CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

THE EDUCATIONAL IMPACT OF TRAINED CANCER CRUSADERS UPON RESIDENTS

A thesis submitted in partial satisfaction of the requirements for the degree of Master of Public Health

by

Eva Huey

August, 1975
The thesis of Eva Huey is approved:

California State University, Northridge
August, 1975
To My Parents
Daniel and Lily Huey
and My Husband
Edmund
ACKNOWLEDGMENTS

Many individuals have contributed to this study whom I want to express my deepest thanks. Without their help, this thesis would have been impossible.

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ABSTRACT

THE EDUCATIONAL IMPACT OF TRAINED CANCER CRUSADERS UPON RESIDENTS

by

Eva Huey

Master of Public Health

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Cancer is the second leading cause of death in the United States. In 1974 an estimated 358,000 Americans succumbed to this disease. This year about 365,000 will die of cancer. This figure can be drastically reduced through public education which plays a vital part in informing and motivating people to seek medical help earlier. Numerous techniques have been utilized by the American Cancer Society to achieve this goal including panel discussions with doctors, nurses, health educators, former patients, mass media advertisements, publications in journals and magazines, meetings, lectures, and other person-to-person activities.

The purpose of this study was to train volunteer cancer crusaders to effectively educate residents on
certain facts about cancer. This responsibility was in addition to the volunteer's usual tasks while crusading. Thus, when the trained crusader went door-to-door during April, she asked each resident to fill out a 15 item questionnaire, then corrected and explained the answers to the respondent, and finally asked for contributions. This questionnaire constituted the pre-test of the study. One month later post-test questionnaires with identical questions were mailed to the same participants to complete.

The experimental group (trained volunteers) and the control group (untrained volunteers) consisted of four crusaders each. Together they contacted 60 residents in the San Fernando Valley during the month of April to fill out the initial questionnaires for the base line data. During May, 60 post-test questionnaires were sent and 30 (50%) were returned by June 1975 for the final analysis.

Analysis of the data was obtained through utilization of the computer located at California State University, Northridge. Analysis of covariance and the t-test for independent groups revealed that the differences in gains in knowledge between the control and experimental groups were not significant and could not be attributed to the cancer crusader's educational effort. There were also no significant differences in the amount of money collected for the American Cancer Society by the control and the experimental groups of crusaders.
CHAPTER I

INTRODUCTION

Health education is the planned or formal efforts to stimulate and provide experiences at times, in ways, and through situations leading to the development of health knowledge, attitudes, and behaviors that are conducive to the attainment of individual, group or community health (53:231). This begins with the health educator interesting the people with whom he hopes to teach, and continues with subtle and unobstructive attempts to bring about lasting changes in attitudes, habits, and behavior (25:239).

In the past, efforts in health education have been generally episodic or disjunctive and at times almost totally ineffective (29:12). And where such programs have been initiated, virtually no follow-up or evaluative measures have been applied. However, there have been exceptions such as the public campaigns of the Red Cross, the American Heart Association, the surgeon general's reports on smoking and health, and other related efforts to heighten public awareness of specific health hazards. In fact, tremendous efforts have been expended by the American Cancer Society to educate the public on cancer.

Nation-wide educational programs on cancer have been conducted by the American Cancer Society since 1937.
Since then, the cures of cancer have increased from about one in five patients to one in four in 1968, and to better than one in three for 1974 (10:405).

However, still more people need to be reached through innovative programs that stimulate behavioral changes for the best health possible. People need to be acquainted and reinforced with the facts about cancer. For example, a simple thing like knowing the seven cancer warning signals and visiting the physician for treatment when necessary can eliminate needless suffering and save thousands of people who now die prematurely.

The cancer education program described in this study was developed to acquaint, reinforce, and test people on the facts about cancer and to contribute to the cancer education programs already available.

STATEMENT OF THE PROBLEM

The purpose of this study was to plan and implement a training session to instruct volunteer cancer crusaders on how to effectively educate residents in their neighborhoods during the April Crusade. The aims were primarily:

1. to determine if trained volunteers were effective in educating residents on cancer facts, and
2. to determine if more funds were raised since volunteers were "giving" information in exchange for contributions.
LIMITATIONS OF THE STUDY

This study was limited to the individuals who volunteered to crusade for the American Cancer Society in the San Fernando Valley unit. And therefore, limited to the residents these crusaders contacted to administer the questionnaire.

DEFINITION OF TERMS

These terms were frequently used throughout this study; therefore, their definitions have been stated to avoid misunderstanding.

A.C.S.  The American Cancer Society. A voluntary health organization dedicated to the control of cancer.

Cancer  The misbehavior of cells that have become abnormal. They reproduce themselves in an uncontrolled way, often very rapidly, and without regard for the needs of the tissues in which they originate.

Cancer Crusader  An individual who donates his/her time and effort to solicit contributions from his/her neighbors for the American Cancer Society.

Control Sample  The standard of comparison for verifying or checking the findings of a varying factor.
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<th><strong>Experimental Sample</strong></th>
<th>The group upon which a varying factor is tested to discover something not yet known or to demonstrate something known.</th>
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<td><strong>Training</strong></td>
<td>A planned and organized process which develops a person's ability to perform a function in order to achieve a goal.</td>
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<td><strong>Volunteer</strong></td>
<td>A person who enters or offers to enter into any service of his own free will with no promise of compensation.</td>
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CHAPTER II

LITERATURE REVIEW

This chapter is a discussion of three areas of the literature pertaining to education and training. The first examines health education--its history and methodology.

The second concerns cancer education in regards to development, attitude, and past programs.

Finally, the third discusses the techniques for training volunteers and its successes.

HEALTH EDUCATION

In the past, the whole field of health education has been fragmented, uneven in effectiveness, and lacking a base of operation (15:1182). On September 25, 1973, the President's Committee on Health Education reported that the need and demand for health care services have been rising, but that health education was being neglected. The committee also found that many, perhaps most, major causes of sickness and death could be affected--and some even prevented--by individual behavior. Yet the total cost of existing health education programs in the United States is something less than two percent of the nation's expenditure for personal health services (29:21).

McNerney calculated that in an average United States
population model of 1,000, it could be expected in any one year that some 700 persons would experience an episode of pain, discomfort, or dysfunction and that 500 of these would see a physician at least once. One hundred would be hospitalized, and ten would be hospitalized in a teaching environment—the point being that medical education would be focused on these ten and largely ignore all the rest (29:14).

Greene has shown a general lack of basic health knowledge through a survey of 228 homemakers in eight Capitol area parishes in 1972. Only 29% of the homemakers knew the normal body temperature, and only 15% could compute how much fever a person with a given temperature had. Many homemakers believed that treatment of certain ailments consisted of tying objects around various parts of the body. They treated teething problems by tying a silver dime, swamp root beads, whole nutmeg, the stem of a pumpkin or the tongue of an old shoe around the infant's neck. Placing straw on a baby's head was considered good for treating worms and shortness of breath (18:284).

In another study conducted in 1972, a commercial network television channel in Detroit was monitored in order to determine the amount and quality of health information that appeared during one week. The study found that only 7.2% of the programming time was devoted to health related content and of this 30% of the health material offered useful information while the remaining
70% was inaccurate or misleading or both (6:25).

Fortunately, health education has not been totally neglected, but owes a great deal to the work of the World Health Organization (WHO). Reference to health education was written into the World Health Organization's constitution and the World Health Organization has established sections devoted to this aspect of preventive medicine at its headquarters in Geneva as well as in the regional offices.

The World Health Organization's first expert committee reported in 1954 the aims of health education simply as:

1. to make health a valued community asset;
2. to equip the individual with knowledge and skills to change attitudes and behavior so that he can solve many of his own health problems; and
3. to promote the development of the health services (53:231).

Today, health education has developed to the point where there is substantial, though not large, investment in the subject, an increasing use of the mass media, a move to develop a profession of Health Educator, and a growing acceptance of health education in the practice of community medicine (53:230). Health education as merely a marginal activity, mainly of the medical and nursing staff, is no longer feasible.

Barum agrees with the current trends that the mass media represents an enormous and unprecedented potential
for public health education (6:24). Yet, Yarriw emphasizes that mass media alone does not produce an effective means of health education (55:244). Public instruction by means of advertising on television and notices printed on packages, as in the case of cigarettes, will not by itself change behavior significantly unless it is consistently supported, followed up, and focused on the individual by other methods (29:13). Both the personal-individual approach and intensive widespread publicity must normally be used in health education (55:244).

Furthermore, Pike recommends that after an educational message reach the public, it is the health practice team members' duties to explain and reiterate the contents of the message to their patients and other audiences (37:181). Repetition of the message in different forms is essential for behavioral changes to occur.

The extraordinary degree to which the personal focus improves the effectiveness of the generalized message was illustrated in October 1974 when the 27 cancer detection centers, sponsored by the National Cancer Institute (NCI), reported a four to ten times increase in requests for breast examinations in the week following the widely publicized operation on Mrs. Ford. The Strang Clinic in New York and the American Cancer Society reported similar increases in demands for their preventive services in the same period (29:13).
The World Health Organization's expert committee has emphasized to the President that any changes or improvements in the delivery and financing of health care will be virtually nullified unless there is, at the same time, an improvement in health education—which means not just supplying information about health to people, but motivating them to accept the information and putting it to work in their daily lives (15:1182).

In other words, health educators must not just offer health education to the public, but must sell the public on the merits of popular health education. People must be taught how to care better for themselves (the art of preventive medicine) and be convinced that they should (42:4).

McNerney believes that in order to achieve the interest and response that can convert health information into changes in health behavior, consumers themselves must become involved in the process (29:17). Health educators must communicate the knowledge we presently have in a manner that instills in the individual the desire to know about and to do something about these afflictions. These are things only the individual can do for himself (42:4). People can and do change, if leadership is exerted, objectives are set, and our vast communication mechanisms are used aggressively (29:11).
Health education is demonstrably the most important of all the health and disease services; it is the only service that offers the real help of reducing the ever expanding cost of treatment, palliation, and support (25:243).

CANCER EDUCATION

The American Cancer Society is one of the largest and oldest voluntary health agencies in the United States. Its fight against cancer involve activities in research, education, and service. Originally named the American Society for the Control of Cancer, it was organized in 1913, in New York City, by a group of ten physicians and five laymen. At that time, the public was completely uninformed about cancer. There were no organized programs of cancer research or cancer control and the medical profession's attitude was essentially one of disinterest and pessimism. In an effort to dispel this helpless and hopeless attitude, the American Society for the Control of Cancer was founded "to disseminate knowledge concerning the symptoms, treatment, and prevention of cancer, to investigate conditions under which cancer is found, and to compile statistics in regard thereto." (1:2).

Over the years, the Society's organizations grew strong and became numerous. Newspapers, magazines, and radio stations began accepting more and more educational material concerning cancer. The Society had stimulated
an interest and desire on the part of the public to "do something about cancer." In 1938, it supplied medical and statistical information to Congress as a basis for its action to establish the National Cancer Institute and to authorize the President to designate April of each year as Cancer Control month (1:2).

Today, the American Cancer Society's public education programs aim to persuade people to go to their doctors at a time when cancer is curable, and to take all known measures to prevent cancer. Specifically, it promotes the following actions for the public to protect themselves against cancer:

1. adopt preventive habits--avoid cigarette smoking, overexposure to sunlight, etc.;
2. have medical check-ups regularly, regardless of how well you feel; and
3. learn cancer's seven warning signals and go to the doctor if one should occur (56:21).

Cancer education programs have been developed to persuade people to act in accordance with the considerable knowledge available so that much needless suffering would be avoided and the lives of thousands of people who now die prematurely would be saved.

There are many forms of cancer that show symptoms early for which early treatment offers a reasonable chance of cure. Yet, the cure rates have been relatively low.
The major hindrance to a drastically-improved cure rate is, sadly, the cancer patient himself. Patients persistently delay seeing their doctors and seeking medical help. Wagner's study on patients' reasons for delay in seeking medical aid was carried out in Manchester. It showed that symptoms which evoked suspicions of cancer in the patient led to longer delays than symptoms which were not so frequently or directly brought into context with cancer (52:185).

The evidence that knowledge of the meaning of symptoms can cause delay suggests that what is really needed is not only that the public should know more about cancer but that people should feel differently about the disease (13:317). The prevailing attitude is often "If I've got cancer, I don't want to know," or "I can't understand why this has happened to me." Another reason is, "I never thought it was anything I could not cure myself with lint and ointment." (14:601). Dr. Arthur Peck of the Mount Sinai School of Medicine in New York found that out of the 50 cancer patients who were questioned, 18-36% actually felt guilty because they had cancer and felt that their own actions had caused them to develop the disease (14:601). Some laymen even consider the diagnosis of cancer to be an inescapable death sentence (52:185). These attitudes must be changed to one that regards cancer correctly as being another of the serious but ordinary
diseases that afflict mankind. The job of changing these attitudes for the better is one of the most difficult and challenging tasks of health education.

Thus, it remains a fundamental task within the framework of cancer control to generate a more hopeful attitude, a belief in the curability of cancer and in the importance of early detection and treatment. (52:185).

Quite a few educational programs on cancer have tried to accomplish this goal. Some projects have been effectively developed and implemented throughout the world, but most programs lack an evaluative component.

Davison reported that Britain had implemented several successful programs of cancer education. One organization was the Women’s National Cancer Control Campaign, which was largely concerned with education about cancer of the breast and of the womb. Other intensive schemes of cancer education included the Manchester Regional Committee on Cancer in Merseyside, the Cancer Information Association in Oxford, the Tenovus Cancer Information Center in south-east Wales, and the Cancer Information Center in Cardiff. (13:317).

The cancer education project in the Manchester region had great positive impacts. Results showed that to the question, "Can cancer ever be cured?" only 30% of the respondents to the survey carried out in 1953 said "usually" or "sometimes." This proportion rose over the
years to 48.5% in 1958, 54.5% in 1964, and 60.0% in 1966. There were also signs that patients were coming in earlier for treatment. For instance, during the same period the proportion of women treated for early cancer of the womb at the regional radiotherapy center more than doubled (13:319).

Stanley noted that in April 1973, the Welfare Committee of the Marie Curie Memorial Foundation sponsored an educational project for the lay public on the care of the cancer patient at home (45:153).

Ravnihar found that in Yugoslavia the voluntary anti-cancer societies were in charge of the programs and conducting educational messages to the public. The first week in March each year was designated as "Anti-Cancer Week" with certain subject for the educational campaign chosen in advance. Detailed programs are then drawn up by the republics' organization and preparations continue throughout the year (39:227).

O'Sullivan reported that in Northern Ireland cancer education was the responsibility of the Ministry of Health and Social Services. Their programs involved doctors speaking on cancer to various audiences with a short slide and tape presentation. In their first three years, 1971-1974, 282 evening meetings were held before an estimated audience of 12,173 people (33:171,174).

In the United States, programs by the American
Cancer Society have made remarkable progress in educating the public. Their public education activities include house-to-house educational visits by trained American Cancer Society volunteers from the community, the furnishing of speakers to various groups, film presentations with physicians present to answer questions, discussion groups, cooperative planning with schools and colleges for the inclusion of cancer education in school curricula, smoking cessation classes, employee/business group educational projects, breast cancer educational projects which teach and encourage women to practice monthly breast self examination, colon and rectum cancer projects which teach all adults to request proctosigmoidoscopic examinations, and uterine cancer projects which encourage women to ask for pap smear tests with their physical examinations.

Other projects of the American Cancer Society include Cancer Education Week, Federal employee cancer education projects, Biology of Cancer Courses, and the Conquest of Cancer Teacher training programs.

In 1974, the American Cancer Society ran 200 "Helping Smokers Quit" clinics in various communities to help smokers. Other anti-smoking efforts involved "Don't Smoke" messages on 250,000 milk cartons delivered daily by a New Jersey dairy to public schools in three counties, and a statewide American Cancer Society supported D-Day
campaign in Minnesota on October 7, 1974 which urged all smokers to stop for at least one day (2:18).

More than 50,000 public education programs were conducted on uterine cancer and the Pap test. An American Cancer Society sponsored Gallup study showed an increase in percentages of 53% in 1970 to 78% in 1973 of all United States women who have now had a Pap test (2:14).

By the end of 1974, local public education programs based on the six "target" sites (breast, lung, uterus, colon-rectum, skin, oral) reached a total of 18,732,000 people throughout the country—an increase of nearly 300,000 over the previous year. The number of adult programs including a film showing, speaker, and discussion expanded by 13,807 and youth programs by 28,492 (2:14).

Lieberman, in 1972, worked with the American Cancer Society to test the power and potential of April Cancer crusaders as an educational vehicle. He found that the crusader played an important role in increasing the readership of a pamphlet handed out to residents. He showed that a simple thing like explicitly telling the people to read the leaflet had a marked effect on moving the readership level up (23:14).

Cameron reported that with the passing of time, the proportion of listeners had increased. More people now knew more danger signals; more of them were beginning to believe cancer was often curable; more realized the
importance of early treatment; and as a result, more cancers were being seen earlier than they used to be (10:404).

**TRAINING VOLUNTEERS**

McQuire has defined volunteers as auxiliary personnel who offer their resources of time, energy, skill, and talent for the benefit of others (28:43). These individuals have been identified as having personalities conducive to high levels of voluntary action.

Reddy and Smith (40:37) compiled a profile of an active volunteer to possess any one of the following characteristics:

1. extroversion, sociability, friendliness, social confidence (vs. introversion, interpersonal cynicism, distrust)

2. ego-strength, psychic adjustment, satisfaction, optimism, positive self-image, self-confidence (vs. anxiety, neuroticism, pessimism, dissatisfaction)

3. dominance, aggressiveness, personal autonomy, "leadership", assertiveness (vs. submissiveness, shyness, dependence, conformity, acquiescence)

4. achievement, motivation, efficacy, competence, perseverance (vs. fatalism, alienation, powerlessness, apathy, lack of aspiration)

5. flexibility, adaptability, readiness to change, (vs. rigidity, compulsiveness, authoritarianism, inflexibility)

6. morality, sugerego, strength, altruism (vs. lack of interpersonal and group orientation or concern, selfishness, expedient orientation)

Dalworth, Rudow, and Taub found volunteers to be flexible, autonomous, and independent (49:249).
With the Minnesota Multiphasic Personality Inventory (MMPI), Tapp and Spanier identified the characteristics of volunteers to include benevolence, spontaneity, independence, and an orientation to the present (49:245).

Studies by Balwin have stressed the importance of training volunteers (5:477). Hoff has found the influence of adequate training contributing more than any other factor to the successful performance of auxiliary health workers (19:760). In fact, McQuire stated adequate training as often the determining factor for the very success of the entire program (28:43).

Sutherland has defined training as an instrument whereby people doing jobs or about to do jobs become more productive. It brings nearer the fulfillment the potential where education has made possible. Yet little difference is seen between training and education as both involve learning, understanding, and if successful, a change in behavior for the better (48:303).

Hoff defined training as the planned and organized process which develop a person's ability to perform a function in order to achieve a goal (19:761). Carlaw explained the purpose of training not for knowing more but for behaving differently (11:754).

The technology of training involve several steps and provide the framework for the training paradigm and basis for subsequent program evaluation. Hoff (19:764,765)
has described this process as follows:

1. development of behavioral objectives;
2. identifying knowledge, attitudes, and skills;
3. determining the training methods;
4. selecting educational materials; and
5. conducting the training program.

Carlaw's (11:756) list of questions to be considered during the planning stage are:

1. What needs to be known by the trainees at the end of the course?
2. In what particular areas is experience needed?
3. How will we determine the group's resources and experience?
4. How will we determine the group's interests and their relations to the training program?
5. What particular competencies or experiences within the staff should be emphasized?
6. What methodologies are available?
7. What agency or community resources are desirable and available for this course and how can they best be utilized?

A survey of the literature indicated many successful programs employing trained volunteers. Bengson reported that programs have been conducted in the State of Washington to train volunteers as Activity Directors since 1958. Their 40 hour training program included lectures, social and group activities, crafts, and eight hours patient contact. The content of the lecture was centered on understanding and working with the geriatric patient,
working with or being a volunteer, and organizing an activity program (8:102).

Moser described the use of volunteers and non-professionals as behavior modifiers in hospital and school settings. Volunteers received four training sessions of approximately 60 minutes each on: 1) terminology familiarization, 2) description and observation of behavior, 3) design and management of behavior change programs in the classroom, and 4) evaluation of behavior intervention programs (31:252).

Volunteers at Lynnbrook Elementary School received on-the-job training to help children with reading disabilities. The program was a total success. Individual test scores after three months' tutoring by the volunteers showed progress ranging from four months to three years in word recognition, five months to 14 months in oral reading, and from one-two years' improvement in comprehension. Classroom teachers reported not only academic advances in the children being tutored, but also definite improvements in self-image, social adjustment, and general behavior (51:56).

Parten's studies described a six week training session that prepared neighbors, mothers, grandmothers, and other volunteers in the barrios of Los Angeles to work directly with children in the classroom. At the end of two months, over 30 mothers and one father had completed the training (34:31).
McQuire reported that in preparation for the 1973 winter-spring term, the Greenwich Tutoring Service planned and conducted a series of five training workshops to assist new volunteers (28:44).

Mariner described the first training program of the Red Cross in 1956 for school health volunteers in Florida. The program has since become an approved activity and has been accepted by other Red Cross chapters throughout the country as well as in dependent schools for American children overseas. The first part of their training course was done by the Chapter. It included two hours of introduction to Red Cross, four hours of the principles of voluntary service, ten hours of Red Cross standard first aid, and two hours of Red Cross care of the sick and injured. The second phase of the training program was a one hour minimum orientation to the school job (27:428).

This present study was designed to train volunteers to be effective health educators. If residents could become informed about cancer through crusader intervention, thousands of people may be convinced to seek medical treatment earlier, leading to thousands of lives being saved annually.
CHAPTER III

METHODOLOGY

The following chapter presents the purpose of the study, the program objectives, the research design, the pilot study, the population studied, the training program, the data collection, and the methods of evaluation.

PURPOSE OF THE STUDY

The purpose of the study was to design, implement, and evaluate a training program for April Cancer Crusaders to determine their effectiveness as meaningful disseminators of cancer information.

OBJECTIVES OF THE PROGRAM

The specific objectives of the program were:

1. to determine if trained volunteers were effective in educating residents on certain facts about cancer; and

2. to determine if more funds were collected since volunteers were giving information in exchange for contributions.

RESEARCH DESIGN

A comprehensive literature search on educational programs, training methodology, and questionnaire construction was completed through the utilization of
the Medlars/Medline Search Request available at the University of California, Los Angeles. This information assisted the author in designing the questionnaire and planning the training course.

The investigator began this study by first administering a questionnaire to a pilot group of individuals. Results were analyzed and revisions were made accordingly. Next, the author selected at random four census tracts within the San Fernando Valley to execute the program. A list of all cancer crusaders who had volunteered to "walk their blocks" within these four designated census tracts was then obtained. For each tract, two volunteer crusaders were selected at random—one to become the experimental group and the other the control.

The crusaders were sent letters asking them if they would like to cooperate in a cancer education study. Confirmation of participation and elaboration upon project requirements were conducted over the telephone by the author. Participants of the experimental sample were requested to attend a short one hour training session. For the "control" volunteers, appointments were made by the author to visit these crusaders at their homes to distribute questionnaires and explain responsibilities. They were not required to attend any training meeting.

During the April crusade, the role of the trained
crusader was to administer a questionnaire to each neighbor, correct and explain the answers, and then ask for contributions. The role of the control Crusader was identical except that corrections and explanations of answers were omitted.

One month later, the residents who had completed the first pre-test questionnaire were mailed a second post-test questionnaire with identical questions. The post-test questionnaires were sent with postage-paid, self-addressed envelopes to the American Cancer Society to encourage returns.

When the post-test questionnaires were not returned within three weeks, respondents were telephoned and reminded to fill out and return the questionnaires.

THE PILOT STUDY

A questionnaire was devised for the study to elicit responses concerning what people knew about cancer. Ten people were asked at random to complete the initial questionnaire consisting of ten multiple choice questions. As a result of this pilot, some questions were rephrased and a few more technical questions were included. The change was implemented because respondents scored very well on the pilot-test—either because the questions were too simple or because the people were knowledgeable about cancer already. Thus, discriminating questions had to be added to differentiate between those who knew
about cancer and those who guessed correctly.

When the questionnaire was revised, it was again piloted on a random sample population. Five individuals completed this survey with the results of one person missing one question, three persons missing five questions, and one person missing seven questions. The author concluded that this was a much more meaningful questionnaire to administer. Thus, the finalized questionnaire was composed of 15 items--12 multiple choice questions and three fill-in questions. The respondents were also asked to fill in their name, address, occupation, sex, and age. Number codes were printed on the questionnaires as a means of identification so that names and addresses were kept strictly confidential.

POPULATION STUDIED

The population for this study consisted of eight volunteer Cancer Crusaders and the 60 residents the crusaders contacted. The crusaders were all women recruited by paid telephone solicitors of the American Cancer Society.

The four trained crusaders were between the ages of 20 and 60—one each from the areas of Northridge, Canoga Park, Mission Hills, and Studio City. Their occupations were a businesswoman, a student, a marketing representative, and a government employee. All four volunteers had attended a training session on April 16,
1975, a few days before the crusade campaign days.

The control counterparts to the trained volunteers were also women between the ages of 20 and 60 from Northridge, Canoga Park, Mission Hills, and Studio City. The author made only one contact with these volunteers which involved visiting them at their homes to distribute questionnaires.

The residents that the experimental and control crusaders contacted all lived within one or two blocks of the crusader's own home. They were randomly selected as far as the crusaders themselves were randomly selected. However, the crusader could choose which homes she wished to visit and which to ignore on the door-to-door march.

THE TRAINING PROGRAM

The purpose of the training session was to educate the volunteers on certain facts about cancer and to familiarize them, through role playing, their parts as volunteer Cancer Crusaders.

The training course was held on Tuesday, April 16, 1975 from 7:30 p.m. to 8:30 p.m. It was held in the conference room of the American Cancer Society in Reseda, California.

Before the participants arrived, the agenda was written on a front blackboard in the conference room. The evening's objectives were:

1. to measure how much each volunteer knew about
2. to practice interviewing each other; and
3. to reassess the participant's knowledge about cancer.

The education director of the Reseda Cancer Society and the author both conducted the training program. As the volunteers arrived, each were handed a small packet—which included a clip board, the 1975 Cancer Facts and Figures magazine, a pre-test questionnaire, crusade instructions, and a name tag for the participant to wear during the training session.

The author began the evening with a brief introduction about the project and reviewed the program's objectives. Next, the education director described the American Cancer Society—its history and purpose. Respondents were then given five minutes to complete a pre-test questionnaire, identical to the questionnaire residents would be completing. When the volunteers finished, they were encouraged to participate in expressing the answers. A reference sheet with the answers and short explanations to the questions was distributed.

The second part of the meeting involved the education director and the author demonstrating how to interview residents and ask for donations. Next, the volunteers were paired off into twos and given either the role descriptions of a crusader or a resident to portray. The
pairs were given eight minutes to run through their respective parts. Then, they switched roles, the crusader assumed the part of the resident, and the resident role-played the crusader. A discussion followed on the role playing interaction.

Finally, the volunteers were asked to complete post-test questionnaires, which consisted of identical questions as the pre-test, to reassess their knowledge about cancer. The rationale being that volunteers must be knowledgeable about cancer before they can educate others.

The training concluded with the author going over the crusader's instructions and summarizing the evening's events.

COLLECTION OF DATA

Data were collected from the experimental group of crusaders at the training course of April 16, 1975 to measure their knowledge about cancer. On the pre-test, incorrect responses ranged from two to seven. However, on the post-test, all the trained crusaders received perfect scores. This assured the author that the volunteers were knowledgeable about cancer to pass on information to others.

Data were also collected from the residents the control and experimental groups visited. During April, the experimental and control groups each administered 30 pre-test questionnaires to residents in their
neighborhoods. One month later, 60 post-test questionnaires were sent to the pre-test respondents. However, only 30 post-test questionnaires (50%) were returned by June 30, 1975, the cut off date for this study.

Control and experimental crusaders were also compared on the amounts of money each collected.

METHODS OF EVALUATION

The method of evaluation utilized in this study was the pre-test post-test questionnaire. The number of correct responses to both tests were compared and analyzed to detect if changes occurred. The larger the percent increase between the tests, the more effective the impact.
CHAPTER IV

DATA ANALYSIS AND DISCUSSION

In this chapter the statistical results of the questionnaire are presented as they relate to knowledge retention and an overview and discussion of these results are given.

Data are presented in two ways. First, descriptive data and frequency tabulations of the respondents and of the questionnaire itself are reported. Then, results from analysis of covariance and the t-test are presented.

Data were collected from a sample composed of 30 residents from Mission Hills, Canoga Park, Studio City, and Northridge in the San Fernando Valley. These residents were studied to determine if gains in knowledge occurred because of crusader intervention and if increases in donations were registered.

DESCRIPTIVE DATA

The variables age, sex, and occupation as they relate to the respondents are considered in this section.

60% of the respondents from the control group were forty years or younger. Their mean was 40 years of age. For the experimental population, 66.7% of the respondents were forty years or younger and 36 was the mean age of the sample (See Table 1). No one was under twenty-one
years of age.

<table>
<thead>
<tr>
<th>Age</th>
<th>Control</th>
<th>%</th>
<th>Experimental</th>
<th>%</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-30</td>
<td>4</td>
<td>26.7</td>
<td>9</td>
<td>60.0</td>
<td>13</td>
<td>43.3</td>
</tr>
<tr>
<td>31-40</td>
<td>5</td>
<td>33.3</td>
<td>1</td>
<td>6.7</td>
<td>6</td>
<td>20.0</td>
</tr>
<tr>
<td>41-50</td>
<td>2</td>
<td>13.3</td>
<td>2</td>
<td>13.3</td>
<td>4</td>
<td>13.3</td>
</tr>
<tr>
<td>51-60</td>
<td>3</td>
<td>20.0</td>
<td>1</td>
<td>6.7</td>
<td>4</td>
<td>13.3</td>
</tr>
<tr>
<td>Over 61</td>
<td>1</td>
<td>6.7</td>
<td>2</td>
<td>13.3</td>
<td>3</td>
<td>10.0</td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>100.0</td>
<td>15</td>
<td>100.0</td>
<td>30</td>
<td>99.9</td>
</tr>
</tbody>
</table>

In regards to the sex gender, 53% of the residents from the control were females and 47% were males. The percentages were reversed for the sex composition of the experimental group—53.3% were males and 46.7% were females (See Table 2).

Participants from the control and experimental groups both portrayed a variety of occupations. They ranged from housewives, engineers, technicians, nurses, managers, and businessmen to students, teachers, and pharmacists.
TABLE 2
SEX OF CONTROL AND EXPERIMENTAL GROUP RESPONDENTS

<table>
<thead>
<tr>
<th>Sex</th>
<th>Control</th>
<th>Experimental</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Female</td>
<td>8 53.3</td>
<td>7 46.7</td>
<td>15</td>
</tr>
<tr>
<td>Male</td>
<td>7 46.7</td>
<td>8 53.3</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>15 100.0</td>
<td>15 100.0</td>
<td>30</td>
</tr>
</tbody>
</table>

To determine if an increase in knowledge about cancer took place, the control and experimental residents were each given identical pre-test and post-test questionnaires. Fifteen questions were used on the survey to measure what these respondents knew (See Appendix A).

Table 3 shows the results to Question #1 regarding the definition of cancer. 67% of the control participants knew that cancers were the abnormal growth and spread of cells on the pre-test. Respondents with incorrect answers identified cancers as either the destruction and death of cells (20%) or the spread of differentiated mature cells (13.3%). On the post-test, one month later, 87% of the control group answered the first inquiry correctly, increasing the number of correct responses by 20%.

In contrast, 93% of the experimental sample knew the definition of cancer on the pre-test, but only 80%
answered it so on the post-test, a decrease of 13% in the number of correct responses.

**TABLE 3**

**NUMBER OF CORRECT RESPONSES TO QUESTION #1, "What is cancer?"

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test N</th>
<th>%</th>
<th>Post-test N</th>
<th>%</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>10/15</td>
<td>67</td>
<td>13/15</td>
<td>87</td>
<td>20</td>
</tr>
<tr>
<td>Experimental</td>
<td>14/15</td>
<td>93</td>
<td>12/15</td>
<td>80</td>
<td>-13</td>
</tr>
</tbody>
</table>

The results to Question #2 concerning "Who can get cancer?" are tabulated in Table 4. All the respondents, on the pre-test and post-test, knew that anyone could get cancer. No one believed that it was limited to a specific group of individuals, like the elderly, the chronically ill, or the physically weak. Thus, a zero percent change for both the control and experimental groups was documented.

Question #3 asked if cancers were contagious. The outcomes of this inquiry are shown in Table 5. For the pre-test, 67% of the control respondents answered this question correctly. They knew that cancers were not contagious. The remaining 33% believed cancers were contagious. Subsequently, only 7% believed cancers were
contagious on the post-test, an increase of 27\% in the number of true answers.

The entire experimental sample believed cancers were not contagious on the pre-test, but only 93\% indicated so on the post-test. Thus, an observed decrease of 7\% resulted. This question and Question #1 were the only items showing decreases in the number of accurate responses by the experimental group.

**TABLE 4**

**NUMBER OF CORRECT RESPONSES TO QUESTION #2, "Who can get cancer?"**

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Control</td>
<td>15/15</td>
<td>100</td>
<td>15/15</td>
</tr>
<tr>
<td>Experimental</td>
<td>15/15</td>
<td>100</td>
<td>15/15</td>
</tr>
</tbody>
</table>

**TABLE 5**

**NUMBER OF CORRECT RESPONSES TO QUESTION #3, "Are cancers Contagious?"**

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Control</td>
<td>10/15</td>
<td>67</td>
<td>14/15</td>
</tr>
<tr>
<td>Experimental</td>
<td>15/15</td>
<td>100</td>
<td>14/15</td>
</tr>
</tbody>
</table>
Table 6 reveals the results to Question #4 regarding the inheritability of cancers. 87% of the control population cited cancers could not be inherited on the pre-test. Their post-test questionnaires indicated that they had not changed their beliefs during the month of the study.

An increase in the number of correct answers did occur within the experimental group. 73% believed cancers were not inheritable on the pre-test and 93% indicated so on the post-test.

**TABLE 6**

**NUMBER OF CORRECT RESPONSES TO QUESTION #4, "Are cancers inherited?"

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test N</th>
<th>Pre-test %</th>
<th>Post-test N</th>
<th>Post-test %</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>13/15</td>
<td>87</td>
<td>13/15</td>
<td>87</td>
<td>0</td>
</tr>
<tr>
<td>Experimental</td>
<td>11/15</td>
<td>73</td>
<td>14/15</td>
<td>93</td>
<td>20</td>
</tr>
</tbody>
</table>

Table 7 shows the responses to Question #5 concerning past injuries as frequent causes of cancer. This was a true and false question. Increases in the number of correct responses were obtained in both the control (13%) and experimental (7%) groups. Consequently, less people believed past injuries were carcinogenic.
in June 1975 than in April 1975.

**TABLE 7**

NUMBER OF CORRECT RESPONSES TO QUESTION #5, 
"Cancers are frequently caused by a past injury."

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N %</td>
<td>N %</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>8/15 53</td>
<td>10/15 67</td>
<td>13</td>
</tr>
<tr>
<td>Experimental</td>
<td>10/15 67</td>
<td>11/15 73</td>
<td>7</td>
</tr>
</tbody>
</table>

"Could a person have cancer without knowing anything was wrong?" constituted the content of Question #6 (See Table 8). All the participants of the control group indicated on the pre-test and post-test that they believed individuals could have cancer without knowing anything was wrong. Thus, no changes occurred.

For the experimental sample, 93% on the pre-test and 100% on the post-test believed cancer patients could be asymptomatic. So an increase of 7% in correct responses was observed for this group.

No changes in the number of correct responses were tabulated for Question #7 ("If you detect cancer early, are your chances better for survival?"). See Table 9. Apparently, everyone in the study believed that early detection increased survival. This result indicated to
the author how saturated the people in this study were with the facts pertaining to early detection.

**TABLE 8**

NUMBER OF CORRECT RESPONSES TO QUESTION #6, "Could a person have cancer without knowing anything was wrong?"

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>15/15 100</td>
<td>15/15 100</td>
<td>0</td>
</tr>
<tr>
<td>Experimental</td>
<td>14/15 93</td>
<td>15/15 100</td>
<td>7</td>
</tr>
</tbody>
</table>

**TABLE 9**

NUMBER OF CORRECT RESPONSES TO QUESTION #7, "If you detect cancer early, are your chances better for survival?"

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>15/15 100</td>
<td>15/15 100</td>
<td>0</td>
</tr>
<tr>
<td>Experimental</td>
<td>15/15 100</td>
<td>15/15 100</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 10 represents the data collected on Question #8 (Cancer, in its early most curable stage, usually causes no symptoms. But cancer at this stage often can
be detected by a physician.) Participants were requested to respond with either a "true" or "false" reply. Results show that both the control and experimental groups increased 7% on the number of correct responses on the post-test for this question. Obviously, each group had its own means of learning about cancer curability.

**TABLE 10**

<table>
<thead>
<tr>
<th></th>
<th>Pre-test N</th>
<th>%</th>
<th>Post-test N</th>
<th>%</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>14/15</td>
<td>93</td>
<td>15/15</td>
<td>100</td>
<td>7</td>
</tr>
<tr>
<td>Experimental</td>
<td>13/15</td>
<td>87</td>
<td>14/15</td>
<td>93</td>
<td>7</td>
</tr>
</tbody>
</table>

Table 11 reveals the results to Question #9 asking "Which of the following cause cancer? a) cigarette smoke; b) chronic irritations; c) repeated sunburns; or d) alcohol." Next to the question, in parenthesis, it was noted that more than one answer could be circled. 53% of the control group knew cigarette smoke, chronic irritations, and repeated sunburns were the causes of cancer on the pre-test. In addition, 46% knew at least two of these causes. A month later, an increase in
knowledge was observed when 60% indicated all three carcinogens on the post-test questionnaire.

For the experimental group, 53% knew the three causes on both the pre-test and post-test surveys, and 27% knew two causes. Only a few incorrectly identified alcohol as carcinogenic.

## TABLE 11

NUMBER OF CORRECT RESPONSES TO QUESTION #9, "Which of the following cause cancer?

<table>
<thead>
<tr>
<th></th>
<th>a) cigarette smoke</th>
<th>b) chronic irritations</th>
<th>c) repeated sunburns</th>
<th>d) alcohol.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-test</td>
<td>Post-test</td>
<td>Percent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Control</td>
<td>8/15</td>
<td>53</td>
<td>9/15</td>
<td>60</td>
</tr>
<tr>
<td>Experimental</td>
<td>8/15</td>
<td>53</td>
<td>8/15</td>
<td>53</td>
</tr>
</tbody>
</table>

Question #10, true or false, on "No matter when it is obtained, the biopsy provides the only strictly reliable basis for a diagnosis of cancer," was asked next. Its results are shown in Table 12. For the control group, 93% believed this was true on both the pre-test and post-test. Thus, no changes were recorded. However, 73% of the experimental group believed this was true on the pre-test and 93% thought so on the post-test, a mean increase
of 20% on the number of correct responses.

**TABLE 12**

NUMBER OF CORRECT RESPONSES TO QUESTION #10, "No matter when it is obtained, the biopsy provides the only strictly reliable basis for a diagnosis of cancer."

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>N</td>
<td></td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>14/15</td>
<td>14/15</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>93</td>
<td>93</td>
<td></td>
</tr>
<tr>
<td>Experimental</td>
<td>11/15</td>
<td>14/15</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>73</td>
<td>93</td>
<td></td>
</tr>
</tbody>
</table>

Table 13 indicates the results to Question #11 regarding the types of preventable cancers. 20% of the control group believed that some types of cancers were preventable and could name one type on the pre-test, e.g. skin cancer, lung cancer, etc. An additional 20% knew cancers were preventable, but could not name a specific type. A month later, the former respondents raised their post-test percentages to 33.3%, an increase of 13.3% in regards to believing and naming preventable cancers.

26.6% of the experimental group knew some cancers were preventable and were able to name one type on the pre-test questionnaire. After crusade intervention, this figure rose to 66.6%, a 40% increase of accurate responses.
TABLE 13

NUMBER OF CORRECT RESPONSES TO QUESTION #11, "Can some types of cancer be prevented? If yes, name one type."

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test N</th>
<th>Pre-test %</th>
<th>Post-test N</th>
<th>Post-test %</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>3/15</td>
<td>20.0</td>
<td>5/15</td>
<td>33.3</td>
<td>13.3</td>
</tr>
<tr>
<td>Experimental</td>
<td>4/14</td>
<td>26.6</td>
<td>10/15</td>
<td>66.6</td>
<td>40.0</td>
</tr>
</tbody>
</table>

Question #12 asked "Which type of cancer was the most common among men?" (See Table 14). 53% of the control population indicated lung cancer as the most common site of cancer on the pre-test, which is the correct response. 20% thought cancer of the prostate was the most common and 26.6% did not respond. On the post-test, the number of correct answers decreased to 40%, a drop of more than 10%. Evidently, for some reason people changed their beliefs and cited cancer of the prostate as the most common (46%). One individual stated cancer of the throat as the most prevalent.

For the experimental group, 53% knew lung cancer was the most common site of cancer on the pre-test. The remaining 47% indicated cancer of the chest, cancer of the testis, cancer of the colon-rectum, cancer of the prostate, or cancer of the throat as having the greatest
incidence among men. One month later, the experimental sample increased 33% in the number of correct responses. However, 13% still believed cancer of the prostate was the most common site.

**TABLE 14**

**NUMBER OF CORRECT RESPONSES TO QUESTION #12, "Which type of cancer is the most common among men?"**

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
</tr>
<tr>
<td>Control</td>
<td>8/15</td>
<td>53</td>
<td>6/15</td>
</tr>
<tr>
<td>Experimental</td>
<td>8/15</td>
<td>53</td>
<td>13/15</td>
</tr>
</tbody>
</table>

Table 15 shows the results of Question #13 asking "Which type of cancer is the most common among females?" On the pre-test, 67% of the control group stated cancer of the breast as the most common site, which is correct. The five (33%) incorrect responses were attributed to participants stating cancer of the uterus as the most prevalent. On the post-test, 73% stated cancer of the breast as the most common, a 7% increase in the number of correct answers.

87% of the experimental sample knew that cancer of the breast was the most prevalent on the pre-test and
post-test questionnaires. The remaining believed cancer of the uterus was the most prevalent.

**TABLE 15**

NUMBER OF CORRECT RESPONSES TO QUESTION #13, "Which type of cancer is the most common among women?"

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test N</th>
<th>Pre-test %</th>
<th>Post-test N</th>
<th>Post-test %</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>10/15 67</td>
<td>11/15 73</td>
<td></td>
<td></td>
<td>7</td>
</tr>
<tr>
<td>Experimental</td>
<td>13/15 87</td>
<td>13/15 87</td>
<td></td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

Regarding Question #14 (How can you protect yourself against cancer?) 93% of the control participants indicated annual physical check-ups as the means of protection against cancer, on the pre-test and post-test questionnaires (See Table 16). The one (7%) incorrect reply was due to a respondent citing reading books on cancer prevention as the correct preventive measure. None believed eating natural foods or taking vitamins prevented cancer. For the experimental group, all the respondents knew annual physical check-ups was the only true means of defense against cancer.

Finally, Table 17 shows the results of Question #15 inquiring identification of the seven cancer warning
signal among 13 choices--a) a change in bowel or bladder; b) a sore that does not heal; c) a pain that does not go away; d) a weight loss; e) an unusual bleeding or discharge; f) extreme fatigue; g) chronic headaches; h) an obvious change in a wart or mole; i) insomnia; j) indigestion or difficulty in swallowing; k) a nagging cough or hoarseness; l) a lack of appetite; or m) a thickening or lump in the breast.

20% of the control group knew all seven warning signals on the pre-test. 66.7% knew six of the warning signals, and 13.3% knew five signals. The signs that people were most ignorant about included indigestion or difficulty in swallowing (29%), a nagging cough or hoarseness (29%), and a sore that does not heal (21%). Everyone knew a thickening or lump in the breast and a change in a wart or mole were signals indicative of
cancer on the pre-test. The erroneous responses most frequently cited included a weight loss (71%) and a pain that does not go away (21%).

There was a 13% increase in the number of accurate responses on the post-test for the control group. However, the participants were still missing the same items and persistently identifying a weight loss (60%) as a cancer signal.

For the experimental group, 20% knew all seven signals on the pre-test questionnaire, 33% knew six signals, 40% knew five signals, and 7% knew four signals. The symptoms most frequently identified were indigestion or difficulty in swallowing (45%) and a change in a bowel or bladder habit (25%). In addition, everyone knew a thickening or lump in the breast, and an unusual bleeding or discharge were cancer signals.

Two signs were frequently mistaken for cancer signals: a pain that does not go away (45%) and a weight loss (30%).

On the post-test questionnaire, 53% knew all seven signals, an increase of 33%. Indigestion or difficulty in swallowing was still forgotten as a signal (36%) and a weight loss and a pain that does not go away were still being mistakenly marked as cancer signals.
### TABLE 17
NUMBER OF CORRECT RESPONSES TO QUESTION #15, "What are the 7 cancer warning signals?"

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N (%)</td>
<td>N (%)</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>3/15 20</td>
<td>5/15 33</td>
<td>13</td>
</tr>
<tr>
<td>Experimental</td>
<td>3/15 20</td>
<td>8/15 53</td>
<td>33</td>
</tr>
</tbody>
</table>

### ANALYTICAL DATA
A comparison of the control group's results versus the experimental group's results is presented in Table 18.

### TABLE 18
MEAN PERCENTAGES OF THE PRE AND POST TEST QUESTIONNAIRES

<table>
<thead>
<tr>
<th>Group</th>
<th>Pre-test Mean</th>
<th>Post-test Mean</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>71.06</td>
<td>77.29</td>
<td>6.23</td>
</tr>
<tr>
<td>Experimental</td>
<td>75.04</td>
<td>84.77</td>
<td>9.73</td>
</tr>
</tbody>
</table>

Prior to the program, the control sample obtained an average of 71% of all correct answers on the pre-test questionnaire. After the program, this figure rose to
77%, a mean increase of 6%. In terms of raw data, the average number of correct responses out of a possible 15 was 11 for the pre-test and 12 for the post-test, a mean difference of one.

The average number of correct responses the experimental group achieved was 11 on the pre-test and 13 on the post-test, of the maximum 15 possible. A mean difference of two resulted. In percentages, a mean increase of 10% was calculated, approximately one and a half times greater than the control group's mean increase.

To determine if the experimental group's increase in their number of correct responses was significantly different over the control group's increase, two statistical tests were performed on the data.

Analysis of covariance indicated no statistical difference between the control and experimental populations. The calculated F value was 2.6 with one and 27 degrees of freedom, but a value greater than 11.2 was required for statistical significance.

The t-test for independent groups was also performed. At t=1.495 with two degrees of freedom, differences were not statistically significant. This agrees with the analysis of covariance statistics and confirms the idea that the April cancer crusaders' educational messages did not have a significant impact upon residents. Their effort did not cause a significant increase in the number
of correct responses on the post-test questionnaire or in a general gain of cancer knowledge.

Table 19 reveals the amounts of contributions collected by each cancer crusader within the control and experimental samples. In addition, amounts are shown for a group of crusaders randomly selected from the same four designated census tracts for monitory purposes only. They were in no way involved with the questionnaire and did not know they were participants in the study. They were utilized only by including the amounts of contributions they collected for Table 19 as an extra control measure.

Statistics show no relationship or correlation between the types of crusaders and the amounts of donations collected.

<table>
<thead>
<tr>
<th>Area</th>
<th>Experimental Group</th>
<th>Control Group</th>
<th>Monitoring Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northridge</td>
<td>$6.00</td>
<td>$24.00</td>
<td>$7.75</td>
</tr>
<tr>
<td>Studio City</td>
<td>25.00</td>
<td>23.00</td>
<td>21.50</td>
</tr>
<tr>
<td>Canoga Park</td>
<td>8.00</td>
<td>10.00</td>
<td>12.00</td>
</tr>
<tr>
<td>Mission Hills</td>
<td>15.00</td>
<td>6.00</td>
<td>12.00</td>
</tr>
<tr>
<td>TOTAL</td>
<td>54.00</td>
<td>63.00</td>
<td>53.25</td>
</tr>
<tr>
<td>MEAN</td>
<td>13.50</td>
<td>15.75</td>
<td>13.33</td>
</tr>
</tbody>
</table>
DISCUSSION

Results of the pre-test questionnaire indicated the control and experimental groups approximately equal in knowledge about cancer before the April crusade. After the crusade, analysis of the post-test questionnaire revealed no statistical differences in the knowledge of the control and experimental groups.

Overall findings showed the experimental group scoring higher marks and achieving greater increases than the control sample, but not enough to be significant, according to analysis of covariance and the t-test for independent groups. Thus, the increments of the experimental group could not be attributed to the trained crusader's educational effort. Chance alone may have caused these gains in knowledge.

Statistics also showed no relation between the trained and untrained crusaders in regards to the amounts of contributions collected for the American Cancer Society.
CHAPTER V

SUMMARY AND CONCLUSIONS

This chapter summarizes and concludes the findings in this study.

SUMMARY

The purpose of this study was to plan and implement a training session to instruct volunteer cancer crusaders on how to effectively educate residents in their neighborhoods during the April crusade. Four volunteers, the experimental group, participated in the training meeting of April 16, 1975 and an additional four volunteers, the control sample, participated as controls for the study. A total of 60 pre-test questionnaires from various San Fernando Valley residents were completed and returned to the author for analysis.

Post-test surveys were mailed to the same respondents one month later. A return rate of 50% was reached 30 days later. Statistical analyses were then performed on the data to determine significance.

CONCLUSIONS

Several conclusions about the target population have been formulated from analysis of the pre-test and post-test questionnaires.
1. The control and experimental populations were approximately equal in knowledge about cancer before the April Cancer Crusade.

2. All the respondents were highly knowledgeable about general facts regarding cancer. In fact, several aspects about cancer seemed to have already reached its saturation level.

3. Increases in knowledge on the part of the experimental group on the post-test questionnaire cannot be attributed to the trained cancer crusader's educational effort.

4. Increases in donations solicited by trained crusaders were not significantly different from contributions raised by the control crusaders.
BIBLIOGRAPHY


APPENDIX A
This questionnaire has been designed to assess your knowledge about cancer. Please circle the correct answer. The information you give is confidential and will not be publicized. Your cooperation is greatly appreciated. Thank you.

1. What is cancer?
   a) the abnormal growth and spread of cells
   b) the normal growth and spread of cells
   c) the destruction and death of cells
   d) the spread of differentiated mature cells

2. Who can get cancer?
   a) only the elderly
   b) only the chronically ill
   c) only the physically weak
   d) anyone

3. Are cancers contagious? (Can you catch cancer from another person?)
   a) yes
   b) no

4. Are cancers inherited?
   a) yes
   b) no

5. Cancers are frequently caused by a past injury.
   a) true
   b) false

6. Could a person have cancer without knowing anything was wrong?
   a) yes
   b) no

7. If you detect cancer early, are your chances better for survival?
   a) yes
   b) no

8. Cancer, in its early most curable stage, usually causes no symptoms. But cancer at this stage often can be detected by a physician.
   a) true
   b) false
9. Which of the following cause cancer? (More than one answer can be circled.)
   a) cigarette smoke
   b) chronic irritations
   c) repeated sunburns
   d) alcohol.

10. No matter when it is obtained, the biopsy (tissue sample) provides the only strictly reliable basis for a diagnosis of cancer.
   a) true
   b) false

11. Can some types of cancer be prevented?
   a) yes
   b) no
   If yes, name one type of preventable cancer _______.

12. Which type of cancer is the most common among males? _______.

13. Which type of cancer is the most common among females? _______.

14. How can you protect yourself against cancer?
   a) eat natural foods
   b) have annual physical check-ups
   c) read books on cancer prevention
   d) take vitamins

15. Which are the seven cancer warning signals?
   a) a change in bowel or bladder habit
   b) a sore that does not heal
   c) a pain that does not go away
   d) a weight loss
   e) an unusual bleeding or discharge
   f) extreme fatigue
   g) chronic headaches
   h) an obvious change in a wart or mole
   i) insomnia
   j) indigestion or difficulty in swallowing
   k) a nagging cough or hoarseness
   l) a lack of appetite
   m) a thickening or lump in the breast