PERCEPTIONS OF SUSCEPTIBILITY TO HEALTH PROBLEMS AND ANXIETY IN CHILDREN

A THESIS

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CHAPTER 1

INTRODUCTION

A life style that fosters good health and avoidance of chronic disease problems benefits society as a whole as well as the individual. It is well accepted that changing adult habits and living patterns is a difficult thing to do. Logically, were the child to grow into the type of adult who practices positive health behaviors, the difficulty of trying to alter living patterns could be diminished.

The motivation for human behavior is a very complex subject as is the motivation for health behavior. An attempt to explain health behavior is exemplified by the health-belief model. This model has been shown to have some application toward understanding health behaviors primarily of adults but also to some extent with children. The more that health care givers and educators can learn about health behaviors, the better equipped they will be to supply meaningful intervention. Investigating the development of health behaviors in children could supply some key starting points for the health education that would produce those children with positive living habits.

Problem of Study

The problem of this study was to determine the relationship between perceived susceptibility to health problems and general level of anxiety in children.

Justification of Problem

Forty percent of all adult deaths in the United States are due to chronic disease problems related to cancer, heart disease, and stroke. The development of some of the risk factors related to these and other disease conditions (death and/or disability from auto accidents, alcoholism, venereal disease) falls squarely upon individual living habits and personal misbehaviors. Over 99% of persons are born healthy and made sick as a result of personal misbehavior and environmental conditions. Therefore, prevention of disease means forsaking the bad habits which many people enjoy -- overeating, too much drinking, taking pills, staying awake late at night, engaging in promiscuous sex, driving too fast, and smoking cigarettes (Knowles, 1977).

As stated by Knowles (1977), the United States spent more on health in absolute terms and as a percentage of the gross national product (GNP) than any other nation in the world -- from $39 billion or 5.9% of the GNP in 1965 to $120 billion or 8.3% of the GNP in 1975. Knowles (1977)

related that

> The greatest portion of our national expenditure goes for the caring of the major causes of premature, and therefore preventable, death and/or disability in the United States, i.e., heart disease, cancer, strokes, accidents, bronchitis and emphysema, cirrhosis of the liver, mental illness and retardation, dental caries, suicide and homocide, venereal disease, and other infections. (p. 75)

By forsaking some of the bad habits related to the diseases and/or conditions just named a vast amount of this country's resources could be saved.

Actually, avoiding the development of bad habits in the first place would be superior to trying to change later in life. The difficult and sometimes expensive programs for weight reduction and smoking and alcohol consumption cessation that are flourishing now are examples of the difficulty in changing adult living habits.

> The recognition that adult chronic disease factors can be easily identified in childhood, and that they are largely the result of lifestyle habits (i.e. cigarette smoking, poor eating habits and lack of exercise) acquired early in life, has led many to the conclusion that the primary prevention of chronic disease must begin with children. (Williams, Carter, Arnold, & Wynder, 1979, p. 505)

Williams'et al. (1979) study of children in the sixth through eighth grades revealed children with one or more of the five risk factors for coronary heart disease: 26% had one risk factor, 6% had two risk factors, and 1% had three or more, equaling a total of 36%. Through the "Know Your Body" project, Williams (1980) stated results of a

nutrition program that involved 106 school age children who were 20% or more over their ideal weight. In the program 51% of the intervention group actually lost weight. That would indicate, given the right approach at the right time with the identified "at risk" group, actual changes can be made. These changes of life style at an early age can help prevent the young "at risk" child from becoming a chronically ill adult.

The very acceptance by an individual of the fact that he may indeed be susceptible to or to some degree at risk for developing a particular disease or condition is one of the major constructs of the health-belief model (Rosenstock, 1966). In this model, perceived susceptibility has appeared to have greater value than other variables in predicting a variety of health behaviors (Kegeles, 1963; Kirscht, Haefner, Kegeles, & Rosenstock, 1966; Rosenstock, 1974). This construct in relation to children has been studied for many years by Gochman (1970). He found children's perceptions of vulnerability to illness and accidents to show stability and consistancy. Gochman also found that generally the concept was inversely related to perceived internal control (Gochman, 1971) and self-concept (Gochman, 1977). Additionally, he has found evidence that perceived susceptibility is directly related to age and the greater differentiation that goes

along with increasing age (Gochman, 1972a; 1981). He suggested that further research is needed to discover the determinants of perceived susceptibility to health problems, such as to what degree its roots lie in other personal characteristics like self-concept, personal and family health experiences, or anxiety (Gochman, 1981).

Williams' et al. (1979) "Know Your Body" program is an example of utilizing the concept of perceived susceptibility. The children received their own records that illustrated to them their personal risk factors. If discovering a certain level of risk was integral in their developing a certain amount of anxiety, then identifying those levels of risk in indiviudal or groups of children could be helpful. Possibly different methods of nursing intervention might be developed to foster an appropriate level of anxiety, that level of anxiety which would not hinder positive action.

Conceptual Framework

The framework used for this study is that of the health-belief model (Rosenstock, 1966). The model was developed as a possible explanation of health behaviors, by persons who were interested in why people use health services. Rosenstock stated,

> the goal of understanding and predicting behavior should appropriately precede the goal of attempting to persuade people to modify their health practices ... Efforts to modify behavior will ultimately be more successful if they grow out of an understanding of causal processes. (p. 94)

The variables of the model are of two general types: a person's psychological readiness to act and the extent to which a particular course of action is believed to be beneficial in reducing the threat. Readiness to act is divided into two major concepts: perceived susceptibility and perceived seriousness. Perceived susceptibility "refers to the subjective risks of contracting a condition" (Rosenstock, 1966, p. 99). Perceived seriousness refers to the extent that the person feels the condition will effect him physically, socially, psychologically, or economically.

The perceived benefits of taking action are counterbalanced by any barriers that may be present. Barriers that may exist could be cost of the action or procedure, convenience or accessibility, pain of the procedure, and anxiety or fear.

> The person's belief about the availability and effectiveness of various courses of action and not the objective facts about the effectiveness of action, determines what courses he will take. In turn, his beliefs in this area are doubtless influenced by the norms and pressures of his social groups. (Rosenstock, 1966, p. 100)

Perceived susceptibility has been shown to be a critical determinant of health behavior (Rosenstock, 1974) and indeed

may be of greater value in predicting some health behaviors. Gochman has been studying perceived susceptibility primarily in children since 1967. He has found evidence that among children and young adults perceived susceptibility can be seen as a consistent personality characteristic with those persons seeing themselves as highly likely to encounter one illness or health problem also seeing themselves as similarly likely to encounter others (Gochman, 1970).

Perceived susceptibility to health problems could be considered a remote danger and, therefore, be among those things which cause fear of anxiety in persons. Sarason, Davidson, Lighthall, Waite, and Ruebush (1960) conceptualized anxiety as conscious danger signals associated with external danger and unconscious contents and motivations. Herein lies the association of anxiety and one's perception of susceptibility to health problems.

Assumptions

The assumptions of this study were:

1. The variables of the health-behavior model are applicable to children.
2. Health behaviors have their beginnings in childhood.
3. Perceived susceptibility to health problems is a remote danger and therefore a fear of children.

4. There is an association between health behaviors and anxiety.

Hypothesis

The hypothesis of this study was: there is a positive relationship between perceived susceptibility to health problems as measured by the Health Problem Expectancies Questionnaire and anxiety as measured by the General Anxiety Scale for Children in children in the fourth through sixth grades.

Definition of Terms

Terms defined for this study were:

1. Perceived susceptibility to health problems--referred to how likely the child feels he is susceptible to certain health problems as measured by the total score exhibited on the Health Problem Expectancies Qeustionnaire (Gochman, 1970).
2. Anxiety--referred to "conscious danger signals associated not only with an external danger but also with unconscious contents and motivations" (Sarason et al., 1960, p. 6) as measured by the total score obtained on the General Anxiety Scale for Children.

Limitations

The limitations of this study were:

1. Small sample size.
2. Lack of randomization due to use of a convenience sample.
3. Influence of previous experiences with health problems.
4. The greater amount of defensiveness often exhibited by males in answering questions about anxiety or fear.
5. The fact that the anxiety scale was adapted from a scale developed with all male college students and may, therefore, show some bias toward males (Sarason et al., 1960).

Summary

Chapter one has presented the justification and conceptual framework to support investigating a relationship between perceived susceptibility to health problems and anxiety. Also presented were the assumptions, hypothesis, definitions, and limitations. Chapter 2 will review the literature of factors affecting children's health beliefs, and anxiety and health behaviors. Chapter 3 will present the procedure and collection of data for this study. Chapter 4 will analyze the resulting data. Chapter 5 will summarize the study and discuss the

outcomes as related to implications for nursing and further research.

CHAPTER 2

REVIEW OF LITERATURE

This chapter will discuss factors influencing children's health beliefs. Social factors of of parental and societal influences will be reviewed as well as developmental aspects. The concept of perceived susceptibility to health problems will be discussed with a review of two programs that exemplify the use of the concept of perceived susceptibility with children, anxiety, and health behaviors. Lastly, literature relating anxiety and health behaviors in children will be reviewed.

Factors Affecting Children's Health Beliefs

Over the past 30 years social scientists and clinicians have steadily contributed to the literature describing the health-related beliefs and behaviors of adults. A recent consolidation (Cummings, Becker, & Maile, 1980) of the variables cited in 14 models proposed by major contributors identified six factors: 1) access to care, 2) evaluation of care by patients, 3) perceptions of symptoms and threat of disease, 4) social network characteristics, 5) knowledge about disease, and 6) demographic characteristics. During this same time period

the literature on the development of children's health-related beliefs and behaviors has been quite limited. "Less than a dozen investigators have published more than a single study concerned with these phenomena" (Lewis & Lewis, 1982, p. 87).

Social Factors

Mechanic (1964) in an exploratory investigation studied mothers' influence upon children's health attitudes and behaviors. He found that even though mothers' attitudes and behaviors were indeed important factors in molding children's patterns of illness behavior, those maternal influences appeared not to be as great as anicipated.

Children's concept of illness was examined through interviews with children and their mothers (Campbell, 1975). Those interviews revealed that both children and mothers used similar themes to define illness. Yet, within mother-child pairs, a specific child's concept was not likely to resemble that of his parent.

The effects upon children's health behaviors by child rearing methods was investigated by Pratt (1973). This researcher found that the methods she identified as developmental methods which used reasons, rewards, and autonomy also helped to develop the child's resources and

and capacities for coping and taking care of himself.

Whether parents imparted their health knowledge to their children was examined by Campbell and Early (1969) and replicated in 1972 by Coleman, Burkhardt, and Highfill. The original study population was middle-to-upper income families and the replication was done with underachievers and their parents. There was no apparent relationship in health knowledge between either group of young adults and their parents. The findings might indicate that there is a failure of parents, in general, to disseminate health knowledge to their children (Coleman et al., 1972).

Campbell's (1978) interviews with children who were short-term inpatients and their mothers clearly showed that the children's perceptions of their sick-role were associated with their ages and sex roles. Significantly, their perceptions were also related to parental socio-economic status indicators.

A study of poor black inner city and upper middle class white fourth graders showed differences in attitudes (Marshall, Hassanein, Hassanein, & Paul, 1970). Whether the apparent differences were due to ethnic or socio-economic influences was not able to be determined. The study showed white children to have more positive attitudes toward health personnel and health institutions while being more apprehensive about sickness. The black

children, on the average, were less concerned about sickness and held more positive attitudes about themselves. Somewhat in contrast to the previous study, Lewis and Lewis (1980) found during interviews with children

> some evidence...that children from different ethnic backgrounds held similar views about the casues of illness, and that there seemed to be some 'homogenization' of their belief systems. (p. 147)

Lewis and Lewis (1974) looked at the impact of television commercials on health-related beliefs. Forty-seven percent of their sample of fifth and sixth graders accepted all commercial "messages" related to health as true. The proportion of those accepting all "messages" was higher among children from lower socioeconomic backgrounds. Additional findings showed personal experience and parental modeling of products or activities increased the credibility of the messages.

Developmental Factors

Intellect and cognitive deveopment increase with age. A number of studies exemplify the influence of that development upon health-related beliefs. Porter (1974) looked at children's perceptions of their internal body parts. She found that perceptions did, in some areas, become more sophisticated with increasing age and that children generally knew considerabily more than previous studies (Gellert, 1962; Tait & Ascher, 1955) had indicated.

Likewise, Campbell (1975) noted age-linked intellectual development and health experiences contributed to more sophisticated adult-like definitions of illness.

Bernstein and Cowan (1975), while examining children's concepts of how people get babies, found that sex information is not simply taken in by children. This material is transformed to the child's current cognitive level following a Piagetian developmental sequence. Natapoff (1978) also found cognitive developmental trends in her study of children's ideas about health. Her open-ended interviews of 264 first, third, and seventh graders revealed age to be the one significant variable. The 12 year olds expressed more abstract ideas like mental health, feelings, and considering parts and wholes simultaneously. Younger children were more concrete in their conceptions citing specific health practices/activities.

Palmer and Lewis (1976), prompted by the question as to whether children felt more or less vulnerable to certain medical events at different ages, interviewed children in the first, third, and sixth grades. They found that

> the higher the grade, the greater the increase in discrimination between ill and injured states, and the greater the awareness of and reliance on body cues in a decision to seek care. (Palmer & Lewis, 1976, p. 401)

Palmer and Lewis suggested that preventative health behaviors can be taught to third graders and that health

care decision-making with interventions appropriate for the developmental stage of the child.

Perceived Susceptibility

According to the health-belief model, perceived susceptibility is a critical determinant of health behavior (Rosenstock, 1966). Gochman has been the most prolific investigator into the health beliefs of children, specifically that of perceived susceptibility to health problems. In his studies, Gochman (1970) found perceived susceptibility to have stability and consistency. He stated that

> At an early age, children begin to acquire a perceptual pattern of health problem expectancies that remains stable over time, at least through 16 years of age, and is apparently not contradicted by subsequent experience or growth. (Gochman, 1970, p. 72)

Additionally, certain positive personal characteristics have an inverse relationship to perceived susceptibility. Gochman (1971) found that those children with more positive self concepts (Gochman, 1977) demonstrated lower levels of perceived susceptibility to health problems.

In a study of predicting intention to see a dentist, Gochman (1972b) found a significant set of predictors. Perceived susceptibility to health problems, perceived benefits attributed to visiting the dentist, and previous experiences of dental trauma were generally significant predictors; yet, they were even better predictors among

children for whom health was more important than appearance. The importance of health does seem to mediate the decision to take positive action in behalf of one's own health. Gochman (1971) commented, "One of the more disturbing observations in the study was the relatively minor degree to which health was salient for these respondents" (p. 153).

> ...a legitimate question can be raised about the importance of health not only to the youngsters in this study but to the adults into whom they will develop, as well as the contemporary adult population of middle class Americans. (Gochman, 1971, p. 154)

Gochman pursued a developmental explanation of perceived susceptibility and found support for the hypothesis of a direct relationship between these phenomena. As the child gets older, he is able to show a greater ability to differentiate experiences and likewise expectancies to health problems as well as susceptibility to those problems (Gochman, 1972a). His studies have revealed evidence that perceived susceptibility can be interpreted as a consistent personality characteristic in children and young adults. Health beliefs, being among those beliefs developed early in life, are highly unlikely to change as readily in later childhood as they might at much earlier ages (Gochman, 1981).

Child-initiated Care Program

The "Child-initiated Care" program integrates much of the information about children's health beliefs and behaviors and the health-belief model. The program was developed and instituted by Lewis and associates (Lewis, 1974; Lewis, C.E. & Lewis, M.A., 1980; Lewis, C.E., Lewis, M.A., Lorimer, & Palmer, 1977). The conceptual framework of the study "combines work in cognitive developmental psychology, social learning theory, and the social psychological research leading to the health-belief model" (Lewis, C.E. & Lewis, M.A., 1980, p. 145). The model views the child as having a set of perceptions with regard to health-related events and a cognitive store of information.

Children aged 5 to 12 years were involved in this project. They were completely free to initiate their own contact with the school nurse. The children filled out a "care card", left a portion of it with the teacher, and went directly to the nurse's office whenever they had a health problem they could not solve.

At the point of the intervention, the child either formulated the options or assisted in their formulation and then chose the alternative he wanted to use to solve the problem. The operational principles of the intervention were: 1) involvement of the child in the decision-making

would be limited to problems and situations where there was no threat to the health and welfare of the child; 2) value judgments would not be attached to different patterns of use; and 3) all visits were considered to be necessary from the point of view of the child (Lewis et al., 1977).

The children were questioned before the institution of the "care card" system, at the end of the first year, and at the end of the second year. The questions in the instrument explored: 1) the child's knowledge and experiences related to health-illness, 2) perceived health status (vulnerability), 3) perceived severity of problems, 4) perceived value of care, 5) use of the sick role, and 6) cognitive style (locus of control) Lewis, et al., 1977).

The results of the study showed that utilization of services by the children was quite similar to that of adults. Fifteen to 20% of the children (mostly boys) never went to see the nurse in two years while 15% of the children (all biologically healthy) used over half of the services (Lewis, C.E. & Lewis, M.A., 1980). Those children who were the high users exhibited greater perceived susceptibility and perceived benefits of care, more commonly used the sick role, had poor self concepts, and seemed to have problems in making decisions in general, not just about the use of health services. A direct

outcome of this program was the development of a curriculum of health education that focuses on decision-making, self-reliance, body cues, and balanced living.

Know Your Body Program

"Know Your Body" is a behaviorally oriented chronic disease prevention education program. The original study involved children 11 to 14 years old (Williams, Arnold, & Wynder, 1977). The findings led the investigators to do an adaptation of the same study in 5 and 6 year old first graders.

Each child was screened for risk factors of chronic disease. Tests included total blood cholesterol, Harvard Step Test: Recovery Index, height/weight, blood pressure, and skin fold thickness as well as an interview of smoking and alcohol use and health habit survey. Each child's personal results with comparisons to normal values were recorded in a "health passport" and given to him. Innovative activities of the health education curriculum were then instituted.

Part of the program aimed at preventing and/or reducing smoking was directed toward teaching life skills. It included topics on self image, decision making, advertising techniques, coping with anxiety, communication skills, dating skills, and assertiveness training as well

as myths and realities of cigarette smoking. A similar program directed toward weight reduction utilized behavior modification techniques. The approach focused on respect for one's body, responsibility for one's own health, mature decision making, and evaluation of risks and benefits. The results of a 15 week program showed that 51% of the students lost weight.

Results of the three component program including assessment of risk factors, receiving results, and educational intervention showed that children can be motivated to assume responsibility for their own future health and modify their life styles in the direction of reducing risk of disease (Williams et al., 1977).

Anxiety and Health Behavior

One of the concepts often discussed in association with health and illness behavior is that of anxiety. Rosenstock (1966) conceptualized anxiety as a possible barrier to taking health action. He postulated that high levels of fear or anxiety may render the individual incapable of thinking objectively or behaving rationally about the problem, regardless of the solutions offered. Gochman (1977) related

> accumulated research evidence suggests that high levels of anxiety facilitate the learning of simple tasks, but impede more complex learning. Moderate levels of anxiety, while not facilitative of simple learning, do facilitate more complex learning. (p. 119)

A comparative study of children's worries (Orton, 1982) looked at worries of children in 1939 with contemporary children. On a series of 62 items, girls and boys in 1939 ranked "getting sick" 4th and 10th, respectively. "Getting sick" did not even appear in the top ten ranks of the contemporary children.

In the "Know Your Body" project there was concern that receiving one's own screening results could be anxiety producing. To assess that notion an anxiety inventory was administered before and after the children received their test results. In both age groups--5 to 6 and 11 to 14 year olds--there was no substantial difference in anxiety scores. The change that was observed was in the direction of decreased anxiety (Williams, Carter, Wynder & Blumfield, 1979; Williams, Carter, Arnold, & Wynder, 1979).

The anxiety producing nature of dental intervention has led to the development of an assessment measure of situational anxiety in young children (Venham & Gaulin-Kremer, 1979). The self-report measure is a picture selection test utilizing stylized drawings in pairs. The test proves to be a useful tool for persons interested in

assessing young children's responses to stressful situations.

Conceiving of perceived susceptibility as an anxiety-like state was confirmed by Gochman (1977). He suggested further research looking at perceived susceptibility and anxiety (Gochman, 1981). Wright (1980) also used the health-belief model in an attempt to relate children's anxiety and predicting future dental health behavior. He assessed dental anxiety specifically and also illness anxiety by using the Illness Anxiety Scale developed by Brodie. He found that neither type of anxiety provided an estimate of future dental behavior. He did find that these anxieties of children operated through a complex interplay of variables.

Brodie (1974) examined the views of healthy children toward illness to possibly enhance knowledge of the source of anxiety that children exhibit toward illness. She developed the Illness Anxiety Scale which addresses: 1) the child's perception of illness as punishment, 2) the child's perception of his parents' reaction to his illness as a form of parental displeasure, and 3) the child's perception that illness is a disruptive force in his life. Brodie used the General Anxiety Scale for Children (Sarason et al., 1960) to identify the anxious child in order to determine whether anxious children had

a higher level of anxiety about illness than nonanxious children. The results demonstrated a significant direct correlation between high scores on the General Anxiety Scale for Children and the Children's Illness Anxiety Scale. The correlation held true for all ages -- first, fourth, and fifth graders. Brodie (1974) suggested that those findings could indicate that "children viewed as being anxious may possess quite distorted views of illness (p. 1158).

Summary

This literature review has illustrated the interrelatedness of factors influencing perceived susceptibility to health problems in children. Development of the concept of perceived susceptibility involves intrapersonal, interpersonal, and extrapersonal influences. Two programs incorporating perceived susceptibility, anxiety, and health behaviors were discussed. Additionally, literature relating anxiety and health behavior in children was reviewed.

CHAPTER 3

PROCEDURE FOR COLLECTION AND TREATMENT OF DATA

Alterations in the variables of perceived susceptibility and anxiety have occurred in the natural course of the child's development, therefore, limiting this study to a nonexperimental, descriptive-correlational study (Polit & Hungler, 1978). An objective of this study was to add to a description of the relationship between perceived susceptibility to health problems and anxiety.

Setting

The setting was the classrooms of the fourth, fifth, and sixth graders of a small private Catholic school in a suburban area of the Southwest. The total enrollment of the school was approximately 235 students. Of these students, 82 were in the fourth through sixth grades.

Population and Sample

The population was that of all fourth, fifth, and sixth graders without chronic illnesses enrolled in the school. There were 26 fourth graders, 26 fifth graders, and 30 sixth graders. Of these 82 children, 43 children comprised the sample. The sample included those children,

both boys and girls, who chose to participate and had their parent's consent, therefore, making this a convenience sample.

Protection of Human Subjects

This study was reviewed and approved by the Human Subjects Review Committee of Texas Woman's University (Appendix A). Agency approval to conduct this study was obtained (Appendix B). Approval from the Graduate School to conduct the study was received (Appendix C). A letter explaining the study with two attached consent forms (Appendix D) was sent home for parents' approval of their children's participation in the study. Parents who allowed their children to participate signed the two copies, keeping one and returning one to the teacher. The returned consent forms were given to the researcher.

Assurance of confidentiality and anonymity was included in a oral explanation (Appendix E) given to the children as well as in the written permission letter. The answer sheets were coded and the data was reported as group data. There was little or no risk involved with participation in this study and those involved may have benefitted by a heightened awareness of their own feelings or ideas about health or health problems.

Instruments

Perceived susceptibility to health problems was measured by the Health Problem Expectancies Questionnaire (HPEQ) (Gochman, 1981) (Appendix F). Permission to use this instrument was obtained from Gochman (Appendix G). This instrument asks children to respond to a series of fifteen expectancy-type questions related to health and eight additional filler items dealing with social, family, and athletic activities. The general form of the questions is: "What chance is there of your getting the flu during the next year?" Children are instructed to choose one response from the seven that best expresses what they feel their chance might be. The choices and the scoring of each item are as follows: no chance = 1; almost no chance = 2; a small chance = 3; a medium chance = 4; a good chance = 5; almost certain = 6; certain = 7. The score on each of the fifteen health expectancy questions is added to provide the "perceived susceptibility to health problems" raw score. The possible range of raw scores is 15 to 105. The raw score is then converted to show the level on the 7-point scale that is represented by the raw score.

The instrument has proven to be reliable in terms of internal consistency (Gochman, Bagramian, & Sheiham, 1972).

Gochman's (1981) recent study showed odd-even *r*'s of .66 and .68 ($p < .0001$) in the third and seventh grades respectively and a subsample showed reliability in terms of stability with a test-retest *r* of .82.

Anxiety was measured by the General Anxiety Scale for Children (GASC) (Appendix H) developed by Sarason et al. (1960). Permission to use this instrument was obtained from Sarason (Appendix I). This tool is a forty-five question survey of simple questions to which the child answers either "yes" or "no". Positive answers indicate anxiety. For the purposes of this study this instrument was scored: yes = 1; no = 0. The scores on each question were added to give the child's anxiety score. The possible range of scores was 0 to 34.

Imbedded in the GASC is an 11 item lie scale. This scale includes questions 4, 8, 12, 16, 20, 25, 29, 33, 37, 41, and 45. The correlations between the lie score and the general anxiety score ranged from -.40 to -.66. The developers of the GASC included a lie scale with the purpose of identifying those persons who might attempt to misrepresent themselves by answering in such a way as to appear more or less anxious than they actually are. The latter is termed "defensiveness". Sarason et al. (1960) found scores for boys on the GASC to be generally lower than those of girls. Those results suggested that boys

reflect greater defensiveness about admitting to anxiety rather than lower levels of anxiety. Sarason et al. (1960) also considered another factor which could account for some of the difference in the scores between boys and girls; the scale taps areas of anxiety that are more pertinent to boys, thus eliciting greater defensiveness. Sarason et al. (1960) stated

> The fact that the content of our children's scales was in part determined by the content of the scales used successfully with college students, 'who were all males' undoubtedly served to restrict the 'sample of anxieties' from which we drew our items for use with children. (p. 258)

The demographic tool at the beginning of the HPEQ (Appendix F) was used to specifically describe the sample and allow for differential analysis of the data. This tool obtained information about sex, age, and grade in school.

Data Collection

All children enrolled in the fourth, fifth, and sixth grades took home to their parents the letter explaining the study and two consent forms (Appendix D). The signed forms were returned by each child whose parents gave permission to participate to his/her teacher within 1 week. On a prearranged day the researcher came to the school to administer the questionnaires. The teachers took the children who had not received permission to

participate out of the room. The oral explanation of the study was given to those remaining students. They were reminded that they need not participate if they did not wish to do so, even though their parents had given permission. None declined. The method of completing the answer sheets was reviewed with the use of a large chart. The HPEQ was administered first followed by the GASC. All questions were read aloud by the researcher. The students had their own copy of the questions to read along.

After both questionnaires had been completed, student volunteers collected the sheets. Students were given the opportunity to have copies of the questionnaires and answer sheets. Many students very enthusiastically did so. The same procedure was followed in the three classes.

Treatment of Data

Each answer sheet was scored and each total score was ranked. The Spearman rank correlation coefficient r_s (Siegal, 1965) was used to test the hypothesis that there is a positive relationship between perceived susceptibility to health problems and anxiety in children. The Spearman's r_s was an appropriate test of correlation because the study attempted to identify a direction and degree of relationship between two variables with data at

an ordinal level. Level of significance was set at .05.

CHAPTER 4

ANALYSIS OF DATA

This chapter describes the sample and reports the findings of the application of the two instruments, the HPEQ and the GASC, to measure the variables of perceived susceptibility and anxiety in fourth, fifth, and sixth grade children. The Spearman rank correlation coefficient r_s was applied to the sample and subsamples: all boys, all girls, fourth grade, fifth grade, and sixth grade. Additional findings are also included.

Description of Sample

Of the possible 82 consent forms to be returned, 43 (52.4) were signed and returned. On the day of testing, three students were absent, leaving a sample size of 40 students. Questionnaires were completed by the 40 students (18 girls and 22 boys). Seven students' responses were discarded due to three students not correctly completing the answer sheets and four students having lie scale scores of 6 or greater on the 11 point scale. The resulting sample size for statistical analysis was 33, 17 girls and 16 boys. Eight students were in the fourth grade, 14 in the fifth grade, and 11 in the sixth grade.

Findings

The hypothesis that there is a positive relationship between perceived susceptibility to health problems and anxiety in children was tested using the Spearman rank correlation coefficient r_s (Siegal, 1956). The resulting coefficient r_s = .031 was not significant at the .05 level. Therefore the hypothesis was not supported. A scatter diagram was plotted (Appendix J).

Additionally, any effects of socialization and development as indicated by the conceptual framework were examined. Mean scores and standard deviations for the HPEQ and the GASC were calculated. The range of raw scores for the sample on the HPEQ was 34 to 80 with a mean of 59.58 and a standard deviation of 11.72. Using the 7-point scale of the HPEQ the range of scores for the sample was 2.26 to 5.53 with a mean of 3.97. These findings demonstrated that the sample, on the average, felt themselves to have a "medium chance" of experiencing health problems.

The range of scores for the sample on the GASC was 4 to 34. The sample mean was 17.73 with a standard deviation of 6.76. This finding illustrated how centrally the scores gathered.

Additional Findings

The sample was divided into subsamples of boys and girls. The correlation coefficient was calculated on these two groups to determine if there was a relationship within these subgroups. The calculated coefficient for boys was $r_s = .05$ and for girls $r_s = .043$. These results did not reach statistical significance.

The mean scores using the 7-point scale for the subsamples of boys and girls on the HPEQ were 3.85 and 4.08 respectively. The means on the GASC for boys and girls were 14.31 and 20.94 with the standard deviations of 6.27 and 5.51 respectively. These results indicated that girls exhibited greater amounts of perceived susceptibility to health problems as well as being able to relate greater amounts of anxiety than boys, as measured by the GASC.

The mean scores on the 7-point scale of the HPEQ for the subsamples divided by age were: fourth grade was 3.31; fifth grade was 4.06; and sixth grade was 4.33. The mean scores on the GASC by grade were in order: 18.25, 18.07, and 16.91 with standard deviations of 7.21, 6.44, and 6.75 for the fourth, fifth, and sixth grades. These results suggested lessening anxiety with increasing age.

Summary of Findings

The Spearman rank correlation coefficient r_s was used to test the hypothesis in the sample and all subsamples: all boys, all girls, and each grade individually. Statistical significance at the .05 level was not reached in any group.

Additional findings included calculation mean scores and standard deviations were reported for the total sample, and for each sex and each grade.

CHAPTER 5

SUMMARY OF THE STUDY

The factors that influence health behaviors are a complex interrelation of intra-, inter-, and extrapersonal influences. The health-belief model was developed to describe and predict health behaviors. The concept of the health-belief model that has value in predicting some health behaviors is perceived susceptibility to health problems. Evidence has been presented that shows perceived susceptibility to be a consistent personality characteristic in children and young adults. Associating other personality characteristics with perceived susceptibility could be of value to health care givers and educators. The connection of anxiety to health/illness leads to an examination of its relationship to perceived susceptibility to health problems.

Summary

The principal of a private Catholic school of a large metropolitan suburb agreed to allow this study to be conducted in that school. Forty children in the fourth, fifth, and sixth grades, who had their parent's permission and had no chronic illnesses, volunteered to

participate. These 40 students comprised the convenience sample. The two questionnaires answered by these students were the Health Problems Expectancy Questionnaire (Gochman, 1981) used to measure perceived susceptibility and the General Anxiety Scale for Children (Sarason et al., 1960) used to measure anxiety. Because of the need to discard seven children's responses, the sample size totaled 33.

The hypothesis that there is a positive relationship between perceived susceptibility to health problems and anxiety in children was tested with the Spearman rank correlation coefficient r_s. The hypothesis was not supported.

Mean scores and standard deviations for both instruments were calculated on the total sample and the various subsamples to determine if socialization and development have an effect on the variables. The mean scores revealed the following trends: 1) girls have greater perceived susceptibility and general anxiety than boys, 2) perceived susceptibility increases with age, and 3) anxiety decreases with age.

Discussion of Findings

Indeed there may be no association of any significance between perceived susceptibility and anxiety as shown in this study, or the non-significance of the correlation could mean that the sample was too small to detect any association. Yet, stating that there is no actual relationship between perceived susceptibility and anxiety in children could be premature if based only on this study. There seems to be a rather limited number of measures for children's anxiety, particularly written ones. The anxiety scale used in this GASC admitted probable biases toward anxieties of boys. Orton's (1982) study also pointed out that over a 40 year period there have been changes in those things causing children to worry. Thus, it is possible that the GASC just did not tap the appropriate information.

The very complexity of the influences upon perceived susceptibility and anxiety could be at the root of the lack of relationship exhibited in this study. A simplistic approach of putting the two variables in relation to each other without assessing other influences might have caused any relationship to be disguised.

An important factor that has been shown to work in conjunction with perceived susceptibility is that of the

importance that the individual places upon health (Gochman, 1971, 1972b, 1977). The particular group of youngsters in this study may or may not have seen health as being very important to them.

Additionally, perceived susceptibility has been shown to be related to traumatic experiences (Gochman, 1977). Although in Gochman's 1977 study there was a direct relationship between trauma and perceived susc-tibility, trauma accounted for only 2% of the variance in perceived susceptibility. The sample of this study, being generally "healthy" may not have had many negative health/illness experiences. Therefore the mediating factor of previous personal and/or family experiences may have been instrumental in the findings of the present study.

Findings within each instrument follow what would be expected from the literature and conceptual framework presented in this study. Boys as a group and within each grade did exhibit lower mean anxiety scores than did girls. Additionally, all four questionnaires discarded due to lie scores of 6 or greater were from boys. Both points were addressed by Sarason et al. (1960) in their work with anxiety and the associated lie scale. The three lowest HPEQ and GASC scores were recorded from three of those four questionnaires that were discarded. This

finding reinforces Sarason's suggestion that an elevated lie score indicates an attempt to appear less anxious.

The HPEQ also exhibited trends in scores that were discussed in the literature. The mean HPEQ scores between boys and girls demonstrated that the girls' mean was higher than the boys' mean, a finding that Gochman addressed (1981). He stated that the socialization process for girls tends to make them feel more vulnerable in addition to being able to express their feelings more easily. Another additional finding of an increase in means from the fourth to the sixth grades reinforces Gochman's developmental hypothesis (1981).

Conclusions and Implications

The concepts of perceived susceptibility to health problems and anxiety are complex and influenced by a number of different factors. The conceptual framework for this study suggested that there is a relationship between these two variables; however, testing that relationship evidently requires a more complex design than was utilized in this study. On the other hand, since the development of the health-belief model was based on adult attitudes and behaviors, it may be that children's attitudes and behaviors regarding health are not the same. Thus, there needs to be further study of children's

attitudes toward health. Even though no relationship was found between the two measures in this study, subdividing the sample demonstrated some effects of age and sex upon each variable. When examining concepts, behaviors, or ideas of children one must consider that socialization is a major process by which children acquire their behaviors and ideas. Sex roles are a very important part of that socialization process and affect many concepts of children. Sex roles also account for different expressions of the same concept in boys and girls. Therefore, the data from this study supports Gochman's (1981) notion that girls as a group have developed a greater sense of perceived susceptibility to health problems and have a higher level of general anxiety. Boys, on the other hand, for reasons already stated, appear to have lower levels of both variables.

Additionally, the developing cognitive abilities and concept formation become more complex and refined as a child grows older. Therefore age will affect the expression of concepts in the child. From a developmental standpoint the data of this study supports Gochman's (1981) idea that as children grow older (at least to age 12 years) they exhibit a greater sense of perceived susceptibility to health problems.

Nurses need to keep in mind the child's developmental level and design primary interventions appropriate to that level. Learning activities with younger children may be more meaningful to them if such programs are designed to address his more concrete thought processes; whereas, the older child might relate more to actual and abservable activities than general statements about health and staying well. Additionally, nurses need to project to boys an open and accepting attitude toward personal expressions of vulnerability. They need to encourage boys' acceptance of their own vulnerability.

Recommendations for Further Study

Some recommendations for further study generated by this study are:

1. Replicating this study with a larger sample and eliciting more demographic variables such as race, socioeconomic status, and intelligence which may have an effect upon perceived susceptibility and anxiety.
2. Using another instrument to determine anxiety.
3. Including a measurement of importance of health along with measuring perceived susceptibility and anxiety in order to evaluate the added influence of the person's value of health.
4. Investigate the differences in perceived susceptibility to health problems and anxiety in "healthy" children and children with chronic illnesses or experiencing hospitalization.
5. Investigating possible sources of children's anxiety about health/illness matters.

APPENDIX A

TEXAS WOMAN'S UNIVERSITY
Box 23717, TWU Station
Denton, Texas 76204

1810 Inwood Road
Dallas Inwood Campus

HUMAN SUBJECTS REVIEW COMMITTEE

Name of Investigator: Candace R. Taylor Center: Dallas

Address: 4802 A. Bradford Dr. Date: 6/11/82

Dallas, Texas 75219

Dear Ms. Taylor:

Your study entitled Anxiety and Perceptions of Susceptibility to Health Problems in Children

has been reviewed by a committee of the Human Subjects Review Committee and it appears to meet our requirements in regard to protection of the individual's rights.

Please be reminded that both the University and the Department of Health, Education, and Welfare regulations typically require that signatures indicating informed consent be obtained from all human subjects in your studies. These are to be filed with the Human Subjects Review Committee. Any exception to this requirement is noted below. Furthermore, according to DHEW regulations, another review by the Committee is required if your project changes.

Any special provisions pertaining to your study are noted below:

____ Add to informed consent form: No medical service or compensation is provided to subjects by the University as a result of injury from participation in research.

____ Add to informed consent form: I UNDERSTAND THAT THE RETURN OF MY QUESTIONNAIRE CONSTITUTES MY INFORMED CONSENT TO ACT AS A SUBJECT IN THIS RESEARCH.

____The filing of signatures of subjects with the Human Subjects Review Committee is not required.

XX Other: 1. Delete sentence at beginning of 3rd paragraph on oral explanation to children "you all look like a very good group...."

____No special provisions apply.

Sincerely,

Estelle D. Kurtz

Chairman, Human Subjects Review Committee

at Dallas

2. Item 36, potential benefits, needs elaboration on consent form
3. Item 1 on written consent form - the statement "The information obtained ..." is unclear, needs revision.
4. Clarify your procedure for excluding children with chronic illnesses. Tell parents not to return consent forms if they have such illnesses or to specify them somewhere.
5. You may want to include in your explanation to parents that the school has given you permission to contact them.

PK/smu/3/7/80

APPENDIX B

TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

AGENCY PERMISSION FOR CONDUCTING STUDY*

THE _____

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

To survey 4th through 6th graders for a relationship between anxiety as measured by a general anxiety scale and susceptibility to health problems as measured by an expectancy type questionnaire.

The conditions mutually agreed upon are as follows:

1. The agency (may) (may not) be identified in the final report.
2. The names of consultative or administrative personnel in the agency (may) (may not) be identified in the final report.
3. The agency (wants) (does not want) a conference with the student when the report is completed.
4. The agency is (willing) (unwilling) to allow the completed report to be circulated through interlibrary loan.
5. Other _____

Date: 8-17-82

_____
Signature of Agency Personnel

Candace Taylor BN
Signature of Student

Judith A. Erlen RN PhD
Signature of Faculty Advisor

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

APPENDIX C

TWU Texas Woman's University
P.O. Box 22479, Denton, Texas 76204 (817) 383-2302, Metro 434-1757, Tex-An 834-2133
THE GRADUATE SCHOOL

September 21, 1982

Ms. Candace Taylor
4802A Bradford Drive
Dallas, TX 75219

Dear Ms. Taylor:

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

Sincerely yours,

Robert S. Pawlowski
Provost

ap

cc Dr. Anne Gudmundsen
Dr. Judith Erlen

APPENDIX D

Letter Explaining Study

Dear Parent,

I am Candace Taylor, a nurse and graduate student in maternal-child health nursing at Texas Woman's University. I am interested in how children feel about certain aspects of health. I have two sets of questions that I would like your child to answer if you give your permission and he/she would like to participate. One set of questions concerns certain health problems, such as, how likely a child thinks he/she may be to get the flu in the next year, have a toothache, and similar problems. The other set asks about things that a child might worry or be concerned about, such as being afraid of snakes or knowing his/her lessons. These questions will be given to your child in his/her own classroom and will take approximately 20 to 25 minutes.

Should a child for any reason be disturbed or upset by any of the questions he/she may give the questionnaires back and quit at any time without any comment. Also to assure that no child should fear embarrassment about his/her answers, there are no names on any of the sheets and the information obtained will be analyzed and reported on a group basis. By assisting me to learn more about what children think, your child will have the opportunity to help health care professionals learn more about children and their ideas of health.

These questionnaires are not a test. There is no grade involved, no right or wrong answers, and no punishment or reward for helping or not. This and all of the preceding information will be explained to your child in school before the questionnaires are administered.

Since children with chronic diseases/illnesses have special experiences with health care, their answers might be very different from children who do not have special health problems. This particular survey is concerned with those children without special problems. If your child has any conditions like diabetes, kidney diseases, cerebral palsy, cystic fibrosis, asthma, heart defects or disease, etc., please do not return the consent form.

I would greatly appreciate you and your child helping me to learn more about his/her attitude toward health. If you will allow your child to participate in answering the questions, would you please fill out both of the following consent forms, keeping one copy for yourself and returning one copy to school with your child on or before September 1, 1982.

The principal of the school has given permission to conduct this study. If you have any questions regarding the study or your child's involvement in it, please call me at the following number: 522-4172. Thank you.

Candace Taylor R.N.

Consent Form
TEXAS WOMAN'S UNIVERSITY
COLLEGE OF NURSING

(Form A -- Written presentation to subject)

Consent to Act as a Subject for Research and Investigation:

The following information is to be read to or read by the subject. One copy of this form, signed and witnessed, must be given to each subject. A second copy must be retained by the investigator for filing with the Chairman of the Human Subjects Review Committee. A third copy may be made for the investigator's files.

1. I hereby authorize Candace R. Taylor
(Name of person(s) who will perform procedure(s) or investigation(s)

to perform the following procedure(s) or investigation(s): (Describe in detail) Administer written questionnaires to 4th, 5th, and 6th grade children as follows: General Anxiety Scale for Children and the Health Problem Expectancies Questionnaire. This is to take approximately 20 minutes to complete in the children's classroom. This information will be analyzed to see if children who expect to have more health problems are also more anxious.

2. The procedure or investigation listed in Paragraph 1 has been explained to me by Candace Taylor (Name). in the accompanying letter

3. (a) I understand that the procedures or investigations described in Paragraph 1 involve the following possible risks or discomforts: (Describe in detail) possible embarassment due to improper release of information and/or possible emotional upset due to the nature of the questions.

(Form A - Continuation)

3. (b) I understand that the procedures and investigations described in Paragraph 1 have the following potential benefits to myself and/or others: the participant may become more aware of health concerns, will see that people in health care are concerned about what they as children think, and will be able to participate in expanding knowledge about children.

(c) I understand that - No medical service or compensation is provided to subjects by the university as a result of injury from participation in research.

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

_____ _____

Subject's Signature Date

(If the subject is a minor, or otherwise unable to sign, complete the following:)

Subject is a minor (age___), or is unable to sign because:

Signatures (one required)

_____ _____

Father Date

_____ _____

Mother Date

_____ _____

Guardian Date

_____ _____

Witness (one required) Date

APPENDIX E

Oral Explanation to Children

Hello, I am Candace Taylor. I am a nurse and a graduate student at Texas Woman's University. I am very interested in children and what they think, especially about health.

I am here to ask you if you would help me learn more about children. I have two groups of questions for you to answer if you would like to help. One group of questions asks how likely you think certain things may happen to you in the next year, for example, things like going to a ball game or like having a tooth pulled. The other set of questions asks about things that might worry or concern children, such as, knowing your lessons or being afraid of snakes. These questions are not a test. There are NO right or wrong answers, only your answers, because everyone has different feelings about different things. There is no grade and there are no names on the papers. NO ONE, not your classmates, your teacher, your parents, or even I will know how any of you answer the questions; so, please be as honest as you can. You can quit any time you want if you feel like it, just return the sheets to me. There is no punishment.

I hope all of you decide to help me out, if you have your parents permission. Thank you.

APPENDIX F

Health Problem Expectancies Questionnaire

Instructions for giving questionnaire:

The person giving the questionnaire will read all the instructions and questions aloud. The subjects are directed to complete the information at the top of the first answer sheet. Then they are asked to follow along with the reading of the questions and mark on the answer sheet the answer that BEST tells how likely he/she thinks the event will happen to him/her. Have each subject follow along with the practice question #1 and see how it is answered on the answer sheet.

1. What chance is there of your going to a movie during this next year?

For the following questions (2-23) put an X by the number on the answer sheet in the column under the appropriate answer.

2. What chance is there of your having a bad accident--like breaking your arm--during this next year?

3. What chance is there of your getting a rash during this next year?

4. What chance is there of your getting a nice present during this next year?

5. What chance is there of your running a fever (temperature) during this next year?

6. What chance is there of a dentist pulling one of your teeth during this next year?

7. What chance is there of your going to a picnic during this next year?

8. What chance is there of your getting a sore throat during this next year?

9. What chance is there of your getting the flu during this next year?

10. What chance is there of your playing with your friends during this next year?

11. What chance is there of your getting a toothache during this next year?

12. What chance is there of your catching a cold during this next year?

13. What chance is there of something you wish for coming true during this next year?

14. What chance is there of the gums in your mouth bleeding during this next year?

15. What chance is there of your having an upset stomach during this next year?

16. What chance is there of your going to a ball game during this next year?

17. What chance is there of your being sick enough to miss a week of school during this next year?

18. What chance is there of your having a cavity in your teeth during this next year?

19. What chance is there of your having a birthday party during this next year?

20. What chance is there of your having a bad headache during this next year?

21. What chance is there of your breaking or cracking a tooth during this next year?

22. What chance is there of your moving to a different apartment or house during this next year?

23. What chance is there of your cutting a finger accidentally during this next year?

Date of Birth:_____ Age:_____ Sex: F M

Grade:_____ #:_____

HPEQ - Answer Sheet

	No Chance	Almost No Chance	Small Chance	A Medium Chance	A Good Chance	Almost Certain	Certain
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

	No Chance	Almost No Chance	A Small Chance	A Medium Chance	A Good Chance	Almost Certain	Certain
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							

APPENDIX G

UNIVERSITY OF LOUISVILLE
LOUISVILLE, KENTUCKY 40208

RAYMOND A. KENT
SCHOOL OF SOCIAL WORK

March 3, 1982

Ms. Candace Taylor
4802A Bradford Dr.
Dallas, Tx. 75219

Dear Ms. Taylor;

You have my permission to use my measure of perceived vulnerability with appropriate acknowledgement and citation. I am enclosing a copy of a paper I presented last year, along with other reprints that will help you, and copies of the instructions. These materials also contain scoring information, etc.

I hope these are of value to you.

Sincerely,

David S. Gochman, Ph.D.
Professor

Enclosure

DSG:yjb

APPENDIX H

General Anxiety Scale for Children

Instructions for giving questionnaire:

The person giving the questionnaire will read all the instructions and questions aloud. Have each subject follow along and choose "yes"or "no" depending upon how he/she feels about the question. Put a circle around the answer on the answer sheet next to the number of the question.

There are NO right or wrong answers, only how one feels. It is important that each question be answered with what is BEST for that individual.

1. When you are away from home, do you worry about what might be happening?
2. Do you sometimes worry about whether
   (other children are better looking than you are?)
   (your body is growing the way it should?)
3. Are you afraid of mice or rats?
4. Do you ever worry about knowing your lessons?
5. I you were to climb a ladder, would you worry about falling off it?
6. Do you worry about whether your mother is going to get sick?
7. Do you ever get scared when you have to walk home at night?
8. Do you ever worry about what other people think of you?
9. Do you get a funny feeling when you see blood?
10. When your father is away from home, do you worry about whether he is going to come back?
11. Are you frightened by lightning and thunderstorms?

12. Do you ever worry that you won't be able to do something you want to do?

13. When you go to the dentist, do you worry that he may hurt you?

14. Are you afraid of things like snakes?

15. When you are in bed at night trying to go to sleep, do you often find that you are worrying about something?

16. When you were young, were you ever scared of anything?

17. Are you sometimes frightened when looking down from a high place?

18. Do you get worried when you have to go to the doctor's office?

19. Do some of the stories on radio or television scare you?

20. Have you ever been afraid of getting hurt?

21. When you are home alone and someone knocks on the door, do you get a worried feeling?

22. Do you get a scary feeling when you see a dead animal?

23. Do you think you worry more than other boys and girls?

24. Do you worry that you might get hurt in some accident?

25. Has anyone ever been able to scare you?

26. Are you afraid of things like guns?

27. Without knowing why, do you sometimes get a funny feeling inside your stomach?

28. Are you afraid of being bitten or hurt by a dog?

29. Do you ever worry about something bad happening to someone you know?

30. Do you worry when you are home alone at night?

31. Are you afraid of being too near fireworks because of their exploding?

32. Do you worry that you are going to get sick?

33. Are you ever unhappy?

34. When your mother is away from home, do you worry about whether she is going to come back?

35. Are you afraid to dive into the water because you might get hurt?

36. Do you get a funny feeling when you touch something that has a real sharp edge?

37. Do you ever worry about what is going to happen?

38. Do you get scared when you have to go into a dark room?

39. Do you dislike getting in fights because you worry about getting hurt in them?

40. Do you worry about whether your father is going to get sick?

41. Have you ever had a scary dream?

42. Are you afraid of spiders?

43. Do you sometimes get the feeling that something bad is going to happen to you?

44. When you are alone in a room and you hear a strange noise, do you get a frightened feeling?

45. Do you ever worry?

Code Number _____

GASC Questionnaire Answer Sheet

1.	YES	NO	16.	YES	NO	31.	YES	NO
2.	YES	NO	17.	YES	NO	32.	YES	NO
3.	YES	NO	18.	YES	NO	33.	YES	NO
4.	YES	NO	19.	YES	NO	34.	YES	NO
5.	YES	NO	20.	YES	NO	35.	YES	NO
6.	YES	NO	21.	YES	NO	36.	YES	NO
7.	YES	NO	22.	YES	NO	37.	YES	NO
8.	YES	NO	23.	YES	NO	38.	YES	NO
9.	YES	NO	24.	YES	NO	39.	YES	NO
10.	YES	NO	25.	YES	NO	40.	YES	NO
11.	YES	NO	26.	YES	NO	41.	YES	NO
12.	YES	NO	27.	YES	NO	42.	YES	NO
13.	YES	NO	28.	YES	NO	43.	YES	NO
14.	YES	NO	29.	YES	NO	44.	YES	NO
15.	YES	NO	30.	YES	NO	45.	YES	NO

APPENDIX I

Yale University *New Haven, Connecticut 06520*

INSTITUTION FOR SOCIAL AND POLICY STUDIES
17A Yale Station (70 Sachem Street)

March 22, 1982

Ms. Candace Taylor
4802A Bradford Drive
Dallas, Texas 75219

Dear Mr. Taylor:

You have my permission to use the general anxiety scale for children. Information about the administration and scoring of the scales are contained in our book, "Anxiety in Elementary School Children." The administration is simple: the items are read to the class and the student encircles a yes or a no on the answer sheet. Other details are given in our book.

Cordially,

Seymour Sarason

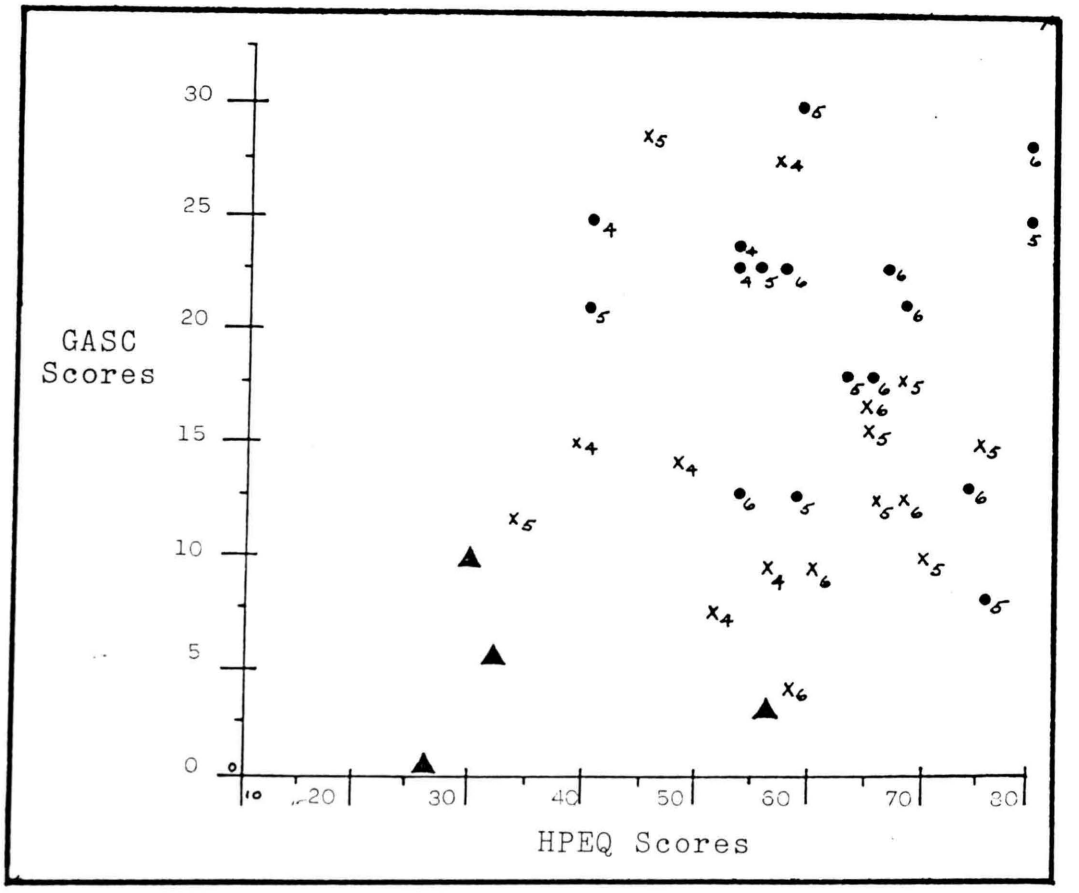
Seymour B. Sarason
Professor of Psychology

SBS/gp

P.S. The book was published by John Wiley, and I assume it is in your college library.

APPENDIX J

Scatter Diagram



O = Girls
X = Boys
# = Grade in School
▲ = Test Scores of the 4 Students with Elevated Lie Scores

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