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EFFECT OF A HEALTH PROMOTION PROGRAM ON SELF-CARE AGENCY OF CHILDREN

by

NANCY ALFRED COFIELD

A DISSERTATION

Submitted in partial fulfillment of the requirements for the degree of Doctor of Science in Nursing in the School of Nursing in The Graduate School, The University of Alabama at Birmingham

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ABSTRACT OF DISSERTATION
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Title Effect of a Health Promotion Program on Self-Care Agency of Children

The study addressed the effect of a health promotion program on the self-care agency of school age children. The conceptual framework of the study incorporated Orem's (1985) theory of nursing. A Solomon four group design with repeated measures was used in this experimental study. The null hypothesis tested was: There will be no difference between the self-care agency scores of students who participate in the health promotion program and the scores of those students who do not participate in the program. The research question also addressed was: Is there a difference between the first and second self-care agency scores of students who participated in the health promotion program?

The sample included 149 subjects. All subjects were in the seventh and eighth grades in a rural school system. Students, as part of intact classrooms, were randomly assigned to four experimental and four control groups. A pretest was given to two randomly selected control groups and two experimental groups. A series of 10 health promotion classes were taught to the experimental groups.

At the conclusion of the program, all subjects were post-tested. The experimental groups were retested again after 4 weeks. All testing was completed with the Denyes' Self-Care Agency Instrument. Reliability of the instrument for use with the sample in this study was established through a test/retest method ($r = .837$).

Use of the analysis of variance procedure resulted in failure to reject the null hypothesis. Interestingly, in analysis of the six scales for the instrument, the experimental groups scored significantly higher than the control groups on the Attention to Health Scale. Answering the research question, there was no significant difference between the first and second posttest of the experimental groups.

Recommendations included further research be conducted, investigating the effect of health promotion programs on the self-care agency and/or self-care of children in various settings and with different age groups. Finally, longitudinal studies were suggested as a method of augmenting this area of nursing knowledge.

Abstract Approved by: Committee Chairman Elizabeth Stullenbarger

Program Director Elizabeth Stullenbarger

Date 6-1-90 Dean of Graduate School Jerry L Hickey

DEDICATION

My dissertation is dedicated to the two people--two very special people who fostered my dream to become a nurse to the fullest extent I could. When I had doubts, they never did. One of them speaks to me on a regular basis; she still lives in an old house in Alum Bridge, West Virginia. The other one talks to me in my heart; and, he looks down from another Place that he had to go . . .

When I found out, at the age of 12, that I was to be diabetic for the rest of my life, I decided to become a nurse one day, to help people deal with their afflictions. My two greatest fans were my Grandad "Shake" and my Grandma Emma. Many were the times that I tried to quit. They were always there to see that I didn't.

I watched my Granddad "Shake" from the day he first knew I wanted to be a nurse until I was in my first year of college to do just that. If there is poetic injustice in this world, it is in the fact that he died in the same hospital where I began this education. He saw the dream, mine and theirs, in the beginning. My Grandma Emma, from the time she was my 4-H Counselor and taught me to love life through watching birds, is here to see the dream become reality. They were both educators, as I am, and gave me an education that you can't get at any college. From the day

my Granddad bought me my first nursing watch, until my Grandma bought my regalia, I have always known that they would both be there . . . and they are still. They taught me the value of education. They taught me that, although people may die, dreams never do.

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I want to acknowledge the love and support given me by my mother, Davita Kisner, and my step-dad, Charley. My mother taught me one of the most valuable lessons that I could ever have learned. She taught me that when you fall down, all you have to do to succeed is to get right back up and keep trying. I used that lesson to get through many rough times. She and I traveled many roads together over the years. I want her to know that I love her very much. Charley made me come to know another truth from his wheelchair. Now I know that even if a person can't stand up, they can still stand tall. Thank you both.

My father, George Alfred, also supported me throughout my education. He never turned down a chance to help me succeed. I want to thank you, Dad, for everything you've done to help me get to where I am today.

My daughter, and only child, Audra, was a source of inspiration for me. She traveled with me, sorted research forms, and saw me through some trying times. I want to thank her for the help she gave me and for loving me through it all. I love you, Audra, forever.

My Aunt Bobbie, a nurse herself--just like my mom and me, was a tremendous help to me. I appreciate everything she did to make sure that our plans went smoothly. Thanks, Aunt Bobbie, for being there for me.

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There are others who touched my life along the way; but, space not permitting the acknowledgement of them all, allow me to say, "Thanks, I made it."

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CHAPTER I

Introduction

Increasing emphasis is being directed toward health promotion in American society. No longer is the main focus on the treatment of disease. The societal trend is now toward disease prevention and health promotion. As a result of this trend, development of health promotion programs has gained momentum. However, the primary target of these health promotion programs has been the adult population. The focus of this study was to shed light on health promotion programs as they pertain to children.

Significance of the Study

Evolution of health promotion programs for children has not progressed as rapidly as it has for adults. This limited progress for children's programs exists despite the belief that development of health behaviors during childhood may influence health behaviors as individuals mature to adulthood (Bruhn & Parcel, 1982a). In fact, the limited progress in health promotion for children was the impetus for two related colloquia. The recommendations from these two colloquia were to unify data collection on health promotion for children, as well as to apply relevant theories within research of health promotion for children (Bruhn & Parcel).

The need for more clearly stated theoretical bases for health promotion programs has been cited (Timmreck, Cole, James, & Butterworth, 1987). Endorsing this same position, Denyes (1983) reviewed nursing research related to health promotion of school age children and adolescents and found that "collectively, the studies reflected a distressing lack of attention to scholarly study of related empirical and theoretical works" (p. 47).

There is a dearth of literature concerning the long-term effects of health promotion programs initiated during childhood (Nugent et al., 1988; Saunders, 1988). A possible contributing factor to this absence of long-term evaluation of existing programs may be the emphasis on specific health compromising behaviors on which emphasis changes rapidly (Perry, 1984). Another possible factor could be the lack of emphasis on promoting children's understanding of the reasons for health promoting behaviors which may result in transient effects on health performance (Carlyon, 1984; Kalnins & Love, 1982; Pidgeon, 1985).

A potential focus of health promotion programs for children is on enhancement of their self-care agency. Orem (1985) defined self-care agency as "the complex capacity for action that is activated in the performance of the actions or operations of self-care" (p. 31). Furthermore, Orem defined self-care as "the production of actions directed to self or to the environment in order to regulate one's functioning in the interests of one's life, integrated functioning, and well-being" (p. 31). According to Orem,

the existence of one's self-care agency is necessary before self-care can occur. Moreover, the development of self-care agency begins in childhood and continues through old age (Orem). Consequently, health promotion programs which enhance children's self-care agency could have an effect on the health promoting behaviors of children.

Several concepts relevant to self-care agency have been considered within the realm of health promotion for children. Self-management skills of children were implicated as an influence on personal control over lifestyle behaviors of children (Petosa, 1986). Self-reliance also was presented as a learned attribute of children which could promote positive health behaviors (Brown, 1986). In addition, decision-making skills of children have been explored as a significant aspect in developing health promotion behaviors of children (Gantz, 1980; Johnson & Gaines, 1988; Lewis & Lewis, 1982).

In the nursing literature, consideration has been given to the application of Orem's (1985) concept of self-care agency with children's health promotion (Eichelberger, Kaufman, Rundall, & Schwartz, 1980; Facteau, 1980). These authors proposed that self-care agency increases as the child develops, and can be fostered by providing them with appropriate health information.

The related concept of self-care also has been explored via the nursing process. Validation of the usefulness of the concept of self-care in nursing practice was presented by Joseph (1980). Koster (1983) discussed the prerequisites

for self-care of children as being cognition and participation. Hence, self-care and the resulting health behaviors of children have been explored in nursing, as well as self-care agency and health promotion of children. Further, empirical evidence is necessary to strengthen the existing body of knowledge concerning health promotion and the self-care agency of children.

Problem

This study addressed the effect of a health promotion program on the self-care agency of school age children. The findings of this study could support the use of intervention strategies to strengthen health related self-care skills of children.

Null Hypothesis

A null hypothesis was tested through the conduction of this study. The null hypothesis was: There will be no difference between the self-care agency scores of students who participate in the health promotion program and the scores of those students who do not participate in the program.

Research Question

A research question was addressed for this study. The research question was: Is there a difference between the first and second self-care agency scores of students who participated in the health promotion program?

Definition of Terms

The following terms were defined both theoretically and operationally for the purpose of this study.

Health Promotion - Theoretical: activities that increase or maintain one's positive health state. Operational: a health promotion program from the Teenage Health Teaching Module.

Self-Care Agency - Theoretical: the complex capability for action that is activated in the performance of the actions or operations of self-care (Orem, 1985). Operational: total scores on the Denyes Self-Care Agency Instrument (Denyes, 1980).

Conceptual Framework

Within the conceptual framework of this study, health promotion and the self-care agency of children are viewed in a consociational relationship. To demonstrate the bond between these two concepts, health promotion information provided for children must be comprehensive and developmentally sound (Ames, 1982; Farrell, Kettyle, & Lummis, 1984; Igoe, 1988; Natapoff, 1982). Emphasis of the health promotion program which builds decision-making skills should enable children to be actively involved in choices about their health behaviors. This focus on decision-making can influence the development of self-care agency as described by Orem (1985). The ability to make decisions about care of self and to operationalize these decisions could be a sequel to participation in a health promotion program which emphasizes health decision-making in children. Furthermore, one of the propositions about self-care agency is that it is a complex, acquired human characteristic (Orem, 1979). Hence, within the conceptual framework,

development of health decision-making is a desired and expected outcome.

Finally, the retention of knowledge about health promotion is incorporated within the conceptual framework. The ability to acquire knowledge about self-care and to retain and operationalize it is another powerful component of self-care agency which is relevant to this conceptual framework (Orem, 1979). An enduring change of self-care agency is the expected consequence of the health promotion program. Therefore, participation in a health promotion program should increase the self-care agency of children and this positive change in self-care agency should be enduring.

Assumptions

This research is based on some basic assumptions about children and the health behaviors of children. These assumptions are: (a) children are able to perform behaviors which influence health states, and (b) children who develop positive health behaviors during childhood may maintain those behaviors through adulthood (Igoe, 1988).

Summary

A need exists for investigation of health promotion for children. Improved development of the self-care agency of children could influence positive health behaviors of children (Bruhn & Parcel, 1982a; Nugent et al., 1988). This possible positive influence on health behaviors provides impetus for further research related to the nexus of the concepts: health promotion and self-care agency of children.

CHAPTER II

Review of the Literature

The structure of the conceptual framework presented in Chapter I was utilized to guide the review of related research literature. Studies investigating health promotion and health promoting behaviors of children were examined as related to the study. Investigations concerning self-care agency, as defined by Orem (1985) were also examined. Of these studies, those examining self-care agency of children are presented. In addition, research concerning self-care of children was reviewed. The various findings of all the reviewed studies, as pertinent to the study, are presented in this chapter.

Health Promotion

The number of studies investigating health promotion of children is limited. Kieckhefer (1987) studied the perceptions of 71 chronically ill children who had asthma, ranging in age from 9 to 11 years. The study attempted to predict health promotion and illness management behaviors. Custodial parents also were examined within this study. Path analysis indicated that the child's perception of health was not the most significant cause of health promotion or illness management. Age and parental perception of the child's health were found to be significant predictors

of illness management as a component of health promotion. The conclusion drawn from the study suggested that knowledge gained from similar future studies could be useful in designing interventions that could help sustain motivation for health promotion of children.

Denyes (1988) presented the results of tests concerning health promotion of 369 adolescents. The sample consisted of healthy, as well as chronically ill individuals, whose ages ranged from 12 to 20 years. In an attempt to attain accurate measurement of general health status, self-care agency and self-care information were obtained by means of the Denyes' Health Status Instrument, the Denyes' Self-Care Agency Instrument, and the Denyes' Self-Care Practice Instrument. The results indicated that self-care and self-care agency were significant predictors of general health state, with self-care being the stronger predictor. The findings of the study suggest that health can be promoted when nursing care is designed to assist persons to develop and use self-care agency and to engage in self-care.

Related research on health promotion behavior also is relevant to this study. Cox (1985) studied motivation for health behaviors. Through a mailed survey, the Health Self-Determinism Index was completed by 202 randomly selected adults. This index provided four subscales: self-determined health behaviors, perceived competency in health matters, self-determination health judgments, and internal-external cue responsiveness. Four subscales accounted for 56% of the total variance in the measure. The internal

consistency of the four subscales was supported by alpha reliability coefficients of .75, .75, .67, and .69, respectively. The conclusions of the study indicated that, with refinement, the index would enable exploration of client antecedents and correlates of motivation for health behavior. Also, the role of motivation in predicting health behavior could be explored by use of the index.

Another investigation of health promotion behavior was completed by Laffrey (1985). This study was conducted with white adults (N = 95) from randomly selected households of three midwestern suburbs. The Personal Orientation Inventory which had prior established reliability, the Health Conception Measure, and the Health Behavior Choice Scale were used in the study. The Health Conception Measure and the Health Behavior Choice Scale were developed by Laffrey, and construct validity was established prior to use within the investigation. The investigation attempted to explore health behavior choice as related to self-actualization and health conception. The results indicated that health conception was not associated with age, but age was negatively associated with health behavior choice. These findings indicated that, although age did not make a difference in the way health was conceived, the older the participants, the less health promoting were their choices of health behavior. Laffrey concluded that knowing the client's conception of health could assist in understanding health behavior choices and in formulating appropriate health goals.

Petersen-Martin and Cottrell (1987) investigated self-concept, values, and health behavior with 83 college students. The self-concept component of the Index of Adjustment and Values was used to measure self-concept. Personal values of the subjects were measured with the terminal values section of the Rokeach Values Survey. Also, the Martin Index of Health Behavior was developed and used in the study, with validity established by use of a panel of experts. Reliability was documented through a test-retest method. Study results showed a positive correlation between health behavior scores and self-concept scores. The recommendation from this study was to implement studies to determine what motivates health behavior.

Health behavior of sixth-grade children was studied by Ourant (1985). This investigation explored the relation among locus of control, health perception, health behaviors, and participation in a health promotion program. Ourant utilized Orem's (1980) theory of self-care as the conceptual framework for the study. The results indicated that, within this study, there was no significant change in health behavior of the subjects who participated in the health promotion program, nor was there any change in those who did not participate in the program. A limitation of the study, as presented by Ourant, was the possibility of there being insufficient time for health perception and health behaviors to change. Within the study, approximately 2 weeks elapsed after the program and prior to testing. Recommendations included allotting more time between pretesting and

posttesting to allow for changes in health perception and health behavior to occur.

A convenience sample of 37 adolescents with insulin-dependent diabetes mellitus, ranging in age from 11 to 19 years, was studied to investigate their health and illness self-care (Frey & Denyes, 1989). Within this study, universal self-care was measured by the Denyes' Self-Care Practice Instrument. Universal self-care relates to maintenance of life processes, integrity of human structure and functioning, and general well-being (Orem, 1985). Health deviation self-care was tested with the Diabetic Self-Care Practice Instrument. The effects and treatment of genetic and constitutional defects and human structural and functional deviations comprise health deviation self-care (Orem). A measurement of health status was achieved by combining the scores from the Self-Perception Profile for Children and the Denyes' Health Status Instrument. Control of pathology was evaluated by using the value of each subject's glycosylated hemoglobin. Finally, the Brief Symptom Inventory was used to determine health symptoms. All instruments used in the study had reported alpha coefficients which ranged from .73 to .94. Correlation and multiple regression were used to analyze these data. The findings of the study indicate that two distinct types of self-care do exist. Frey and Denyes suggested that the findings may support the explanation that basic conditioning factors do not influence health deviation self-care directly, but do so indirectly, via universal self-care.

Orem included age, sex, developmental state, health state, and conditions of living as basic conditioning factors. Age, sex, birth order, religious participation, and mother's employment outside the home were considered basic conditioning factors in this study.

Lewis and Lewis (1980) completed a descriptive and exploratory study using a child-initiated health system. Of the 350 school age children studied, 15% to 20% of the children never utilized the health services provided, while another 15% used over half of all the services. Findings from the study indicated that the utilization of the health system was significantly associated with: (a) sex (females showed higher incidence of use than did males), (b) ordinal position (first-born and/or only children used the services more frequently), and (c) specific elements of the health belief model. Conclusions of the study suggested further study of children's abilities to initiate self-care were warranted.

A study was conducted by Bruhn and Parcel (1982b) to develop and test a health education curriculum for preschool children, as well as to determine the relationship of parental health variables and the development of children's health behavior. Two hundred two mothers of children 2 to 4 years of age were interviewed to determine if parental health variables were related to their children's reported practice of health and safety behaviors. A questionnaire was administered to the mothers prior to the intervention and again after the first year of the program. The analysis

showed no relationship between health related background variables, mothers' health behaviors, health locus of control, value placed on health, and the children's practice of health and safety behaviors.

Gantz (1980) implemented a health education project with 10-year-old children (N = 60) within a school system. The program was based on Orem's self-care framework and emphasized the student as an active learner and self-care agent. Methods of presentation were used which aimed to assist the students in accepting increasing responsibility for making health decisions. The program was implemented during the entire school year. Although there was no formal evaluation of the program, informal evaluation was documented. Reports from teachers concerning observed positive behavioral changes of the students were reported. These reports spanned a period of 2 years after the students participated in the program. This informal documentation lends support to the lasting positive effects of a health education program on the health behaviors of children.

Another health education program was implemented by Igoe (1982). This program, Participatory and Assertive Consumer Training (Health PACT), was designed to teach children 3 through 18 years of age how to become more knowledgeable about their health care. Age-appropriate teaching methods were used with the children within the school health clinic. Igoe stated that health-wise children will learn to take more responsibility for their health as

they grow older. The program emphasized five basic rules:

> (a) talk to the health professional; (b) listen and learn from the health professional; (c) ask questions of the health professional; (d) decide, with the health professional, what to do about the health problem or how to meet a health related goal; and (e) do what was decided on (Igoe, 1982, p. 99).

The results of the program indicate that children can assume responsibility for health care effectively.

Goodwin (1978) conducted a limited evaluation of the Health PACT program with fifth grade students in three Colorado school districts. Using a posttest only design, Goodwin tested subjects who had participated in the Health PACT program. The findings of the study indicated that the program could positively influence the child's attitudes about health and health care.

Another study evaluating the effectiveness of Health PACT, after 3 1/2 years, was conducted by Stember (1988). The purpose of the study was to investigate the extent to which Health PACT positively influenced children's knowledge, attitudes, and behavior about health and health consumer roles. Quantitative, qualitative, and integrative methodologies were used in the study. Some of the findings indicate that gender and grade level influence children's health perceptions. Implications for health care delivery included fostering child participation in health care visits and promoting a mutual participation model (Stember).

Hubbard and Young (1988) conducted a study to determine whether participation in the Teenage Health Teaching Module (1982) health promotion program affected health knowledge,

attitudes, and practices of participants. Subjects for the study were junior and senior high school students (N = 491). Three groups were used: a Teenage Health Teaching Module treatment group, a textbook group, and a control group. A testing instrument was developed and field-tested prior to use in the study. Subjects were tested at the beginning and again at the end of one semester. Results indicated that both types of health education increase health knowledge and attitudes of the subjects. In addition, the subjects exposed to the Teenage Health Teaching Module showed significant positive changes in health practices. These results indicate that the Teenage Health Teaching Module can be effective in health promotion. Conclusions included suggestions for increased administrative support for programs of health instruction.

Self-Care Agency

Measurement of self-care agency in adolescents was the purpose of the instrument developed by Denyes (1980). The works of several developmental theorists, as well as the work of Orem (1971), were used as a major basis to identify the components of self-care agency. A convenience sample of 14- to 18-year-old adolescents was studied to establish reliability of the instrument. Six factors of self-care agency in adolescents were identified as: (a) ego strength and health decision-making capability, (b) valuing of health, (c) health knowledge, (d) physical energy levels, (e) feelings, and (f) attention to health. Positive correlations were reported among these six factors and measures

of self-care practices and health status. Denyes' effort resulted in a reportedly valid and reliable instrument which measures self-care agency.

Another study concerning self-care agency was conducted by Moore (1987). Moore investigated self-care agency, locus of control, and autonomy. A convenience sample of 92 fifth grade students was used in the pretest-posttest control group design. The three instruments used were: Personal Autonomy Scale, Denyes' Self-Care Agency Instrument, and Parcel's Children's Health Locus of Control Scale. All instruments were pilot tested prior to the study to establish reliability and validity. The autonomy and self-care agency tools were revised for use in this study. Moore did not report what type of revisions were made regarding these tools. The results of this study supported a positive relationship between autonomy and self-care agency, as well as a significant correlation between these two variables. A positive relationship between autonomy and locus of control was found with pretesting, but not with posttesting. In this study, promoting autonomy was shown to promote self-care agency.

A study previously mentioned in relation to health promotion, Denyes' (1988) study, also presented results of tests of Orem's (1985) theory. The Denyes' Self-Care Agency Instrument was utilized with these samples to measure Orem's concept of self-care agency. The total scale alpha coefficients for the Self-Care Agency Instrument of the aggregate data set used in this research ranged from .87 to .89.

The results of these studies, with an aggregate sample of 369 adolescents, indicated that self-care and self-care agency were significant predictors of health. The concept of health was viewed as a general positive state of integrity and soundness, not merely the absence of disease. The significance of the relationship of self-care and self-care agency as health predictors was evident when this holistic definition of health was utilized. The results of the combined research indicated that health can be promoted when nursing care is designed to assist in the development of self-care and self-care agency.

Blazek and McClellan (1983) investigated the effects of self-care instruction on locus of control in 42 fifth graders. The study focused on whether there was a difference in locus of control between those children who received self-care instructions and those who attended a health discussion group. Parcel's Children's Health Locus of Control Scale was used as both a pretest and a posttest. The subjects were randomly selected and assigned to either the experimental group or the control group. The conclusions of this research suggested that participation in self-care instruction can increase the extent to which children view health event outcomes as being due to their actions. A possible limitation of this study--not reported by Blazek and McClellan--was the use of "gain scores" only in determining the results of the study.

Rew (1987) studied 89 children with asthma who attended a residential camping program. One focus of the study was

to assess the relationship between self-care behaviors, age, sex, health locus of control of the child, health locus of control of the mother, and health locus of control of the father. Another focus of this study was to determine whether self-care behaviors of the children changed from pre-camping experience to post-camping experience. The instruments used within this study were the Health Locus of Control Scale, the Children's Health Locus of Control Scale, and the Children's Self-Care Behaviors Instrument. The therapeutic camp experience was used as the intervention in this correlational pre-post intervention designed study. Implications from the results of the study included that self-care behaviors: (a) do increase with age, (b) vary with child's sex (females in this sample exhibited more self-care behaviors than did males), and (c) are positively related to the health locus of control of the child's parents.

Ingersoll, Orr, Herrold, and Golden (1986) investigated self-management and its relation to cognitive maturity among adolescents with insulin-dependent diabetes mellitus. Self-management in this study was presented as congruent with self-care. Adolescents were sequentially recruited from an adolescent diabetes clinic. Subjects included 41 clients, ages 12 to 21 years. A set of psychologic, behavioral, and achievement instruments designed to evaluate the use of self-management were administered. The results revealed that the more cognitively mature adolescents were, the more likely they were to perceive themselves as being in control

of their illness. Also, self-adjustment and metabolic control were found to be related to cognitive maturity. Ingersoll et al. suggested that, from the results of the study, assessment of cognitive maturity may be of value in determining the adolescent's ability to assume responsibility for self-care.

The purpose of the research conducted by Clements (1985) was to examine the relationship between the level of knowledge of the child with diabetes and the self-care activities practiced by the child. Another purpose of Clements' research was to determine if there was a relationship between age, sex, or duration of diabetes with self-care activities and level of knowledge. The sample was obtained from a camp for children with diabetes. The 72 subjects ranged from 8 to 15 years of age. The self-care and level of knowledge checklist were developed by Clements. These instruments had alpha levels of .92 and .72, respectively. A significant relationship was found between children's self-care and level of knowledge scores. No significant relationship was found between age, sex, or duration of diabetes and self-care. Clements' recommendations included further research needed to be conducted to correlate self-care and level of knowledge of diabetic children.

Schorfheide (1985) explored the relationship of reported self-care practice, parental motivation for self-care, and health locus of control of diabetic children and their families. The sample consisted of 90 Type I diabetic

children and their mothers or surrogate mothers. Findings suggested that parental motivation was a significant predictor of self-care for diabetic children. Age also was a significant predictor of self-care; however, internal health locus of control was not.

A comparison study of physically disabled and non-disabled children was conducted to study children's perceptions of self-care (Kruckenberg, 1980). Thirty disabled and 30 non-disabled children participated in the study. The ages of the subjects ranged from 9 to 16 years. The children were matched on the basis of age, sex, grade level, and attendance in the same school district. A modified form of the Exercise of Self-Care Agency Scale was administered to the subjects and their mothers. Results revealed that there was no significant difference between the perceptions of disabled children or the perceptions of children who were non-disabled. In addition, the mothers' perceptions of the self-care abilities of the subjects were measured. Again, this comparison indicated no significant difference between the perceptions of the mothers in the two groups. Conclusions of the study suggested that the instruments developed by Kruckenberg and used in the study may not have been sensitive enough to reflect existing differences between the two groups.

Stashinko (1987) investigated the relationship between self-perceptions of competence and self-care behaviors in 119 children in the third grade level. The instruments used in this study included a modified version of Stullenbarger's

(1984) pictorial Q-Sort Instrument and Harter's Self-Perception Profile for Children. In addition, children's views of health, health behavior, and personal responsibility for health were assessed during a taped interview. Results revealed that behavioral conduct was a small, but significant predictor of self-care behavior in the sample. Self-worth was the strongest predictor of self-care behavior in boys; whereas, scholastic competence was positively correlated with self-care in girls.

Description of self-care abilities of young school age children was the purpose for development of a Q-analysis instrument by Stullenbarger (1984). The study included 18 children at the third grade level and 13 children at the second grade level. Content validity of the instrument was established through use of expert judges. A test-retest method was used to establish reliability. The Q-type factor analysis completed by the subjects revealed three person types. Type I and II persons were described by negative responses. Recommendations by Stullenbarger included further study of the influence of age, race, sex, and developmental status on self-care abilities, as well as continued use of the Q-technique with children.

Summary

The review of research revealed that limited numbers of studies have been focused on health promotion of children. Some studies investigated the health perceptions of chronically ill children and predictors of health promotion behaviors of adolescents (Denyes, 1988; Frey & Denyes,

1989; Kieckhefer, 1987). Various psychological factors were investigated as predictors of health promotion behaviors by other authors (Cox, 1985; Laffrey, 1985; Peterson-Martin & Cottrell, 1987). The implementation of a program designed to enhance children's health decision-making was evaluated and found to need modifications to impact on children's health behaviors (Goodwin, 1978; Igoe, 1988; Stember, 1988). One study conducted by Ourant (1985) found no difference in health perceptions of subjects after participation in a health promotion program. Other studies implementing health promotion programs for children lacked substantial evaluation of results (Bruhn & Parcel, 1982b; Gantz, 1980; Lewis & Lewis, 1980).

Research concerning self-care agency and self-care of children was varied in approach of investigation. School age children were studied to determine whether certain psychological factors were linked with self-care (Blazek & McClellan, 1983; Moore, 1987; Rew, 1987; Stashinko, 1987). Two investigators developed instruments, to measure the self-care agency of adolescents (Denyes, 1980), and the self-care of children (Stullenbarger, 1984). Investigations of the self-care abilities of chronically ill children yielded varied results (Clements, 1985; Ingersoll et al., 1986; Schorfheide, 1985). Kruckenberg (1980) compared the self-care of disabled and non-disabled children and did not find a significant difference. Thus, after reviewing the available research, there seems to be a lack of research related to the effects of health promotion programs on the

self-care agency of children. Research in this area is indicated to supplement the available data concerning health promotion of children and self-care agency.

CHAPTER III

Methodology

The expansion of empirical knowledge for nursing must be founded in nursing theory. This study is based on a conceptual framework which incorporated Orem's (1985) theory of nursing. Furthermore, this study was conducted in an attempt to increase nursing knowledge about health promotion and its effect on self-care agency of children. The methodology of the study is presented in this chapter.

Design of the Study

An experimental approach utilizing a Solomon four group design with repeated measures was used within this study. The independent variable was the participation in a health promotion program. The total score of subjects on the Denyes Self-Care Agency Instrument was the dependent variable. Eight groups, comprised of four experimental groups and four control groups, were used within the study. Two of the experimental groups and two of the control groups randomly selected were pretested to measure self-care agency. The remaining groups were not pretested. All four experimental groups participated in the health promotion program. The program was given during a 2-week period of time. The first posttest was administered to all subjects immediately after the conclusion of the health promotion program with

the experimental group. A subsequent administration of the posttest to the experimental groups occurred again after 4 weeks. This design was chosen to strengthen the significance of the findings by evaluating the endurance of changes in self-care agency over time (Burns & Grove, 1987).

Null Hypothesis

This study tested one null hypothesis. This null hypothesis was: There will be no difference between the self-care agency scores of students who participate in the health promotion program and the scores of those students who do not participated in the program.

Research Question

A research question was also addressed. The research question was: Is there a difference between the first and second self-care agency scores of subjects who participate in the health promotion program?

Subjects

The sample for the study was selected from a single county school system in rural, central West Virginia. All subjects were enrolled in the seventh and eighth grade health classes in one middle school. All students in the seventh and eighth grades from the entire county attended this school. Assignment of classrooms to either control or experimental groups was accomplished by use of a random numbers table. Each intact classroom had from 15 to 25 students. The study included four experimental and four control groups. This provided a sample of 149 subjects.

Procedure

Permission from the Institutional Review Board of The University of Alabama at Birmingham was obtained prior to conducting the study. Also, permission from the County Board of Education, as well as from the designated school in which the program was presented, was secured.

The study was introduced and explained to all seventh and eighth grade students enroled in health classes, as well as to the faculty teaching and instructing the classes. Consent forms (Appendix A) were sent home with the subjects to be completed by the student and a parent or guardian. All study data were coded and maintained in a securely locked place under the direct and sole supervision of the investigator, thereby assuring confidentiality of the subjects' responses.

The administration of the Denyes' Self-Care Agency Instrument as a pretest was completed within the school setting. The pretests were administered by the investigator and two of the health instructors. Written instructions were used by the investigator and the two health instructors for presentation to all groups to assure uniformity of directions. The two experimental and two control groups, chosen at random, participated in the testing. All subjects being pretested were in their assigned classrooms. The testing required from 20 to 35 minutes. After the pre-testing was completed, the presentation of the health promotion program was given to the four experimental groups by the investigator.

Presentation of the health promotion program was the independent variable in this study. A series of educational programs was taught during a 10-day period. These programs ranged in length from 20 to 40 minutes. The health promotion program materials utilized in this study were from the Teenage Health Teaching Module (THTM) (1982), produced by the Education Development Center, Inc. of the Centers for Disease Control in Atlanta, Georgia. The modules from which components were presented include: "Health is Basic"; "Understanding Growth and Development"; and "Living with Feelings" (see Appendix B for objectives of the 10 classes). The investigator completed training for presentation of these modules in an attempt to maintain the quality of the program (see Appendix C for letter of verification). The presentation methods of the programs included teaching techniques such as: (a) small group discussions, (b) role playing, (c) brain-storming (d) didactic interaction, (e) individual decision-making, (f) individual goal-setting, and (g) individual goal-evaluation. Students signed an attendance list for every session. Subjects had to be present for 6 of the 10 sessions to remain in the study. This attendance was deemed adequate because each session was initiated with a review of content completed in previous sessions. The length of each session was from 20 to 40 minutes. At the conclusion of the health promotion program, all subjects participated in posttesting. These posttest scores served as the dependent variable within the study. After a time lapse of 4 weeks, the same posttest was again

administered to the four experimental groups. This time lapse of 4 weeks was arbitrarily selected as a sufficient time to allow for possible change in acquired health promotion attitudes and/or behaviors. This subsequent posttesting enabled the investigator to determine if there was a difference between the final posttest score and the initial posttest score of the subjects in the experimental groups.

Instrumentation

In this study, one instrument was used both for pretesting and posttesting. This instrument was the Denyes' Self-Care Agency Instrument. As previously mentioned, Denyes (1988) utilized an aggregate sample of 369 subjects, ranging in age from 12 to 20 years, to investigate general health status, self-care agency, and self-care. The total scale alpha coefficients for the Self-Care Agency Instrument with this aggregate data set ranged from .87 to .89 (Denyes). In Denyes' (1980) initial study to develop the Self-Care Agency Instrument, internal consistency, as well as test/retest and alternate forms reliability were documented.

Data on self-care agency in this study were obtained from responses to the 42-item, self-reporting Denyes' Self-Care Agency Instrument. The first seven questions on the instrument are demographic in nature, requesting information concerning age, sex, grade in school, siblings, and health problems. The next 32 questions require answers to be stated on a scale of 0 to 100. The final three questions

request responses via any number the subject wishes to give. Clear instructions are given to indicate the change in the format for answering these last three questions. Denyes (1980) divided the Self-Care Agency Instrument into six subscales. These were: Scale 1 - Ego Strength and Decision-Making Capability; Scale 2 - Relative Valuing of Health; Scale 3 - Health Knowledge and Health Decision-Making Experience; Scale 4 - Physical Energy Levels; Scale 5 - Feelings; and Scale 6 - Attention to Health. To obtain scores for the instrument, four specified items must first be recoded due to the fact that these items are negatively stated. The scale scores are then derived by obtaining a mean score for each scale. The four recoded items previously mentioned are recoded in obtaining the scale scores as well as the total score. The last three items on the instrument are deleted when obtaining the total score, due to the fact that they are answered in a variant manner. Thus, the total score is arrived at by deletion of the first seven items (demographics), the deletion of the last three items (Health Value questions answered in a variant manner), and then obtaining a mean for the remaining 32 questions, including the four recoded responses. In this study, if a subject omitted one or more items, the mean was obtained for the involved total and/or scale scores by dividing by the number of items answered. This method would not affect the mean score for the scale or the total; therefore, the investigator deemed it appropriate for the study.

Analysis

The hypothesis for the study was: There will be no difference between the self-care agency scores of students who participate in the health promotion program and the scores of those students who do not participate in the program. This hypothesis was tested by using the analysis of variance procedure. This analysis was used to determine if there were differences in the total scores on the self-care agency instrument between the experimental and the control groups. The research question was: Is there a difference between the first and second self-care agency scores of subjects who participated in the health promotion program? Testing for the research question also was completed through use of the analysis of variance procedure. Again, this method was used to determine differences between the first posttest scores and the second posttest scores.

The alpha level was set at .05 for this study. In this type of behavioral research, .05 is an appropriate level of significance (Hinkle, Wiersma, & Jurs, 1979; Kerlinger, 1973). In selection of this level of significance, the consequences of acceptance or rejection of the hypotheses were considered and deemed acceptable (LoBiondo-Wood & Haber, 1986).

Limitations

Potential limitations of the study included difficulty in controlling all variables which might influence the health promotion concepts and self-care agency of the subjects. Another limitation of this study may have been the

inability to generalize results to all subjects in the seventh and eighth grades. In addition, the limited number of males within the sample could be a limitation of this study.

CHAPTER IV

Findings

This study addressed the need for further research to support the idea that health promotion education for children can influence their self-care agency. The null hypothesis was: There will be no difference between the self-care agency scores of students who participate in the health promotion program and the scores of those students who do not participate in the program. The research question addressed was: Is there a difference between the first and second self-care agency scores of subjects who participated in the health promotion program? A Solomon four group design with repeated measures was utilized in this experimental study. The initial sample for the study (N = 149) was seventh and eighth grade students in a rural middle school. Description of findings of the study are elaborated within this chapter.

Description of Subjects

Initially, 149 seventh and eighth grade students participated in the study. These students were enrolled in a rural school system in which all county students attend a single middle school. The subjects, as members of intact classrooms, were randomly assigned as either seventh or eighth graders to control or experimental groups. The

sample included 130 females and 19 males. Subjects' ages ranged from 12 to 16 years of age. Table 1 provides a description of the class composition of the control groups. Table 2 depicts the same information for the experimental groups. The random assignment of groups resulted in a smaller number of subjects in the control groups than in the experimental groups. In addition, no males were part of the classes assigned to the experimental groups.

Supplemental information obtained from subjects included birth order, number of siblings, and history of health problems. The range of birth order and number of siblings for both the control and experimental groups is presented in Table 3. The distribution of only children was 9% for the control groups and 7% for the experimental groups. Subjects who were first-born comprised 42% of the control groups and 37% of the experimental groups. In Table 4 are the responses given by subjects to the question on the Denyes' Self-Care Agency Instrument which asked for information concerning anything they felt were health problems. In the control group, 29% indicated that they had self-reported health problems. Within the experimental groups, 25% indicated they had health problems. Table 5 provides aggregate data of self-reported health problems for both the control and experimental groups. This information identifies what the subjects considered health problems. The experimental group, having more subjects, also had more health problems stated.

Table 1

Demographic Data for Control Groups

Control Group Number	Number of Subjects	Sex	Grade Level	Age				
				12	13	14	15	16
1	18	F	7	14	4			
2	14	F	7	7	7			
3	11 7	M F	8	7	9		2	
4	8	M	8		4	3		1
Totals	58	F (39) M (19)	7 8	28	24	3	2	1

Table 2

Demographic Data for Experimental Groups

Control Group Number	Number of Subjects	Sex	Grade Level	Age				
				12	13	14	15	16
1	25	F	7	16	18	1		
2	19	F	7	12	6	1		
3	25	F	8		14	8	1	2
4	22	F	8		11	10	1	
Totals	91	F (44)	7	28	39	20	2	2

Table 3

Ranges of Birth Order and Siblings for All Groups

Group Type and Number	Range of Birth Order	Range of Number of Siblings
Control #1	1-3	1-3
Control #2	1-8	0-8
Control #3	1-5	0-4
Control #4	1-3	0-4
Experimental #1	1-8	0-8
Experimental #2	1-5	1-9
Experimental #3	1-6	0-9
Experimental #4	1-8	0-8

After the first posttesting of the entire sample, the sample size was reduced to 124 subjects. Resulting composition and reasons for deletion within the control groups is provided in Table 6. Sample mortality resulted in 46 control group subjects. Subjects were deleted if comparison scores were not available. Table 7 depicts the same information for the experimental groups. For the first posttesting, 78 experimental group subjects were retained.

A second posttest was administered to the experimental groups 4 weeks after the initial posttesting. For the second posttest, 80 subjects participated. Information describing the experimental group's composition for the second posttest is provided in Table 8.

Table 4

Subjects' Report of Health Problems

Group Type and Number	Number of Subjects	Health Problems	
		Yes	No
Control #1	16	9	7
Control #2	14	4	10
Control #3	18	2	16
Control #4	7	1	6
Total	55*	16	39
Experimental #1	25	10	15
Experimental #2	18	5	13
Experimental #3	25	5	20
Experimental #4	20	2	18
Total	88**	22	66

*Subject response totals for the control groups = 55 plus 3 absent
**Subject response totals for the experimental groups = 88 plus 3 absent

Analysis of the Data

Hypothesis

There will be no difference between the self-care agency scores of students who participate in the health promotion program and the scores of those students who do not participate in the program. Testing of this null hypothesis was accomplished by use of the analysis of variance procedures. The level of significance for the study was

Table 5

Self-Described Health Problems of Entire Sample

Group	Self-Described Problems	Number of Subjects Reporting Health Problems
Control	Vision problems	7
	Allergies	6
	Asthma	3
	Braces on teeth	1
	"Tailbone problem"	1
	Knee problem	1
	Rheumatoid arthritis	1
Experimental	Allergies	8
	Asthma	5
	Headaches	2
	Overweight	2
	Back problem	1
	Difficulty resting	1
	Absence of toes on one foot	1
	Arthritis	1
	Ear problems	1
	Anemia	1
	Stomach problems	1
	"One kidney"	1
	Heart murmur	1
	Vision problems	1
	Problem with knees and ankles	1

Table 6

Concluding Status of Control Groups

Control Group Number	Number of Subjects	Sex	Grade Level	Age					Number Deleted	Reason Deleted From Study	Reason Deleted From Posttest
				12	13	14	15	16			
1	16	F	7	13	3				2	Absent for post-test and not pre-tested	
2	11	F	7	5					2	Moved residence	
									1		Absent for posttest and pretested
3	12	M(5) F(8)	8		6	4	3		4	Withdrew	
									2		Absent for posttest and pretested
4	7	M	8	3	2	1	1		1	Absent for post-test and not pretested	

n = 46

Table 7

Status of Experimental Groups After First Posttest

Experimental Group Number	Number of Subjects	Sex	Grade Level	Age					Number Deleted	Reason Deleted From Study	Reason Deleted From First Posttest
				12	13	14	15	16			
1	22	F	7	14	6	1			3		Absent for posttest
2	18	F	7	11	6	1			1	Absent from posttest and not pretested	
3	18	F	8		14	8	1	2	7		Absent for posttest
4	20	F	8		10	9	1		2	Absent from posttest and not pretested	

n = 78

Table 8

Status of Experimental Groups for Second Posttest

Experimental Group Number	Number of Subjects	Sex	Grade Level	Age					Number Deleted	Reason Deleted From Study	Reason Deleted From Second Posttest
				12	13	14	15	16			
1	24	F	7	15	8	1			1		Absent
2	13	F	7	9	3	1			1	Absent first posttest	
									1		Absent
3	23	F	8	14	7	1	1		5		Absent
4	20	F	8		10	9	1				

n = 80

predetermined at the .05 level. Use of the analysis of variance procedure resulted in failure to reject the null hypothesis because the difference between means was not at the .05 level of significance. Table 9 provides data concerning the related findings on the first posttest.

Further analysis was completed with the Solomon four group design, as several comparisons to determine the effect of the experimental treatment can be made. This design involves conducting the study twice; once with pretests, and once without pretests (Ary, Jacobs, & Razavieh, 1985). Therefore, analysis of the experimental and control groups which participated in the pretesting was completed. No significant difference between the total scores of these groups was found. In Table 10, the information obtained by use of the analysis of variance procedure is provided.

Analysis of the experimental and control groups which were not pretested provided further data regarding the null hypothesis. No significant difference was found between the total scores of these groups. Table 10 provides the information obtained through use of the analysis of variance procedure.

Research Question

Is there a difference between the first and second self-care agency scores of subjects who participated in the health program? The analysis of variance procedure was used to answer this question. In Table 11, data were provided concerning the findings for the first and second posttest of the experimental groups. Analysis of these data revealed

Table 9

Comparison of Total Scores of Control and Experimental Groups On First Posttest

Group	DF	SS	MS	F*	N	Mean	SD
Between Group	1	406	406	2.31			
Within Group	121	21312	176				
CFT					46	69.12	13.36
EFT					78	72.87	13.22

*Not significant at the .05 level
CFT = Control First Test
EFT = Experimental First Test

Table 10

Comparison of Total Scores of Non-Pretested and Pretested Control and Experimental Groups On First Posttest

Group	N	Mean	SD	F*
P-CFT	23	69.04	15.27	.27
P-EFT	39	70.94	13.20	
N-CFT	23	69.19	11.48	2.93
N-EFT	38	74.85	13.12	

*Not significant at .05 level
P-CFT = Pretested Control First Test
P-EFT = Pretested Experimental First Test
N-CFT = Non-pretested Control First Test
N-EFT = Non-pretested Experimental First Test

that there was not a significant difference between first and second posttest means of total scores for the experimental groups. Therefore, scores had no significant change form the first and the second posttesting.

Supplemental Analysis

In addition to the total score, six scale scores also are produced with the Denyes' Self-Care Agency Instrument. In analysis of these scale scores, Scale Six, Attention to Health, was found to have a significant difference between control and experimental groups after the first posttest. Table 12 presents data on the analysis of the six scale scores after the first posttest. The mean of the experimental groups was significantly higher on Scale Six than that of the control groups.

Table 11

Comparison of Total Scores of First and Second Posttest for Experimental Groups

Group	DF	SS	MS	F*	N	Mean	SD
Between Group	1	169	169	1.04			
Within Group	156	25319	162				
EFT					78	72.86	13.13
EST					80	74.93	12.34

*Not significant at the .05 level
EFT = Experimental First Test
EST = Experimental Second Test

Table 12

Comparison of Control and Experimental Groups on Scale 6 of First Posttest

Group	N	Mean	SD	F*
CF6	46	55.97	16.60	6.29
EF6	78	64.75	19.96	

*Significant at the .05 level
CF6 = Control First Scale 6
EF6 = Experimental First Scale 6

The scale scores for the first and second posttest of the experimental groups were analyzed using the analysis of variance procedure. Results revealed no significant difference in the scale scores between the first and second posttest of the experimental groups. Also, an analysis of the scale scores for the experimental and control groups which were pretested revealed no significant differences between groups. The findings of the analysis of the pretest and experimental and control groups are consistent with data obtained on the pretested groups.

Interestingly, with analysis of the scale scores of the experimental and control groups which were not pretested, the Attention to Health Scale was significantly different at the .05 level between these groups. Comparison of these data is provided in Table 13. This finding is divergent from the findings on the total scores for the non-pretested groups.

Table 13

Comparison of Non-Pretested Control and Experimental Groups on Scale 6 of First Posttest

Group	N	Mean	SD	F*
N-CF6	23	54.97	13.38	4.19
N-EF6	38	65.75	22.99	

*Significant at the .05 level
N-CF6 = Non-Pretested Control First Scale 6
N-EF6 = Non-Pretested Experimental First Scale 6

Further analysis combining the pretested and non-pretested experimental groups was conducted. Use of analysis of variance revealed no significant difference between the total scores of these groups. This finding indicated that the experimental groups exhibited no measurable difference as a result of pretesting. Analysis of the scale scores on this same group also revealed no significant difference between the pretested and the non-pretested experimental groups.

A final analysis was performed with the pretested and the non-pretested control groups. No significant difference was found on the total scores of these groups. The scale scores for these groups also were analyzed. The pretested and non-pretested control groups' scale scores also revealed no significant difference.

To determine reliability of the Denyes' Self-Care Agency Instrument for use with the sample in this study, the

test/retest method was used with control groups. Analysis of the total scores of the control groups which were pretested and posttested was completed. A Pearson correlation coefficient was obtained (r = .837). This finding supports the stability of this instrument for this sample because the control groups did not participate in the health program; re-testing was completed after a 2-week time period between the pretesting and posttesting; and scores remained constant for the pretest and the posttest.

Summary

Chapter IV presented demographic information about the sample and the findings. Analysis of the data were presented for the hypothesis and the research question. The hypothesis failed to be rejected; the research question was answered with no difference in first and second posttesting. Supplemental analysis was also provided on the scale scores which indicated significance of the scale six score. Finally, reliability data were presented for the Denyes' Self-Care Agency Instrument for the sample of the study.

CHAPTER V

Conclusions, Discussion, and Recommendations

Investigating the effect of a health promotion program on the self-care agency of seventh and eighth grade students was the problem addressed in this study. Determining whether changes in self-care agency of subjects who participated in the health promotion program were enduring also was examined. The design employed for the investigation was a Solomon four group experimental design with repeated measures. Findings of the study included higher total scores for subjects in the experimental groups after the first posttest than for subjects in the control groups. However, this increase was not statistically significant; therefore, the null hypothesis was not rejected. The research question was answered with no significant dif- ference in the first and second posttest scores for subjects in the experimental groups.

Conclusions

Results of the study relevant to the null hypothesis resulted in failure to reject this hypothesis. There was no significant difference between self-care agency scores of the control and experimental groups. A single scale score, Attention to Health, was determined to be significantly

different for the experimental group than for the control group. The research question was answered with no significant difference found between the first and second posttest of the experimental group. This findings is contingent on the slight changes of means for the self-care agency scores of the experimental groups.

Based on the findings of the study, conclusions related to the hypothesis included:

1. Subjects who participated in the health promotion program were not significantly different on scores of self-care agency than subjects who did not participate in the program. In view of the sample size within this study and the use of the Solomon four group design, the clinical significance of the finding could be uncertain. This design allows for information from the pretest/posttest procedure, as well as from the non-pretested groups to be incorporated into findings (Ary et al., 1985). The small size of some experimental and control groups could have reduced the power of the analysis.

2. Subjects who participated in the health promotion program had significantly different scale scores on the Attention to Health scale (Scale 6) than did subjects who did not participate in the program. Content of the health promotion program presented in this study could have influenced the subjects' scores on the Attention to Health scale. Repetitive information on health attitudes was a strong component of the program. However, another strong component of the program was health decision-making. Two related

scales, Ego Strength and Health Decision-Making Capability Scale, and Health Knowledge and Health Decision-Making Experience Scale (Scales 1 and 3, respectively) did not show any difference between the control and experimental groups. Thus, conclusiveness of this finding is not evident.

3. Subjects who were pretested in the control and experimental groups had no significant difference in total or scale scores. Subjects who were not pretested in the control and experimental groups had no significant difference in total scores. However, subjects not pretested in the experimental group had a significant difference on the scale score Attention to Health; whereas, the non-pretested control groups did not. These conclusions indicate that the health promotion program did not have a measurable effect on the experimental group. However, the mean for the experimental group was higher than the mean for the control group. Thus, a question does remain concerning the clinical significance of this finding.

4. Subjects in pretested and non-pretested experimental groups had no significant differences in total and scale scores. This also was found with the comparison of the pretested and non-pretested control groups. These findings lead to the conclusion that pretesting did not have an influence on the scores of the sample.

The following conclusions related to the research question include:

1. There was no significant difference in scores from the first and second posttesting of the experimental group.

This result indicates that the increase in scores from pretesting to first posttesting was retained for the second posttesting. Within the limitations of significant findings of this study, the level of self-care agency scores was retained.

2. There was no significant difference in scale scores from the first to the second posttest. This finding shows further support than any change in self-care agency scores was retained, if indeed these changes occurred.

Discussion

Relation of Results to Conceptual Framework

Health promotion and self-care agency of children were presented in the conceptual framework of this study as having a consociational relationship. A proviso to demonstration of this relationship was that the health promotion information be developmentally sound and comprehensive (Ames, 1982; Farrell et al., 1984; Igoe, 1988; Natapoff, 1982). Within this study, the program presented satisfied these prerequisites. The program also focused on decision-making which Orem (1985) described as influencing self-care agency. The results of this study did not indicate a significant change in self-care agency after participation in a health promotion program. However, the increase of the means of the total scores for the experimental groups was higher than for the control groups. The limited size of some experimental and control groups may have contributed to the lack of statistical significance of this finding.

A significant difference on the Attention to Health Scale with the experimental and control groups may be linked with the comprehensive nature of the program concerning health. As previously mentioned, the two scales, Ego Strength and Health Decision-Making, and Health Knowledge and Health Decision-Making Experience, did not show significant differences for subjects who participated in the program and those who did not participate. The emphasis on health decision-making within the program and the lack of effect on scores for these two scales causes questions regarding the lack of differences with these scales.

A final component of the conceptual framework is the retention of knowledge about health promotion which results in an enduring effect on self-care agency. Orem (1979) defined a power component of self-care agency which describes retention and operationalization of knowledge about self-care. Findings of the study support this concept because total and scale scores of the experimental groups remained stable from the first to the second posttesting. This is only supported if the difference of means between the control and experimental groups is truly a valid indication of the effect of the health promotion program.

Relation of Results to Review of Research

Previous studies about health promotion for children have indicated, without stringent statistical analysis, positive changes in health behaviors and attitudes of children who participated in health promotion programs (Gantz, 1980; Igoe, 1982; Lewis & Lewis, 1980; Stember,

1988). The findings of this study are consistent with those previous studies. Results of this study indicate a change in mean scores of self-care agency for the experimental groups, but not at a statistically significant level. The increase in the means of total scores for experimental groups at a slightly higher level than for the control groups was not enough to reject the null hypothesis. Another finding of this study that corresponds with the previously mentioned studies is the significant difference in the Attention to Health scale between the experimental and control groups. This finding may indicate that some effect on self-care agency may have occurred in relation to the health promotion program.

The findings of the study which support the enduring effects on self-care agency of the health promotion program are contingent upon the existence of a change in self-care agency scores. Studies that investigated and reported long-term effects of health promotion program did not reflect robust results (Gantz, 1980; Igoe, 1982; Stember, 1988). Therefore, the results of this study also are in accordance with previous studies. As with cited studies, the significance of the results perhaps should be considered for clinical significance as well as statistical significance.

Several components of the demographic data obtained in this study are congruent with previous studies. The sample for this study was predominantly female. Prior studies indicated that health perceptions may be influenced by sex, with females having more positive perceptions than males

(Lewis & Lewis, 1980; Stember, 1988). In this study, the slight positive changes found would be similar to those of previous studies.

Studies which investigated perceptions of chronically ill children reported that these children did not vary significantly from well children (Clements, 1985; Frey & Denyes, 1989; Ingersoll et al., 1986; Kieckhefer, 1987; Kruckenberg, 1980; Schorfheide, 1985). In this study, 73% of the subjects reported no existing health problems, while the remaining 27% reported at least one existing health problem. The previous studies indicated that health perceptions may not be a significant factor in health behaviors of children. Therefore, the distribution of subjects with self-reported health problems or no health problems within this study conforms with previous studies.

A final possible influence on findings was the number of first-born and only children within the study. Lewis and Lewis (1908) reported that firstborn and only children participating in a health program more frequently demonstrated positive health behaviors than did other children. Within this study, 9% were only children and 40% were first-born children. Therefore, this demographic factor may have influenced results by increased participation rates within the study.

Explanation of Results in Terms of Sample and Extraneous Variables

Within this study, the sample was predominantly female. Of the 149 subjects, only 19 were male. No males were part

of the randomly assigned experimental groups. A previous study indicated that females participate more frequently in health programs (Lewis & Lewis, 1980). Therefore, the results of this study could be influenced by the composition of the sample.

During the time span for presentation of the program, many more students were absent due to illness than normally reported. This observation was supported by a reported 15% increase in absenteeism during the study's initiation and implementation as compared with absenteeism for the prior month.

A possible influence on the findings of this study could have been a lack of incentive for some subjects, usually produced by the grading system within schools. Some of the participants may have completed instruments and/or participated in the program with less than optimal attention due to this fact. If this indeed occurred, scores could have been affected.

Another consideration to be explored regarding the findings of the study may be the length of the program. This factor may have been insufficient to create a measurable change in self-care agency. An additional consideration is that the time span allotted within this study prior to measurement of self-care agency could have been insufficient. More time allotted for internalizing knowledge gained through the health promotion program could be necessary to measure accurately changes in self-care agency.

A final extraneous factor which may have influenced sample size was the coexisting concern of the community about a proposal to implement education concerning AIDS in the county school system. The investigator participated in telephone conversations with four parents prior to initiation of the research, in order to dispel concerns that the study to be conducted was related to the concurrent controversy about AIDS education for middle school students. This issue could have negatively influenced participation in the study.

Recommendations

Recommendations, derived form the findings, conclusions, and discussion are as follows:

1. Further research investigating the effect of health promotion programs on the self-care agency of children is needed to extend this area of knowledge.

2. Replicating this study in various settings could substantiate the evidence that positive effects on self-care agency can be produced by health programs for children.

3. Conducting studies within environments in which participation is self-motivated, such as church or scouting organizations, could provide another sample with which to compare findings.

4. Conducting similar studies in urban settings could also strengthen the ability to generalize findings and conclusions of this research topic.

5. Implementating similar studies with different age groups, especially younger children, could extend findings to other aged children.

6. Age-appropriate health promoting programs could be presented and self-care and/or self-care agency measured with instruments designed for the younger child.

7. Using the six scale data obtained with the Denyes' Self-Care Agency Instrument as part of research hypotheses could provide more definitive information. This type of research might link one or more areas related to the scales with participation in health promotion programs.

8. Implementing longitudinal studies in which self-care agency scores of subjects who participated in health promotion programs would be obtained over a 1- to 3-year period could provide data to support or refute the permanence of positive influences on self-care agency of children.

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Appendix A

Information Sent Home to Parent or Guardian

Dear Parent or Guardian,

My name is Mrs. Nancy Cofield. I am conducting a study at the school as part of finishing my Doctoral Degree in Nursing. I am a licensed Registered Nurse and I am the Chairperson of the Nursing Department. This study will help determine how well children use self-care (their ability to take care of their health). In order to tell if the health promotion program does make a difference in the children's ability to take care of their health, half of the students will participate in the health promotion programs and half will not. All students will have an equal chance of being assigned to the group that participates in the program as they will be randomly assigned. Every student will have the unique opportunity to learn about research and be an important part of the study.

I ask that you sign both of the consent forms and allow your child to participate, because health is so very important. Let me tell you what is involved.

There are no risks involved for any child. The study will take place during regular school hours and no other time is needed at all. There is no homework involved, and the program is not graded, so it will not affect your child's grade in any way. All this program does is measure what children know about health and help them learn more about how to take care of their health. The children really have a lot of fun and gain much knowledge from this program.

Please sign both copies of the consent form and send one copy to school with your child tomorrow. Thank you very much for your support.

If you have any questions at all, please call me at _____.

Thanks again!

Sincerely,

Mrs. Nancy Cofield

P.S. Please be sure to sign both copies of the consent form and keep one for yourself. Send the other one with your child tomorrow.

CONSENT FORM

I understand that my child is being asked to participate in a study to determine if participation in a health promotion program will effect his/her self-care (the ability to take care of health related activities). This study will take place within the school during scheduled school days. No other additional time will be necessary for participation in this study. The study will be completed by Mrs. Nancy Cofield as part of her requirements for completing a doctoral degree in nursing from the University of Alabama School of Nursing, University of Alabama at Birmingham. Mrs. Cofield is a resident of _____ County and is the Chairperson of the _____ Nursing Department.

The study will begin with half of the students taking a brief test on self-care. This will require approximately 35 minutes. The health promotion program will be presented in 10 class sessions of 50 minutes each. Half of the students will participate in the program at the beginning of the study. The health promotion program is produced by the Education Development Center of Centers for Disease Control at Georgia. Objectives for reach of the 10 sessions are attached. At the conclusion of the study, all students will complete the test on self-care, and then again in 4 weeks.

There are no risks involved in this study. This program will not be graded, and therefore will not effect the students' grades. Benefits of participation in the study could be increased knowledge concerning health promotion.

I understand that the information gathered during this study will be kept confidential. In addition, I understand that I am free to withdraw my consent for my child to participate in the study at any time without any negative consequences.

If I have any questions about the study, Mrs. Nancy Cofield will be glad to answer them. Mrs. Nancy Cofield's phone number is _____.

I have received a copy of the consent form. My signature below indicates that I agree to the participation of my child in this study.

_____ _____
Signature of Parent or Guardian Date

I, _____ have agreed to participate
Name of Child

in the study "The Effect of a Health Promotion Program on the Self-Care Agency of Children."

_____ _____
Signature of Child Date

_____ _____
Signature of Principle Investigator Date

Appendix B

Objectives for Health Promotion Program

Objectives for Health Promotion Program

Session I: Health is Basic

Students will be able to:

1. Define health.
2. Explain the concept of health tasks.
3. State the importance of health in their lives.

Session II: Understanding Growth and Development

Students will be able to:

1. State understanding of self responsibility for health.
2. Describe how one's physical appearance affects how he or she feels about himself or herself.
3. Distinguish between those physical characteristics that people can work on to change if they wish and those that essentially cannot be changed.
4. State understanding that everyone is different.
5. State acceptance of physical flaws, real, or imagined in themselves and others.

Session III: Understanding Growth and Development (continued)

Students will be able to:

1. Demonstrate desire to manage their lives to improve physical, mental, emotional, and social health.
2. Set short-range goals for personal health improvement that could become part of a long-range effort.

3. Select and schedule specific behaviors and strategies for accomplishing their goals.

Session IV: Understanding Growth and Development (continued)

Students will be able to:

1. Assess their progress toward goals they have set for themselves and reward themselves for accomplishments.
2. Plan long range goals for assuming responsibility for their health.

Session V: Understanding Growth and Development (continued)

Students will be able to:

1. Describe some characteristics of children's thought processes.
2. Describe some of the qualities of adolescent thought.
3. State understanding of how they think differently now from the way they did when they were younger.
4. State understanding of the expanding capacities of their minds.

Session VI: Living with Feelings

Students will be able to:

1. Identify a range of feelings in themselves.
2. Cite examples of how feelings affect behavior.
3. Explain how feelings motivate behavior.
4. State acceptance of a wide range of feelings as natural.

Session VII: Living with Feelings (continued)

Students will be able to:

1. Distinguish between positive and negative ways of handling feelings.
2. List ways to cope with angry feelings.
3. State understanding that coping with feelings involves choosing among different behaviors.
4. Identify various positive coping strategies for use in their own lives.

Session VIII: Living with Feelings (continued)

Students will be able to:

1. Recognize at least three or four alert signals of depression.
2. List people, memories, and events that provide a sense of pleasure in their lives.
3. State understanding that feelings of happiness, joy, and affection may also be difficult to express.

Session IX: Living with Feelings (continued)

Students will be able to:

1. Identify at least two strategies for helping others cope with feelings.
2. List the important elements of active listening.
3. State understanding that helping others is part of life and contributes to a personal sense of well being.

Session X: Living with Feelings (continued)

Students will be able to:

1. Identify typical feelings that can be obstacles to self acceptance.
2. Cite steps that can be taken to help overcome obstacles of self acceptance.
3. State understanding that accepting one's feelings leads to self acceptance.
4. State understanding that it is possible to change feelings about oneself.

Appendix C

Letter of Verification

The University of Alabama at Birmingham
School of Education
Department of Health Education and Physical Education
205/934-2446 Telex 888826 UAB BHM

August 1, 1989

Nancy Cofield
Box 81
Rennys Mobile Court
Buckhannon, WV 26201

Dear Nancy:

I am glad you were able to attend the teacher training workshop for the Teenage Health Teaching Modules. This training is designed to facilitate proper implementation of the Modules.

Good luck with your research for your doctoral degree.

Sincerely,

Charlotte M. Hendrick

Charlotte M. Hendricks, H.S.D.
Assistant Professor

GRADUATE SCHOOL
UNIVERSITY OF ALABAMA AT BIRMINGHAM
DISSERTATION APPROVAL FORM

Name of Candidate Nancy A. Cofield

Major Subject Maternal Child Health Nursing

Title of Dissertation Effect of a Health Promotion Program on the Self-Care Agency of Children

Dissertation Committee:

Elizabeth Stullenbarger, Chairman   Paul E. McArdle

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Ann Sirles

Director of Graduate Program Elizabeth Stullenbarger

Dean, UAB Graduate School Terry L Hickey

Date

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