

**The Effect of a Self-Care Intervention
on Health Related Attitudes and Beliefs**

by

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ABSTRACT

Self-care has always been a primary means of caring for health problems. It has been estimated that 80% of all health care is provided by the individual or family and most people experience a self-care decision on one out of every three days (Morrell, 1976). Reactive self-care or correct actions taken by lay people in response to symptoms is a current educational intervention in many workplace health promotion programs. The emphasis of these programs is increased health care knowledge and decision making by the individual and appropriate utilization of the health care system.

Key components of many self-care programs are self-care handbooks which contain specific self-care recommendations for home treatment of common medical problems. Additionally, the handbooks also contain information about health care consumerism, developing an active partnership with your health professional, and what clinical interventions to expect when you do enter the medical system for a specific problem.

It appears however that individual personality factors such as attitudes and beliefs may influence whether or not self-care behaviors are practiced (Krantz, 1980). There have been relatively few studies

which have assessed the ability of a self-care program (with or without a handbook) to impact health related attitudes and beliefs.

The purpose of this study was to explore the effects of a structured self-care program which included a self-care handbook on health related attitudes and beliefs in a group of electric utility employees with comparisons to a group of employees who received no intervention. An experimental design was utilized for this study with a convenience sample of 70 employees.

Subjects were randomly assigned to control and treatment groups of 35 members each. Data were collected pre- and post-intervention on health related beliefs and health related attitudes. Additional information collected included age and gender for both groups and post intervention book utilization in the treatment group.

An analysis of the data revealed overall that a structured self-care intervention which included a self-care handbook could significantly affect some health related attitudes and beliefs. The specific scales that revealed significant change were powerful others and information. Furthermore, these changes did last over time, as posttest data was captured three months after

intervention. It was discovered that treatment group members who had read more of their book were less likely to believe their health status was due to chance events. Younger participants in both groups did indicate a higher desire to obtain health related information. These results support the ability of a self-care program to improve attitudes and beliefs in regard to personal responsibility and active participation in health care.

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Chapter 1

Introduction

Self-care or care that individuals perform for themselves is the predominant form of health care (Sorofman, Reimer, Laver, & Martin, 1990). These health related actions encompass multiple interventions and may include: "A person's attempts to promote optimal health, prevent illness, detect symptoms at an early date, processes of self-monitoring and assessment, symptom perception and labeling, evaluation of severity, management of chronic illness and evaluation and selection of treatment alternatives, such as self-help, lay helping resources or formal health services" (Woods, 1989, p.2).

Dean (1981) defines self-care as: "The basic level of health care in all societies. It can be preventive, curative, and rehabilitative, but is neither contemporary or reactionary. It involves the range of individual health behaviors; health maintenance/lifestyle, utilization of preventive health services, symptom evaluation, self-treatment and interaction with the professional sector" (p.673). It is estimated that 85% of health care interventions are self-care, and that most individuals are faced with some type of symptom on one out of every three days (Morrell, 1976).

Barofsky (1978) divides self care activities into four types:

1. Regulatory self-care (for example eating, sleeping and bathing).
2. Preventive self-care (for example exercising, dieting and brushing one's teeth).
3. Reactive self-care (responding to symptoms without a physician's intervention).
4. Restorative self-care (which includes both behavior change and compliance with a professionally prescribed treatment regimen).

Symptom self-care or reactive self-care focuses on the processes that individuals utilize for identification and evaluation of symptoms in order to make decisions about specific actions that may resolve the health concern (Sorofman, Reimer, Lauer, & Martin, 1990). In fact, a study of reactive self-care actions taken by 340 individuals who had experienced symptoms was conducted by Wilkinson (1987), through a review by six general practitioners. In only 2% of cases were actions assessed as inappropriate or harmful. Research in symptom self-care has also shown that self-care behaviors are due to subjective perceptions; that is individuals act according to what they believe and how they feel (Keller, Ward, & Bauman, 1989).

Current health care trends are increasingly emphasizing prevention and personal responsibility over more traditional forms of care (Vickery, Golaszewski, Wright, & Kalmer, 1989). Such an emphasis is consistent with preventive self-care and reactive or symptom self-care.

Health policy concern has also moved from a focus on length of life to one of quality of life (Verbrugge & Ascione, 1987). Life quality can depend on the successful management of physical and emotional symptoms experienced daily. Individuals' short-term patterns of physical and mental health are increasingly being assessed for daily health concerns and decision making in regard to self-care and professional care (Verbrugge & Ascione, 1987).

Self-care intervention strategies have been used as a tool to reduce unnecessary and overutilization of health services. Roberts (1983) reported on a study by Mechanic (1978) which indicated that although the causes of health cost escalation are multiple and complex, discretionary consumer behavior patterns have a significant impact. An earlier study by Dunnell and Cartwright (1972) indicated that a substantial number of physicians believed that at least 25% of their visits were for conditions that people could treat themselves. Unnecessary medical visits and appropriateness of medical visits are of direct interest to

health insurance companies, government agencies and corporations who bear the burden of these costs. Average health costs of \$3,605 per employee were reported in a 1991 Foster Higgins study, and were rising at a rate of 12% to 30% a year with no sign of abatement.

As the traditional paradigm of the patient as a consumer now shifts to one of the patient as consumer and provider of health care (Kemper, 1990), the patient's ability to be proactive and involved with all decisions concerning health care will have a major impact on quality and cost of health care (Vickery, 1986). Little is known about the skills or attitudes individuals must have to enable them to step into the self-care role.

However, McLean and Pietroni (1990), found that a high level of internal control of reinforcement appears to be crucial to successful utilization of self-care practices. They conclude that: "It appears that an inner directed or internal orientation is vital for the successful practice of self-care and self-help approaches in health" (p.595). Further research is needed to examine ways to enhance this internal orientation as a step toward helping individuals move toward a paradigm of self-care.

The purpose of this study was to explore the effect a self-care intervention had upon individuals' attitudes and beliefs concerning personal responsibility and involvement

in their own health care. The results of the study may have significance for the development of preventive and reactive self-care programs that could be delivered within a health promotion framework.

Empowerment of individuals to higher levels of health status and health knowledge should be a key objective for any nurse/client interaction. The individual is then determining desired health outcomes through the risk factors they choose to engage in or avoid and are a part of an active partnership with their health care providers.

If nurses are to be effective in promoting self-care and healthy lifestyle management they must assess clients' knowledge, experience, values, attitudes, beliefs, decisions, and actions. Findings from this study will be used to structure a corporate self-care program that focuses on health behaviors as well as content and will hopefully empower individuals to engage in higher levels of self-care practices in their daily lives for increased health status.

Chapter 2

Review of the Literature

Introduction

This chapter contains a review of the literature related to several facets of self-care: actions taken by individuals in response to symptoms before and after self-care interventions, the role of health related attitudes and beliefs on self-care behaviors, and some supporting studies relating to types of symptoms experienced and utilization patterns.

The literature and research concerning self-care reveal a complex topic that includes theories, frameworks, phenomena, concepts, models, specific behaviors, and multiple definitions. Because self-care also extends over a variety of disciplines, it is better to review the topic from a specific perspective rather than attempt to define a global meaning (Gantz, 1990).

In 1987, the Self-Care Institute reviewed the literature and identified seven disciplines that all agree on several characteristics of self-care and organize self-care knowledge to answer questions of central importance to the discipline (Gantz, 1990). The seven disciplines and their self-care focus are outlined below:

Medicine

The discipline of medicine focuses on medical

self-care which transfers certain levels of health actions to clients. Specific activities form the context and there is no framework to outline encounters or behavior theories about self-care. The medical self-care model is shaped by symptoms and emphasis is on the client exhibiting learned behaviors to deal with disease or condition (Gantz, 1990).

Nursing

The discipline of nursing focuses on holistic characteristics of clients to identify and assess self-care needs and abilities. Intervention strategies are then designed for empowerment of the client to higher levels of self-care. The goals of self-care are mutually agreed upon by the client, family, and health care professionals. The nursing discipline contains concepts, theories, models, frameworks, content, and behavior research in regard to self-care (Gantz, 1990).

Psychology

The focus of self-care within psychology is to understand why a client makes self-care decisions based on health beliefs, locus of control, values, attitudes, self-esteem and concepts. Self-care issues in psychology have led to the development of a new field entitled Health Psychology which examines how individuals stay healthy, why illness occurs, and response when sickness occurs (Gantz, 1990).

Health Education

Self-care in this field is concerned with design and delivery of programs that will empower the individual to make healthy decisions. Health education is action oriented and involves a supply of knowledge, ability, and motivation to individuals. Overall goals include the individuals' willingness to assume personal responsibility. This discipline does bridge other disciplines in regard to individual behavior and society and organizations (Gantz, 1990).

Sociology

Self-Care in sociology is concerned with the individual, small group, and community. The focus is on social, legal, political, and organizational structures that facilitate or impede self-care. Some sociologists have researched the potential impact of a self-care paradigm that would redirect the focus of health care from the traditional medical model (Gantz, 1990).

Public Health

Public health is concerned with providing environments for individuals to live safely and providing health services for individuals and groups. This discipline is focused on self-care issues in regard to allocation of resources, access to care, and environmental regulations (Gantz, 1990).

Business Administration and Insurance

Self-care within this discipline is both a product line and an approach for reducing health benefit costs. Products include over the counter medications, self-assessment devices, wellness related equipment, and service delivery such as classes and programs. Alternative payment systems, wellness programs, and health education are examples of health cost control and increased employee health and productivity measures (Gantz,1990).

This self-care research project extends over several of the identified disciplines to examine problem solving through specific content such as medical self-care and self-care process-oriented concepts such as values, attitudes, and beliefs from the psychology discipline. For the purposes of this research, the review of literature will focus only on self-care behaviors demonstrated by people in response to symptoms, examine attitudes and beliefs concerning personal health after a self-care intervention, as well as describe the capacity of the Multidimensional Health Locus of Control scales to measure internal or external control of reinforcement which appears to be crucial to successful adoption of self-care practices (McLean and Pietroni,1990). This review will assist in answering the question: Can self-care behaviors be augmented through a planned self-care education program?

Self-Care Interventions Using A Self-Care Education Program

There have been numerous studies which have examined the impact of self-care interventions using a self-care handbook on medical utilization and other variables (Berg and LoGerfo (1979), Moore, LoGerfo, and Inui (1980), and Vickery, Kalmer, Lowry, Constantine, Wright, and Loren (1983)). Most of these studies evaluated interventions designed to assist subjects in making appropriate decisions about the use of medical care for a broad range of common health problems. Many of the studies utilized self-care books which contain algorithms for common adult symptoms and also measured program impact on book usage, attitudes and knowledge.

Some studies have not supported reduced medical utilization as an outcome medical self-care interventions. Berg and LoGerfo (1979) examined 3,929 patient symptom logs in a retrospective study and determined that there would have been an increase in physician visits for upper respiratory infections if algorithms from the medical self-care book Taking Care of Yourself (Vickery and Fries, 1979), had been followed correctly.

Moore, LoGerfo, and Inui (1980) explored the effect of a self-care book, Taking Care of Yourself, on physician visits. The purpose of the study was to determine the effects of the book on attitudes about self-care, its use

in response to symptoms, and the impact on medical utilization.

Study participants were selected from 1,112 families enrolled in United Healthcare (a prepaid insurance plan). To be eligible for the randomization the family had to be enrolled between November, 1976 and May, 1977 with an average of one family member physician visit during the six month period. Seven hundred eighty five families met the criteria and were randomly placed into three groups. After accounting for dropouts there were 699 families eligible at the end of the experimental period or 1,705 persons.

The three groups consisted of a control group for whom no intervention took place. This group was also unaware their visits were being monitored. Groups two and three received a self-care book by a student who delivered the book. A letter was attached from United Healthcare that described the book and invited the recipients to an hour workshop to explain the book. The letter to the families in group three informed them they would receive \$50 at the end of the six months if their family's physician visits had decreased by one-third as compared to the number of visits during a six month period one year earlier.

After the book and letter were delivered, families were contacted by phone and invited to select a time to

attend the self-care seminar. The self-care seminar consisted of examples on how the book should be utilized along with a question and answer session. Four months after the book distribution and workshop, a phone questionnaire was administered to groups two and three concerning book usage and impact.

In examining office and emergency room visits for a six month period from the baseline to the experimental periods, there were decreases in all three groups after the intervention. The average number of visits decreased by 24% in group three, 21% in group two and by 16% in group one. The decreases in visits between baseline and experimental periods were significant, but the difference in decreases between the groups was not statistically significant.

There were no differences in results related to age and gender. Fourteen percent of families in group two attended the optional seminar and 20% of families in group three attended. Seminar attendees did utilize physicians less but this difference was not statistically significant compared to non-attendees.

The telephone questionnaire regarding book usage was
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administered to 64% of families in groups two and three. The book was read by 49% of group two families and 46% of

group three families. Thirty-six percent of group two and 41% of group three reported using the book for a specific problem. In assessing visit rates for group two, there was a 16% decrease in visits for the book users versus a 19% decrease in the nonusers group. In group three, nonusers decreased visits by 27% versus a 14% decrease for users.

Similar results occurred with readership. Nonreader families in group two decreased visits 18% versus a 20% drop in readers visits. Group three non-readers decreased their visits by 25% compared with 12% for reader families. The differences between these groups were not statistically significant.

The major strength of this study was the randomized prospective design with retrospective and prospective data. If there had not been a control group, the results would have indicated a significant reduction in visits for groups two and three. The intervention was thorough and all variables were measured separately and between groups.

There was no significant effect on physician's visits even though one-half of the families read most or all of the book and more than one-third had used it for a specific medical problem. This result occurred despite an aggressive book distribution with a \$50 incentive.

This study measured actual impact of the book on visits and did not find the increase predicted by Berg and

LoGerfo (1979). The telephone interview did uncover a positive effect on attitudes concerning self-care and on confidence in management of medical problems.

The researchers do not comment or attempt to explain the results that occurred between book readers and non-readers and book users and non-users. They recommend future efforts for evaluating self-care initiatives look at appropriateness of visits. They also recommend that to truly decrease visits the algorithms must be more oriented toward home treatment and that programs supplemented with workshops and resources available to reinforce instructions at the time of illness.

Kemper (1982) studied a self-care program's impact on medical utilization with 900 Health Maintenance Organization members over a 12 month period with a control group and self-care workshop sessions and the self-care book, The Healthwise Handbook (Kemper, 1979). The study measured three areas: 1) the logistic success of the program; 2) impact on predisposing factors of self-care knowledge and attitudes; 3) the impact of a self-care handbook and education program on medical utilization.

Forty-eight percent of a 6,000 person health maintenance organization agreed to participate in a new health education program. These individuals were randomly divided into experimental and control groups. Experimental

group members were asked to attend ten two-hour self-care workshop sessions led by a nurse practitioner. Promoting greater confidence in dealing with health concerns was the overall goal of the program.

Program content began with vital sign monitoring and taught participants how to perform home physical examinations. The chapters of The Healthwise Handbook were reviewed and key emphasis was placed on facilitating a more activated relationship between individuals and their health care providers. Control group members were asked to fill out a questionnaire and told the classes were full but that they would be contacted when additional classes were offered.

The findings indicated a reduction in the cost per visit by program participants but the differences in total visit costs were not significant between control and experimental groups. The control group did have slightly higher utilization of medical services but the results were not significant.

Twenty-six percent of the families in the experimental group participated in the workshop and attended an average of five of the ten sessions. Eighty-three percent of participants felt the workshop would improve health care for their families and 81% had read at least half of the handbook.

Significant differences in self-care knowledge scores were observed between control and experimental groups concerning self-care knowledge scores.

An increase in score of 125% was noted for participants versus an increase of 8% for control group members. This difference was highly significant at the 0.01 level.

Knowledge scores were measured again at six months after the intervention and only dropped 1% during this time.

The study did demonstrate that large numbers of people from a general population could be recruited and trained in medical self-care at a reasonable cost. Kemper proposes that a larger sample would probably have resulted in a significant drop of visits for the experimental group. He also proposes that additional research is needed to examine utilization and cost areas and that future studies should be longer term covering three or more years.

Two major strengths of this study are the in-depth program content for self-care provided by the workshop and the measurement of this knowledge after program conclusion and six months later. The positive correlation between knowledge and attitudes of participants is also significant.

Stergachis, Newman, Williams, and Schnell (1990) studied the impact of mailed distribution of a brief self-care pamphlet on upper respiratory infection related

medical care utilization. The sample of 20,127 individuals was taken from a health maintenance organization. Individuals were randomly assigned to a control or experimental group. The experimental group of 12,353 received a four page pamphlet about upper respiratory infection which included information about symptoms, referral guidelines, and self-care treatments. The pamphlet was accompanied by a letter from the health maintenance organization and a telephone consultation service with nurses when advice was needed about upper respiratory infections. The control group of 7,774 received no intervention.

Five months after the intervention a survey was administered and completed by 83% of the experimental group. Ambulatory care visits for the control and experimental groups were also measured. The decrease in visits during the five month period for the experimental group was not statistically significant when compared to the control group. Appropriateness of visits for upper respiratory infections was comparable in both groups; 80% in the experimental group and 76% in the control group. Sixty-one percent of the experimental group indicated they had received the pamphlet and of those 45% said they had read it carefully.

The study design and assessment of several variables with survey, phone follow-up and record review are the strengths of this study. Some weaknesses noted are that there was no mention of informed consent to participate or review medical records, the intervention could have been designed differently for a greater possible impact, and that there are no recommendations for future studies. The researchers conclude that a simple mailed self-care brochure has little effect on medical utilization for upper respiratory infection.

Some medical self-care intervention studies have shown an association with reduced utilization. Roberts, Imrey, Turner, Hosokawa, and Alster (1983) conducted a study to assess if a brief health education program would impact unnecessary clinic visits for upper respiratory tract infections. The sample of 877 families or 1,858 persons was obtained from a Family Medical Care Center. When an adult family member attended the clinic during the enrollment period, they were asked if they planned to live in the area for the next 12 months and continue their care at that facility. If they answered affirmatively, they were randomly assigned to a test or control group. There were 433 families in the test group and 444 families in the control group.

The educational intervention for the test group

consisted of a one on one educational session by a health educator while waiting to be seen at the clinic. Key information was presented on determining the necessity of a clinic visit for respiratory tract symptoms . The material given to the test group consisted of a four page information pamphlet on home treatment for the common cold, criteria for an office visit, a blank symptom chart to record information and an oral Fahrenheit thermometer. The educational sessions averaged five minutes. All family members waiting could participate in the educational session and ask any questions. Phone support was available from their provider if any questions arose.

Monitoring of visits by two family practitioners and one health educator took place for 11 to 17 months after study entry. The visits were classified as necessary or unnecessary according to the panel consensus. Medical visits were monitored for the control group as well.

The test families visited the clinic for unnecessary upper respiratory infections 44% less than the control families ($p < .002$) and had 15% fewer visits. The researchers calculated a benefit cost ratio of 15:8 for the test group. The cost of the educational intervention, including materials, was \$8.00; the avoidance of unnecessary visits produced \$15 in savings per test group participant.

One strength of this study is the carefully planned and executed educational intervention. The information packet contained the tools individuals needed for symptom assessment and resolution and was carefully explained by a health educator. There was also a follow-up component for questions that arose when illness occurred. Another strength was the avoidance of the Hawthorne effect due to participants being unaware their visits were being monitored.

The results of this study may be different from the findings of Moore et al.. for several reasons. This intervention was for one type of illness only and the educational program was geared toward this illness specifically. The other possible contributing factor could have been how the intervention was delivered: one on one training versus a self-care book that was sent to participants.

Similar results were obtained by Vickery, Kalmer, Lowry, Constantine, Wright, and Loren (1983) in a prospective, randomized controlled study of a self-care intervention effect on ambulatory care utilization. The sample population was drawn from 11,090 households enrolled in a health maintenance organization. An invitation was sent to the home and 25% of the households agreed to participate. When the signed informed consent form was

returned, the household was assigned to one of three control and experimental groups for a total of 1,625 households participating.

The first experimental group received the book Taking Care of Yourself and Taking Care of Your Child by Vickery and Fries. These materials were delivered by mail and this group was also offered a telephone information service and individual counseling. The second experimental group received the written materials and the telephone service. The third experimental group received the written materials only and the fourth group received no intervention during the one year study.

The self-care written materials intervention also included a monthly newsletter in addition to the book. All of the content focused on individual decisions in the area of self-care, medical care utilization and life-style choices. The telephone service was staffed by a nurse coordinator who provided information on health related issues. The individual counseling session was conducted by a nurse who reviewed all of the material and provided instruction on the algorithms plus a follow up call two to six weeks later to encourage the participant. Data were collected for all participants one year prior to entry into the study and for one year following entry for all ambulatory and specialist visits.

All three experimental groups revealed statistically significant decreases in ambulatory care utilization as compared with the control group; the average of the decreases was 17.2%. The decreases for all three experimental groups were in direct proportion to the intensity of the intervention, but there were no significant differences among the three groups. Group one was further divided into the participants that had attended the counseling session and those that did not. The group that had attended the counseling session had a 21.16% decrease in ambulatory care utilization for one year versus a 9.56% decrease for the group that did not attend the session.

The researchers further examined the data by selecting 75 diagnostic codes for the minor illness category of visits. When assessing utilization for these codes only, all three experimental groups had statistically significant decreases in utilization as compared to control groups. There were no significant differences between demographic variables and changes in utilization.

The researchers indicate that a program based on creative written communications aimed at personal decision making in health care is associated with reductions in ambulatory utilization which results in cost savings. The cost savings was \$3.43 for each dollar invested in group

one and \$2.41 in savings for each dollar invested in groups two and three. The additional health conference may further increase savings, especially for high utilizers.

These findings are consistent with those of Roberts et al.. (1983) of a 40% lower rate of unnecessary visits for respiratory infections when health education materials that contained algorithms are utilized. The Vickery et al.. (1983) study contained a large sample and a well planned and executed self-care intervention at multiple levels. These two studies support the idea that written materials emphasizing self-care and containing clinical algorithms can reduce ambulatory care utilization. There was no mention of any data collection on health related attitudes, beliefs or confidence in decision making as was noted in the Moore et al. (1980) study. It is interesting to note that the more intensive the intervention, the more significant the decrease in medical utilization, which gives support to individual instruction plus the self-care resource book as the optimal intervention.

Further demonstration of a self-care intervention program's ability to reduce medical utilization was demonstrated by Loring, Draines, Brown, and Richardson (1985). The purpose of their study was to evaluate a health education program's impact on medical utilization. The

program was designed to help employees make informed decisions about when to seek professional care. The sample population consisted of 15,800 persons who were employed by 22 Northern California employers. From this group 7,349 attended a 20 minute program on self-care in which they received the book, Taking Care of Yourself, study information and an explanation on how to use the book. Each participant also utilized the book by assessing two symptoms solicited from other participants. After the program, the workers received 12 monthly health newsletters, and posters were placed at the worksite to reinforce individual responsibility for good health.

This study is similar to the Moore et al. (1980) and Vickery et al. (1983) studies in that it uses the Taking Care of Yourself book. It is different in that the sample is much larger, a longer follow-up period was measured and the intervention was delivered in the workplace versus a clinic.

Participants completed an initial questionnaire and additional questionnaires every three months which measured data on general family member information, number of outpatient visits, place of visit and reason for visit. There were three follow-up mailings if no questionnaires were returned. If no data were obtained for two quarters, the individual was dropped from the study. A total of

5,191 participants or 71% completed at least one posttest questionnaire. The researchers opted to obtain self reported data because most employees do not have first dollar health care coverage for nonemergency care and a survey of claims would underestimate actual visits. The participants also provided information through a questionnaire for one quarter prior to the start of the health education program, so pre- and post intervention rates could be calculated.

The reduction in visits for all responders was 7.2% per year. A subgroup of 2,465 participants that were insured by Blue Cross of California showed a 17% reduction in visits to physicians or two visits per household per year. There was a larger decrease in utilization from younger participants but the amount was not significant.

Limitations of this study include the possibility of inaccurate self-reporting and a Hawthorne effect due to the fact that participants would under-report utilization since they had received educational intervention. The researchers conclude that a minimal low-cost workplace health education program can significantly reduce outpatient visit rates. The intervention was very similar to the Vickery et al. (1983) study but was structured differently so that only one level was administered. Two other key differences were the larger sample size in this

study and that the data were self reported.

Vickery, Golaszewski, Wright, and Kalmer (1989) conducted a study on the impact of a self-care intervention on the timeliness of ambulatory care visits after participants had received the intervention. The sample of 1,625 households was drawn from a population of 11,090 participants in a group health association. The participants returned a signed consent form and were assigned to either one of three experimental groups or the control group.

Written materials for the intervention consisted of the book Taking Care of Yourself by Vickery and Fries, a monthly health newsletter, and a self-scored health risk appraisal. Group one received the written materials by mail and were offered a telephone information service and individual counseling. Group two received the written materials and were offered the telephone service. Group three received written materials only. Group four served as the control group and received no intervention during the one year observation period.

A Timeliness of Patient Visit Form was developed and utilized for nine different health problems or acute conditions. The categories consisted of early, on time, or late. Each visit made by a study participant for one of the nine conditions was compared to the algorithm format in

the self-care book. The timeliness of each visit was then determined based on the algorithm comparison.

A total of 239 experimental group members and 63 control group members received treatment for the nine identified health problems during the one year data collection period. There were no significant differences by response for each illness category, so all data were combined for analysis. The timeliness form was reviewed by the medical provider and a study physician.

There was a significant agreement between patients', providers', and the study physicians' estimates of timeliness found in the experimental group but not the control group. The researchers found this interesting because it suggests that the algorithms are a method by which providers and patients can agree on timeliness of visits. Responses that were given for the late category for the experimental and control groups did show statistically significant differences. The experimental group did tend to delay treatment compared to the control group. The researchers assessed if the delays had resulted in complications that may lead to an increase in total illness days; this did not occur. The researchers offer that there is no evidence to suggest that an apparent trend to delay treatment within the experimental group would have an adverse effect on health.

Based on the overall findings of the study, the researchers summarize that their medical self-care intervention was found to decrease utilization with no adverse effect on health. The researchers did not discuss any data collection performed on the three experimental groups separately; data was pooled into one experimental group.

This study uses self-care interventions similar to those that have been utilized in other studies. However, it attempts to capture outcomes related to the variables of safety and timeliness. Rasmussen (1989) investigated the effect of a self-care booklet and education program on young children's minor illnesses with 572 mothers. Sixty-nine percent were later interviewed and of those, 99% recalled the booklet and 96% had read the child care section. The mothers who had read the child care section followed recommendations about when to seek medical care significantly better than those who had not read the booklet.

Self-Care Interventions and Attitudes and Beliefs

The ability of a self-care intervention to enhance health related attitudes and beliefs has been supported. Coons, McGhan, Bootman, and Larson (1989) studied the impact of a self-care education intervention emphasizing the importance of personal responsibility and involvement

in health care for college students.

This posttest only experimental design measured health attitudes and beliefs utilizing the Krantz Health Opinion survey and the Multidimensional Health Locus of Control Scale. The treatment group, consisting of 188 students, read a page of general information about self-care and then a small booklet on symptoms, illness, and surgery while they waited for treatment in the student health center. The control group of 204 received no intervention and filled out a survey instrument only. The survey instruments were then administered. Significant differences were noted on the Krantz Health Opinion survey on the behavior subscale between treatment and control groups which indicated that the treatment group preferred to be more active in their own health care. No significant differences were noted on the information subscale.

In assessing the Multidimensional Health Locus of Control Scale, the control group had higher scores on the powerful others subscale than the treatment group indicating that treatment group members were less likely to believe that their health was controlled by others. No significant differences were noted on internal health locus of control and chance health locus of control.

The researchers concluded that personal responsibility

and involvement in health care can be changed by a self-care intervention. The researchers acknowledge that the immediate completion of the survey instrument did not allow a measurement of how enduring the changes would be over time.

The researchers suggested future studies incorporate a follow-up procedure for measuring attitudes and beliefs over time to further assess how enduring any changes may be. Another suggestion was to intensify the self-care intervention for a possibly greater impact on scores in the experimental group.

McLean and Pietroni (1990) conducted a study to assess the benefits of a self-care program in a general medical practice. The sample of 150 patients were referred to the study by their physicians and had to meet one of two categories: (1) Patients whose medical condition was felt to have a stress-related basis like headaches or hypertension. (2) Patients who identified themselves or whom their physician identified as having difficulties coping with anxiety and tension.

Fifty percent of the 150 patients referred to the study participated in the intervention. The other 50% dropped out or did not attend any of the self-care classes. The intervention consisted of six 90 minute classes combining behavioral methods and active health promotion.

The components included an educational session based on Selye's General Adaptation Syndrome which emphasized the relationship between stress and ill health and responsibility in maintaining positive health. The sessions also included training in diaphragmatic breathing and progressive muscular relaxation techniques.

Each patient was asked to complete two questionnaires at the initial interview and follow-up assessments at six weeks, six months, and one year. The Multidimensional Health Locus of Control (MHLC) was completed by participants. It is a self report measure to assess health related beliefs according to internal, chance and powerful others factors. In addition, all participants filled out The Bedford Foulds Personal Disturbance Scale which measures anxiety and depression.

There were significant differences in the psychiatric morbidity levels at baseline and one year later. The mean scores of anxiety and depression were significantly lower following the intervention and this trend continued with further follow-up assessments. There was a significant difference between the baseline and six week follow-up scores on the internal scale of the MHLC of patients who had dropped out initially and the remaining patients. The patients who remained in the study continued to have higher scores at the six and 12 month follow-up which suggests the

impact of the self-care program on participants. The mean total internal score of the patients who dropped out was 21.73 and the mean total internal score for all participants who stayed in the study one year later was 25.57. Similar results include that the internal scores for improved patients were consistently higher than those who had remained in the psychiatric illness category. The external scores of the chronic patients on the chance and powerful others scales were consistently higher than the scores for the improved patients throughout each of the follow-up assessments.

In the discussion of their results, the researchers comment on the holistic aspects of self-care: "Self-care is concerned with facilitating and promoting changes in patients' perceptions about themselves and their enhanced role and responsibility in health care decision making as well as a more conscious involvement in the process of restoring and maintaining positive levels of well being" (p.594).

In reference to locus of control they note: "The goals of self-care programmes are often seen implicitly as primarily encouraging internal beliefs in individuals' abilities to influence and change themselves and their environment and is supported by the bulk of research on locus of control" (p.594). They note that the consistently

higher internal HLC scores of improved patients follows the assumption that this group would exhibit more positive attitudes towards self-care and take greater responsibility for their own health care.

Waller and Bates (1992) conducted a study of 57 healthy elderly subjects to assess health locus of control, self-efficacy beliefs and lifestyle behaviors. The subjects were selected from a voluntary sample of elderly at several retirement villages and senior centers. Sixty-five subjects completed a telephone interview and of those, 57 met the study criteria for being in good health with no major disability or disease. The participants were then contacted by telephone and agreed to provide information on health locus of control, self-efficacy and lifestyle behaviors through a questionnaire. The return rate was 100%.

Results from the MHLIC reveal that 52 of the 57 (91.2%) scored above the median score for internality and were rated as high internals. Forty-two of 57 (73.7%) scored at the median or below on the chance dimension and were rated low chance believers. Forty-one of 57 scored at the median or below on the powerful others dimension and were rated low on powerful others belief. The majority of the sample scored high on internality and low on externality which included the chance and powerful others scales. There were

no significant differences between genders or between the young-old and old-old categories of aging for any of the locus of control scores.

Results from the general self-efficacy scores reveal that a majority of the subjects, 33 (57.9%) scored above the mean and were considered high in self-efficacy. The correlations of internal health locus of control and self-efficacy with the healthstyle score were moderately high indicating that internal locus of control, self-efficacy, and good health behaviors are positively related.

The researchers conclude that the majority of participants who scored high on internality and self-efficacy believe they are in control of their health and have the ability to change or maintain health behaviors as needed. "Combined with other research there is preliminary support that locus of control and self-efficacy are associated with lifestyle behaviors and health. If this assertion is true, then health education practitioners and researchers should measure locus of control and self-efficacy in subjects to determine if compliance and success of health education interventions are related to these sociological variables" (p.308).

These three studies and their findings support the

value of measurement of locus of control as an indicator of health beliefs and researchers propose further interventions and measurements in this area in regard to self-care.

Related Self-Care Studies Pertaining to Symptoms

This section will briefly summarize the findings of some self-care studies in the areas of safeness of self-care, appropriateness of medical visits, and most common symptoms experienced for a further understanding of self-care symptom characteristics.

Six experienced general practitioners evaluated the actions taken by 340 respondents who had a minor symptom two weeks prior to an interview in a study by Wilkinson, Darby, and Mant, (1987). Only 2% of self-care actions were assessed as inappropriate or potentially harmful. Ninety-eight percent of all self-care actions taken were safe and/or appropriate.

A study by Dunnell and Cartwright (1972) indicated that a significant number of physicians believed that at least 25% of of their patient visits were for conditions that people could treat themselves.

Verbrugge and Ascione (1987) studied the above topic by reviewing daily symptoms from diaries kept for 6 weeks by adults. They found that respiratory symptoms (from colds) and musculoskeletal symptoms (from arthritis, injury

and overexertion) were the most common symptoms. The most popular action for both is prescription or nonprescription drugs followed by lay consultation, restricted activity and lastly, medical care.

Summary

The first section of the review of literature described studies concerning the actions individuals take with or without a self-care intervention program. In summarizing this group, several points are important. All of the studies used either a self-care handbook or a shorter type of self-care literature. The books were read and/or used appropriately by the subjects in the Kemper (1982) study and the Moore et. al. (1980) study. Three studies demonstrated a reduction in visits to physicians between treatment and control groups, but differences were not statistically significant. The magnitude of the reductions were consistent with the five studies that did support significant differences in physician visits (a 7-17% drop) after a self-care intervention. Two of the studies further assessed the self-care intervention's impact on health related knowledge, attitudes and beliefs which revealed positive findings in the ability of the program to significantly enhance this content area for participants.

The second section of the review of literature described individual health related attitudes and beliefs after self-care interventions, and health locus of control measurement in a healthy elderly sample. All three studies supported the concepts that personal responsibility, and active involvement in health care can be positively adjusted with a self-care intervention and that an internal locus of control is required for individuals to take responsibility for their health. The effects of self-care intervention on attitudes and beliefs have not been explored as heavily as impact on medical utilization.

The third section provided some key points in regard to self-care. Self-care actions taken by individuals have not been harmful and a significant number of physicians believed 25% of their visits were unnecessary. Finally, the most frequent type of symptoms are respiratory and musculoskeletal and the most popular action is prescription or non prescription drugs followed by lay consultation.

All studies point to widespread use of self-care, the effectiveness of self-care, education in reducing health care utilization and improving health related attitudes and beliefs, the safety of self-care, and the concept of internal locus of control being a key factor in taking personal responsibility for health. Further research concerning the ability of a self-care intervention to

influence health related attitudes and beliefs is indicated by the few studies which addressed these issues. "In order to facilitate self-care it is essential that health professionals provide the proper encouragement, skills and resources to enable individuals to involve themselves in appropriate self-care activities" (Coons et. al., 1989, p.121). These key points justify the need for further study in this area.

Chapter 3

Methodology

Introduction

This chapter will describe the research questions, hypotheses, variables, study population, instrumentation, reliability, validity, and limitations. The self-care intervention will be described in detail.

Purpose of the Study

The purpose of this study was to explore the effect of a self-care intervention program has on the health related attitudes and beliefs of employees of a large utility company.

Research Questions

The following questions were asked:

What effect does a self-care intervention program have on health related attitudes and beliefs? In order to answer or partially answer this question a series of questions were explored:

1A. Is there a significant gain in health related belief scores from pre-to posttest in a group of employees receiving no self-care intervention?

1B. Is there a significant gain in health related belief scores from pre- to posttest in a group of employees receiving a self-care intervention?

These questions were investigated by considering

pretest and posttest comparisons for experimental and control groups on the Multidimensional Health Locus of Control Scale (Wallston et al., 1978) which reflects three dimensions of beliefs: Internal, powerful others, and chance.

2A. Is there a significant gain in health related attitude scores from pre- to posttest in a group of employees receiving no self-care intervention?

2B. Is there a significant gain in health related attitude scores from pre- to posttest in a group of employees receiving a self-care intervention?

These questions were investigated by comparisons on the Krantz Health Opinion Survey (1980) which contains two subscales that measure attitudes toward health related information and a behavioral involvement scale that measures attitudes toward self-care and active participation in health care.

3A. Are there significant differences in health related beliefs between those who have used the book a little versus those who used the book a lot?

3B. Are there significant differences in health related attitudes between those who have used the book a little versus those who use the book a lot?

4A. Are there significant differences in health related beliefs between males and females?

- 4B. Are there significant differences in health related attitudes between males and females?
- 5A. Are there significant differences in health related beliefs between younger users and older users?
- 5B. Are there significant differences in health related attitudes between younger users and older users?
- 6A. Are there significant differences in health related belief posttest scores between a group of employees who received a self-care intervention and a group that did not?
- 6B. Are there significant differences in health related attitudes posttest scores between a group of employees who received a self-care intervention and a group that did not?

Hypotheses

A number of null hypotheses were tested:

- 1A. There will be no significant differences from pretest to posttest for the control group on the Multidimensional Health Locus of Control which measures health related beliefs.
- 1B. There will be no significant differences from pretest to posttest for the experimental group on the Multidimensional Health Locus of Control which measures health related beliefs.
- 2A. There will be no significant differences from pretest to posttest for the control group on the Krantz Health

Opinion Survey which measures health related attitudes.

2B. There will be no significant differences from pretest to posttest for the experimental group on the Krantz Health Opinion Survey which measures health related attitudes.

3A. There will be no significant differences in health related beliefs between those who have used the book a little versus those who used the book a lot.

3B. There will be no significant differences in health related attitudes between those who have used the book a little versus those who used the book a lot.

4A. There will be no significant differences in health related beliefs between males and females.

4B. There will be no significant differences in health related attitudes between males and females.

5A. There will be no significant differences in health related beliefs between younger and older participants in the experimental group.

5B. There will be no significant differences in health related attitudes between younger and older participants in the experimental group.

6A. There will be no significant differences in posttest scores of beliefs between the experimental and control groups.

6B. There will be no significant differences in posttest

scores of attitudes between the experimental and control groups.

Study Variables

The independent variables included the self-care intervention program, self-care book, monthly self-care newsletter, self-care book utilization, age, and gender.

The dependent variables were health related beliefs and health related attitudes.

Definition of Variables

The following variables are operationally defined for the purpose of this study:

Independent Variables

Self-care intervention program - An educational program that will be administered by a health educator to the subjects in the experimental group. The intervention emphasized the importance of taking personal responsibility for health, how to become a wiser health care consumer, and the importance of developing a partnership with health care providers. The intervention was be delivered through small group discussion accompanied by overheads that emphasized key points. Objectives for the intervention included:

- 1) Outline several reasons why it is important for individuals to take personal responsibility for their health status through lifestyle and health decision choices.

- 2) Identify available resources for assistance in recognizing symptoms correctly in order to apply proper home treatment or obtain correct professional care.
- 3) Discuss the importance of developing a partnership with your health care providers and how to facilitate this partnership.
- 4) Practice usage of the self-care resource book by participating in several examples.

All participants in the experimental group received the self-care book Take Care of Yourself (1990) by Vickery and Fries and a monthly self-care newsletter. The participants received the newsletter for three months and were encouraged to utilize the toll free healthline in the newsletter each month which provides a health information topic from a health educator. The self-care book and newsletters were the resources given to participants for utilization of health and self-care information.

Self-care book - The book Take Care of Yourself (1990), by Vickery and Fries was be distributed to all participants in the experimental group for them to keep. The text consisted of three sections. Section one had 11 chapters on health habits such as prevention, interacting with health providers, aging and vitality, health care plans, and home pharmacy. Section two

contained 109 health related concerns and algorithms for each concern that provided the reader with a decision making chart for symptoms present. The reader was instructed for each symptom to either "apply home treatment", "see a physician today", "call physician today", or "see physician now". A decision making tree for each symptom was provided and home treatment for each symptom described. Section three consisted of blank charts for entering family health and illness information.

Monthly self-care newsletter - A monthly self-care newsletter written and distributed by The Center for Corporate Health who also distributes the book, Take Care of Yourself. The newsletter is entitled "Taking Care" and participants in the experimental group received it for three months after the self-care intervention. The newsletter focused on healthy lifestyle habits and reviewed specific health concerns and symptoms from self-care the book. The newsletter was intended to encourage readers to adopt and maintain wise lifestyle management practices and read and utilize the self-care book, especially when symptoms occur. The newsletter also promoted and provided a toll free health topic phone line which is staffed by a health educator. Health topics change on a monthly basis and participants may ask educator questions in regard to the monthly topic.

Self-care book and newsletter utilization - How often participants in experimental group have read and or utilized the self-care book and newsletter. This was measured by selected questions from The Center for Corporate Health's datapac of questions concerning self-care book and newsletter usage.

Age - Age in years self-reported by subject by indicating age in one of five categories.

Gender - The gender of a participant (male or female) as self-reported in a question on the questionnaire.

Dependent Variables

Health related beliefs. - The kind and extent of control a person thinks he (she) has over his (her) own state of health. This was measured utilizing a self-administered instrument with 18 statements about health related beliefs entitled the Multidimensional Health Locus of Control (Wallston et al., 1978) which contained a six item Likert scale for responses (Appendix A). The instrument contained three subscale measurements that reflect three dimensions of beliefs: internal - person believes that they have control over their health; powerful others - belief that health professionals control one's health; chance - belief that one's health is under the control of fate or luck. The higher the score on each scale the stronger the belief in that particular concept. The author recommends that the

beliefs should be measured on each scale, and a total score should not be obtained.

Health related attitudes - The degree of preference for information and behavioral involvement (i.e., self-care and active participation) in health care. This was measured utilizing the Krantz Health Opinion Survey (1980), (Appendix B). This instrument contained 16 statements that encompass preferences for an active and informed role versus a relatively inactive and trusting role in the health care process. The first scale was called Behavioral Involvement and consisted of nine items concerned with attitudes toward self-treatment and active behavioral involvement in health care. The second scale was called Information and consisted of seven items measuring the desire to ask questions and wanting to be informed about health decisions. The instrument measured these attitudes by a Guttman scale in which participants are asked to agree or disagree. The higher the score on each scale the stronger the attitudes toward that particular concept. The author recommends measuring each scale separately and not totaling the scales.

Study Design

This study utilized a pre-, posttest experimental design with randomly assigned treatment and control groups. This design was selected because experimental

research offers "the most convincing evidence concerning the effects one variable can have on another" (Polit and Hungler, 1991, p.152). A true experimental design is characterized by manipulation, control, and randomization (Polit and Hungler, 1991).

The manipulation or experimental treatment in this study consisted of the self-care intervention. All participants received the pretest; then the self-care intervention was administered to the experimental group. The control group received no intervention. The posttest was conducted four months later for both groups. The setting was three different locations of an electric utility corporation. Data were collected using the Multidimensional Health Locus of Control scales (Wallston et al. 1978), the Krantz Health Opinion Survey (Krantz, 1980), selected questions from the Center for Corporate Health's datapac on book and newsletter utilization, and two demographic questions.

Study Population and Sample

The population for the study consisted of 544 employees of an electric utility in Maryland and Delaware. The population was distributed in three of the company's 23 sites. The sites included: A division general office in Salisbury, Maryland with 300 employees, a power station in Vienna, Maryland with 44 employees and a power station in

Millsboro, Delaware with 200 employees. The company employs 2,900 employees and provides energy services (electric and gas) over a 400 mile radius to the residents of the Delmarva Peninsula. The company's corporate headquarters is in Wilmington, Delaware.

A corporate health promotion program had been in place for five years at the time of the study with an average of 30% to 40% participation in the multi-faceted program. There had not been a formal program offering in self-care prior to study implementation. This self-insured company provides a generous health benefit package to employees with a choice of three plans. One plan is a managed care network with no fees and the other two are indemnity plans with deductibles. With dependent coverage included, the number of covered lives is about 9,500. This regulated industry is most interested in managing health care costs of employees, retirees, and dependents. They are experiencing about \$17,155,000 in yearly health costs or \$47,000 a day or approximately \$5915 per employee per year.

A convenience sample of 70 employees was obtained from the entire population of three worksites or 544 employees. A letter was sent to all employees inviting them to participate in the study. The letter explained that participation was voluntary and all responses were anonymous. The letter briefly described the study and

informed participants of the free self-care book they would receive for participating (Appendix C). The sample represented 12% of the population that was invited to participate. Reading of forms was a criterion for participation. All Delmarva Power employees must complete reading tests prior to employment.

Instrumentation

Multidimensional Health Locus of Control Scale (MHLC).

The MHLC (Appendix D) was utilized to measure health related beliefs. The tool was developed in 1978 by Wallston, Wallston, and DeVellis and was patterned after a similar scale by Levenson (1973). Wallston applied the locus of control concept to health based on the original locus of control theory as coined by Rotter (1966). This concept is further derived from Bandura's social learning theory (1977) which states that the potential for a behavior to occur is dependent upon the expectancy that the action would lead to a specific outcome and its reinforcement value. Rotter described internal locus of control as a feeling of being responsible for outcomes, while external locus of control deals with outcomes being controlled by luck, chance or powerful others. The instrument consists of three subscales: internal (IHLC), powerful others (POHLC), and chance (CHLC). The internal health locus of control assesses the individual's ability

to control his/her own health. The other two scales fall under the category of external health locus of control. Chance health locus of control assesses the belief that health is determined by fate, luck or chance. Powerful others assesses the belief that powerful others such as friends, family, doctors, and nurses determine one's health.

The three subscales have six items each and are scored by a six point Likert format ranging from 1 = strongly disagree to 6 = strongly agree. Each subscale has a range of 6 to 36 with a median score of 21. For the internal scale, individuals have a high internal locus of control if they score above the median, and a low internal locus of control if they score at or below the median. Measurements are similar for the other two scales; the higher the score, the stronger belief in the factor being measured. Permission to utilize the tool was obtained from Dr. Kenneth A. Wallston (Appendix E).

Validity

Content validity was established by the researchers in the initial scale development. One hundred and fifteen questionnaires were returned after completion through a convenience sample in a airport. Correlations between health status and MHLIC scores were computed. Health status

correlated positively with the IHLC, negatively with the CHLC, and did not correlate with the POLHC.

Reliability

The scales' internal consistency was measured by the researchers when the initial pilot study of 115 individuals was conducted. Alpha reliabilities were calculated for each scale and the following values were obtained: IHLC-.859, POHLC-.830, and CHLC-.841. These values represent a high degree of homogeneity among the questions in each scale.

The Krantz Health Opinion Survey

Health related attitudes were measured utilizing the Krantz Health Opinion Survey (1980) (Appendix D). This instrument measures preferences for information and behavioral involvement (i.e. self-care and active participation) in health care. The first subscale is Behavioral Involvement and consists of nine items concerned with attitudes toward self-treatment and active behavioral involvement in health care. The second subscale is Information and consists of seven items measuring the desire to ask questions and be informed about health decisions. The total scale consists of 16 items rated in a binary agree-disagree format. This type of scoring is also known as a Guttman Scale. The instrument yields a score

for the two subscales and a total score measuring attitudes toward treatment approaches. High scores indicate favorable attitudes toward self-directed or informed treatment.

Validity

Validity of the Krantz Health Opinion Survey was initially established through administration of a 40 item test about aspects of medical care to 200 undergraduates. Items were eliminated if they showed a narrow distribution of response alternatives. This reduced the number of items to 26 items which were administered to 159 undergraduates. Factor analysis was utilized to develop two subscales called Behavioral Involvement and Information. Items not correlating with either scale were eliminated. This left the final version with 16 items.

Predictive validity refers to the degree an instrument can predict criteria observed at a future time (Polit and Hungler, 1991). The instrument was administered to 149 students enrolled in a medical self-help course and 81 students who had reported to a college medical office for routine health care. It was predicted that the students in the self-help course would have higher scores. Analysis revealed significantly higher scores for the medical self-help group on the behavioral subscale, and total

score. Results were marginally different on the information scale. As the author had predicted, the Health Opinion Survey successfully discriminated between a selected group of high self-care subjects and the general student population.

Reliability

Both Krantz scales together have a Kuder-Richardson 20 reliability of .77. Reliability of the Behavior scale was .74 and reliability of the Information scale was .76. Two further college samples who were tested revealed a Kuder-Richardson 20 reliability of .71 for the Behavioral Involvement scale and .59 for the Information scale. Permission to utilize this instrument was obtained from Dr. David S. Krantz (Appendix F).

Center for Corporate Health Datapac

Permission was obtained from the Center for Corporate Health to utilize some questions from their datapac (Appendix G) for measurement of book and newsletter readership, utilization and opinion. Each question had approximately five to six possible responses that ranged from 0% to 100% regarding book and newsletter usage and from a negative three to a positive three regarding book and newsletter understanding.

Demographic Information

There were two demographic questions at the end of the

Krantz Health Opinion Survey which measured age and gender.

Data Collection

A plan for data collection was presented to the Manager of Compensation and Benefits, Assistant Manager of Employee Relations, and President of Local 1238 of the International Brotherhood of Electrical Workers at the study corporation. This plan did receive final approval from the Compensation and Benefits Department (Appendix H). The plan for data collection was also reviewed and approved by the Human Volunteers Committee of Salisbury State University (Appendix I).

A listing of all departments in the Salisbury location was obtained with the number of employees in each department. Corporate policy prohibited employee names from being distributed, thus the inability to perform a random sample. The information and consent forms were sent out to all departments in early December, 1992 and a brief note was attached asking the secretary to please distribute the forms to all employees in the department.

The information letter described that interested employees would be randomly assigned to treatment or control groups and that all responses would be anonymous. Employees had three weeks to return consent forms. The consent forms were then randomly sorted into control and

treatment groups. The control group received their pretest in the inter-office mail in early February, 1993. There were brief instructions attached (Appendix J) to the pretest with the researcher's phone number for questions and inter-office mailing address for return. The pretest consisted of the MHLIC scales, the Krantz Health Opinion Survey and the two demographic questions. In addition, there were instructions for the participants to select any two numbers and place the number 1 at the end and to write the number in test code section of pretest. A wallet card was attached as well and participants were instructed to place the code number on the wallet card for safe keeping to use again on the posttest for comparison purposes only. They were also reminded that they would receive a free self-care book at the study's completion after the posttest.

The experimental group was divided into smaller groups by location and each participant was contacted by phone concerning the day and time they could attend a self-care workshop. There were two workshops delivered in Salisbury, two in Indian River, and two in Vienna. As participants entered the conference room they were given an instruction sheet and wallet card identical to the ones in the control group, but were instructed to place a "2" at the end of their two numbers they selected to identify themselves as

the treatment group. Participants received the same pretest as the control group. After completing the pretest, the self-care intervention was delivered and comments or questions from participants were encouraged. The content of the intervention was described previously. All participants received their book and newsletter instructions. They were aware they would complete a posttest in three months. The self-care interventions were conducted in February, 1993 except for one workshop that was completed in early March. The employees in these groups were reminded not to share any of the content with treatment group members if the opportunity was presented.

An instruction sheet and posttest questionnaire were distributed to all study participants in early May, 1993, (Appendix K). The questionnaires were identical except for the treatment group who had questions on book and newsletter readership and utilization. The posttest was to be returned in several weeks and after that cut off date, a second reminder was sent out to all participants. The final post-tests were returned in late May, 1993.

Limitations of the Study

Since all employees were invited to participate in this study, the individuals who agreed to participate may have had more interest, superior self-care skills, and may have responded differently than employees obtained through

a random sample. There also is the possibility that the Hawthorne effect could have occurred; that is the employees may have responded in a particular way on the pre- or posttests when they discovered the nature of the intervention. The treatment group could have discussed the self-care intervention with the control group over the three months prior to posttest which may have influenced posttest scores. The generalizability of the research findings is limited to the employees at the utility company. The sample size also limits the generalizability of findings to the general population.

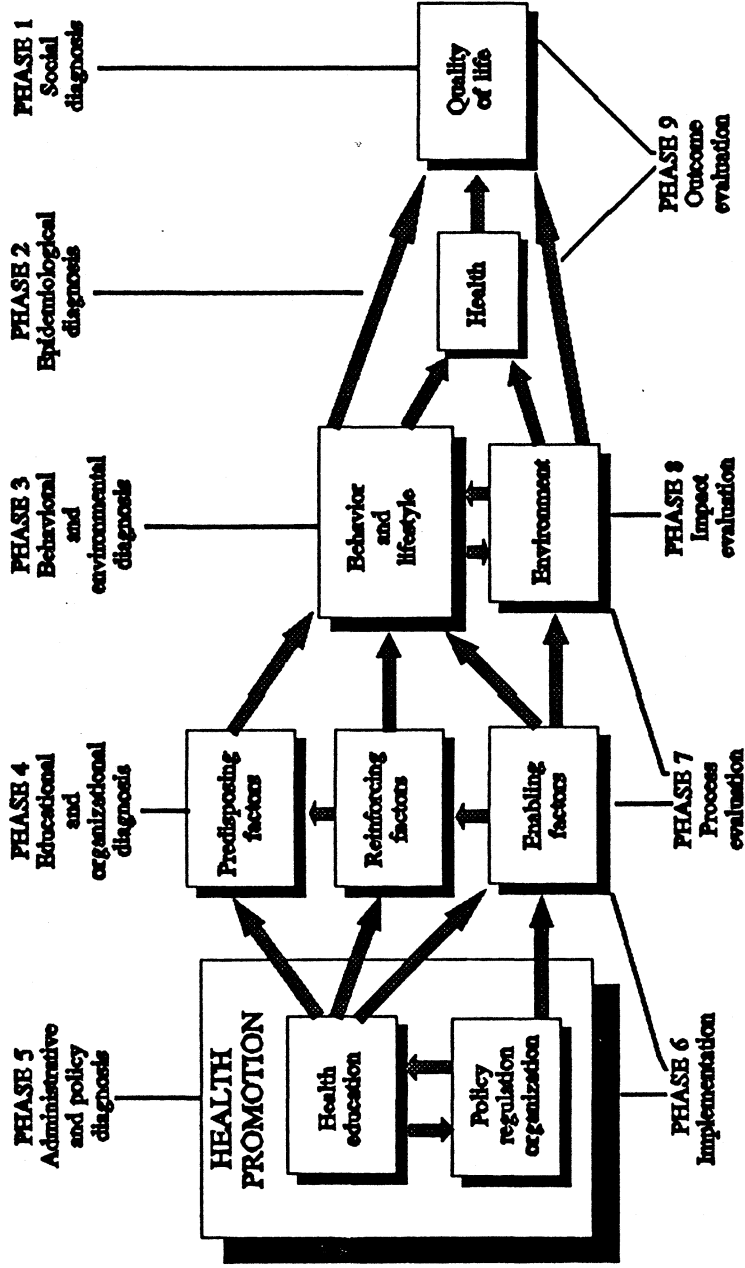
Theoretical Base

The PRECEDE-PROCEED framework (Green & Kreuter, 1991) was selected as the theoretical model for this study due to the multidimensional nature of the study. Results will be utilized to plan upcoming health promotion programs with regard to attitudes and beliefs. The model (see Figure 1) is designed to assist the health promotion planner to assess what they want to accomplish and then work backwards to plan more precisely.

The model has nine phases. Phase one begins with the desired outcome that reflects quality of life. Phase two identifies specific goals or problems that contribute to health concern in phase one. Phase three identifies environmental and behavior factors that could have

FIGURE 1: (Green and Kreuter, 1991)

PRECEDE



PROCEED

FIGURE 1.4

The PRECEDE-PROCEED model for health promotion planning and evaluation.

contributed to problems identified in phase two. Phase four identifies three areas that facilitate or impede motivation for change and include predisposing factors, enabling factors, and reinforcing factors. Phase five consists of assessment of the organization and administrative resources for program development. Phase six is implementation, and phases seven, eight and nine deal with the three types of evaluation (Green & Kreuter, 1991).

"In the PRECEDE-PROCEED model, two fundamental propositions are emphasized: (1) health and health risks are caused by multiple factors; and (2) because health and health risks are determined by, multiple factors, efforts to effect behavioral, environmental, and social change must be multidimensional or multisectoral" (Green & Kreuter, 1991, p.31).

Utilizing the PRECEDE-PROCEED model for self-care practices (Figure 2), predisposing, enabling, and reinforcing factors contribute to intervention in self-care practices by the individual. The nine phases of the framework in regard to the proposed self-care study are described in Figure 2.

The PRECEDE-PROCEED framework provides highly comprehensive planning for the health concern being explored and can be applied in a variety of situations.

FIGURE 2

PRECEDE

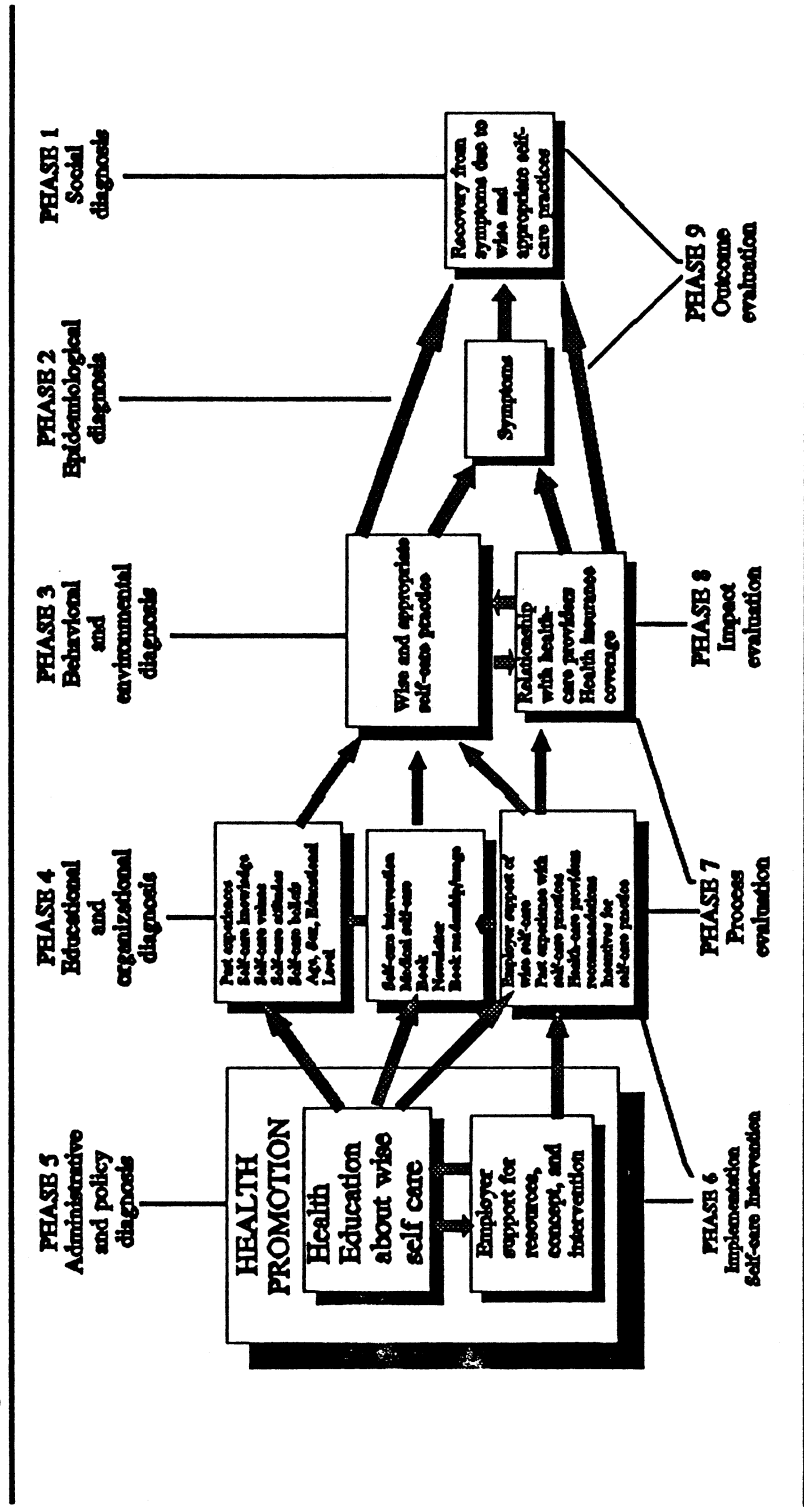


FIGURE 1.4

The PRECEDE-PROCEED model for health promotion planning and evaluation.

Chapter 4

DATA ANALYSIS

Introduction

The purpose of this study was to describe the effect of a self-care intervention program on health related attitudes and beliefs of employees of a large utility corporation. Study participants were randomly divided into experimental and control groups. The experimental group received the self-care intervention over a three month period; the control group received no intervention. Pre- and post-intervention health related attitudes were measured in both groups using the Krantz Health Opinion Survey (1980). This instrument was divided into two subscales: Information and Behavioral. Health related beliefs were measured pre and post intervention in both groups using the Multidimensional Health Locus of Control (Wallston et al., 1984). This instrument is divided into three subscales: internal, chance, and powerful others. These instruments were selected because personal control or locus of control has been associated with health-related beliefs. " Since one of the aims of self-care programs is to increase peoples' general feelings of self-reliance and control over their bodies, the psychological effects of self-care might be viewed in terms of the concept of personal control and attitudes toward health" (Krantz et

al, 1980, p.978).

Two demographic questions were included by this researcher that measured age and gender. Data was collected in regard to post test attitude and belief scores based on age and gender in both groups. The treatment group received additional post-test questions regarding self-care book and newsletter readership and utilization and developed from the Center for Corporate Health's datapac. Data was collected from the treatment group in regard to book readership and utilization's impact on health related attitudes and beliefs.

In this chapter, the characteristics of the study sample will be described and the data which were collected concerning the effect of a self-care intervention on health related attitudes and beliefs will be analyzed. Tests of reliability of the instruments as used in this study will be discussed as well. The data collected for each subscale will be reviewed in regard to each test of the hypotheses.

The SPSSX Computer Program on the VAX system at Salisbury State University was used for data analysis

Reliability of Study Instruments:

The Multidimensional Health Locus of Control

Internal consistency of the the scales of the Multidimensional Health Locus of Control (Wallston, et al.,

1978) as used in this study was determined by using Cronbach's alpha. The computation for the internal scale in this study was .4189 as compared to the Wallston et al. (1984) reliability measurement of .859. The value for this study did not indicate a high degree of internal consistency. This could be explained by the low number of items (six) in this scale. The computation for the chance scale in this study was .6921 as compared to the Wallston reliability measurement of .841. The value for this study indicated a moderate degree of internal consistency. The computation for the powerful others scale for this study was .5493 as compared to the Wallston reliability measurement of .830. The value for this study did not indicate a high degree of internal consistency and may be explained by the low number of items.

It is not clear why the internal consistency for each of the Wallston scales was considerably lower for this study population than those reported by Wallston. The difference may be partially accounted for by differences in the study samples.

The Krantz Health Opinion Survey

Internal consistency of the two scales of the Krantz Health Opinion Survey (1980) as used in this study were determined by using Cronbach's alpha. The computation for

the Information scale for this study was .8361 as compared to the Krantz Kuder-Richardson reliability measurement of .76. The value for this study did represent a high degree of reliability. The computation for the Behavioral scale for this study was .8420 as compared to the Krantz Kuder-Richardson reliability measurement of .74. The value for this study did represent a high degree of reliability.

Sample Characteristics

In order to determine the effect of a self-care intervention on health related attitudes and beliefs in an electric utility employee population, a convenience sample of 70 employees was selected. The sample was drawn from the entire 544 employees that were located in three different worksites. An information and consent letter was sent to all employees at one location in early December, 1993. At the cut off date, 20 forms had been returned. A second invitation to participate in the study was mailed out in late December and 20 additional forms were returned. An additional 244 information and consent forms were mailed to employees at two other worksites in January, 1993. Thirty forms had been returned by late January for a total of 70 study participants. This represented a 12% sample of the study population.

The information and consent forms were randomly sorted into control and treatment groups. There were 35

participants in the treatment group and 35 participants in the control group.

A pretest with an instruction sheet was sent out by mail to all control group participants in early February, 1993. The pretest consisted of the Krantz Health Opinion Survey (1980), and the Wallston MHLC (1978) scales, along with two demographic questions. The participants were also asked to enter a three digit code ending with the number one in the upper right hand corner of questionnaire and using this number for the second questionnaire they would receive in the future. Thirty-five questionnaires were sent out and 28 were returned for a pre-test return rate of 80% in the control group.

Six self-care workshops were conducted in the three worksites with 35 treatment group participants in February, 1993 for the treatment group. Participants first completed the pretest questionnaire identical to the control group pretest with a three digit code that ended with the number two. After the pretest, participants received the self-care intervention. Thirty-five treatment group participants completed the pre-test and the self-care workshop for a participation rate of 100%.

An instruction sheet and posttest were mailed to the treatment group participants and the 28 control group participants in early May, 1993. By the end of May, 1993

there were 26 post-tests returned from the treatment and control groups for a total of 52 posttests returned or a 74% participation rate. The posttest was identical to the pretest except for the treatment group who received additional questions about book readership and utilization. All returned questionnaires were used in the data analysis. After matching the code numbers for pre- and posttests from each participant, there were 48 questionnaires that were eligible for data analysis or 68% of the original sample.

The study sample was described in terms of two demographic characteristics (Table 1). There were 24 participants in the treatment group and 23 participants in the control group, with one set of missing values for age and gender. Ages were grouped into ten year spans starting with less than 20 and ending with 60 or greater. The largest age span in the control group was the 30-39 age range and the largest age span in the treatment group was the 40-49 age range. The control group contained one more male than female participants while the treatment group was split evenly between male and female participants.

Effects of a Self-Care Intervention Program on Health

Related Attitudes and Beliefs

The primary research question asked what effect a self-care intervention program would have on the health

Table 1

Comparison of the Demographic Characteristics of the Treatment and Control Groups (n=48).

<u>Demographic Characteristics</u>	<u>Control</u>		<u>Treatment</u>	
	<u>no.</u>	<u>%</u>	<u>no.</u>	<u>%</u>
Age:				
< 20	0		0	
20-29	3	12	1	4
30-39	9	37	4	16
40-49	8	33	9	37
50-59	3	12	7	29
> 60	0		3	12
Missing Value	1	4		
Gender:				
Male	12	52	12	50
Female	11	47	12	50
Missing Value	1	1		

attitudes and beliefs of employees of a large utility company. Specifically, health related attitude and belief scores were compared within and between control and treatment groups pre and post-intervention. Additional research questions were explored in regard to differences in attitudes and beliefs related to gender and age and the book readership's impact on health related attitudes and beliefs. Six hypotheses were tested at the .05 level of significance.

Differences from Pre-test to Post-test on the MHLC

The first hypothesis stated that there would be no significant differences within the experimental and control groups from pretest to posttest on the three scales of the MHLC which measures health related beliefs. Total scores were computed for each of the three subscales for each group and mean scores were compared using a paired t-test (Table 2). The data analysis did indicate a significant difference in the treatment group from pretest to posttest on the powerful others scale. The treatment group did not have significant differences from pre- to posttest on the internal or the chance scales. The control group did not have any significant differences from pre- to posttest on any of the MHLC scales.

Differences from Pre-Test to Post-Test on the Krantz Survey

The second hypothesis stated there would be no

Table 2

Comparison of Pretest and Posttest Means for the Experimental and Control Groups for the MHLC Scales

Experimental

	Means	SD	df	t	p
Preinternal	27.96	3.71	24	-1.42	.167
Postinternal	28.96	3.36			
Prechance	15.76	4.50	25	1.16	.257
Postchance	14.57	4.95			
Prepowerful Others	21.76	3.88	25	2.36	.027
Postpowerful Others	19.15	4.73			

Control

Preinternal	27.75	2.57	19	.59	.562
Postinternal	27.35	2.30			
Prechance	16.47	4.56	20	-.57	.576
Postchance	16.85	4.31			
Prepowerful Others	17.42	4.02	20	-.45	.656
Postpowerful Others	17.76	3.78			

significant differences from pretest to posttest within the treatment and control groups on the Krantz Health Opinion Survey which measures health related attitudes through two scales, information and behavioral. Total scores were compared for each group and mean scores were calculated using a paired t-test (Table 3). The data analysis indicated a significant difference in the treatment group from pretest to posttest on the information subscale. This scale measures the desire to obtain health related information. There were no significant differences in the treatment group for the behavioral scale. The control group did not have any significant differences from pretest to posttest on either scale.

Differences in Health Related Beliefs and Attitudes in the Treatment Group Based on Book Readership

The third hypothesis stated that there would be no significant posttest differences in health related attitudes and beliefs within the treatment group for those who had read little or none of the book versus those who had read some, most or all of the book. There was one question from the readership questions that addressed this. Total scores were computed for each group and mean scores were compared using a t-test (Table 4). The data analysis revealed a significant difference in the chance subscale between those who had read some, most or all of the book

Table 3

Comparison of Pretest and Posttest Means for the Experimental and Control Groups for the Krantz Health Opinion Survey

Experimental

	<u>Means</u>	<u>SD</u>	<u>df</u>	<u>t</u>	<u>p</u>
Preinformation	3.20	1.04	24	-3.94	.001
Postinformation	5.08	2.27			
Prebehavioral	5.24	1.85	24	-1.41	.172
Postbehavioral	6.28	2.79			

Control

Preinformation	5.95	1.46	20	-1.00	.329
Postinformation	6.14	1.45			
Prebehavioral	6.47	2.15	20	.22	.829
Postbehavioral	6.38	2.69			

and those who had read little or none. The group that had read more of the book had a significantly lower chance score than the group that read little or none of the book. The higher readership group had stronger beliefs that their health status was not due to chance than the group that had read little or none of the book. There were no significant differences noted between the two groups for the information, behavioral, internal, or powerful others subscales. It is of interest to note that the mean scores of the higher readers were better than the lower readers in the information, behavioral, internal, and powerful others scales but these differences were not significant.

Differences in Health Related Beliefs and Attitudes Between
Males and Females

Hypothesis four stated that there would be no significant differences in posttest scores for all five scales between male and female participants in both groups. Total scores were compared for each group and mean scores were calculated using a t-test (Table 5). The data analysis did not reveal any significant differences between males and females in mean scores for either of the five scales. The males did have a better mean score than the females in the behavioral scale ($p=.067$), indicating a trend for the male group to exhibit more active involvement in health care than females. The males had better scores

Table 4

Comparison of Posttest Means in the Experimental Group for
Participants With Higher Readership Versus Lower Readership

	<u>Means</u>	<u>SD</u>	<u>df</u>	<u>t</u>	<u>p</u>
<u>Information</u>					
Lower Readers	3.8	2.28	23	-1.28	.214
Higher Readers	5.25	2.26			
<u>Behavioral</u>					
Lower Readers	6.2	3.63	23	.04	.972
Higher Readers	6.15	2.64			
<u>Internal</u>					
Lower Readers	27.4	3.2	22	-1.18	.249
Higher Readers	29.4	3.43			
<u>Chance</u>					
Lower Readers	18.8	6.26	23	2.62	.015
Higher Readers	13.15	3.78			
<u>Powerful Others</u>					
Lower Readers	20.4	4.03	23	.65	.520
Higher Readers	18.8	5.05			

Table 5

Comparison of Health Belief and Attitude Posttest Means in
Males and Females

	<u>Means</u>	<u>SD</u>	<u>df</u>	<u>t</u>	<u>p</u>
<u>Information</u>					
Males	5.83	2.01	45	1.13	.265
Females	5.17	1.99			
<u>Behavioral</u>					
Males	7.00	2.39	45	1.87	.067
Females	5.56	2.84			
<u>Internal</u>					
Males	27.59	2.55	43	-1.25	.218
Females	28.73	3.50			
<u>Chance</u>					
Males	16.45	4.31	45	1.16	.253
Females	14.86	5.08			
<u>Powerful Others</u>					
Males	18.45	4.46	45	-.32	.754
Females	18.86	4.46			

in the information, and powerful others scales but these differences were not significant. The females had better scores in the internal and chance scales but these differences were not significant.

Differences in Health Related Attitudes and Beliefs Between
Younger and Older Participants

The fifth hypothesis stated that there would be no significant posttest differences in health related attitudes and beliefs between older and younger participants. Total scores were computed for each group and mean scores were compared using a t-test (Table 6). Older participants were described as age 40 and greater while younger participants were less than 39. The data analysis did indicate a significant difference in older versus younger participants in the information subscale. The younger participants had significantly better mean scores than older participants indicating a higher desire to seek information about health care. There were no significant differences between older and younger participants on the behavioral, internal, chance, or powerful others scales. Younger participants had better mean scores on the behavioral and powerful others scales, while older participants had better scores on the internal and chance scales but these differences were not significant.

Table 6

Comparison of Posttest Health Belief and Attitude Means in
Younger and Older Participants

	<u>Means</u>	<u>SD</u>	<u>df</u>	<u>t</u>	<u>p</u>
<u>Information</u>					
Older	5.03	2.18	44.76	-2.58	.013
Younger	6.35	1.32			
<u>Behavioral</u>					
Older	6.2	2.79	45	-.33	.745
Younger	6.47	2.57			
<u>Internal</u>					
Older	28.28	3.28	43	.30	.768
Younger	28.0	2.85			
<u>Chance</u>					
Older	15.36	5.24	45	-.60	.550
Younger	16.23	3.71			
<u>Powerful Others</u>					
Older	19.10	5.06	44.9	1.04	.302
Younger	17.88	2.93			

Differences in Health Related Beliefs and Attitudes

Posttest Mean Scores Between Treatment and Control Groups

It was of interest to determine if the group receiving the self-care intervention had better posttest scores on the five scales than the group that received no intervention. An examination of differences in pretest means between treatment and control groups was and revealed significant pretest score differences in the information, behavioral, and powerful others scales (Table 7). This means that the control group had significantly better pretest scores on these three scales than the treatment group even though participants were randomly assigned to treatment and control groups. Since the pretest scores between the two groups were significantly different, it was necessary to account for these differences in examining posttest scores. A difference score for each group was calculated by subtracting each individual's pretest score from their posttest score for the two groups and for each of the five scales, between the two groups. A t-test was then used to compare difference scores between the two groups (Table 8). This data analysis revealed a significant difference between the control and treatment groups on in the information scale and powerful other scales. That is,

Table 7

Comparison of Pretest Means for the Experimental and Control
 Groups on the MHLIC Scales and the Krantz Health Opinion Survey

	<u>Means</u>	<u>SD</u>	<u>df</u>	<u>t</u>	<u>p</u>
<u>Information</u>					
Control	5.81	1.56	35.8	6.66	.000
Experimental	3.20	1.04			
<u>Behavioral</u>					
Control	6.45	2.11	45	2.10	.041
Experimental	5.24	1.85			
<u>Internal</u>					
Control	27.90	2.60	45	-.02	.985
Experimental	27.92	3.64			
<u>Chance</u>					
Control	16.47	4.56	45	.53	.597
Experimental	15.76	4.50			
<u>Powerful Others</u>					
Control	17.42	4.02	45	-3.75	.001
Experimental	21.76	3.88			

accounting for the differences between groups on pretest scores by using a difference score, the treatment group had a significantly better score on the information and powerful other scales after the self-care intervention. After the self-care intervention, the posttest scores of the treatment group showed significantly more improvement than the control group. The information scale measures the desire to obtain information in regard to health care. The powerful other scale measures the belief that powerful others in the health care system control our health. There were no significant posttest differences noted in the behavioral, internal, and chance scales between the two groups after accounting for differences from pre to posttest. It is of particular interest to note that the treatment group mean scores did improve from pretest to posttest on behavioral, chance and internal scales but these differences were not significant.

Summary

A convenience sample of 70 employees from an electric utility company were randomly distributed into control and treatment groups. Both groups completed the MHLIC (Wallston et al. 1984), which measures health related beliefs and the Krantz Health Opinion Survey (1980), which measures health related attitudes, initially, and three months later. The

Table 8

Comparison of Mean Differences Between MHLC and Krantz Health Opinion Survey From Pretest to Posttest for Experimental and Control Groups

	<u>Mean</u>	<u>SD</u>	<u>df</u>	<u>t</u>	<u>p</u>
<u>Information</u>					
Control	.190	.873	31.30	-3.29	.002
Experimental	1.88	2.38			
<u>Behavioral</u>					
Control	-.095	1.99	38.10	-1.32	.193
Experimental	1.04	3.69			
<u>Internal</u>					
Control	-.400	3.03	43	-1.41	.166
Experimental	1.00	3.51			
<u>Chance</u>					
Control	.381	3.07	41.42	-1.43	.159
Experimental	-1.19	5.24			
<u>Powerful Others</u>					
Control	.333	3.38	2.21	41.79	.032
Experimental	-2.615	5.65			

control group received no intervention, but the treatment group received a self-care intervention designed by this researcher.

Significant improvement within treatment group posttest scores and between control group posttest scores were noted on the powerful others and information scales. Treatment group participants who had read most of their self-care book had significantly better scores on the chance scale. Data collected from the demographic questions revealed a trend that males scored higher in the behavior scale, and younger participants scored significantly better on the Information scale than older participants. These results indicate the ability of a self-care intervention to positively adjust health related attitudes and beliefs in several of the five areas measured for treatment group participants.

Chapter 5

SUMMARY AND CONCLUSIONS

Introduction

The purpose of this study was to observe and compare the health related attitudes and beliefs of employees who received a self-care intervention to employees who received no intervention. Health related beliefs were collected through a 18-item Likert type instrument (MHLC) developed by Wallston et al. (1984). Health related attitudes were collected through a 16-item agree/disagree scale developed by Krantz (1980). Demographic data concerning age and gender were also collected and book utilization was measured posttest in the treatment group. These instruments were administered to a convenience sample of 35 employees who received no intervention and 35 employees who received a self-care intervention developed by the researcher. The validity of the Krantz Health Opinion Survey and the MHLC were previously established by the developers of the instruments. Internal consistencies of the instruments as used in this study were high for the Krantz Health Opinion Survey and moderate for the MHLC scales. The study measured the effect of the self-care intervention in six areas: Significant differences were found between pre- and posttest scores for health related beliefs within the treatment group, between pre- and

posttest scores within the treatment group for health related attitudes, in health related attitude scores in the treatment group for those who read most of the book versus those who read little or none of the book, in health related attitude scores between males and females in both groups, in health related attitudes and beliefs between older and younger participants in both groups, and for posttest differences in health related beliefs and attitudes between control and treatment groups.

Discussion of the Study findings

Overall Effects of a Self-Care Intervention

The results of this study demonstrate that employees' beliefs and attitudes regarding personal responsibility and active involvement in health care as measured by the Krantz Survey and MHLC three months after intervention can be positively changed through a self-care program. The scores in the group of employees who received a self-care intervention indicate that the intervention did have a positive impact in raising health related attitude and belief scores in two of the five scales measured, powerful others and information. When compared to control group posttest scores, the group of employees who received the intervention had significantly higher scores on the information and powerful other scales. Treatment group

participants who read more of their self-care book had significantly better scores on the chance scale than lesser book users. These findings are somewhat consistent with findings in the review of the literature. Previous research by Coons et al. (1989) found that college students who received a self-care intervention scored higher on the behavioral scale and powerful others scale. McLean and Pietroni (1990) observed significant differences in MHLC scores for the internal scale at six months and one year after a self-care intervention in a group of patients. The literature review also indicated that a self-care program that includes the book Taking Care of Yourself (1980) by Vickery and Fries promotes a positive attitude toward self-care and on confidence in management of medical problems (Moore et al., 1980).

Health Related Beliefs

The group of employees who received the self-care intervention had stronger beliefs three months after the intervention that their health status was not controlled or determined by powerful others such as doctors, nurses, friends or family. The belief that powerful others do control health status is considered an external locus of control or that external forces control individual health status. This finding is similar to the findings of Coons et al. (1989), who observed significant decreases in

the powerful others scale in a group of college students who received a self-care intervention. The posttest score in this study is similar to mean scores for healthy adults as reported by Wallston. The methodology is different from Coons et al., (1989) in that the MHLC measurement in this study was taken three months after intervention, and immediately after intervention in the Coons et al. (1989) study. The significant change in the powerful others scale three months after the intervention provides an indication that this belief change endured over time. The posttest scores for the internal scale did improve (28.96), but this change was not significant. This measurement is higher than the reported 27.38 value Wallston provides as a mean for persons engaged in preventive health behaviors. Likewise, the chance posttest score dropped (14.57) but not significantly. This measurement is lower than the reported Wallston chance measurement (15.52) for persons engaged in preventive health behaviors.

Health Related Attitudes

The group of employees who received the self-care intervention indicated a higher desire to ask questions and be informed about health decisions. The treatment group posttest scores were significantly improved on the Information scale. This finding is different than Coons et al, (1989), who found significant differences in the

treatment group on the Behavioral scale. The Behavioral scale scores did improve for the treatment group, but these findings were not significant.

Book Utilization and Health Related Attitudes and Beliefs

Treatment group participants who read 30 to 100% of the book Taking Care of Yourself (1990) were less likely to believe that their health status was determined by fate, luck or chance. The belief that chance controls your health status is an external health locus of control. The higher readers also had better scores on the information, internal, and powerful others scales, but these differences were not significant. There were no studies discovered that measured a self-care book's impact on health related attitudes and beliefs. Moore et al. (1980) found that the book Taking Care of Yourself (1980) had no significant impact on number of physician's visits. Fifty-five percent of the 699 families who had read part of the book felt "more confident" about taking care of health problems and 45% felt no different.

Male/Female Differences in Attitudes and Beliefs

The male participants in the self-care study indicated stronger behavior toward self-treatment and active involvement in health care ($p=.067$). The male participants scored higher on the Information and powerful others scales, while the females scored higher on the internal and

chance scales, but these differences were not significant. No other self-care intervention studies were discovered that examined differences in health related attitudes and beliefs based on gender.

Age and Differences in Health Related Attitudes and Beliefs

Participants in both groups who were age 39 and younger expressed a stronger desire to ask questions and want to be informed about health decisions. Younger participants scored better on the behavioral, and powerful others scales, while older participants scored better on the internal and chance scales, but these differences were not significant. No other self-care intervention studies were discovered that measured health related beliefs and attitudes based on age.

Health Related Attitudes and Beliefs Between Control and Treatment Group

After receiving the self-care intervention, treatment group participants were more likely to ask questions and be informed about health decisions than control group members. They were also more likely not to believe that powerful others in the health system like doctors and nurses controlled their health. It is interesting to note that control group members had significantly higher pretest scores on the information, behavior, and powerful others scales even though individuals were randomly assigned to

groups. When adjusting for these differences, there was a significant posttest difference between the two groups on the information and powerful other scales. When compared to the control group, the treatment group scores did show more improvement posttest in the other scales but these differences were not significant. Individuals who prefer to ask questions and play an active role in health care may be less likely to seek out the help of a physician for minor illness (Krantz, 1980).

Limitations

The following limitations of the study are identified:

1. Study results may only be generalized to populations of employees employed at electric utilities.
2. A convenience sample was utilized instead of random sample.
3. There is a possibility of a Hawthorne effect occurring on treatment group posttest scores after they received the intervention.
4. There is a possibility that the treatment group shared information with the control group members during the three month period.
5. There were a number of participants who incorrectly placed coding on their posttest and had to be dropped from the study.

6. The final total number of participants (n= 48), only represent 8% of the employee population.

Implications of Findings

The results of this study demonstrate that employees' beliefs and attitudes regarding personal responsibility and active involvement in health care as measured by the MHLIC and the Krantz Health Opinion Survey can be changed through a self-care program intervention. Although health related beliefs and attitudes are not directly related to health status they are generally accepted as positive predisposing factors that health improvement programs should address (Kemper, 1982). The review of literature supported the concept that personality factors such as attitudes and beliefs play an important role in regard to self-care behaviors. " The effect of interventions involving information and behavioral involvement depend on the way they are presented and whether they empower individuals to higher self-care behaviors" (Krantz, 1980, p.987).

Health promotion professionals facilitate self-care programs for many populations with the objective of assisting individuals to regain, maintain, or improve their health. If an individual's health status is to improve through personal responsibility and active decision making, health educators must provide the proper encouragement, skills and resources. There are many health education

topics that are considered for implementation in employee health promotion programs. The findings from this study and the review of literature suggest that health related beliefs and attitudes should be assessed prior to implementation of any health promotion program to better meet participants' needs. A comprehensive self-care program that encourages personal responsibility and active decision making should be the foundation for employee health promotion programs since these concepts are key factors for success in other programs such as smoking cessation and weight loss.

The utilization of the self-care concept in multiple programming is demonstrated in the Precede-Proceed model by Green, (1991). To arrive at the designated outcome for the health education intervention, predisposing factors such as attitudes and beliefs must be assessed in order to individualize treatment approaches. For example, suppose there are two different approaches to a weight loss or smoking cessation program. One emphasizes self-direction and the other is direction from an expert therapist. If health related belief scores were available prior to the intervention, the health promotion planner could direct the high Internals to the self-directed program, while high powerful others would be referred to the expert therapist and the high chance scorers should be assessed closely for

dropout or failure.

The results of this study have provided initial data regarding the ability of a self-care program to change attitudes and beliefs in a pilot employee intervention. An upcoming self-care program for all employees will be structured very similarly to the one in this study. Additionally, the concept of including questions regarding health related attitudes and beliefs as a self-care measurement within the health risk assessment is being explored. Data obtained in reference to employees with lower attitude and belief scores could prompt a focused intervention for these employees with heavier emphasis on active involvement and personal responsibility.

In today's unstable health care environment with increasing health insurance deductibles and co-pays, it is necessary for individuals to foster self-care attitudes and beliefs that will positively influence their health status, reduce their need for unnecessary utilization and facilitate an active partnership with their health care provider. The content of the self-care program delivered in this study clearly provided at least some of the concepts needed for employees to meet this goal.

Recommendations for Further Study

The findings of this study suggest a number of

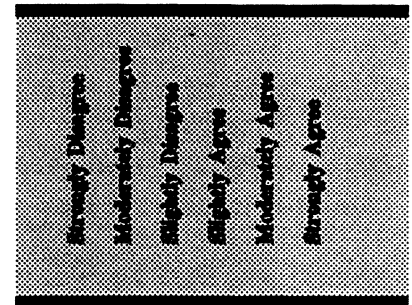
recommendations for further study. The study sample could be increased to include a larger and random sample, preferably from other companies that sponsor worksite health promotion programs. Using other worksites with a different population would increase the generalizability of the results. The self-care intervention could be adjusted in a number of ways to further reinforce key concepts and analysis of health related attitude and belief scores may indicate which level of intervention had more of a significant effect. And finally, an analysis of outcomes in a health promotion program could be performed based on locus of control and attitude scores for participants. Scores would be computed prior to entering health promotion program. Content could be structured to the type of health beliefs and attitudes mostly present in the group.

Number Code _____

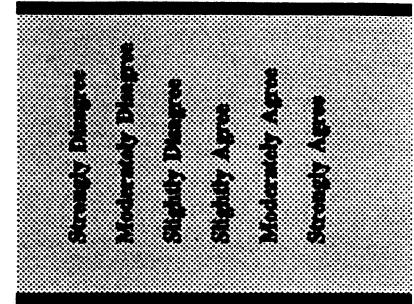
HEALTH RELATED BELIEFS QUESTIONNAIRE

This is a questionnaire designed to determine the way in which different people view certain important health related issues. Each item is a belief statement with which you may agree or disagree. Beside each statement is a scale which ranges from strongly disagree (1) to strongly agree (6). For each item please circle the number that represents the extent to which you disagree or agree with the statement. The more strongly you agree with a statement, then the higher will be the number you circle. The more strongly you disagree with a statement then the lower will be the number you circle. Please make sure you answer every item and that you circle only one number per item. This is a measure of your personal beliefs; obviously, there are no right or wrong answers.

Please answer these items carefully, but do not spend too much time on any one item. As much as you can, try to respond to each item independently. When making your choice, do not be influenced by your previous choices. It is important that you respond according to your actual beliefs and not according to how you feel you should believe or how you think I want you to believe.



- | | | |
|----|--|-------------|
| 1. | If I become sick, I have the power to make myself well again. | 1 2 3 4 5 6 |
| 2. | Often I feel that no matter what I do, if I am going to get sick, I will get sick. | 1 2 3 4 5 6 |
| 3. | If I see an excellent doctor regularly, I am less likely to have health problems. | 1 2 3 4 5 6 |
| 4. | It seems that my health is greatly influenced by accidental happenings. | 1 2 3 4 5 6 |
| 5. | I can only maintain my health by consulting health professionals. | 1 2 3 4 5 6 |
| 6. | I am directly responsible for my health. | 1 2 3 4 5 6 |



- | | | | | | | | |
|-----|---|---|---|---|---|---|---|
| 7. | Other people play a big part in whether I stay healthy or become sick. | 1 | 2 | 3 | 4 | 5 | 6 |
| 8. | Whatever goes wrong with my health is my own fault. | 1 | 2 | 3 | 4 | 5 | 6 |
| 9. | When I am sick, I just have to let nature run its course. | 1 | 2 | 3 | 4 | 5 | 6 |
| 10. | Health professionals keep me healthy. | 1 | 2 | 3 | 4 | 5 | 6 |
| 11. | When I stay healthy, I am just plain lucky. | 1 | 2 | 3 | 4 | 5 | 6 |
| 12. | My physical well-being depends on how well I take care of myself. | 1 | 2 | 3 | 4 | 5 | 6 |
| 13. | When I feel ill, I know it is because I have not been taking care of myself properly. | 1 | 2 | 3 | 4 | 5 | 6 |
| 14. | The type of care I receive from other people is what is responsible for how well I recover from an illness. | 1 | 2 | 3 | 4 | 5 | 6 |
| 15. | Even when I take care of myself, it's easy to get sick. | 1 | 2 | 3 | 4 | 5 | 6 |
| 16. | When I become ill, it's a matter of fate. | 1 | 2 | 3 | 4 | 5 | 6 |
| 17. | I can pretty much stay healthy by taking good care of myself. | 1 | 2 | 3 | 4 | 5 | 6 |
| 18. | Following doctor's orders to the letter is the best way for me to stay healthy. | 1 | 2 | 3 | 4 | 5 | 6 |

HEALTH OPINION SURVEY

The following questions ask for your opinions about different kinds of health care. For each statement below, decide whether you agree or disagree and circle the answer which best fits your opinion. Each person is different, so there are no right or wrong answers. Please try to circle an answer for each question, and don't leave any blank. Even if you find you don't completely agree or disagree with a statement, choose the one answer that comes closest to what you believe.

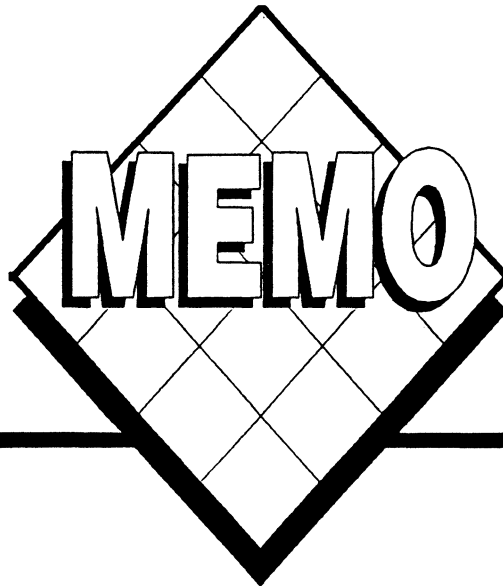
**For each question
circle only one
answer that comes
closest to your
beliefs:**

- | | | |
|--|-------|----------|
| 19. I usually don't ask the doctor or nurse many questions about what they're doing during a medical exam. | AGREE | DISAGREE |
| 20. Except for serious illness, it's generally better to take care of your own health than to seek professional help. | AGREE | DISAGREE |
| 21. I'd rather have doctors and nurses make the decisions about what's best than for them to give me a whole lot of choices. | AGREE | DISAGREE |
| 22. Instead of waiting for them to tell me, I usually ask the doctor or nurse immediately after an exam about my health. | AGREE | DISAGREE |
| 23. It is better to rely on the judgments of doctors (who are experts) than to rely on "common sense" in taking care of your own body. | AGREE | DISAGREE |
| 24. Clinics and hospitals are good places to go for help since it's best for medical experts to take responsibility for health care. | AGREE | DISAGREE |
| 25. Learning how to cure some of your illness without contacting a physician is a good idea. | AGREE | DISAGREE |

- | | | | |
|-----|---|-------|----------|
| 26. | I usually ask the doctor or nurse lots of questions about the procedures during a medical exam. | AGREE | DISAGREE |
| 27. | It's almost always better to seek professional help than to try to treat yourself. | AGREE | DISAGREE |
| 28. | It is better to trust the doctor or nurse in charge of a medical procedure than to question what they are doing. | AGREE | DISAGREE |
| 29. | Learning how to cure some of your illness without contacting a physician may create more harm than good. | AGREE | DISAGREE |
| 30. | Recovery is usually quicker under the care of a doctor or nurse than when patients take care of themselves. | AGREE | DISAGREE |
| 31. | If it costs the same, I'd rather have a doctor or nurse give me treatments than to do the same treatments myself. | AGREE | DISAGREE |
| 32. | It is better to rely less on physicians and more on your own common sense when it comes to caring for your body. | AGREE | DISAGREE |
| 33. | I usually wait for the doctor or nurse to tell me about the results of a medical exam than asking them immediately. | AGREE | DISAGREE |
| 34. | I'd rather be given many choices about what's best for my health than to have the doctor make the decisions for me. | AGREE | DISAGREE |

Complete the following responses by placing a check in the appropriate box:

- | | |
|--|--|
| 35. Age: | 36. Gender: |
| <input type="checkbox"/> less than 20
<input type="checkbox"/> 20-29
<input type="checkbox"/> 30-39
<input type="checkbox"/> 40-49
<input type="checkbox"/> 50-59
<input type="checkbox"/> 60 and greater | <input type="checkbox"/> male
<input type="checkbox"/> female |



TO: All Employees

FROM: Flora J. Glasgow, R.N., B.S. CHES

SUBJECT: Self-Care Study

DATE: December 4, 1992

In addition to my role as Medical/WellTrak Administrator at Delmarva Power I am also a graduate student in a Master of Science program at Salisbury State University. I am conducting a study on attitudes and beliefs about health and I am seeking your participation. Participation is strictly voluntary and this study is not related to my present work at Delmarva Power. All information will be anonymous. You will not be required to sign your name on any questionnaires. The participation components of the study areas follow:

1. All participants will complete an anonymous 47-item questionnaire on health related attitudes and beliefs at the beginning of the study that will take approximately 30 minutes.
2. One-half of the participants will then be randomly selected to attend the first program (approximately one-hour) on self-care. This will be conducted off of company time, but will be scheduled to meet your needs. If participating in this program you will receive a free book *"Taking Care of Yourself"* by Donald Vickery. These participants will also receive a health newsletter for about three months.

Self-Care Study (continued)

Page 2

3. Participants in the first self-care program will be asked to complete an anonymous questionnaire on health-related attitudes and beliefs three months after completion of the course.
4. Individuals not selected for the first self-care program will be scheduled, at their convenience, for a later program and will receive a free self-care book.

Q. Why should I participate in this study?

- A. By participating in this study you will receive a **free** self-care book, and additional training that emphasizes additional self-care skills as well as a monthly newsletter. In addition, your responses will help to expand knowledge concerning individual health related attitudes and beliefs.

If you agree to participate please fill out the attached **Consent Form** and send to me in inter-company mail no later than December 23, 1992.

Once I receive your **Consent Form**, I will contact you with further instructions concerning the study's components.

Please call me at 330-3565 (work) or 410-835-8625 (home) if you have any questions or concerns.

Thank you for your consideration and cooperation.

Note: The self-care study will not begin until January, 1993. No participation will be required in December.

CONSENT FORM

I agree to participate in the study concerning health related attitudes and beliefs conducted by Flora J. Glasgow in affiliation with Salisbury State University. I understand that I will be a part of a study that will increase understanding of health related attitudes and beliefs in conjunction with a self-care program and my cooperation is valuable.

I understand that my participation is strictly voluntary and the questionnaire that I fill out will be anonymous. I am aware that I may leave any particular question unanswered or choose to drop out of the study at anytime.

I realize that the questionnaires are brief and will be distributed at the start of the study and approximately three months later.

I further understand that I may be assigned to a group that receives a one-hour self-care program, and a monthly self-care newsletter. If I am not assigned to the self-care program initially, I will have an opportunity to participate in three months.

I know that by participating in this study I will receive a free self-care book, either at the beginning of the study or at study completion.

If I have any questions about the study or would be interested in the results I may call Flora at 330-3565 (work) or at 410-835-8625 (home).

I am also aware that there are no risks to me in this study since all responses are anonymous and no highly sensitive questions are addressed.

Date: _____

Respondent's Signature

Department

Department Phone Number

Please return to: Flora J. Glasgow
Employee Health
Indian River

Please return no later than: December 23, 1992

APPENDIX D

Subcategories of the Questionnaire

Multidimensional Health Locus of ControlInternal Health Locus of Control

1. If I become sick, I have the power to make myself well again.
2. I am directly responsible for my health.
3. Whatever goes wrong with my health is my own fault.
4. My physical well-being depends on how well I take care of myself.
5. When I feel ill, I know it is because I have not been taking care of myself properly.
6. I can pretty much stay healthy by taking good care of myself.

Powerful Others Health Locus of Control

7. If I see an excellent doctor regularly, I am less likely to have health problems.
8. I can only maintain my health by consulting with health professionals.
9. Other people play a big part in whether I stay healthy or become sick.
10. Health professionals keep me healthy.
11. The type of care I receive from other people is what is responsible for how well I recover from an illness.

APPENDIX D

12. Following doctor's orders to the letter is the best way for me to stay healthy.

Chance Health Locus of Control

13. Often I feel that no matter what I do, if I am going to get sick, I will get sick.
14. It seems that my health is greatly influenced by accidental happenings.
15. When I am sick, I just have to let nature run its course.
16. When I stay healthy, I am just plain lucky.
17. Even when I take care of myself, it's easy to get sick.
18. When I become ill, it's a matter of fate.

Krantz Health Opinion SurveyInformation Subscale

19. I usually don't ask the doctor or nurse many questions about what they're doing during a medical exam.
20. I'd rather have doctors and nurses make the decisions about what's best than for them to give me a whole lot of choices.
21. Instead of waiting for them to tell me, I usually ask the doctor or nurse immediately after an exam about my health.
22. I usually ask the doctor or nurse lots of questions

APPENDIX D

about the procedures during a medical exam.

Information Scale continued:

23. It is better to trust the doctor or nurse in charge of a medical procedure than to question what they are doing.
24. I usually wait for the doctor or nurse to tell me the results of a medical exam rather than asking them immediately.
25. I'd rather be given many choices about what's best for my health than to have the doctor make the decisions for me.

Behavioral Involvement Scale

26. Except for serious illness, it's generally better to take care of your own health than to seek professional help.
27. It is better to rely on the judgements of doctors (who are the experts) than to rely on "common sense" in taking care of your own body.
28. Clinics and hospitals are good places to go for help since it's best for medical experts to take responsibility for health care.
29. Learning how to cure some of your own illness without contacting a physician is a good idea.

APPENDIX D

30. It's almost always better to seek professional help than to try to treat yourself.
31. Learning how to cure some of your illness without contacting a physician may create more harm than good.
32. Recovery is usually quicker under the care of a doctor or nurse than when patients take care of themselves.
33. If it costs the same, I'd rather have a doctor or nurse give me treatments than to do the same treatments myself.
34. It is better to rely less on physicians and more on your own common sense when it comes to caring for your body.

VANDERBILT UNIVERSITY



NASHVILLE, TENNESSEE 37240

TELEPHONE (615) 322-7311

Health Care Research Project * School of Nursing * Direct Phone 343-3317

To: Fellow Health Researcher
From: Kenneth A. Wallston, Ph.D.

Thank you for your interest in the Health Locus of Control Scales. Please excuse this form response, but I have so many inquiries requiring similar replies that I have found this to be an efficient means of disseminating information.

You have my permission to utilize Form A or B of the MHLC scales in any health related research you are doing. My only request is that you keep me informed of any results you obtain using the scales. In that way I hope to continue to serve as a clearinghouse for information about the scales.

We have recently developed Form C of the MHLC scales, an instrument which can easily be made specific to any existing medically-related condition which your subjects might have (e.g., diabetes, cancer, high blood pressure, migraine headaches, arthritis, chemical dependencies, etc.) We have used Form C as an "Arthritis Locus of Control Scale" and are generally pleased with its psychometric properties. If you think such an instrument would be helpful in your research and if you are willing to share your data back with us, we would be pleased to make it available to you.

If you wish us to send you additional material, please complete and return the enclosed form. For most items there is a small charge to cover duplication and postage.

If you have more specific questions, don't hesitate to contact me. Please remember to send me information on any use you make of these scales. I have included a usage questionnaire to facilitate your doing so. I look forward to hearing from you.

P.S. I have enclosed a copy of a brief article I just wrote on the importance of placing measures of Health Locus of Control in a Theoretical Context. I hope you find it interesting and stimulating.



MEDICAL PSYCHOLOGY

UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES
 F. EDWARD HÉBERT SCHOOL OF MEDICINE
 4301 JONES BRIDGE ROAD
 BETHESDA, MARYLAND 20814-4799



TEACHING HOSPITALS
 WALTER REED ARMY MEDICAL CENTER
 NAVAL HOSPITAL, BETHESDA
 MALCOLM GROW AIR FORCE MEDICAL CENTER
 WILFORD HALL AIR FORCE MEDICAL CENTER

To Those Interested in the Krantz Health Opinion Survey (KHOS):

I apologize for this form letter, but I do not have the resources to reply personally to every inquiry received on this topic.

I am enclosing a copy of the KHOS and verbatim instructions for its use. The scoring key and scale of validation may be found in the article by Krantz, Baum & Wideman in Journal of Personality and Social Psychology, 1980, vol. 39, no. 5, pp. 997-990.

I have not worked in this area for several years, but can suggest three articles providing further validation for the KHOS scales, and research applying the instrument to health care stress situations:

1. Martelli, M.F., Auerbach, S.M., Alexander, J., & Mercuri, L.G. Stress management in the health care setting: matching interventions with patient coping styles. Journal of Consulting and Clinical Psychology, vol. 55, no. 2, April, 1987, pp. 201-208.

2. Auerbach, S.M., Martelli, M.D., & Mercuri, L.G. Anxiety, information, interpersonal impacts, and adjustment to a stressful health care situation. Journal of Personality and Social Psychology, vol. 44, no. 6, June 1983, pp. 1284-1296.

3. Smith, R.A., Wallston, B.S., Wallston, K.A., Forsberg, P.R., & King, J.E. Measuring desire for control of health care processes. Journal of Personality and Social Psychology, vol. 47, no. 2, August, 1984, pp. 415-427.

Please keep me informed on your results, so that I will be able to provide others like yourself with new information.

Sincerely yours,

David S. Krantz
 Professor

ser/DSK
 enc.

**Additional Post-test Questions for Group that received
*Take Care of Yourself.***

37. How much of the book, *Take Care of Yourself*, have you read?
- _____ All of it (100%)
- _____ Most of it (65-99%)
- _____ Some of it (30-64%)
- _____ Little of it (1-29%)
- _____ None of it (0%)
38. How often do you refer to the book *Take Care of Yourself*, when making a decision about what to do for a health problem (such as see a doctor, treat the problem at home, etc.)?
- _____ Always since I have had the book (100%)
- _____ Most of the time (65-99%)
- _____ Some of the time (30-64%)
- _____ Occasionally (1-29%)
- _____ Never (0%)
- _____ No health issues have occurred over the past four months, so I did not consult the book.
39. On the average, how much of the Taking Care newsletter do you read?
- _____ All of it (100%)
- _____ Most of it (65-99%)
- _____ Some of it (30-64%)
- _____ Little of it (1-29%)
- _____ None of it (0%)
- _____ I have not received the newsletter.

Please check the number on the scale provided that is closest to your opinion for each of the following statements. If you cannot answer a statement, that is, if you don't know or the question does not apply to you, fill in the NA found to the right of the scale. Note, zero is a neutral response indicating that you have no opinion or there was no effect. The farther you score from zero, the more you agree with each response.

40. How understandable is *Take Care of Yourself*?

very understandable		no opinion		very confusing
<u>3</u>	<u>2</u>	<u>1</u>	<u>0</u>	<u>-1</u>
			<u>-1</u>	<u>-2</u>
			<u>-3</u>	<u>NA</u>

41. How has *Take Care of Yourself* affected your understanding of health information?

increased confidence		no effect		increased confusion
<u>3</u>	<u>2</u>	<u>1</u>	<u>0</u>	<u>-1</u>
			<u>-1</u>	<u>-2</u>
			<u>-3</u>	<u>NA</u>

42. How has *Take Care of Yourself* affected your understanding of when to see a doctor?

increased understanding		no effect		increased confusion
<u>3</u>	<u>2</u>	<u>1</u>	<u>0</u>	<u>-1</u>
			<u>-1</u>	<u>-2</u>
			<u>-3</u>	<u>NA</u>

43. How do you rate *Take Care of Yourself* as a source of health care advice?

very valuable		no opinion		worthless
<u>3</u>	<u>2</u>	<u>1</u>	<u>0</u>	<u>-1</u>
			<u>-1</u>	<u>-2</u>
			<u>-3</u>	<u>NA</u>

44. How understandable is the Taking Care newsletter?

very understandable		no opinion		very confusing
<u>3</u>	<u>2</u>	<u>1</u>	<u>0</u>	<u>-1</u>
			<u>-1</u>	<u>-2</u>
			<u>-3</u>	<u>NA</u>

45. How have the Taking Care newsletter and the *Take Care of Yourself* book affected your understanding of health information?

increased
confidence

no
effect

decreased
confidence

3 2 1

0 -1

-1 -2 -3 NA

46. How have the Taking Care newsletter and the *Take Care of Yourself* book affected your health related skills?

increased
skills

no
effect

decreased
skills

3 2 1

0 -1

-1 -2 -3 NA

47. How have the Taking Care newsletter and the *Take Care of Yourself* book affected your understanding of seeking medical screening tests or services (blood pressure tests, Pap tests, etc.)?

increased
understanding

no
effect

decreased
understanding

3 2 1

0 -1

-1 -2 -3 NA

Thank you for your time and cooperation.

COMPENSATION & BENEFITS DEPARTMENT800 King Street • P.O. Box 231
Wilmington, DE 19899-0231

August 19, 1992

Dr. Karin Johnson
Director of Grants and Sponsored Research
Salisbury State University
Holloway Hall
College Avenue
Salisbury, MD 21801

Dear Dr. Johnson:

This letter is in reference to Flora J. Glasgow's proposed research study on the effect of a self-care intervention program on employee attitudes and beliefs.

Ms. Glasgow's proposal was thoroughly reviewed for consistency with corporate policy and funding approval.

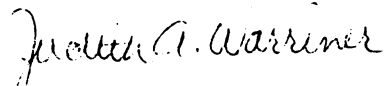
The study content is in direct association with our current employee wellness program and health cost containment efforts. The study's findings will be valuable for planning of future self-care programs.

The Training and Development Department does agree to provide full funding of the study in coordination with our educational assistance program. However, due to corporate policy in regard to employee names, we cannot provide employee name listings for this study.

We will permit Ms. Glasgow to distribute information and consent forms to all (not selected) employees at the Southern Division office in Salisbury, Maryland, and interested employees will respond to Ms. Glasgow.

If you have any further questions in regard to Delmarva Power's approval of this study being conducted at the Salisbury site with the described consent form distribution, please do not hesitate to call me at (302) 429-3424.

Sincerely,



Judith A. Warriner
Coordinator - Benefits

JAW:kmd

STATEMENT OF APPROVAL
 COMMITTEE ON HUMAN VOLUNTEERS
 SALISBURY STATE UNIVERSITY

Date November 17, 1992

MEMORANDUM TO: Karin Johnson

FROM: Chairman, Committee on Human Volunteers

SUBJECT: The Effect of Self Care Intervention on Health Related

Attitudes and Beliefs

Title of Study

SSU, Nursing Department

Grant Application No.

Sponsoring Agency

Dr. Karin Johnson

Principal Investigator or Program Director

Flora J. Glasgow

Student Investigator(s)

The Committee on Human Volunteers has considered the above application and, on the basis of available evidence, records its opinion as follows:

- (1) The rights and welfare of individual volunteers are adequately protected.
- (2) The methods to secure informed consent are fully appropriate and adequately safeguard the rights of the subjects (in the case of minors, consent is obtained from parents or guardians).
- (3) The investigators are responsible individuals, competent to handle any risks which may be involved, and the potential medical benefits of the investigation fully justify these studies.
- (4) The investigators assume the responsibility of notifying the Committee on Human Volunteers if any changes should develop in the methodology or the protocol of the research project involving a risk to the individual volunteers.

Francis Kane

Chairman

Self-Care Study

Salisbury State University

To: Self-Care Study Participants
From: Flora J. Glasgow
Subject: Instructions for Completing Questionnaire

Thank you very much for agreeing to participate in my self-care study in coordination with Salisbury State University.

You have been randomly selected to be in the treatment group. The format for this group is to fill out an anonymous questionnaire now and again in approximately 2 months. You will receive a free self-care book at the completion of the 1st questionnaire entitled "Taking Care of Yourself" by Vickery and Fries.

At the upper right hand corner of the first page of the questionnaire you will notice the words "Number Code" and a blank line beside it. A number code is needed to identify differences in first and second questionnaire responses only, not to identify participants.

Select any 2 numbers that will be followed by the number 2 and place on the number code line. Please write these numbers down on the attached WellTrak card and save in a safe place so that you may use these identical numbers on the second questionnaire.

For example: I select the numbers 2 and 3 for my number code and since I am in the treatment group they must be followed by the number 2. So the number I place in the number code line is 232. I will then write this down on my WellTrak card and place in my wallet for reference when I fill out my second questionnaire.

There will be no way to identify individual participants since only you know your code.

Please call 330-3565 if you have any questions.

If you have received this by mail, please complete as soon as possible and return to: Flora Glasgow, Indian River.

Self-Care Study

Salisbury State University Health Sciences Dept.

TO: Self-Care Study Participants
FROM: F.J. Glasgow
SUBJECT: Completion of Second Questionnaire
DATE: May 6, 1993

Enclosed is the second and last questionnaire for the self care study.

Would you please locate your WellTrak card with your code number and place this code number in right hand corner on the line beside Code. This code was used on the first questionnaire you completed. Please call 330-3565 for any questions.

Please fill out the questionnaire according to your current thoughts and practices, not according to what you think the right answers are. There are no right or wrong answers.

You will notice that some questions are the same as the first questionnaire. This was a planned activity in order to assess any changes in response over time.

Please complete the questionnaire and return to :
Flora Glasgow
Employee Health/WellTrak
Indian River

by May 21, 1993.

Thank you very much for prompt completion of the questionnaire and your participation in the self-care study.

Data will be entered into the statistical program this summer and results should be available this fall. I will provide you a copy of results and interpretations this fall.

I hope you found the book, workshop and discussion group and newsletters to be helpful in regard to your self-care. Thanks again for your participation and support in this graduate study and my thesis development.

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Positions Held

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1986-1988 Medical Administrator
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1983-1986 Staff Nurse
Intensive Care Stepdown and Emergency
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Honors and Awards

- 1993 Governor William Donald Schaffer Health Promotion Award for WellTrak Program at Delmarva Power
- 1993 Outstanding public education in worksite cancer prevention programs from the American Cancer Society, Baltimore, Maryland for WellTrak Program
- 1992 Excellence in Health Promotion Award for outstanding comprehensive programming for the State of Delaware. Presented by Governor Tom Carper.
- 1992 Excellence in Health Promotion Planning Award (personal) from the Delaware Center for Wellness for contributions in disease reduction for the citizens of the State of Delaware
- 1991 Inducted into Sigma Theta Tau Honor Society
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Professional Organizations

American Association of Occupational Health Nurses
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