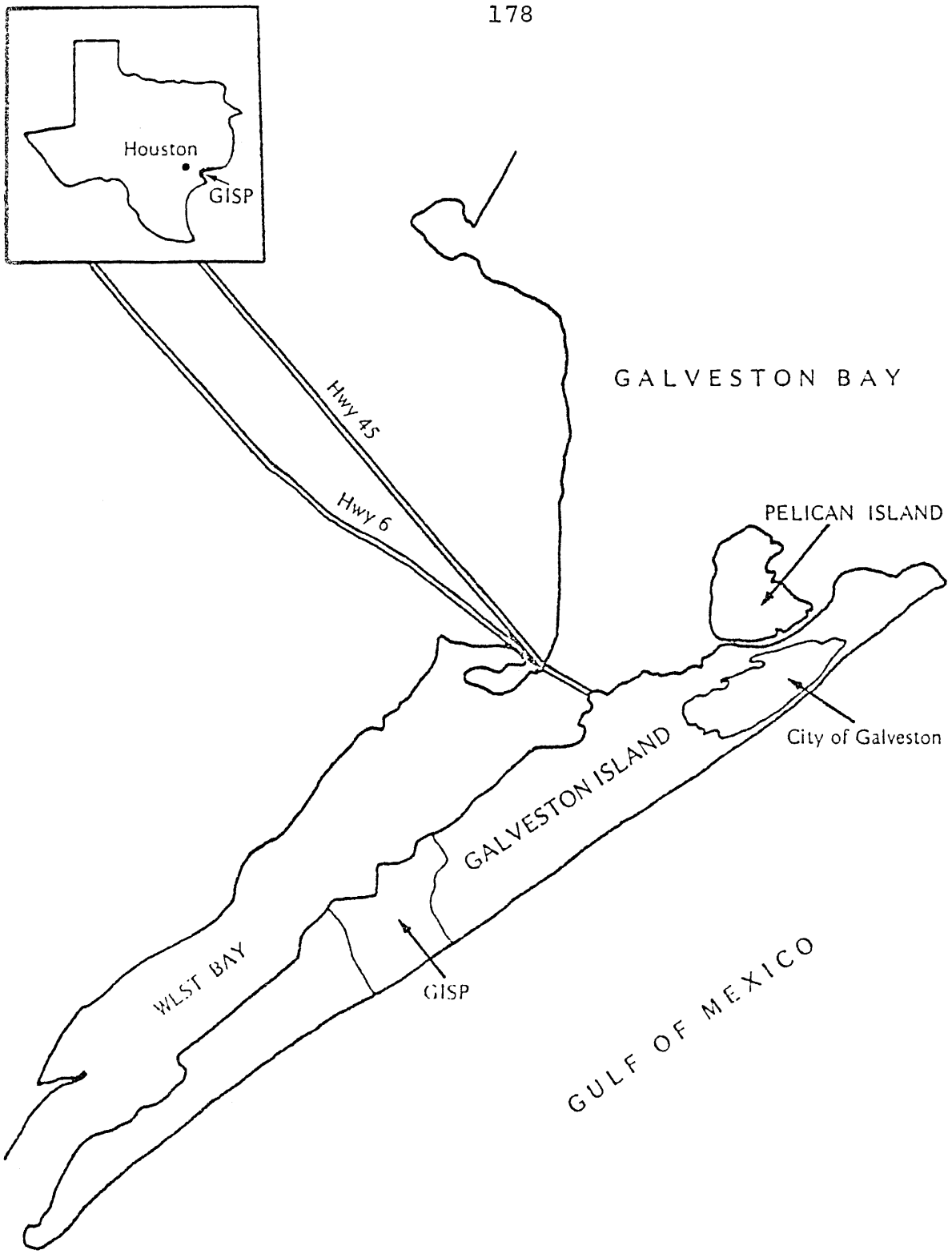
Harry M. Rosenberg, Chief, Mortality Statistics Branch, Division of Vital Statistics, National Center for Health Statistics, (NCHS), was interviewed by this researcher on October 16, 1978, concerning his knowledge of any statistical evidence on mortality that would provide insight to the questions of more lifeguards versus health education program. Dr. Rosenberg stated that mortality statistics on drowning are available in published form only for the United States as as whole, in the annual publication, Vital Statistics of the United States, Volume II, Mortality. Unpublished data are available on request for States. For smaller geographic areas, it is necessary to acquire computer tapes (public use tapes). These are described in the attached NCHS publication Micro-Data Tape Transcripts. The geographic areas include counties and cities with 250,000 or more population in 1970.

To get even more detailed information as to the local place in which the drowning occurred, it would be necessary to go back to the original death certificates, a process that is feasible but both costly and time-consuming.

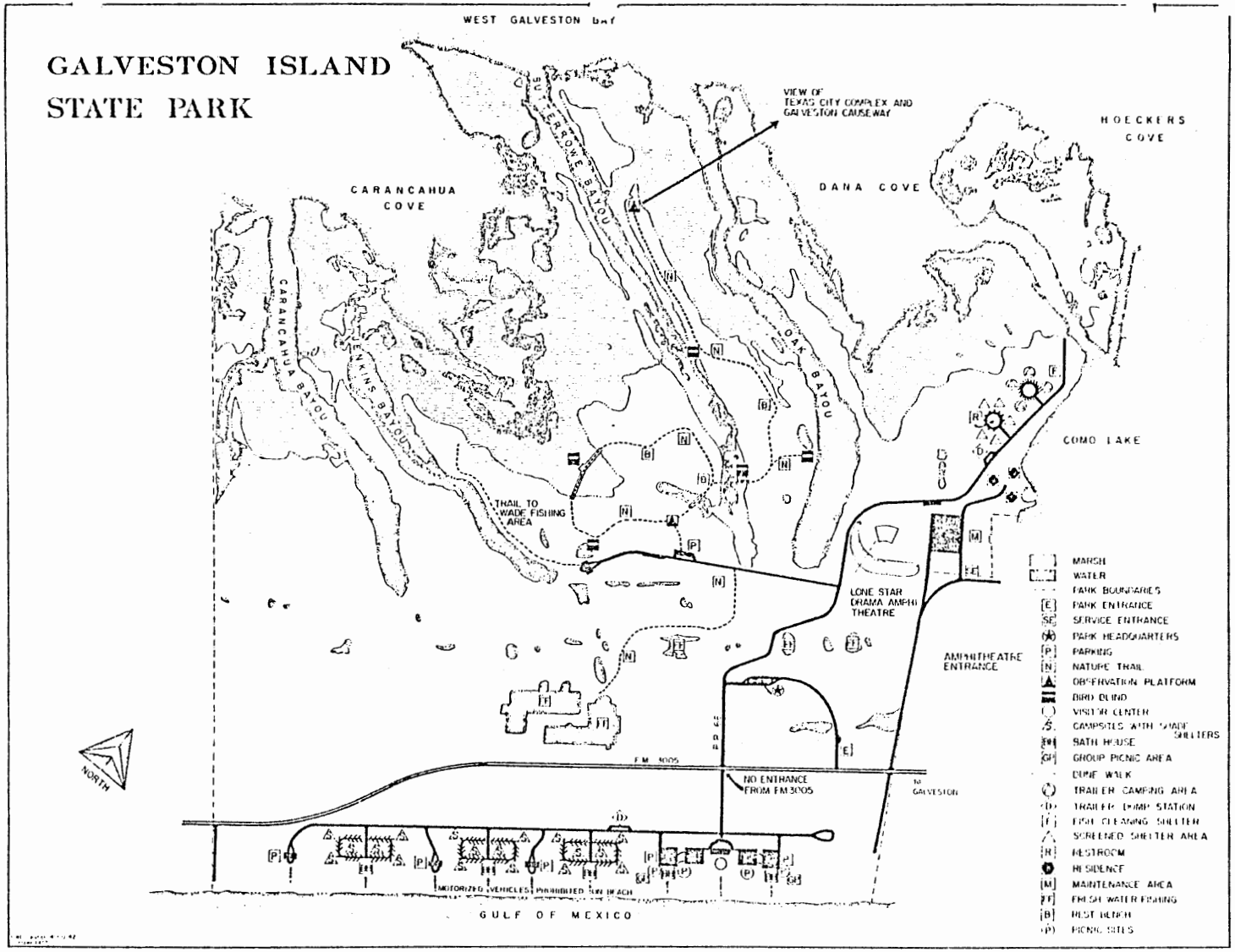
Dr. Rosenberg indicated that he was not aware of studies that provide evidence of the relation between drowning and preventive programs programs such as educational programs or increased protection. Such studies could be pursued only with great difficulty because of the above-mentioned problems associated with acquiring data on the specific location of drownings.

APPENDIX B

MAPS



Map indicating Galveston Island State Park


GALVESTON ISLAND
STATE PARK
WEST GALVESTON BAY
VIEW OF TEXAS CITY COMPLEX AND GALVESTON CAUSEWAY
HOECKERS COVE
DANA COVE
CARANCAHUA COVE
SUNFLOWER BAYOU
CARANCAHUA BAYOU
JENKINS BAYOU
OAK BAYOU
COMO LAKE
TRAIL TO WADE FISHING AREA
LONE STAR DRAMA AMPHI THEATRE
AMPHITHEATRE ENTRANCE
FM 3005
NO ENTRANCE FROM FM 3005
TO GALVESTON
NORTH
MOTORIZED VEHICLES PROHIBITED ON BEACH
GULF OF MEXICO
MARSH
WATER
PARK BOUNDARIES
PARK ENTRANCE
SERVICE ENTRANCE
PARK HEADQUARTERS
PARKING
NATURE TRAIL
OBSERVATION PLATFORM
BIRD BLIND
VISITOR CENTER
CAMPSITES WITH SHADE SHELTERS
BATH HOUSE
GROUP PICNIC AREA
DUNE WALK
TRAILER CAMPING AREA
TRAILER DUMP STATION
FISH CLEANING SHELTER
SCREENED SHELTER AREA
RESTROOM
RESIDENCE
MAINTENANCE AREA
FRESH WATER FISHING
REST BENCH
PICNIC SITES

APPENDIX C

APPROVAL FORMS

TEXAS WOMAN'S UNIVERSITY

DENTON, TEXAS 76204

THE GRADUATE SCHOOL
P.O. BOX 22479, TWU STATION

181 November 30, 1978

Mr. Norman Howard Patrick
1503 Newport Boulevard
League City, Texas 77573

Dear Mr. Patrick:

I have received and approved the Prospectus for your research project. Best wishes to you in the research and writing of your project.

Sincerely yours,

Phyllis Bridges

Phyllis Bridges
Dean of the Graduate School

PB:dd

cc Mrs. Mary E. Benedict
Dr. Anne Gudmundsen
Graduate Office

TEXAS WOMAN'S UNIVERSITY

HOUSTON CAMPUS

HUMAN RESEARCH REVIEW COMMITTEE REPORT

182

STUDENT'S NAME Norman H Patrick

PROPOSAL TITLE Audience Interest in Mass Media Messages About Beach Health and Safety at Galveston Island State Park, Galveston, Texas

COMMENTS: _____

DATE: Oct 31, 1978

Diane G Robertson
~~Disapprove~~ Approve

~~Disapprove~~ Approve

~~Disapprove~~ Approve

~~Disapprove~~ Approve

GP: FMI 24
05029075
BAB:cd

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING
DENTON, TEXAS 76204

DALLAS CENTER
1810 INWOOD ROAD
DALLAS, TEXAS 75235

183

HOUSTON CENTER
1130 M. D. ANDERSON BLVD.
HOUSTON, TEXAS 77025

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE Texas Parks and Wildlife at Galveston Island State Park

GRANTS TO Norman H. Patrick, RN, BSN

a student enrolled in a program of nursing leading to a Master's Degree at Texas Woman's University, the privilege of its facilities in order to study the following problem:

Audience Interest in Mass Media Messages About Beach Health and Safety at Galveston Island State Park, Galveston, Texas

The conditions mutually agreed upon are as follows:

1. The agency (may) (~~xxxxxx~~) be identified in the final report.

2. The names of consultative or administrative personnel in the agency (may) (~~xxxxxx~~) be identified in the final report.

3. The agency (wants) (~~xxxxxxxxxxxxx~~) a conference with the student when the report is completed.

4. The agency is (willing) (~~xxxxxxxxxx~~) to allow the completed report to be circulated through interlibrary loan.

5. Other Questionnaire cover letter shall inidicate that the park user's names were obtained pursuant the Texas Open Records Act. Letter shall inidicate that the data is not for use by the Texas Parks Department.

Date: September 27, 1978

Signature of Agency Personnel

Signature of Student

Mary Elizabeth Broadbent
Signature of Faculty Advisor

* Fill out and sign three copies to be distributed as follows: Original-Student; First copy - agency; Second copy - TWU College of Nursing.

GP:GEN 13
07020074 cd

APPENDIX D

SAMPLING METHOD

SAMPLING METHOD

Date	Number of Permits	Percent	Sampling Ratio	Number in Sample
Sept. 77	1186	5.54	1 n 62	19
Oct. 77	1365	6.38	1 n 62	22
Nov. 77	961	4.49	1 n 60	16
Dec. 77	728	3.40	1 n 61	12
Jan. 78	731	3.42	1 n 61	12
Feb. 78	862	4.03	1 n 62	14
Mar. 78	2292	10.70	1 n 62	37
Apr. 78	2165	10.12	1 n 62	35
May 78	2418	11.30	1 n 60	40
June 78	2823	13.19	1 n 61	46
July 78	3142	14.68	1 n 60	52
Aug. 78	2730	12.76	1 n 61	45
Totals	21,403	100.00		350

APPENDIX E

CONSENSUAL VALIDATION RECORD, INSTRUMENT, FOLLOW-UP LETTER

CONSENSUAL VALIDATION RECORD

To: Norman H. Patrick, R.N.
1503 Newport Blvd.
League City, Texas 77573

Re: Study entitled " Audience Interest in Mass Media Messages About Beach Health and Safety at Galveston Island State Park, Galveston, Texas "

I hereby agree to participate in your study as a member of a panel of judges to provide content validation for your instrument.

signed_____

☐ I have reviewed the content of your revised instrument and consider it valid to meet the research purposes of your study.

signed_____

☐ I am returning your questionnaire and suggest noted changes as a requirement of my validation.

signed_____

TEXAS WOMAN'S UNIVERSITY
1130 M.D. ANDERSON BLVD.
HOUSTON, TEXAS 77030

COLLEGE OF NURSING

188

Dear Galveston Island State Park Visitor:

Your help is needed. We are conducting a study of visitors to the Galveston Island State Park at Galveston, Texas. Our study is a result of discussions between city and county public health officials during which it was determined that more information was needed regarding the visitors to the beaches of Galveston.

We wish the results of the study to be as accurate as possible, so please complete and return the attached questionnaire. The questionnaire is self-addressed and stamped for your convenience and all you must do to return it is to re-fold and staple or tape it shut and put it in the mail. Please read the directions of the questionnaire carefully and indicate your answers in the appropriate blanks.

The data from the survey will be used to identify your health education needs when you are visiting the Galveston beaches. In order to meet the University's requirements, we need your signed consent. You will see the consent form attached to your questionnaire. Please read and sign the form and leave it attached to your questionnaire when you mail it back. The form will be removed from the questionnaire upon our receipt so that your questionnaire will remain anonymous.

A NOTE ON CONFIDENTIALITY

> A vital concern of the researcher is the importance of confidentiality in this study. Your questionnaire will only be identified by a code number. At no time will the questionnaires be identified with your name after we receive it.

If you have <u>any</u> questions about the study please write to us at the address on the questionnaire. We will be most happy to send you the study results if you would like. Please indicate if you would like the results by checking the "Yes" or "No" box on the attached consent form. We hope you will consider the 10-12 minutes it will take you as an important contribution to the health and welfare of future park visitors. Your name was obtained pursuant to the Texas Open Records Act and the data is not for use by the Texas Parks Department.

We appreciate your time and cooperation and look forward to receiving your completed questionnaire.

Sincerely,

Norman H. Patrick, R.N.

Mary Elizabeth Benedict, MSN

Mary Elizabeth Benedict, R.N., M.S.N.
Assistant Professor

TEXAS WOMAN'S UNIVERSITY

Consent to Act as a Subject for Research

1. I hereby authorize Norman H. Patrick, R.N. to perform the following investigation:

   To administer a questionnaire entitled: Audience Interest Survey About Health and Safety Messages

2. The procedure or investigation listed in paragraph 1 has been explained to me in a letter by Norman H. Patrick, R.N.

3. I understand that the investigation has only one possible risk or discomfort. I risk embarrassment if my questionnaire is released to the public with my name attached and the personal information included is no longer confidential.

4. I understand that the investigation described in paragraph 1 has the following potential benefits to myself and/or others:

   a. Will increase the knowledge of health planners and officials about the health education interests of Galveston beach visitors.
   b. Should provide for an increased emphasis on beach health and safety by local health planners.
   c. Will allow health officials to plan for relevant and appropriate safety educational programs for the beach visitor.

5. An offer to answer all my questions regarding this study has been made. If alternative procedures are more advantageous to me, they have been explained. I understand that I may terminate my participation in this study at any time.

_____ _____

Signature Date

_____ I would like the results of the study mailed to me:

Confidential Code Number

☐ Yes ☐ No

Camping permit No._____

AUDIENCE INTEREST SURVEY ABOUT

HEALTH AND SAFETY MESSAGES AT

GALVESTON ISLAND STATE PARK

Your response to this survey will help in the planning for health and safety programs for visitors to the beaches of Galveston. Data obtained from actual beach visitors will help planners design effective programs and materials that reflect the needs and interests of beach visitors.

By completing and returning the questionnaire, you are indicating your willingness to participate in this study.

First of all a few questions.....

1. People have many reasons for visiting Galveston Island State Park. What was your major reason for visiting the park?

   (Check only one item in Column "A" and only one item in Column "B")

A. Purpose	B. With Whom?
_____For a vacation	_____To be by myself
or	_____To be with family
_____For only an overnight trip	_____To be with friends

   C. Please check the one item below that best describes why you visited Galveston Island State Park. Please check only one item.

_____To use the beach	_____To observe nature
_____To camp	_____To picnic
_____To fish	_____Other(specify)_____

2. How do you feel about Galveston Island State Park offering beach health and safety classes for beach visitors and campers? Indicate your feeling by placing a check in front of the appropriate statement:

_____Not at all necessary	_____Very necessary
_____Slightly necessary	_____Extremely necessary
_____Moderately necessary	

Turn the page please

3. Would you attend "on the beach" health and safety programs?

_____Yes _____No

4. Which of the following methods of health and safety education would you prefer to participate in?

_____Printed handout _____in-formal classes

_____Display _____Other, please specify_____

_____.

5. I would like for you to look at the topics of the health and safety messages below and tell me how interested you would be in hearing more about the subject.

Will you show me by using this Thermometer Rating Scale just how you feel about hearing more about each one?

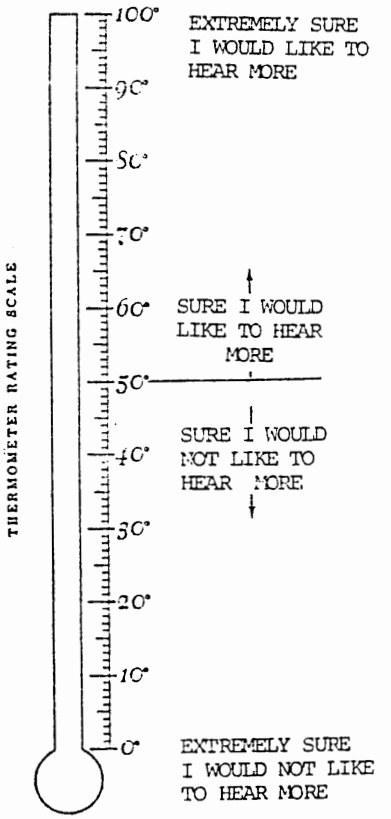
If you are positive you would not like to hear more about the topic, rate it zero (0), like this.....0

If you are positive that you would like to hear more about the topic, rate it 100, like this.....100

If you are not postive, choose the score between one (1) and 99 that best expresses how you feel about hearing more on this topic.

Place your rating in the space next to the topic.

Now, starting with the first topic....



TOPIC	RATING
1. HOW TO PREVENT JELLY-FISH STINGS Being stung by jelly-fish disrupts a beach vacation. To avoid jelly-fish stings it is best to find out what jelly-fish look like and how to avoid them.	
2. HOW TO PREVENT SUNBURNS Some beach visitors take home a severe sunburn as a momento of their trip. There are effective ways of preventing sunburns that do not restrict "fun-in-the-sun" activities.	

NEXT PAGE PLEASE

TOPIC	RATING	TOPIC	RATING
3. EMERGENCY MEDICAL SERVICES The City of Galveston provides emergency ambulance and rescue/ first aid services for beach visitors. When do you use them and how do you reach them?		9. WHERE DO I GO IF I GET SICK? Most people don't expect to get sick or get a toothache while away from home so they are not sure what to do and how to get help. What would you do in this situation?	
4. PREVENTION AND CARE FOR CUTS & SCRAPES ON THE BEACH Many beach visitors are cut and scraped while frolicking in the waves, walking on the beach and fishing with hooks. Precautions can be taken and first aid can prevent complications.		10. WHAT TO DO FOR SUNBURN Mr. Smith finds that he has a severe sunburn after a visit to the beach. What should he do? When should he seek health care?	
5. WATER SAFETY IN THE GULF Gulf waters present even the experienced swimmer and surf-rider with unexpected dangers. What are these dangers and how can I avoid them?		11. BEACH RULES AND INDIVIDUAL RIGHTS Laws prohibiting certain activities on the beach are meant to protect health. But how do these laws affect individual rights?	
6. DANGEROUS MARINE LIFE The Gulf of Mexico contains a large number of dangerous marine life, including poisonous stinging animals and also those which cause injury by biting or cutting a swimmer. Most of the problems occur to unsuspecting victims.		12. FIRST AID FOR THE DROWNING PERSON Seventy-eight percent of water deaths in Galveston from 1971 to 1974 occurred to visitors from out-of-town. Deaths can be prevented through application of first aid to support breathing and heart beat.	
7. WHERE IS IT SAFE TO SWIM IN THE GULF? The jettys and rock groins found on Galveston Island help prevent beach erosion. Why are "no swimming" and "no surfing" signs posted around these landmarks?		13. CAMPFIRE BURNS Camping out can be very relaxing and outdoor cooking can be fun, but campfires can cause serious burns. What are basic campfire precautions?	
8. WHAT TO DO FOR JELLY-FISH STINGS Some people experience discomfort and complications from jelly-fish stings because they do not know what to do when stung. What should you do to treat yourself and when should you seek health care?		14. HEATSTROKE Heatstroke is a killer. Beach visitors must know how to detect and and prevent heatstroke! over please-	

6. What beach and health hazards have you encountered while visiting Galveston Island State Park? Please indicate with a check all that apply:

_____Jelly-fish stings
_____Other marine life stings
_____Sunburn
_____Glass or splinter in foot
_____Cuts or scrapes
_____Burns from fires

Please indicate any hazards encountered not mentioned above:_____

_____

7. How susceptible do you feel about being hurt or injured by beach and health hazards? Please check the statement that best describes how you feel:

_____Not at all susceptible
_____Slightly susceptible
_____Moderately susceptible
_____Very susceptible
_____Extremely susceptible

8. Please complete the questions below in the space provided:

Your age_____

Male_____Female_____

Your occupation?_____

_____

What is your approximate yearly income?
_____Under$10,000
_____Between $10,000 and $20,000
_____Over$20,000

Your education: Please indicate by placing a check.

_____Grade School only
_____Some high school
_____High school graduate
_____Some college
_____College graduate
_____Post graduate studies

THANK YOU FOR YOUR TIME AND INTEREST!!!

Please fold, staple or tape closed your completed questionnaire and place in mailbox. Thank you!

Audience Interest Survey
1503 Newport Blvd.
League City, Texas 77573

Norman H. Patrick, R.N.

1503 Newport Blvd.

League City, Texas 77573

TEXAS WOMAN'S UNIVERSITY
1130 M.D. ANDERSON BLVD.
HOUSTON, TEXAS 77030

COLLEGE OF NURSING

194

Dear Galveston Island State Park Visitor:

We are concluding the data collecting phase of our study on the visitors to the Galveston Island State Park of Galveston, Texas and have not yet received your response. We are eagerly awaiting the return of the questionnaire.

We believe this to be an extremely valuable study in that an important need of the beach visitor is being evaluated and the study should reveal useful information for health education program planning. Only with your response can we be confident that we have an accurate understanding of the health and safety interests of the beach visitor.

A new questionnaire is enclosed, in case you have mislaid the other one or it has been lost in the mail. Please do not forget to read and sign the attached consent form which will be detached from your questionnaire when we receive it. Your response is vitally needed, and we hope you will take some time out of your busy schedule to help us out. Thank you for your time and interest!

Sincerely,

Norman H. Patrick, RN
Graduate Student

Mary Elizabeth Benedict, R.N., M.S.N.
Assistant Professor

APPENDIX F

MULTIPLE COMPARISON FORMULA

MULTIPLE CONFIDENCE INTERVAL PROCEDURES FOR THE KRUSKAL-WALLIS TEST

The differences among K populations can be identified by considering all confidence intervals of interest of the form:

$$\hat{\psi} - \sqrt{\chi^2_{K-1;1-\alpha}}\sqrt{\mathrm{Var}(\hat{\psi})} < \psi < \hat{\psi} + \sqrt{\chi^2_{K-1;1-\alpha}}\sqrt{\mathrm{Var}(\hat{\psi})}$$

where

$$\hat{\psi} = a_1\overline{R}_1 + a_2\overline{R}_2 + \ldots + a_K\overline{R}_K = \sum_{k=1}^{K} a_k\overline{R}_k$$

and

$$a_1 + a_2 + \ldots + a_K = \sum_{k=1}^{K} a_k = 0$$

The variance is given by:

$$\mathrm{Var}(\hat{\psi}) = \frac{N(N+1)}{12}\sum_{k=1}^{K}\frac{a_k^2}{n_k}$$

Simple pairwise contrasts in the mean ranks are given by:

$$\hat{\psi} = (+1)\overline{R}_k + (-1)\overline{R}_{k'} = \overline{R}_k - \overline{R}_{k'} \quad \text{(estimate)}$$

K = number of samples

$\overline{R}_k$ = mean ranks of the kth sample (column)

N = number of cases in all samples combined (177)

$S^* = \sqrt{\chi^2_{K-1;1-\alpha}}$

$\sum_{k=1}^{K}$ directs one to sum over the K samples (columns)

(Marascuilo & McSweeney, 1977, p. 306)

BIBLIOGRAPHY

Anderson, C. L. Community health (2d ed.). Saint Louis: The C. V. Mosby Company, 1973.

American Nurses' Association. Standards--community health nursing practice. Kansas City, Mo.: American Nurses' Association, 1973.

Barlow, D. J., & Bruhn, J. C. Role plays on television--a new teaching technique. Nursing Outlook, 1973, 21(4), 242-244.

Barnum, H. J. Mass media and health communication. Journal of Medical Education, 1975, 50, 24-26.

Becker, M. H., & Maiman, L. A. Sociobehavioral determinants of compliance with health and medical care recommendations. Medical Care, 1975, 13, 10-20.

Bergwall, D. F., Reeves, P. N., & Woodside, N. B. Introduction to health planning. Washington, D.C.: Information Resources Press, 1974.

Bigelow, C. L. The absolute measurement of reader interest. Journalism Quarterly, 1960, 37, 280-288.

Bishop, D. W. Stability of the factor structure of leisure behavior: analysis of four communities. Journal of Leisure Research, 1970, 2(3).

Bradshaw, J. The concept of social need. New Society, 1972, 30(March), 640-645.

Brill, N. Working with people. Philadelphia: J. P. Lippincott Company, 1973.

Brown, A. J. Evaluation's role in patient education. Health Education, 1977, (January/February), 6-8.

Brown, P. J., Dyer, A., & Whaley, R. S. Recreation research --so what? Journal of Leisure Research, 1973, 5, 16-24.

Brown, R. L. Water safety. In Technical Development Board of the American Public Health Association, Accident prevention. New York: McGraw-Hill Book Company, 1961.

Burch, W. R. The playworld of camping: research into the social meaning of outdoor recreation. American Journal of Sociology, 1965, 70, 604-612.

Burdge, R. J., & Field, D. R. Methodological perspectives for the study of outdoor recreation. Journal of Leisure Research, 1972, 4, 63-72.

Byler, R. V. Teach us what we want to know. The Journal of School Health, 1970, (May), 252-255.

Carlton, B. Is community research effective in establishing health education programs? Health Education, 1977, (March/April), 10-12.

Cartwright, D. Some principles of mass persuasion. Human Relations, 1949, 2(3), 253-267.

Cartwright, D., & Zander, A. Group dynamics: research and theory. New York: Harper and Row, 1968.

Cheek, N. H. Intragroup social structure and solidarity in park settings. Research in the parks. Transactions of the National Park Centennial Symposium. U.S. Department of the Interior, National Park Service Symposium Series 1, 1976.

Cheek, N. H., & Burch, W. R. The social organization of leisure in human society. New York: Harper and Row, 1976.

Cheek, N. H., Field, D. R., & Burdge, R. J. Leisure and recreation places. Michigan: Ann Arbor Science Publishers, 1976.

City Health Department. Basic vital statistics--1975. Galveston: Galveston Vital Statistics Office, 1975.

City of Galveston. Budget papers--city police department, beach patrol division, 1977. Unpublished report, 1977.

Congress for Nursing Practice. Standards for community health nursing practice. Kansas City: American Nurses' Association, 1964.

Crandall, R., & Lewko, J. Leisure research, present and future: who, what, where. Journal of Leisure Research, 1973, 8(5), 150-159.

Dietz, P. E., & Baker, S. P. Drowning-epidemiology and prevention. American Journal of Public Health, 1974, 64(4), 303-312.

Dodge, J. S. Factors related to patients' perceptions of their cognitive needs. Nursing Research, 1969, 18, 502-512.

Dodson, J., & Beckman, E. L. An etiological analysis of drowning victims on Galveston Island, 1967-1974. Unpublished paper, 1975.

Epstein, J. B. Magrowski, W. D., & McPhail, C. W. B. The role of radio and t.v. spot announcements in public health education. Canadian Journal of Public Health, 1975, 66, 396-397.

Etzkorn, P. K. Leisure and camping: the social meaning of a form of public recreation. Sociology and Social Research, 1964, 49(October), 76-89.

Feinburg, B. M., & McLaughlin, G. H. Experiment to determine whether film messages can be pretested in print-basic proposition form. Research report 5, January 24, 1969, Syracuse University, Contract No. PH-86-68-22, Injury Control Program, National Center for Urban and Industrial Health.

Ford, L. C. Influencing health values. Health Values: Achieving High Level Wellness, 1977, 1, 17-22.

Fraser-Moodie, A. Accident prevention: how and whom to educate? Journal of Royal College of Surgeons--Edinburg, 1976, 21(2), 75-84.

Freeman, R. B. Community health nursing practice. Philadelphia: W. B. Saunders Company, 1970.

Gales, H. The community health education project: bridging the gap. American Journal of Public Health, 1970, 60(2), 322-327.

Galveston Chamber of Commerce. Visitation summary and estimates. Unpublished statistics, July, 1977.

Galveston County Health District. Deaths by drowning, city of Galveston, 1971-1974. Unpublished report, 1975.

Gibbons, J. D. Non-parametric methods for qualitative analysis. New York: Holt, Rinehart and Winston, 1976.

Graham, S. Studies of behavior change to enhance public health. American Journal of Public Health, 1973, 63(4), 327-334.

Griffiths, W. Health education definitions, problems, and philosophies. Health Education Monographs, 1972, 31, 7-12.

Grout, R. E., & Watkins, J. D. The nurse and health education. International Nursing Review, 1971, 18(3), 248-257.

Haefner, D., & Kirscht, J. P. Motivational and behavioral effects of modifying health beliefs. Public Health Reports, 1970, 85(6), 478-483.

Hall, J. E., & Weaver, B. F. Distributive nursing practice: a systems approach to community health. Philadelphia: J. B. Lippincott Company, 1977.

Harris, B. Personal communication, January 11, 1979.

Harris, J. Water safety: a serious business: the story of the Galveston beach patrol. Galveston, July, 1976.

Haskins, J. B. Title rating: a method for measuring reading interests and predicting readership. Educational and Psychological Measurement, 1960, 20(3), 551-565.

Health Education Project Advisory Committee. Health education. American Journal of Public Health Supplement, 1975, 65, 1-24.

Hecock, R. D. Recreation behavior patterns as related to site characteristics of beaches. Journal of Leisure Research, 1970, 2(4), 237-250.

Highrighter, M. E. The status of community health nursing research. Nursing Research, 1977, 26(3), 183-191.

Hitchcock, J. Working in a nonhealth oriented setting. Nursing Clinics of North America, 1970, 5(2), 251-259.

Huskey, D. A. Community health education: the past, the present, the future. Health Education, 1976, (November/December), 2-6.

Jenkins, C. D. Group differences in perception: a study of community beliefs and feelings about tuberculosis. The American Journal of Sociology, 1966, 71(4), 417-429.

Junior Chamber of Commerce (Galveston). The Galveston tourist--"what they think and say." Unpublished survey, May, 1966.

Kinder, B. N. Attitudes toward alcohol and drug abuse. International Journal of Addictions, 1975, 10, 1035-1054.

Kobin, W. H. Encouraging better health through television. Journal of Medical Education, 1975, 50, 143-148.

Kramer, R. M., & Specht, H. (eds.). Readings in community organization practice. 2d ed. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1975.

Leahy, K. Community health nursing. 3d ed. New York: McGraw-Hill Book Company, 1977.

Leavell, H. R., & Clark, E. G. Preventive medicine for the doctor in his community. New York: McGraw-Hill Book Company, 1965.

Licht, K. R. Relevance and reality in safety. The Journal of School Health, 1970, 40(May), 259-261.

Licht, M. A. Safety and accidents--a brief conceptual analysis and a point of view. The Journal of School Health, 1975, 45(9), 530-534.

Macnicol, M. F. Accident prevention: how and whom to educate. Journal of Royal College of Surgeons--Edinburg, 1975, 20(5), 304-311.

MacQueen, I. A. G. The challenge of health education today. Public Health, 1975, 89, 93-96.

Madsen, K. B. Theories of motivation. Kent, Ohio: The Kent State University Press, 1968.

Marascuilo, L. A., & McSweeney, M. Nonparametric and distribution free methods for the social sciences. Monterey, Calif.: Brooks/Cole Publishing Company, 1977.

Mark, N. How television tries to close the health information gap. Today's Health, 1976, 54, 31-33.

Marshall, C. L., & Salzer, J. E. Transmitting health education to the elderly via cable television. Geriatrics, 1976, 31(10), 126-136.

Mayshark, C. Curriculum development and research for safety education. Health Education, 1976, (May/June), 28-31.

Mendelsohn, H. Some reasons why information campaigns can succeed. Public Opinion Quarterly, 1973, 37, 50-61.

Mercer, D. The role of perception in the recreation experience: a review and discussion. Journal of Leisure Research, 1971, 3(4), 261-276.

Mico, P. R., & Ross, H. S. Health education and behavioral science. Oakland, Calif.: Third Party Associates, Inc., 1975.

Milio, N. A framework for prevention: changing health damaging to health generating life patterns. American Journal of Public Health, 1976, 66(5), 435-438.

Minnick, W. C. The art of persuasion. Boston: Houghton Mifflin Company, 1968.

Murray, R., & Zentner, J. Nursing concepts for health promotion. Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1975.

Myers, O. Personal communication, January 18, 1979.

National Safety Council. Accident facts--1978. Chicago: The National Safety Council, 1978.

Neal, H. Better communications for better health. New York: Columbia University Press, 1962.

Nie, N. H., Hull, H. C., Jenkins, J. G., Steinbrenner, K., & Bent, D. Statistical package for the social sciences, 2d ed. New York: McGraw-Hill, Inc., 1976.

99 million at beaches during busy 1975. Ocean Lifeguard, March, 1976, pp. 1-2.

108 million at beaches during active 1974. Ocean Lifeguard, March, 1975, pp. 1-2.

Pender, N. J. A conceptual model for preventive health behavior. Nursing Outlook, 1975, 23(6), 385-390.

President's Committee on Health Education. The report of the president's committee on health education. New York, 1973.

Prowitt, D. It's information on major diseases that gets to the home audiences--not scare tactics. American Lung Association Bulletin, 1975, 61(7), 10-11.

Public Health Service. Forward plan for health, FY 1977-81. Washington, D.C.: Government Printing Office, 1975.

Redman, B. K. Guidelines for quality care in patient education. The Canadian Nurse, 1975, (February), 19-21.

Redman, B. K. The process of patient teaching in nursing. St. Louis: The C. V. Mosby Company, 1976.

Robischon, P. Community nursing in a changing climate. Nursing Outlook, 1971, 19(6), 410-413.

Rosenberg, H. Personal interview, October 16, 1978; personal communication, March 12, 1979.

Rosenstock, I. M. What research in motivation suggests for public health. American Journal of Public Health, 1960, 50(3), 295-301.

Rosenstock, I. M. Prevention of illness and maintenance of health. In J. Kosa, A. Antonoosko, & I. Zola (Eds.), Poverty and health: a sociological analysis. Mass.: Harvard University Press, 1969.

SAS Institute Inc. User's guide to SAS 76. Raleigh, N.C.: SAS Institute Inc., 1976.

Schaplowsky, A. F. Community injury control--a management approach. American Journal of Public Health, 1973, 63, 252-254.

Skrovan, C., Anderson, E. T., & Gottschalk, J. Community nurse practitioner--an emerging role. American Journal of Public Health, 1974, 64(9), 847-852.

Schwartz, M. P. Motivational factors related to beach usage at Galveston Island State Park. Unpublished master's thesis, Texas A&M University, 1977.

Scott, W. (Officer). Supervisor Galveston Beach Patrol. Personal communication, October 22, 1977.

Somers, A. R. Health care in transition: directions for the future. Chicago: Hospital Research and Educational Trust, 1971.

Spradley, B. W. (ed.). Contemporary community nursing. Boston: Little, Brown and Company, 1975.

Starpoli, C. J., & Waltz, C. F. Developing and evaluating educational programs for health care providers. Philadelphia: F. A. Davis Company, 1978.

Stevenson, R. L. Cross-cultural validation of a readership prediction technique. Journalism Quarterly, 1973, 50, 690-96.

Strasser, M. K., Aaron, J. E., & Bohn, R. C. Fundamentals of safety education. New York: The MacMillan Co., 1964.

Tagliacozzo, D. M., & Kenji, I. Knowledge of illness as a predictor of patient behavior. Journal of Chronic Disease, 1970, 22, 765-775.

Tinkham, C. W., & Voorhies, E. F. Community health nursing: evolution and process. New York: Appleton-Century-Crofts, 1972.

Thygerson, A. L. Safety in health education: some precautions. The Journal of School Health, 1974, 54, 508-510.

Tones, B. K. The organization of community health education: a case for strategic integration. Health Education, 1976, (September/October), 16-19.

Tousignant, H. G. The role of the health educator in a county health department. Health Education, 1975, (September/October), 21.

Viewpoint, health care--next stop on the road from Sesame Street. Journal of Bio-Communication, 1974, 1(1), 2-6.

Vital Statistics of the United States, Vol. II. Mortality. 1977.

Waller, J. A. The accident, the ugly duckling and the three preventions: a fable for mature health officers. American Journal of Public Health, 1974, 64(4), 301.

Winslow, E. H. The role of the nurse in patient education. Nursing Clinics of North America, 1976, 11, 213-222.

WHO Expert Committee. Committee on health education of the public. Technical Report Series No. 89. Geneva: World Health Organization, 1954, 4.

WHO Expert Committee. The community--new focus for nursing. WHO Chronicle, 1975, 29, 91-96.

Williams, C. A. Community health nursing--what is it? Nursing Outlook, 1977, 25(4), 250-254.

Wilson, R. N. Community problems: perceived issues (Chapter III). In Community structure and health action. Washington, D.C.: Public Affairs Press, 1968.

Woodruff, A. D. The use of concepts in teaching and learning. Journal of Teaching Education, 1964, (March), 81-99.

Worden, J. M., Sweeney, R. R., & Waller, J. A. Audience interest in mass media messages about lung disease in Vermont. American Journal of Public Health, 1978, 68(4), 378-382.

World Health Organization. Constitution of the World Health Organization. Geneva: World Health Organization, 1946.