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PREVENTIVE HEALTH BEHAVIOR IN RELATION TO RISK-TAKING AND LOCUS OF CONTROL AMONG COLLEGE STUDENTS

A Dissertation
Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Mohammed Reza Forouzesh

August 1978

1366144

ACKNOWLEDGMENTS

The investigator wishes to express his sincere appreciation to his doctoral committee members: Dr. Robert H. Kirk, Professor and Chairman of the Department of Health and Safety and Dr. Warren J. Huffman, Professor of Health and Safety; Dr. Irshad Ahman, M.D., Associate Professor of Health and Safety; Professor Robert L. Wilson, Associate Professor, Graduate School of Planning.

Special gratitude is extended to Dr. Jack Ellison, Assistant Professor, Department of Health and Safety who provided valuable professional resources and guidance for this study.

The investigator gratefully acknowledges members of Knoxville College Faculty, Dr. Joe Cornelius, Athletic Director; Dr. James Reid Jones, Head, Psychology Department; Dr. Wain Sager, Psychology; and student, Margaret A. Perry, who willingly cooperated in the collection of data.

The investigator wishes to thank Sandra Maureen Maloy for her editorial assistance, Ms. Margaret Olson for typing assistance and also Mrs. Ruby Miller, Mrs. Candy Marek and Miss Vicky Lundy.

Finally, the author wishes to deeply extend his appreciation to his parents, Dr. and Mrs. Mahmoud Forouzesh, and other family members for their patience and understanding and who have made this period of his life a memorable one.

ABSTRACT

The purpose of this research was to determine whether differences exist among persons exhibiting low, moderate, and high preventive health behavior, and socially disapproved behavior. A second purpose was to determine whether the individuals' internal or external control have any relationship to socially disapproved behavior. Another purpose was to determine whether the above variables have any relationship to sex and race differences among college students examined in this study.

The total participants (N = 475) were college students selected from both University of Tennessee, Knoxville, Tennessee (N = 375), and Knoxville College, Knoxville, Tennessee (N = 100), during the Spring Quarter 1978. The largest number of students in this study were between 18 and 21 years of age. There were 179 males and 271 females who participated in this study of which 60 were Black males and 65 were Black females.

The instruments used in this study were, The Preventive Health Behavior Inventory, Risk-Taking Attitudes-Values Inventory, and The Internal-External Locus of Control Scale. In order to analyze the results 2×2×3 analysis of variance was used. Duncan's test for post-hoc multiple comparison was used when the overall F ratio for any variable was found to be significant. Also, the Pearson Product-Moment

Correlation Coefficients were computed to determine the relationship between risk-taking attitude and internal-external locus of control.

Based on the findings and the analysis of data, the following major conclusions were drawn:

1. A significantly higher percentage of men than women with low, moderate and high preventive health behavior demonstrated socially disapproved behavior.

2. White females with low preventive health behavior demonstrated higher socially disapproved behavior than Black females.

3. White females with high preventive health behavior demonstrated higher socially disapproved behavior than Black females.

4. White females with moderate preventive health behavior show lower socially disapproved behavior than Black females.

5. White males with low preventive health behavior demonstrated higher socially disapproved behavior than Black males.

6. White males with moderate preventive health behavior demonstrated higher socially disapproved behavior than Black males.

7. White males with high preventive health behavior demonstrated lower socially disapproved behavior than Blacks.

8. Males and females, both White and Black, with low preventive health behavior showed themselves to be more external.

9. White and Black were shown not to differ in being either external or internal.

10. Black males with high preventive health behavior were slightly more internal than those with low and moderate preventive health behavior.

11. The Black population was shown to have as much sense of internal control as the White population.

The following recommendations were derived in accordance with findings in this study. It is necessary to design preventive health education programs that focus on the population as a whole, specifically young males who tend to engage in higher risk activities, detrimental to their physical and mental health. Similar educational programs are needed for both Blacks and Whites since they seem to retain close behavioral attitudes toward prevention.

Modification in research design and additional retrospective studies in the subject area are suggested.

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CHAPTER I

INTRODUCTION

Health is the third largest industry in the United States. Health spending today is eight times greater than it was twenty years ago. The high cost of today's medical care and current health delivery system have focused the nation's attention on preventive care.

It is primarily through the understanding of various components of the individual's reaction to preventive medicine that one is able to develop and design educational concepts and practices which encourage appropriate preventive health behavior.

Historically, health education has been the major profession which has recognized that human beings cannot be viewed as a reductionistic and a simple being, rather a combination of biological, social, and psychological components. As John Hanlon (47) pointed out, viewing through ecological perspective "forces us to look at the whole human organism not just its organs and organ system, much less in terms of interests of particular professions. It forces us to view the environment as being a reality, multi-environments integrated into a remarkable system."

A knowledge of current preventive methodology and its contrast to individual preventive practices must be

extensively evaluated. Since manipulating existing health services and governmentally supported health programs in preventive health services is extremely costly, one should focus more attention on the study of prevention and factors influencing health related human behavior, such factors as individual's psychological, economical, ethnic, and cultural background.

One of the major components of prevention is directed toward health education. Health education contributes to prevention and health promotion by creating a positive attitude toward preventive health. Through the health educator's appreciation of psychological, social, and cultural influences on the individual's behavior, could one develop an understanding of better preventive health behaviors and practices that contribute to this behavior.

The scope of preventive health behavior depends upon how one views prevention. For the purpose of this study, preventive health is defined as "any rational, voluntary activity undertaken by a person to prevent or detect diseases or disability in order to protect, promote, and maintain one's health at an asymptomatic stage."

Prevention is not only the responsibility of the provider but it is the responsibility of the persons who seek preventive health services as well. This system evolves around individuals who take the initiative necessary to promote preventive care. Thus, if a workable instrument to increase the health status of the population is to be achieved,

it will be necessary that the individual, the social system, and the provider work together. However, before it will be possible for the instrument to be created through the combined effort of the individual, of the social system, and provider, one must study such psychological factors as risk taking and internal-external locus of control.

The main thrust was to study psychological factors such as risk-taking attitude and internal-external locus of control in order to measure the extent of subject's willingness to take preventive health action. The internal-external locus of control refers to the individual's perception of events to be a consequence of his or her ability or purely chance. The internal individual views the positive or negative outcomes of events as determined by one's ability and effort. On the contrary, the external individual believes that events are the outcome of luck or the difficulty of a given task [Weiner, Heckhausen, Meyer, and Cook (126)]. It was also important to determine the individual's extent of willingness to accept the risk associated with not seeking medical care and not taking preventive health measures.

Today's health problems are known to be caused by various aspects of new lifestyle and long learned behavior than has been true of health problems in the past. Due to certain aspects of lifestyles which were mainly due to ignorance of disease causation, groups in the population engage themselves in high risk behavior that, in the long

run, directly affect their health status. This is mainly true among the young people of the population. For this reason, it was the intent of this study to examine the college population and explore the behavior they adopt, the extent of risk they were willing to take in relation to preventive health behavior, and to explore psychological attributes such as internal-external locus of control, as they relate to preventive health behavior among Black and White college students.

1. Purpose of the Study

The primary purpose of this study was to determine whether differences exist among persons exhibiting low, moderate, and high preventive health behavior, and socially disapproved behavior. A second purpose was to determine whether differences were due to variations such as sex or racial differences. A third purpose was to determine whether the individuals' internal or external control attitudes have any relationship to socially disapproved behavior among groups measured in this study. A fourth and final purpose of this study was to increase the understanding of the factors that influence the individuals' preventive attitude.

2. Statement of the Problem

The problem was to determine what differences existed toward risk-taking behavior among subjects exhibiting

different levels of preventive health behavior. Additionally, steps were taken to determine if differences existed with regard to locus of control for these three groups. Finally, an investigation was conducted to determine whether or not there was a relationship between attitudes toward risk-taking and locus of control.

3. Need for the Study

The high cost and manifest concern over the nation's health has created an enormous urgency to examine social and psychological attributes that contribute to positive preventive health behavior.

To improve the health status of the American people, increased efforts should be made to motivate individuals to seek preventive health services. There is also a great need to improve and to increase the social awareness of the economic payoff regarding the elimination of illness and deformity due to preventive health action. However, what is understood by "health" and "prevention" depends on many variables--physical, psychological, sociological, and cultural.

The complexity and diversity of forces influencing health concepts held by different individuals must be

investigated and understood due to the fact that external environmental forces may shape attitudes toward health and life as well as internal environmental forces such as ethnic background. These factors, regardless of being internal or external, influence the response of the individual who adopts preventive behavior. Exploration of these factors makes it possible to determine an individual's overall concept of prevention.

There is a need to examine some of the concepts of preventive health held by certain target populations, since these perceptions may well be barriers to the taking of specific health actions, such as seeking medical attention at an asymptomatic stage.

The Health Belief Model (95) hypothesizes three basic types of belief which tend to motivate individuals to engage in specific preventive health behavior: (1) perception of the vulnerability to the seriousness of the consequences of incurring a disease heightens the "psychological state of readiness to take specific actions," and (2) given a high state of "readiness," the specific direction action taken depends on the individual's beliefs about the relative effectiveness and the availability of alternative actions known to the individual (perceived benefits weighed against cost of action).

The information on concepts of prevention and illness held by different groups within society may reflect a

tendency to be more intrigued by what is most obviously different from traditional beliefs. Better understanding is needed in order to allow us to remove our social and psychological blinders to see how attitudes toward preventive medicine varies within subgroups of society. By understanding the characteristics of certain groups of people, one is enabled to formulate preventive health program planning.

As Suchman (119) has concluded, "we need to know a lot more about public apathy, misinformation, and prejudice in regard to health and illness."

Deeper understanding of attitudes among individuals and subgroups may be helpful to determine and design preventive health education programs. It is also important to examine the extent of risk individuals are willing to undertake in terms of their health. One might assume that an individual possessing low risk-taking attitudes with socially approved behavior would be most likely to engage in appropriate preventive health behavior. And those possessing high risk-taking attitudes with socially disapproved behavior would display inappropriate or low preventive health behavior.

4. Limitations

This study was:

1. Limited to an investigation of preventive health behavior among college students.

2. Limited to undergraduate students at the University of Tennessee, Knoxville, Spring quarter, 1978.

3. Limited to undergraduate students at Knoxville College, Spring quarter, 1978.

4. Limited to subjects who voluntarily participated in this study.

5. Limited to measuring the variables or attitudes towards risk-taking and locus of control.

5. Delimitations

This study was delimited as follows:

1. The study participants were selected from the undergraduate students enrolled as of March 30, 1978 in the University of Tennessee, Knoxville.

2. The study participants were selected from the undergraduate students enrolled as of March 30, 1978 in the Knoxville College, Knoxville.

6. Basic Assumptions

The basic assumptions were as follows:

1. Preventive health behavior can be defined and measured.

2. Locus of control can be defined and measured.

3. Risk-taking attitudes can be defined and measured.

4. The Preventive Health Behavior questionnaire is a valid and reliable instrument for assessing levels of preventive health behavior.

5. The Risk-Taking Attitudes-Values Inventory (RTAVI) is a valid and reliable instrument for measuring risk-taking attitudes.

6. The Internal-External Center of Reinforcement Scale (I-E) is a valid and reliable instrument for measuring individuals' locus of control.

7. Hypotheses

It was hypothesized that there would be significant differences in attitudes towards risk-taking behavior between subjects exhibiting low, moderate, and high preventive health behavior. Additionally, it was hypothesized that there would be significant differences in locus of control between subjects showing low, moderate, and high preventive health behavior. It was also hypothesized that there would be a significant relationship established between risk-taking attitudes and locus of control for subjects displaying low, moderate, and high preventive health behavior. Finally, it was hypothesized that these differences would exist when the groups showing low, moderate, and high preventive health behavior were divided as regards to sex and racial differences.

The following null hypotheses were developed for this study:

1. There would be no significant relationship existing between preventive health behavior, sex, race, and their interactions on socially disapproved behavior.

2. There would be no significant differences in attitudes towards risk-taking behavior among groups displaying different levels of preventive health behavior.

3. There would be no significant differences in attitudes towards risk-taking behavior for males and females displaying low, moderate, and high preventive health behavior.

4. There would be no significant differences in attitudes towards risk-taking behavior for whites and non-whites displaying low, moderate, and high preventive health behavior.

5. There would be no significant relationship between the variables of preventive health behavior, sex, race, and their interactions on the dependent variable, internal-external locus of control.

6. There would be no significant difference in locus of control between groups displaying low, moderate, and high preventive health behavior.

7. There would be no significant differences in locus of control among males and females displaying low, moderate, and high preventive health behavior.

8. There would be no significant differences in locus of control among whites and non-whites displaying low, moderate, and high preventive health behavior.

9. There would be no significant differences among groups displaying socially disapproved behavior and internal-external locus of control.

8. Definition of Terms

For the purpose of this study, the following definitions were adopted:

Preventive Health Behavior. Any rational, voluntary activity undertaken by a person to prevent or detect disease or disability in order to promote, protect, and maintain one's health at an asymptomatic stage.

Attitude. A learned or genetic predisposition consistently positive or negative toward certain persons, objects, or concepts with cognitive, affective, and behavioral components.

External Control. The projection of one's own personal feelings or perceptions onto the external environment.

Internal Control. The reflection of environmental influences on the process taking place within the mind in order to influence individuals' activities.

Risk-Taking. Any event or situation where there is a desirable goal and a lack of certainty that it can be attained.

Primary Prevention. Primary prevention or health promotion which involves activities directed toward promoting general well-being and is not focused on a particular disease.

Secondary Prevention. The early diagnosis and instigation of measures to stop the progression of disease processes or handicapping disabilities.

9. Summary

In summary, the major emphasis of this research was to examine two levels of psychological behavior; the extent of risk-taking and internal-external control as indicators of preventive health action. This information was believed to be a factor in determining why some people behave preventively and others do not. Also, important factors to be studied were the further understanding of personality and intergroup characteristics and their interactions on individual preventive action.

CHAPTER II

REVIEW OF LITERATURE

1. Definition of Health Behavior

The definition of health and actions related was not consistent in the literature. The World Health Organization defined health in highly idealistic fashion as "a state of complete physical, mental, and social well-being, not merely the absence of disease and infirmity." King (61) emphasized the concept of "positive health," or the releasing of the full potential of the individual. He not only favored WHO's definition of health, but enlarges the definition of health to be the maximum physical, mental, and social efficiency for the individual, his family, and community. Mechanic (180) offered a negative definition of health as "the absence of apparent disease and infirmity." He also suggested that his definition is more operational than the WHO definition for distinguishing the healthy from the sick.

Many authors have further expressed the difficulty of arriving at a widely accepted definition [Schulman and Smith (106), Freeman (35)]. Finally, Bauman (9) pointed out that a major problem in attempting to modify health attitude stems from the fact that individuals differentially perceive behaviors as related to their concept of health.

Some sociologists have gone further to define health and prevention. For example, Parson (84) defined health as the optimum capacity of an individual for performing effectively his usual tasks and roles. Parson further suggested that there is a "health role" that carries with it the obligation to maintain one's health in order to perform effectively. He believed it is an individual's obligation to try to prevent threatened illness where this is possible.

Green (43) suggested that health behavior is individual, voluntary, preventive health action. It is individual and voluntary because it is action generally taken apart from sanctions that force an individual to comply. It is preventive because its focus is not curative or remedial action and it is action rather than knowledge, attitudes, beliefs, or values. Green pointed out that the expected behavior has not been observed on the part of many individuals who ostensibly have the appropriate knowledge, beliefs, attitudes, and values; while at the same time, it has been found to characterize others who lack some of the knowledge, beliefs, attitudes, and values considered important to action.

Steel and McBroom (114) concluded that health behavior may be described as preventive behavior inasmuch as it consists of utilization of health services for the assumed purpose of maintaining or improving one's health and avoiding the effects of illness.

It is important to distinguish the differences between "health behavior" and "illness behavior." Because if one cannot distinguish between these behaviors, he would be less likely to practice preventive health activities. This knowledge is necessary in order for the individual to practice health behavior which is preventive in nature rather than illness behavior which is causative in nature.

According to Mechanic (79) the concept of illness behavior refers to an individual's perceptions and actions resulting from his recognition of bodily signs or symptoms. However, later, Mechanic (78) restated the concept of illness behavior as ". . . any condition which causes or might usefully cause an individual to concern himself with his symptoms and to seek help."

Kasl and Cobb (54) further redefined the definition of health related behavior to include the terms public health behavior, illness behavior, and sick-role behavior. They define preventive health behavior as any behavior undertaken for the purpose of preventing disease or detecting disease in an asymptomatic state. Illness behavior is defined as any activity undertaken by a person who feels ill, for the purpose of defining the state of his health and discovering suitable remedy. Sick-role behavior is any activity undertaken by a person who considers himself sick, for the purpose of getting well. Preventive health behavior, alone, has two major components, primary prevention and secondary prevention:

> Primary prevention or health prevention involves activities directed toward promoting general well-being and is not focused on a particular disease. This also includes specific protection for selected diseases, such as immunizations for diphtheria, whooping cough, tetanus, and smallpox.
>
> Secondary prevention involves early diagnosis and the instigation of measures to stop the progression of disease processes or handicapping disabilities.

A model of preventive health action proposed by Suchman (120) advised that individuals and groups be assessed according to factors of personal readiness, social control, and situations or actions. This means that, in addition to studying motivational factors designed to change the behavior of individuals, the nature of the environment or social pressure must be critically examined in terms of its influences on individuals. A change of behavior, if it gives pleasure, does not entail a great amount of effort, seems socially acceptable, and if presented in an attractive package, may have a chance for success. An example illustrating the factors identified by Suchman is given for purposes of reflection. For many, when they were teenagers and young adults, social pressure or the appearance of social acceptability stimulated their desire and readiness to engage in practices harmful to their health such as smoking. For those who eventually decide to cease socially disapproved behavior, the determining factors, perhaps, are related to social control and to internal locus of control.

2. Preventive Health Behavior and Ethnic, Socio-Economic Status

There is evidence to suggest that health behavior is in part a function of income. According to Tumin (123), more favorable "life chances" are associated with higher socio-economic status. Anderson and Anderson (4) asserted that the delivery of services related to health crises and to illness generally perceived as "services" reveals little relationship to family income. Yet, there is a positive relationship between income and physician consultation. It was concluded that the likelihood of contact with a physician during a twelve-month period increased with income. Also, in a study of 150 full-time farm operators in New York, Ellenbogan (28) found that socio-economic status, and especially income, was related to one type of health behavior--subscription to health insurance. Mechanic (80) observed that persons of higher socio-economic status were more likely to engage in preventive health actions, including acquiring health insurance, having physical and eye examinations, and engaging in other related behaviors. At the same time, there is the suggestion that the crisis of illness is not clearly related to the ability to pay for specific services when those services are required for acute episodes, while preventive health behavior is more a function of family income and perhaps indirectly of socio-economic status.

According to Rosenstock (96) the relationship between income and socio-economic status is unidimensional in nature. He implies that those with high socio-economic status have higher income which are both indicative of positive preventive health behavior.

Green (43) reported moderate relationships among the variables of children's diphtheria, pertussis, and tetanus immunications; children's poliomyelitis immunications; children's smallpox vaccinations; well-baby care; mothers' parental care; mothers' preventive dental care; mothers' poliomyelitis immunizations, mothers' possession of a fever thermometer; and mothers' possession of medical books. He concluded, "The assumption of unidimensionality of preventive health behaviors does not hold. Although the various measures or criteria of preventive health behavior are relatively colinear, there is enough unique variance in each to warrant a separate analysis of the relationships between socio-economic status and each of the different forms of preventive health behavior."

Steele and McBroom (114) tended to support Green's theory that some health behavior indicators simply are not related to each other. Their findings fail to support Rosenstock's conclusion that people display a generalized pattern of response towards preventive health action. They support the notion that persons identified with the lower socio-economic status levels are less likely to engage in

preventive health actions than persons of higher status. Relatively higher association between health behavior indicators and education of the dominant female support the contention that the mother or female head of the family is an important factor in determining the health behavior of family members. The same conclusion was drawn by Tyroler (124), Green (43), Freeman and Lambert (34). Steel and McBroom (114) concluded that first, health behavior is not unidimensional and is multidimensional in the sense that persons who engage in one behavior tend to engage in others, and secondly, preventive health behavior is related to socio-economic status, some more than others.

Williams and Wechsler (128) have reported that neither preventive behaviors in general, nor health behaviors alone were unidimensional, and not all health behaviors were interrelated either. They concluded the necessity of preventive health behavior information as a means of identifying persons most or least in need of health education. Also, the information collected on preventive behavior and their interrelationships has implications for the planning of health education programs and clues concerning education campaigns.

3. Social Network in Health Services Utilization

The concept of social network in health services utilization has also been examined by several researchers [e.g., Kasl and Cobb (54), Mechanic (80), Aday and Eichorn (2), Lohr (73), Salloway and Baruch (105)]. These documentations have empirically examined the predictability of preventive activities and have tried to explain why some people routinely seek health care for both curative and preventive purposes while others remain aloof from the medical care system.

McKinlay (77) explained, "perhaps it is truistic to point out that the family, its kinship and friendship networks influences the manner in which the individuals define and act (or fail to act) upon symptoms or life crisis."

The characteristics of those who use preventive health services have been identified in several studies. They tend to be white, married women who have graduated from college, are in the middle to high income group, and are members of small families (two to five members).

In a study of a population of urban gypsies, Salloway (104) concluded that an ethnic group predicted to have very low rates of health care utilization, based upon indicators of socio-economic status, racial differentiation, and education showed much higher than expected use of available medical facilities.

Salloway and Dillon (103) conducted a study in a suburb of Boston with a population characterized by a mixture of 40 percent Blacks, a mixture of French-Canadian Americans, Irish Americans, Italian, Spanish and Jewish Americans. They concluded the larger the friend networks, the more frequent the interaction with them, and the more the role support available from them, the less delay in utilization of health services. The larger the family network, the more frequent the interaction with them, and the more role support is available from them, the longer the delay in utilization. It appears that friend networks facilitate utilization of health services while family network seems to be associated with diminished rate of utilization. As a result, a friend network operates as systems sharing current information about health services while family network operates more as a role support system. These findings tend to support McKinlay's (77) research on the relationship between social networks and health care utilization.

4. A Brief Overview of Preventive Health Behavior

Systematic research in the area of preventive health behavior has not been extensive until recently, in contrast to the psychological and sociological research on beliefs and illness behavior.

A review of the recent literature on preventive health behavior reveals a very general distinction in the conceptualization of preventive health behavior. Several studies have attempted to conceptualize preventive health behavior by the social stratum and peer group in which the individual is placed; conformity to group norms is enforced by internalization and social group pressure [see Suchman (118), Green (43), Salloway and Dillon (103)]. Rosenstock (95) has presented an alternative concept in viewing PHB as goal-directed behavior, with good health, health viewed as a goal more or less common to all; differences in behavior are attributed to differences in social-psychological characteristics of the individual rather than to different social group norms.

Subsequent researchers have followed Kasl and Cobb (54) and relied on one or two discrete indications of PHB, usually indicators of utilization of preventive health services. Some studies have used a single behavioral indicator and others used several indicators. Essentially all those on preventive dental behavior were by Kriesberg and Treiman (65), Freidson and Feldman (36), Kegeles (58), Freeman and Lambert (34), Nikias (83) and Tash, et al. (121); those studies on smoking behavior include James, et al. (51), Bosse and Rose (12), Foss (32) and Mettlin (81). Studies of seat belt use include Morgan (82), Tesser and Grossman (122), and Robertson, et al. (94); and those with screening

exams on particular immunizations as the dependent variable include Yeracaris (129), Fink, et al. (30), Kegeles (57), and Dabbs and Kriseht (26).

More recently, several studies have included behavioral indicators of two or more types of preventive health actions among adults and some compare the adult's own preventive health behavior with the preventive care hygiene of their children. Most of those studies focus mainly on a narrow range of behavior in relation to utilization of health services. For example, polio immunizations and dental visits constitute the dependent variable of preventive health behavior in the studies by Pond (90) and Tyroler, et al. (124); preventive physical and dental exams in the studies by Richardson (93); prenatal care and dental care in Bullough (14); routine physical, dental, and eye check-ups in Steel and McBroom (114) and Salloway and Dillon (103); routine physical check-up and chest x-ray in Haefner and Kirscht (46); and several preventive services were used as indicators of preventive health behavior by Ross (98). Only the studies by Pratt (91), by Williams and Wechsler (128), and Langlie (66) have used a larger number of behaviors as their operational definition of preventive health behavior, and these studies have utilized several indicators such as personal health maintenance practices, and promotion and utilization of preventive health services.

Langlie (66) has gone further in exploring not only behavioral variables, but social-psychological, social interaction and socio-economic status as variables.

5. A Brief Overview of Risk-Taking

Despite the extensive research on risk-taking behavior carried out over approximately the past fifteen years, some psychologists [Hull (50), Hebb (48)] have held the view that risk-taking is an individual's aggressive feeling which reduces one's tension and gives release to human need. McClelland (75) believes that man is in need of external stimulation to satisfy his natural need in order to gain achievement.

Indeed, Kogan and Wallach (64) described risk-taking behavior "on the basis of the kinds of situations in which it occurs where there is a desirable goal and a lack of certainty that it can be attained. The situations may take some form of requiring a choice between more or less desirable goals, with the more desirable one having a lower probability of attainment than the latter, with less desirable one. A further possibility, which is characteristic of such situations, is the threat of negative consequences for failure so that the individual at the post-decisional stage might find himself worse off than he was before he made the decision."

Wide individual variation reflective of differences in risk-taking dispositions seems to be a common feature

of information-seeking activity [Lanzetta and Kanareff (67)]. One of the more common theories of risk-taking regarding human variation is held by Coombs (25), in which each individual has an ideal or most preferred level of risk for all events that they are exposed to. And the behavioral pattern chosen by the individual is that which is closest to the preferred level.

A central issue in the study of risk-taking concerns the relative predominance of gain "maximization" and loss "minimization" in arriving at decisions. Ratting and Rawson (92), working with hypothetical ethical dilemmas, have shown that severity of censure (if apprehended in an unethical act) has greater influence than potential gain in the prediction and actual occurrence of unethical "risky" behavior. Comparable findings in other decision contexts, some involving monetary gain and loss [e.g., Atthowe (6)], reinforce the conclusion that university students tend towards conservatism in decision making.

6. Effect of Personal Characteristics in Risk-Taking

Sex, age, and social class differences in risk-taking have been reported in several researches. With regard to sex differences, there has been greater risk-taking in earlier life [e.g., Kass (55)], but such differences appear to be attenuated in adulthood [Kogan and Wallach (63)]. Higher

risk-taking has been found among university students relative to a gerontological sample of comparable education. Comparisons of subjects differing in social class--university students versus enlisted military personnel--have indicated stronger risk-taking dispositions in latter group [Scodel, Ratoosh, and Minas (107)].

Scodel, et al. (107) found that intelligence was not significantly related to risk-taking, but was related to variability in risk-taking. Low payoff bettors (small risk) as compared to high payoff bettors (high risk) are more directed, more socially assimilated, more middle-class oriented as a group in society.

Gilson (37) explored the relation of certain individual differences in risk-taking. He hypothesized that need for achievement is positively related to risk-taking. He concluded that low achievers were significantly riskier than high achievers, preferred low risk when alone, but would take greater risks as part of a group. High achievers preferred intermediate risks when alone and greater risks when in group settings, however, the effect of reward on risk-taking behavior was unclear.

The bulk of research on personality and motivation in relation to risk-taking has been mainly focused on the achievement motive [e.g., Atkinson (5)]. However, it must be noted that this work concerns the development of a theory of achievement motivation and not a theory of risk-taking as such, and accordingly will not be dealt with here.

Slovic (111) has shown some general personality characteristics of risk takers. Where tasks of a chance nature are concerned--gambling decisions in this case--the most sophisticated work has been carried out by Slovic and associates (112). They felt that males have a more intense gambling behavior than do females. Males are more willing to take chances of being wrong than females. Males are less cautious than females in their judgments and do not have the desire for sureness and certainty that females do.

Risk-taking and interaction in groups has generated a great deal of research over the past decade. These findings indicate that group interaction has a risk-enhancing influence on prior individual decision. This is known as the "risk-shift effect" and in groups has now been demonstrated that cautious shifts sometimes occur [Kogan and Wallach (64), Dion, Baron and Miller (27)].

Wallach and Kogan (125) has shown that group influenced decisions are more risky because the blame for failure of a risky choice will not fall upon a single person, but rather will be diffused across the members of a group.

In regard to group leaders, Hoyt and Sonter (49) concluded that taking risks as a group leader increases groups tendency to become more risky because leaders are more inclined to take risks and they persuade the other group members to follow that course. Others believe that risk-shift

effect is not truly a group phenomenon, but that risk is considered as a cultural value [Bateson (7)].

Others, such as Brown (13) and Stoner (116) have gained the greatest acceptance because they have been able to account for both risky and cautious shifts in groups.

In another study about the value of risk, Willems (127) felt that persons tended to view themselves as moderately risky in comparison to their peers. This value tends to have a stronger cultural impact than caution in that one is as willing to take risks as are his peers. Females are more cautious than males in changing their viewpoints regarding risks, but they are willing to take greater risks following group discussions regarding the value of a risk.

Individuals in western society value risk more highly than caution and believe that they are no less risky than their peers, but discover in the group context that some of their peers are more risky, thereby, offering a rationale for shifts towards greater risk [Bateson (7)].

Rosenthal (97) hypothesized that despite the fact that man is freed from the necessity of risking life for survival, the need for risk still remains. Civilized man can fulfill this need by engaging in calculated risks on both physical and mental levels, which is necessary for his mental well-being.

7. A Brief Overview of Internal-External Locus of Control Scale

The internal-external locus of control scale was constructed, developed within the theoretical framework of social-learning theory [Rotter (100)(99)], and is among the most widely researched personality constructs in recent years [Joe(53), Lefcount (70), Rotter (100)]. At its internal pole, the construct refers to generalized expectancies that important reinforcements are contingent upon one's personal actions, while the external pole attributes control of reinforcements to luck, chance, fate, or other powerful individuals. The I-E scale also indicates the degree in which a person accepts personal responsibility for his/her behavior and life experiences [Rotter (100)]. Internal control refers to the perception of positive and/or negative events as being a consequence of one's own actions and under personal control. The person showing a belief in internal control believes the outcome of an event is directly contingent upon his/her own behvaiors or his/her own permanent characteristics. External control refers to the perception of positive and/or negative events as being unrelated to one's own behaviors in certain situations and beyond personal control. The person showing external control in the I-E scale sees the consequences of his/her behavior as a result of luck, chance, fate, or under the control of others more powerful that he/she is [Rotter (100)].

Internality has been found to be related to insight, self-actualizing responses, and efforts to better one's life circumstances while externality is consistently associated with measures of maladjustment [Foulds, Guinan, and Warehine (33)].

Pender (87) believed that when a person sees himself as powerless, he believes that he has little chance to exert control over his environment. That is, he feels his life is externally controlled. Such feeling often characterizes people within the lower socio-economic class where the incidence of preventive health behavior is very low.

Kirscht (62) has found that those who are internally controlled view themselves as less vulnerable to ill health, but also think preventive health actions are more effective than do externally controlled individuals. Therefore, those who believe they can influence the course of their own health will possess higher preventive health behavior than those who feel powerless. Individuals who are engaged in unhealthy habits are found to be extremely internal. Goss and Morosko (42) found that out-patient alcoholics were extremely internal on the Locus of Control Scale. Those authors, quite independently, reasoned that the ingestion of alcohol afforded the alcoholic a means to "regulate the way he feels at any moment" [Goss and Marosko (42:191)]. Gozali (41) also found a sample of alcoholic males to be more internal than a control group of middle-aged normals.

Other studies suggest that the reason for the addicts' strong beliefs in personal and internal control is based on drug effects rather than social learning, and this in most instances hinders their responsiveness to treatment, educational and rehabilitation programs [Berzins and Ross (10)].

Most studies employing the Internal-External Locus of Control Scale [Rotter (100)] have contrasted the performance differences of internal versus external differences between various cultural subgroups in which the total scale scores have been studied. Relatively external means scores have been associated with membership in relatively "powerless" groups; for example, minority groups, low socioeconomic classes, maladjusted population. Peace Corps volunteers in contrast, have shown highly internal mean scores [Rotter (100)]. Even cross-cultural comparisons have been made [Parsons, Schneider and Hensen (86)] by utilizing Internal-External Locus of Control Scale.

Some studies have attempted to link Locus of Control and cognitive activities. The first study was conducted by Seeman and Evans (108). They used a twelve-item measure of powerlessness, derived from Rotter's I-E scale, to predict knowledge about a disease among sufferers of that disease. External-oriented tubercular patients were found to have less knowledge about tuberculosis than internal tubercular patients. In addition, when the staff of the sanitorium was asked to estimate their patients' knowledge

about tuberculosis, internal oriented patients were rated as more knowledgeable than externals.

The results of this study support the assertion that internals avail themselves of information, even if it has negative connotations for themselves, more than do externals. It has been assumed that this difference is derived from the fact that internals believe that they can act in their own behalf and therefore require more information, while externals more readily accept dependency, are more confident of others, and thus have less need of information.

Lefcourt (71) pointed out that the research pertaining to familial origins of locus of control seems to indicate that an attentive, responsive, critical, and contingent milieu is a precursor of the development of an internal locus of control. The less opportune milieu surrounding the poor and the deprived creates a climate of fatalism and helplessness which is reflected in the scores that individuals obtain on locus of control measures. However, socioeconomic status, membership in denigrated minority groups, and non-voluntary quasi-incarceration share commonality in affording minimal contingency between quality of effort and quality of reward, and in generating more external control expectations. The extent of such a conclusion is evident in a recent report by Stephens and Delys (115), who found out why preschool children from poor homes were more external than middle class children, a common enough finding, but

within lower class children, those from homes assessed as above the poverty line were less external than those from homes rated as below the poverty line.

Locus of control is not a characteristic to be discovered within individuals. It is a construct, a working tool in social learning theory, which allows for an interpretation of remarks made by people and to elicit their expressions of belief. Rotter's Locus of Control Scale is simply a questionnaire for rough approximation of what is believed to be a person's expectancies about control.

McArthur (74) had administered Rotter's scale to a group of Yale undergraduates on the day following a lottery that the United States Government conducted to determine draft eligibility for the armed services. Those who were virtually eliminated from draft consideration scored in a more external control direction than did those who retained the same draft eligibility. He conveyed that locus of control scores shift with relevant environmental events. Whether these shifts were of any permanence is unanswerable. However, it is possible to conclude that internal status can be created by environmental occurrences such that individuals will shift in their expression of the perception of control.

Rotter's scale was subsequently put to practical test by Gurin (45). He found students who are strongly internal in the personal sense have higher achievement test scores,

achieve higher grades in college, and perform better on anagrams tasks in contrast to students who are strongly internal in the sense of believing that internal forces are the major determinants of success in the culture at large (ideological) perform less well than the more externally-oriented students [Gurin (45)]. In addition, Gurin found that externality on the control ideology factor was associated with readiness to participate in social action and the likelihood of choosing careers that had been atypical for blacks.

Among a number of investigations, one study conducted by Lefecourt and Ladwig (69) among inmates provides support for the blacks being governed more by external control than whites. Other studies have shown similar findings, such as Lessing (72), Shaw and Uhl (109), Strickland (117), Zytkoskee, Strickland, and Watson (130).

On the other hand, a few studies have been reported in which class and race groupings were not reflected in measures of perceived control. Gore and Rotter (39) failed to obtain social class differences on the I-E Scale in a group of southern Negro college students. Likewise, Katz (56) and Solomon, Houlihan, and Parelius (113) found no race differences in response to the Intellectual Achievement Responsibility Scale which measures perceived control in the academic settings of childhood. These investigators attributed their failure to obtain race related differences

to the fact that classroom achievement situations may seem more amenable to control for blacks than the wide range of situations represented in other scales pertaining to control.

In one negative study in which the I-E Scale was employed, Kiehlbouch (59) found no differences between black and white reformatory inmates. This finding was obtained approximately six years after the investigation by Lefecourt and Ladwig (69), who also utilized reformatory inmates. Lefecourt (71) explains the differences between these studies by the rise and fall of Martin Luther King, Malcolm X, and the Kennedy brothers, and the changes in race relations in the United States; which therefore, may represent a real shift from fatalism to militancy, to the belief that one must act in one's own behalf or perish. Lao (68) found similar patterns of results with personal control predicting academic achievement and control ideology allowing the prediction of social action and civil rights activity.

Those findings obtained with black students reveal some limitations in the generalizability of control expectancies. In essence, the black experience provides for some disjunction between the ways in which one perceives one's own and others experiences and this is particularly evident in black perspectives upon causality.

The most extensive investigation regarding group memberships, ethnical background and socio-economical status

and the perception of control was conducted by Jessor, Graves, Hanson, and Jessor (52). Objective access was defined by the position of a subject on eight measures including age, marital status, language spoken in the home, occupation, education, religion, generation immobility, and social participation linked to a location in the opportunity structure.

The survey concluded those with an "Anglo" identification had greater objective access to opportunity than did Spanish and Indian persons. When the three groups were compared with regard to scores on Rotter's I-E Scales, Anglos were found to be the most internal in contrast to the Spanish and Indians. The Spanish were more external than both Anglos and Indians. Indians, on the other hand, did not differ significantly fron Anglos. The more objective access to opportunity one had, the more potential control of one's fate did a person acknowledge. While ethnic group membership was also linked, the access to opportunity was more decidedly associated with perceived control.

As a result, it may be concluded that perceived control is positively associated with access to opportunity. Those who are able, through position and group membership, to attain more readily the valued outcomes that allow a person to feel personal satisfaction are more likely to hold internal control expectancies.

Blacks, Spanish-American, Indian, and other minority groups who do not enjoy as much access to opportunity as do the predominant Caucasian groups in North American society are found to hold external control beliefs.

CHAPTER III

METHODOLOGY

1. Overview

The primary purpose of this study was to analyze differences in attitudes towards risk-taking among persons exhibiting low, moderate, and high Preventive Health Behavior. The second purpose was to analyze differences between these three groups and measures of locus of control. Another (the third) was to determine the relationship between attitudes towards risk-taking and locus of control for the three groups. The fourth purpose of the study was to determine if there were any differences between Blacks and Whites or between the sexes with regard to the variables.

2. Instrumentation

The instruments used in the study were: (1) The Preventive Health Behavior Inventory, (2) Risk-Taking Attitudes-Values Inventory, (3) The Internal-External Locus of Control Scale.

Sample copies of these instruments are available in Appendix A, B and C.

Preventive Health Behavior Inventory

This instrument was first used by Williams and Wechsler (128) in two different studies. The studies were undertaken to systematically determine the extent to which a broad range of preventive behaviors were interrelated. The studies were also undertaken to discover whether a general preventive syndrome existed which included health behavior, to determine which behaviors were related and whether or not there were several independent dimensions of preventive behavior.

It was also an aim of the present study to determine whether a general trait of prevention exists which would include risk-taking and health behaviors among college students. Thus, the same preventive health behavior instrument was used due to the fact that certain similarities exist between it and the previous studies.

The Preventive Health Behavior Inventory used in this study consists of 12 items, and was designed to measure the levels of preventive health behavior, low, moderate, and high, among Black and White, male and female college students. The instrument was designed and modified for the purpose of this research after consulting Williams and Wechsler (128).

The initial instrument contained 17 questions related to preventive behavior. Basically preventive behavior

was classified under six categorical actions. These actions were those which (1) reduce susceptibility to disease by sleeping approximately eight hours each night or getting equivalent in rest every day; avoid people who are coughing or sneezing; brushing the teeth three times a day; increasing physical activity during the course of an ordinary day by walking to the third floor of a building when you have a choice, rather than taking the elevator; and maintaining a balanced diet; (2) increase susceptibility to disease such as: smoking cigarettes; attempting to remove or open a pimple or blackhead with a sharp object or by squeezing with the fingers; (3) reduce seriousness of disease such as: medical check-ups on a regular basis; regular dental check-ups (medical and dental check-ups could also be categorized under actions which reduce susceptibility to disease); (4) reduce susceptibility to accidents such as: keeping a safe distance from the vehicle in front of you when driving; (5) increase susceptibility to accidents by drinking one or more alcoholic beverages an hour or less before driving; and by driving while under the influence of drugs; (6) reduce seriousness of accidents such as: the regular use of seat belts.

The questionnaire used in this study consisted of 12 different questions (see Appendix A) in which all questions were based on a one to five scale: always,

usually, quite often, sometimes, and never. Initially, the score was on a one to four scale and the exception to the rule was using the obesity index to score individuals classified as obese [William and Wechsler (128)]. However, in the present study, the scoring on all questions was based on one to five scale.

In this study the concept of prevention was not restricted to health alone. That is, preventive behavior requires some action now which may entail minor effort or inconvenience in order to avoid a more major negative health consequence later. Thus the concept of prevention in this study was extended to accidents (use of seat belts) as a preventive health action. Also risk-taking behavior such as keeping safe distance from the automobile in front as well as those behaviors which apply directly to health (drinking and driving) were included in the preventive health inventory.

Questions on items such as the Papanicolaou test, which is a test primarily for women, were eliminated from the study. Knowledge of first aid was also eliminated due to the fact that first aid classes were used for the purpose of collecting data and thus the response would have been all positive. Questions such as possession of a fire extinguisher in the home and flares in cars were also eliminated because most students did not live at home and many did not own an automobile.

Williams and Wechsler (128) conducted two different studies using the preventive health inventory, which substantiated the reliability and validity of the instrument. In Study A, 161 of the 179 eligible members (women aged 35-54 years) who resided in a suburb of Boston responded, for a response rate of 90 percent. In Study B, responses were received from 240 of 367 mothers (96.5 percent) and from 193 of the 319 fathers (60 percent). The ages of mothers ranged from 33 to 61, with a mean of 43.2; for fathers the ages ranged from 35 to 67, with a mean of 47. The data were analyzed originally by means of the Pearson Correlation. Factor analysis was also used to determine if and how preventive behaviors are interrelated. Some of the variables were eliminated because they were not applicable to their study. For example, having a safe place for important papers, having a handy list of emergency telephone numbers, have a fire extinguisher in the car, and signaling for turns. Eight of the items had a loading factor of 0.44 or more in the predicted direction, but 11 had loading factors of less than 0.30, and three (speeding, chances, driving and drinking) had small loading factors in the opposite direction (see Table 1).

The dimensions of preventive health behaviors were not unidimensional in either Williams and Wechsler's studies. However, Williams and Wechsler rotated the

TABLE 1

THE FACTOR LOADING OF PREVENTIVE HEALTH BEHAVIOR VARIABLES. ADOPTED FROM WILLIAMS AND WECHSLER (135)

Variable	Factor Loading
Papanicolaou test	+ .67
Medical check-up	+ .60
Limit calories	+ .58
Dental check-up	+ .55
Seat belt usage	+ .49
Exercise	+ .46
Tuberculosis test	+ .45
Have a legal will	+ .27
Sleep	+ .26
Toothbrushing	+ .26
Physical activity	+ .25
First aid knowledge	+ .24
Poliomyelitis immunization	+ .22
Fire extinguisher in house	+ .21
Lock car	+ .19
Flares in car	+ .12
Exceed speed limit	+ .11
Rain apparel	+ .06
Chances	+ .04
Drive after drinking	00
Smoking	- .24
Obesity	- .44

variables to determine the pattern of prevention. The Papanicolaou test and dental and medical check-ups were positively associated (+.39, $p < .01$) with factors such as exercise, the voluntary limiting of calories and tuberculosis. Occupational status and education were found to be related to medical check-ups. The medical check-up scale had a correlation with occupation (+20, $p < .05$) and with education (+.21, $p < 0.01$). The exercise--limit--calories--tuberculosis test scale was (+.29, $p < .01$ and +.34, $p < .01$), and to have a will and fire extinguisher scale was (+.33, $p < .01$ and +.34, $p < .01$).

In Study B, cholesterol control and limit calories were positively associated with sleep and exercise (+.32, $p < .01$). And the check-up factor was correlated with occupation (+.24, $p < .01$) and education (+.27, $p < .01$). In Study B, two factors were found to be interrelated (sleep and exercise), and in Study A, the check-up factor was found to be associated with socio-economic status, which was consistent in both studies. However, all preventive health actions were not unidimensional and not all health behaviors were interrelated at moderate statistically significant levels. In fact, there were several dimensions, of preventive behavior in which most of the variables were independent from one another. As a result, people who take preventive actions in one dimension do not necessarily take actions in other directions as well.

Risk-Taking Attitudes

The Risk-Taking Attitude-Value Inventory (RTAVI) was first developed by Carny (15) to measure the risk-taking attitude. The instrument consists of major concepts (Tables 2 and 3, Appendix B). The Risk-Taking Attitude-Values Inventory was developed to provide a measurement procedure which is based on Subjective Utility Theory and valid for use in understanding and predicting both individual behavior and outcomes of treatment and/or prevention program. A brief presentation is given here to provide evidence for the validity of the RTAVI and prediction of behavior.

Information about the concepts measured by RTAVI. Several concepts are postulated as variables in the decision making process: Value-Goal, Needs, Incentive, Expectancy and Environmental Press.

Value Goals. It is assumed that every person regardless of background has a common set of general life goals which are valued to some degree. Such goals form the criteria against which all motive-relevant experience is measured. For the present purposes, a set of eight such generalized Value-Goals are used that have been derived by Harold Lasswell [Rucker, et al. (101)].

It is further assumed that unless some reasonably clear knowledge (both cognitive and emotional) of the nature of these goals is present, there will be a faulty

TABLE 2

STRUCTURE OF THE RTAVI

Value Goals

A. Defines eight universal value goals: Affection, Respect, Skill, Enlightenment, Power, Wealth, Well-Being and Rectitude.

B. Asks how important each goal is (Motive).

C. Asks how near to satisfaction each goal is (Drive).

D. Combines Importance × Distance from goal to define Need.

E. Sums Need over eight goals to obtain Total Need score.

Coping Behaviors

A. Presents 15-25 behaviors appropriate to age level. Behaviors range from highly socially approved to highly socially disapproved with each of three categories: Drugs, Social Interaction and Environmental Interaction.

B. Asks how useful each behavior is for goal attainment (Incentive).

C. Asks likeliness of success at carrying out behaviors (Expectancy).

D. Asks how frequently the behavior has been or is being done.

E. Multiplies Usefulness × Expectancy and adds Frequency to obtain a Behavior Potential score for each behavior.

F. Combines Behavior Potentials into three Behavior Style scores: Socially Disapproved (SDB), Masculine Aggressive (MAB), and Socially Approved (SAB) Behaviors.

Ways of Changing Behavior (Environmental Press)

A. Asks how credible ten environmental influences are as ways of changing behavior for the better.

B. Combines these scores into Institutional (IST), and Interpersonal (INT) scores.

TABLE 3

ALL THE VARIABLES ASSOCIATED WITH THE RISK-TAKING ATTITUDES-VALUES INVENTORY

Socially Disapproved Behavior*	Masculine Aggressive Behavior*	Socially Approved Behavior*
Marijuana	Driving	TV
Pills	Motorcycling	Art
LSD	Racing	Tea
Heroin	Gambling	Moving
Drinking	Sports	Work
Gambling	Fighting	Marriage
Smoking	Cheating	Sports
Sex		
Abortion		
Fighting		
Cheating		
Dropping out		
Stealing		

*Variables specifically used for the purpose of this study.

criterion-reference system against which to judge the outcomes of behavior. Little importance may be placed on goals which are unfamiliar or which have had a history of deprivation. The degree of importance placed on Value-Goals and Motive are here used interchangeably.

Needs. Value-Goals provide the directional component of behavior, but an impetus toward the goals is needed. When an important goal is frustrated, Drive toward that goal develops. Motivation in the form of needs is assumed to be the product of Motive and Drive.

Considerable research, both animal and human, suggests that when both Motive and Drive are high and no effective coping behaviors are present to produce drive reduction, aggressive and/or compulsive behavior is likely to take place. Chronic frustration may lead to a devaluing of the goal and apathy or avoidance [Carney (20)].

Incentive. Each available behavior has a history of association with satisfaction or dissatisfaction of various motives. The schedule and intensity of such reinforcement leads to an expected pay-off for these motives. (If I eat, will this taste good and satisfy my hunger?) This expected probability of consumatory success is called Incentive. The total incentive value for a given act is assumed to be the net gain (or loss) expected for all of the motives which are relevant to a given situation. Deviant behavior is,

then, frequently engaged in because no other behavior has higher incentive value in the life history of the individual. In short, no adequate reinforcement has been received for those behaviors which are more socially acceptable.

Expectancy. Another consideration must be dealt with in the choice of a coping behavior. Is it possible to successfully carry it out? Again each individual has a history of attempts to carry out various behaviors. Abilities and opportunities will lead to failure or success on some schedule which will produce a subjective probability of instrumental success or Expectancy. Problem behavior is assumed to result in part from low expectancies for other behaviors. Why work hard if you see little chance of success? The product of Incentive and Expectancy defines the Subjective Expected Utility of the behavior. Given an existing need to satisfy a particular motive, a behavior will be selected with the highest utility value. It follows that persons exhibiting "problem" behaviors do so because these behaviors have higher utility for them than other, more acceptable behaviors.

Behavior potential and style. When the actual level of present or past behavior is added to the utility of that behavior, the sum provides an indication of the Potential for that behavior. Empirical research has shown that Behavior Potentials tend to cluster into groups or styles

which roughly parallel the degree of social acceptability of the behavior [Carney (15)].

Environmental press. All overt behavior takes place within an environmental context which is likely to be seen subjectively as presenting either blocks or facilitation to the attainment of value goals. Persons who view their environment primarily as a series of negative pressures or blocks which keep them away from their goals are likely to feel greater frustration and to resort to coping behaviors that are less adjustive. Those who perceive potential positive help from the environment, tend to be more open to assistance from those sources [Carney (20)]. Although environmental press is important to measure for individual assessment, program planning and evaluation, it will not be discussed further here. It will be the subject of a separate paper.

Vast amounts of research has been conducted in which high validity and reliability for RTAVI have been reported [Ellison (29), Rucker, et al. (101), Simons (110)]. Simons (110) provides evidence that a low but significant trend is found in that the high need levels will bias individuals toward high-risk, low-gain behavior. Simons in his study combined male, female, delinquent and non-delinquent (grades 1-6) to provide heterogeneity in order to reduce the absolute size of the correlation. Delinquent

groups were distinguished significantly from non-delinquent on the basis of need (multiple R = .253, $p < .05$).

Turning to a measure of adjustment outside of the RTAVI, Ellison (29) compared self concept scores from the Tennessee Self Concept test to the RTAVI measures. He found that persons high in self concept tended to avoid socially disapproved behavior and to engage in a more socially acceptable style. Table 4 shows that even if the correlations are low, they are highly reliable.

TABLE 4

CORRELATIONS WITH BEHAVIOR STYLE

	Behavior Style			
Correlation	SDB	MAB	SAB	Source of Data
Total need (RTAVI)	158**	058	-201*	Simons (116) N=334, Grades 1-6
Self identity	-210**	-025	199**	Ellison (30) N=804, College

*$p < .05$

**$p < .01$

Carney (21) made another systematic attempt to change behavior in this area by reducing need levels. In this case the correlations between changes in average need and behavior style were performed for 14 individual classes.

The general trend was to move progressively toward fewer acceptable behaviors as needs (frustrations) increase. In this study, positive correlation with socially disapproved behavior style was shown to change to lower positive or negative correlation with socially approved behavior style. Kendall's Coefficient of Concordance (W) was calculated to determine how consistently the behavior style changes were ranked by the need change. W for boys was .52 and (Chi-square $\chi^2 = 5.2$, $p < .10$, 2df), for girls was .84 and (Chi-square $\chi^2 = 8.4$, $p < .02$, 2df).

Carney (22) also used data from persons who were driving while intoxicated (DWI). He compared the normative means and the t ratio from the general population (N = 540) to those for the program group (N = 114). A negative difference indicates that the program group had greater need than the norms. There is a general trend for the normative group to have relatively higher need as the value goals become more important (rank order correlation between t ratio and rank of value goal = .903, $p < .01$). In this case, the program group had significantly less need for skill and enlightenment because these are not highly valued goals for them. They have more need in areas that are less troublesome for the norm group (power and wealth). Need for wealth and enlightenment combine to predict group membership ($R = .270$, $p < .01$). In measuring need, the evidence supports the premise that high need tends to go with less adjusted

behavior. These results were found to be statistically significant and quite consistent over a wide range of ages and situations.

In addition to the previously discussed instruments, the Risk-Taking Attitude-Value Inventory also provides other information which significantly increases the predictive efficienty gain and reliability. This instrument also allows certain patterns of attitudes and behavior to predict other behaviors and the characterization of criterion groups. It is in this area that the RTAVI is particularly strong. Internally, the measures of usefulness and expectancy on the RTAVI are highly correlated with their respective behaviors [Carney (15)]. According to the RTAVI, people tend to do those things which seem to have the highest subjective expected utility. The various behaviors and attitudes intercorrelate to form the coherent patterns that are called behavior style, socially disapproved (SDB), masculine aggressive (MAB), and socially approved (SAB) behaviors.

Simons (110) found that very young delinquents were, as expected, significantly higher on SDB and MAB, and slightly lower on SAB styles. The behavior styles combined to differentiate delinquents from the norm ($R = .226$, $p < .05$). Combining need and behaviors produced a total $R = .341$, $p < .05$.

Ellison (29) found that both SDB and MAB styles differentiated between groups that differed in the use of marijuana (as determined by evidence other than the RTAVI). The correlation ratio between group membership and level of SDB was .639, $p < .001$. Significant correlation was also found to be .104, $p < .05$ for MAB, and .099, $p < .05$ for SDB. Combining the style scores gives a multiple R of .75, $p < .001$.

Males were found to have a higher score in SDB than females with a correlation ratio of .298, $p < .001$. The difference was even greater on MAB with a correlation ratio of .346, $p < .001$. These findings confirm the expected general pattern of males showing more aggressive and disapproved behavior while females have more potential for socially approved actions.

When norm groups were compared to persons in the DWI diversion program [Carney (22)], the expected pattern was observed. Drinking drivers are significantly higher in SDB and lower in SAB scores. Other similar evidence includes differences in the expected direction between delinquent and non-delinquent adolescents [Carney (18)], alcoholics and norms [Carney (19)], and drug addicts and norms [Carney (17)]. Numerous drug prevention programs have produced effects that were shown by the RTAVI to be in the expected direction (lower needs, less dysfunctional behavior) [Carney (16) (17) (18) (19) (21) (22)].

Internal-External Locus of Control

The standard version of the Internal-External Locus of Control Scale [Rotter (105)] consists of a 29 items forced choice questionnaire. Each item consists of a pair of alternatives lettered a or b to be selected by the participants. In addition to the 23 forced-choice item pairs, there are six filler items. The six filler items are intended to make the purpose of the test somewhat more mabiguous (see Appendix C).

The questions were constructed to assess the individual's internal or external psychological reinforcement. Students were asked to choose either choice a or b, in order to determine whether they believed the events in life are purely due to accidental happenings or personal control over the outcome of events. Items used were questions such as "many of the unhappy things in people's lives are partly due to bad luck," (choice a) being external in contrast to "People's misfortunes result from mistakes they make" (choice b) being the internal choice. Another question used was "the idea that teachers are unfair to students in nonsense," the internal choice being a, in contrast to "most students don't realize the extent to which their grades are influenced by accidental happenings," with the external choice being b.

The reliability and validity of Rotter's Locus of Control scale has been reported in numerous studies (see

Appendix C). Test-retest reliability for a one-month period was reported to be at +.69. Rotter (100) found that the I. E. Scale correlates satisfactorily with other methods of assessment.

The validity of the Internal-External Locus of Control Scale has been proven in various investigations. Following are some related studies. Ryckman and Sherman (107) found a reliable low-magnitude relationship ($r = -.25$, $P < .0001$, $N = 382$) between Rotter's I.E. Scale and a measure of "feeling of inadequacy," as Fish and Karabenick (31) and Gorman (40) had previously found. In regard to mood change Kilpatrick, Dubin and Marcotti (60) also found, from students who were engaged in medical school, that students characterized as internals exhibited less mood disturbances.

Positive correlation has also been reported among college students. The more external the student, the more frequently did he report incidents of depression [Abromowitz (1)]. Goss and Morosko (42) also found a significant correlation between the I-E Scale and the depressiveness subscale of the MMPI among three samples of alcoholic outpatients ($r = .24$, with 62 females; $r = .31$, $p < .01$ with 100 males; and $r - .22$, $p < .05$ with a second group of 100 males). Positive correlation was also found between changes in personal future and locus of control ($r = .61$, $p < .05$). In other words, a negative outlook for the future and external control expectancies were

associated. Personal control also correlated positively with changes in temporal extension into the future, or, as one feels increasingly helpless, one's span of awareness of the future diminishes ($r = .63$, $p < .05$).

In regard to the locus of control and age, Penk (88) found supportive evidence for such a relationship. Penk found chronological age to be positively correlated with internality as assessed by the locus of control scale ($r = .27$, $p < .01$). This study also supported an earlier finding by Bialer (11) in which mental age and locus of control remained strongly related ($r = .47$, $p < .01$).

With regard to locus of control and achievement, Nowicki (84) concluded that externality was associated with achievement for female ($r = .39$, $p < .05$, $N = 26$) as defined by grade point average, while internality was related to achievement for males ($r = .50$, $p < .02$, $N = 22$). Nowicki (84) also found subsequent replication of these data from college students with $r = .63$, $p < .01$, $df = 38$ and $.42$, $p < .05$, $df = 26$ for female; and $r = -.48$, $p < .01$, $df = 36$ and $-.42$, $p < .05$, $df = 24$ for male.

With regard to change, evidence has shown that internals are not more resistant to influence and change than externals. James, Woodruff and Werner (51) found that more internal males quit smoking for a specified length of time than did external males after hearing the United States Public Health Service Surgeon General's report concerning the link

between smoking and cancer. Likewise Platt (89) had more success in influencing the smoking behavior of internal than external individuals.

A most extensive investigation of intergroup membership and locus of control was conducted by Jessor, Graves, Hanson, Jessor (52). Three groups consisting of Anglos, Spanish and Indians were tested on Rotter's I-E Scale. Anglos were found to be more internal than were the Spanish and Indians while the Spanish were more external than either Anglos ($t = 5.39$, $p < .001$) or Indians ($t = 3.78$, $p < .001$). On the other hand Indians did not differ significantly from Anglos ($t = 1.39$, $p < .001$). Also a strong correlation was found between access to opportunity and Internal External Locus on Control ($r = .50$, $p < .001$), $N = 221$). In general, Blacks, Spanish-Americans and other minority groups who do not enjoy as much access to opportunity as do the predominant Caucasian groups in American society are found to hold more external beliefs. However, it is important to recognize that the locus of control score shift with relevant environmental events, as opportunities [McArthur (74)] in the society increase for the minority population the external control would shift to the more internal one.

In conclusion, the Internal-External Locus of Control Scale has been subject to extensive usage in research and the content, construction, concurrent and predictive validity have been well established (see Appendix C).

3. Population and Sample Selection

The population selected to participate in this study was comprised of undergraduate students at the University of Tennessee, Knoxville, in which the students were predominantly White, and undergraduate students at the Knoxville College, Knoxville, Tennessee, in which the students were predominantly Black.

Sample Selection

In this study the actual number of samples required was determined by the standard deviation of 1.3 in accordance with the review of literature. A confidence level of .90 was selected with an accuracy of .1. The actual number of subjects was computed by adopting the following formula [Ahmed (3)]:

$$N = \sqrt{\frac{\alpha \cdot SD}{AL}}$$

N = number of sample

SD = standard deviation

α = the confidence level

AL = accuracy level

$$N = \sqrt{\frac{(1.65)(1.30)}{0.1}}$$

N = 460.

It was determined that a sample size of 460 would be adequate for the purpose of this study at a confidence level

of 0.1 and with 0.1 level of accuracy. However, for this study a representative sample total of 475 students was selected to participate in this study during the spring quarter of 1978.

A total of 375 students at the University of Tennessee, Knoxville, Tennessee were selected from 12 different courses in order to get a true figure for the population. This figure represents more than 2 percent of the total number (N = 18,592) of daytime undergraduate students enrolled in the various colleges of the University of Tennessee during spring quarter, 1978.

However, a total sample of 100 students was selected at Knoxville College from eight different courses. This figure represented 15 percent of the total (N = 650) daytime students enrolled in various disciplines of the Knoxville College. The total number of students enrolled in these classes were (N = 120) and 83 percent took part in this study.

Announcements were made prior to the administration of the test excusing those students who had previously participated in this study, and all graduate students. A complete set of instructions was given to students prior to their answering the questions. Each student was furnished a manila envelope with one copy of the Preventive Health Behavior Inventory, one copy of the Risk-Taking Attitudes-Values Inventory, and one copy of the Internal-External

Locus of Control Scale, and a consent form, and one number two lead pencil. Students were asked to carefully read the consent form to be signed and returned to the investigator prior to completion of the questionnaire.

All participants were instructed to complete the data instruments in the following order: first, the Preventive Health Behavior Inventory, then the Risk-Taking Attitudes-Values Inventory, and finally the Internal-External Locus of Control Scale.

A copy of the Preventive Health Behavior Inventory, Risk-Taking Attitude-Value Inventory and Internal-External Locus of Control Scale plus a copy of the consent form were submitted to the University of Tennessee's Human Subject Committee for approval. After the Committee's review, the instruments, along with the consent form were approved for administration to the students. The participation of all students was voluntary and the names of the participants remained completely anonymous. Each student has the chance to withdraw from the test any time he or she wished throughout the administration of the instrument.

4. Statistical Design and Analysis

A 2 × 2 × 3 analysis of variance for unequal sample size was employed for the nine experimental groups utilized in this study (see Table 5). A general linear model of SAS

TABLE 5

EXPERIMENTAL GROUPS USED IN THIS STUDY

Preventive Health Behavior				Risk-Taking Attitude				Internal-External Locus of Control			
Male		Female		Male		Female		Male		Female	
Black	White	Black	White	Black	White	Black	White	Black	White	Black	White
Low preventive health behavior				Socially disapproved behavior				Internal or external control			
Moderate preventive health behavior				Socially disapproved behavior				Internal or external control			
High preventive health behavior				Socially disapproved behavior				Internal or external control			

was used to perform analysis of variance to establish a linear model with dependent variables, internal-external locus of control and socially disapproved behavior; and independent variables such as preventive health behavior, sex, race, and their interrelationships. The general linear model procedure uses the principle of least squares to fit a fixed-effects linear model to virtually any type of data [Goodnight (38)].

To determine the relationship between risk-taking and internal locus of control, the Pearson Product Moment method correlation was used.

The Internal-External Locus of Control Scale was scored by hand. The scale was scored in the "external" direction (summing the number of times the external alternatives was chosen) according to Rotter's (100).

The Preventive Health Behavior Inventory was scored by hand and the interval was determined by computing the z value in order to have an equal distribution of 33 1/2 percent of samples in all low, moderate, and high preventive health behavior categories. The preventive health behavior's mean was computed to be 32.18 and the standard deviation of 5.99, the z value was $\pm$ 0.45 for 33 1/2 percent distribution under the normal curve (see Table 6). Therefore, the interval was found to be:

TABLE 6

ANALYSIS OF POPULATION DATA FOR PREVENTIVE HEALTH BEHAVIOR, SEX, AND RACE

Category	Number	Percent
Low preventive health behavior	168	37.3
Male	86	32.1
White	56	12.4
Black	30	6.6
Female	82	30.6
White	57	12.6
Black	25	5.5
Moderate preventive health behavior	137	30.4
Male	47	14.3
White	33	7.3
Black	14	3.3
Female	90	27.4
White	74	16.4
Black	16	3.5
High preventive health behavior	145	32.2
Male	46	14.8
White	30	6.6
Black	16	3.5
Female	99	31.9
White	75	16.6
Black	24	5.3

Low	PHB > 34.65
Moderate	34.65 > PHB > 29.75
High	PHB < 29.75 .

The Risk-Taking Attitudes-Values Inventory was scored for all three variables--socially disapproved behavior (SDB), masculine aggressive behavior (MAB), and socially approved behavior (SAB). The scoring of this instrument was also done by hand. However, for the purpose of this study, only SDB was statistically analyzed.

Analysis of variance was employed to determine whether the internal-external locus of control and the risk-taking attitude toward low, moderate, and high preventive health behavior differ significantly between male, female, White, and Black. To determine the relationship between internal and external locus of control and risk-taking attitudes for the groups defined in this study, the Pearson Product-moment method of correlation was used. The interpretations of various correlations for this study were as follows Guilford (44):

Less than .20--slight, almost negligible, relationship.

.20-.40--low correlation; definite, but small, relationship.

.40-.70--moderate correlation; substantial relationship.

.70-.90--high correlation; marked relationship.

.90-1.00--very high correlation; very dependable relationship.

Duncan's New Multiple Range Test was used based on calculated means. The means for each variable was classified and arranged in order from largest to smallest. Thus, when an analysis of variance showed overall significance in main effects on interaction, Duncan's Multiple Range was conducted to determine the significant mean differences.

All data were collected and computer cards were prepared for this study. The computer program statistical analysis system (SAS) was utilized at the University of Tennessee Computer Center to analyze the results.

CHAPTER IV

ANALYSIS OF THE DATA

1. Introduction

In this chapter, the data were analyzed from the administration of Preventive Health Behavior Inventory, Internal-External Locus of Control, and Risk-Taking Values Inventory, to 475 undergraduate students in which 375 were undergraduates from The University of Tennessee, Knoxville and 100 students from Knoxville College, Knoxville, Tennessee.

For the purpose of this study, PHB is used for Preventive Health Behavior, SDB as Socially Disapproved Behavior for risk-taking attitudes, and IE for Internal-External Locus of Control.

2. Characteristics of the Population

Four hundred seventy-five students participated in this study. However, 25 participants were found to have missed or incompletely responded to the questionnaire. The missing responses were completely eliminated from this study. This was 5.25 percent of the total 475 participants. As a result, a total of 450 completed the survey and were analyzed in this study.

The population was selected from two different institutions. A total of 375 were surveyed from The

University of Tennessee, Knoxville, Tennessee, and a total of 100 from the Knoxville College, Knoxville, Tennessee.

Sex

In the surveyed population, there were 179 males or 40 percent of the total number of participants, and there were 271 females or 60 percent of the total number of participants.

Age

In this study the clustering of age distribution was uniquely centered around participants age 18, 19, 20 and 21 years of age. Three hundred and fifty-one or 78 percent of the 450 participants were in the age range 18-21 years, and 16.2 percent were in the age range 22-25 years. The distribution of the population by age was presented by sex and race in Tables 7 and 8.

Race

The distribution of the participants by race in this study is as follows. Three hundred and twenty-five white students were participants in this study in contrast to 125 Black students. The distribution of the population by race was presented in Table 9.

Worship

In this study the distribution of the participants was classified by their church attendance. Twenty-nine

TABLE 7

AGE OF THE POPULATION BY SEX

Age Range*	Combined Sexes		Male		Female	
	Number	Percent	Number	Percent	Number	Percent
12-17	5	1.11	3	0.67	2	0.44
18-21	351	78.00	125	27.78	226	50.22
22-25	73	16.22	40	8.89	33	7.33
26-30	14	3.11	8	1.78	6	1.33
31-35	6	1.33	2	0.44	4	0.89
46-50	1	0.22	1	0.22	0	0.00
Total	450	100.00	179	39.78	271	60.22

*The age distribution have been adopted from RTAVI.

TABLE 8

AGE OF THE POPULATION BY RACE

Age Range*	Combined Race		White		Black	
	Number	Percent	Number	Percent	Number	Percent
12-17	5	1.11	3	0.67	2	0.44
18-21	351	78.00	249	55.33	102	22.67
22-25	73	16.22	54	12.00	19	4.22
26-30	14	3.11	12	2.67	2	0.44
31-35	6	1.33	6	1.33	0	0.00
45-50	1	0.22	1	0.22	0	0.00
Total	450	100.00	325	72.22	125	27.78

*The age distribution have been adopted from RTAVI.

TABLE 9

RACE DISTRIBUTION OF MALE AND FEMALE POPULATION

Race	Combined Race		Male		Female	
	Number	Percent	Number	Percent	Number	Percent
White	325	72.2	119	26.4	206	45.7
Black	125	27.77	60	13.3	65	14.4
Total	450	100.00	179	40.0	270	60.0

percent were found to attend church or other places of worship occasionally and 25 percent were found to attend weekly (see Table 10).

Class Distribution

The distribution of population in this study was classified by class, such as Freshman, Sophomore, Junior and Senior. The class distribution among students was examined by sex and race (see Tables 11 and 12).

3. Risk-Taking Attitudes

General Linear Model Procedure was used by employing analysis of variance for unequal n's to test the differences in risk-taking attitudes among low, moderate, and high preventive health behavior in both males and females as well as among whites and non-whites. Where the overall F ratio was found to be significant, Duncan's test for multiple comparisons was used to determine which group means differ (see Table 13).

In the analysis of variance for socially disapproved behavior (see Table 14) the overall computed F value was found to be 7.33, and the F value of the table with 0.1 level of significance and (11 and 438) degree of freedom was given to by 1.57. Since the computed F value was significantly greater than F value of table the investigator rejects the null hypothesis that PHB, sex, color,

TABLE 10

DISTRIBUTION OF CHURCH ATTENDANCE BY SEX

Distribution of Church Attendance	Total		Male		Female	
	Number	Percent	Number	Percent	Number	Percent
Never	26	5.78	15	3.33	11	2.44
Less than once a year	37	8.22	20	4.44	17	3.78
Only on major holidays: Easter, Christmas, or Passover	21	4.67	9	2.00	12	2.68
Occasionally	131	29.11	58	12.89	73	16.22
Once a month	35	7.78	15	3.33	20	4.44
Two or three times a month	87	19.33	34	7.56	53	11.78
Weekly	113	25.11	28	6.22	85	18.89

TABLE 11

CLASS DISTRIBUTION OF THE POPULATION BY SEX

Class	Combined Sexes		Male		Female	
	Number	Percent	Number	Percent	Number	Percent
Freshman	131	29.11	42	9.32	89	19.77
Sophomore	127	28.22	43	9.56	84	18.67
Junior	97	21.56	45	10.00	52	11.56
Senior	95	21.11	49	10.89	46	10.22
Total	450	100.00	179	40.00	271	60.00

TABLE 12

CLASS DISTRIBUTION OF THE POPULATION BY RACE

Class	Combined Race		White		Black	
	Number	Percent	Number	Percent	Number	Percent
Freshman	131	29.11	87	19.33	44	9.77
Sophomore	127	28.22	103	22.89	24	5.33
Junior	97	21.56	66	14.67	31	6.89
Senior	95	21.11	69	15.34	26	5.78
Total	450	100.00	225	72.00	125	28.00

TABLE 13

OVERALL MEANS AND STANDARD DEVIATIONS FOR SDB, IE FOR LOW, MODERATE, AND HIGH PHB

Variable	Number	Means	
		IE	SD
Low preventive health behavior			
Male			
White	56	10.4	106.3
Black	30	12.3	86.1
Female			
White	57	12.5	64.4
Black	25	11.4	38.7
Moderate preventive health behavior			
Male			
White	33	10.7	89.1
Black	14	11.7	56.8
Female			
White	74	10.9	52.7
Black	16	12.6	70.3
High preventive health behavior			
Male			
White	30	10.8	55.5
Black	16	9.5	85.1
Female			
White	75	10.6	45.2
Black	24	12.0	28.2

TABLE 14

ANALYSIS OF VARIANCE APPROACH WITH ALL THEIR INTERACTIONS FOR SOCIALLY DISAPPROVED BEHAVIOR (SDB) IN GENERAL LINEAR MODELS PROCEDURE

Dependent Variable: SDB

Source	DF	Sum of Squares	Mean Square	F Value
Model	11	228983.144	20816.649	7.33
Residual	438	1243272.075	2838.520	
Total	449	1472255.220		

R-Square = 0.155 Standard Deviation = 53.277 SDB Mean = 64.553

Source of Variation	DF	Type IV Sum of Squares	F Value	F Value 0.10
PHB	2	25726.685	4.53	2.30
Sex	1	73690.905	25.96	2.71
Color	1	5286.232	1.86	2.72
PHB * Sex	2	15461.921	2.72	2.30
PHB * Color	2	13408.646	2.36	2.30
Sex * Color	1	11.151	0.00	2.74
PHB * Sex * Color	2	28364.248	5.00	2.30

and their interactions would not have an effect on SDB in the linear model, and conclude that PHB, sex, color, and their interaction have a linear interaction on socially disapproved behavior. To determine the effect of PHB on SDB considering other variables were included in the model, the computed F value was found to be 4.53. F value of the table for 0.1 level of significance with (2 and 438) degree of freedom, was given to be 2.30. Therefore, since computed F value is greater than table F value, we reject the null hypothesis that no linear association between independent variable PHB and dependent variable SDB and conclude that inclusion of PHB is significant and there was a relationship between socially disapproved behavior and low, moderate, and high behavior.

Duncan's test (see Table 15) indicated that low, moderate, and high preventive health behavior differed significantly from socially disapproved behavior. To determine the effect of differences in sex and its effect on SDB, the computed F value was found to be 25.96 and F of table with (1 and 438) degree of freedom and 0.1 level of significance is given to be 2.71. Therefore, we conclude that sex has an effect on SDB in the linear model. This meant that inclusion of sex differences is very effective on socially disapproved behavior.

Duncan's test (see Table 16) indicates that SDB among males differ significantly from SDB among females.

TABLE 15

DUNCAN'S MULTIPLE RANGE RESULTS FOR SOCIALLY DISAPPROVED BEHAVIOR FOR WHICH OVERALL F RATIO WERE SIGNIFICANT IN REGARD TO PREVENTIVE HEALTH BEHAVIOR

DF = 447 MSE = 2838.52

Preventive	Low Highest Mean*	Moderate*	High Lowest Mean*
Mean	78.452	63.985	48.986
Number	168	137	145

*Groups not sharing a common underline differed from each other at .1 level of confidence.

TABLE 16

DUNCAN'S MULTIPLE RANGE RESULTS FOR SOCIALLY DISAPPROVED BEHAVIOR FOR WHICH OVERALL F RATIO WERE SIGNIFICANT IN REGARD TO SEX

DF = 447 MSE = 238.52

Sex	Male Highest Mean*	Female Lowest Mean*
Mean	85.519	50.704
Number	179	271

*Groups not sharing a common underline differ from each other at .10 level of confidence.

Males demonstrate much higher socially disapproved behavior than females. In regard to the effect of race on socially disapproved behavior, there was not a very significant linear association, knowing other variables already in the model. The computed F value was found to be 1.86 and F value of the table was 2.72, with 0.1 level of significance and (1 and 438) degree of freedom. Therefore, since the computed F value was found to be less than F value of the table, the investigator accepts the null hypothesis and concludes that there was no linear association between socially disapproved behavior and race.

The effect of male low, moderate, and high preventive health behavior and female low, moderate, and high preventive health behavior on socially disapproved behavior was found to be significant. The computed F value was found to be 2.72 and F of the table with (2 and 438) degree of freedom was found to be 2.30. Thus, since the computed F value is greater than the table value of F, the investigator rejects the null hypothesis of no effect and their association between interaction terms PHB and sex on SDB, and concludes that there was an effect between low, moderate, and high PHB among males and females on SDB.

The test of significance was given to examine the interaction between white low, moderate, and high preventive health behavior and non-white low, moderate, and high preventive health behavior and their effect on socially

disapproved behavior. The computed F value was found to be 2.36 and the F value of the table of (2 and 438) degree of freedom was given to be 2.30. For this reason, the investigator rejects the null hypothesis of no association between interaction terms PHB and race on SDB, and concludes that there was linear association between low, moderate, and high preventive health behavior among whites and non-whites on socially disapproved behavior.

The test of significant association between male white, non-white, and female white and non-white on socially disapproved behavior was examined given other variables in the model. The computed F value was found to be zero, the table value of F with (1 and 438) degree of freedom and 0.1 level of significance was given to be 2.74, therefore, the investigator strongly accepts the null hypothesis that interaction terms sex and race would not have any linear association with SDB.

The overall interaction terms PHB, sex and race had strong linear association with SDB because the computed F value was found to be 5.0 and the F value table was given to be 2.30 with (2 and 438) degree of freedom and 0.1 level of significance. Since our computed F is significantly greater than our table F value, we reject the null hypothesis of no linear association interaction terms PHB, sex, and race on SDB; and conclude that PHB, sex, color, and their interactions were strongly associated with SDB.

4. Internal-External Locus of Control

Analysis of variance for unequal n's was used to test for differences in external and internal locus of control among males displaying low, moderate, and high preventive health behavior; females with low, moderate, and high preventive health behavior; as well as the differences among White and Black. The analyses are presented in Table 17 where the overall F ratio was found to be significant. The intention was to examine the overall model and to observe the linear relationship between variables PHB, sex, color, and their interactions on internal external locus of control. The F value of the table with 0.1 level of significance was 1.57, and the computed F value was 1.72 > 2 since the F value of the table was less than the computed value the null hypothesis was rejected and conclude that, indeed, there was a linear relationship between variables PHB, sex, race, and their interaction on I.E.

In the analysis of variance for preventive health behavior and its linear association between low, moderate, and high preventive health behavior and internal and external locus of control, given other variables in general linear model, the investigator was testing to observe whether inclusion of PHB was significant in relation to I.E. The computed F value was determined to be 2.89 with 0.1 level of significance, and F value of the table with

TABLE 17

ANALYSIS OF VARIANCE APPROACH WITH ALL THEIR INTERACTIONS FOR INTERNAL-EXTERNAL LOCUS OF CONTROL (IE) IN GENERAL LINEAR MODEL PROCEDURE

Dependent Variable: IE

Source	DF	Sum of Squares	Mean Square	F Value
Model	11	276.551	25.141	1.72
Residual	438	6391.368	14.592	
Total	449	6667.920		

R-Square = 0.155 Standard Deviation = 3.819 IE Mean = 11.346

Source of Variation		Type IV Sum of Squares	F Value	F Value .10
PHB	2	84.235	2.89	2.30
Sex	1	33.145	2.27	2.71
Color	1	15.823	1.08	2.71
PHB * Sex	2	16.871	0.58	2.30
PHB * Color	2	32.117	1.10	2.30
Sex * Color	1	6.345	0.43	2.71
PHB * Sex * Color	2	88.581	3.04	2.30

criterion of F for (2 and 438) degrees of freedom was 2.30. Since the computed F value was greater than the F of the table, we reject the null hypothesis that inclusion of PHB is not significant in relation to I.E. and conclude that low, moderate, and high preventive health behavior have, indeed, a linear association with internal and external locus of control. Duncan's test (see Table 18) indicated that low preventive health behavior was shown to have a higher external mean score than both moderate and high preventive health behavior, which were internal.

In regard to sex differences and internal-external locus of control, no significant linear relationship was found. To examine the linear relationship between male, female and I.E., considering other variables in the models, the computed F value from the general linear model was found to be 2.27 with .1 level of significance and (1 and 438) degrees of freedom, the table value of F was given to be 2.71. Therefore, the investigator accepts the null hypothesis that sex differences did not demonstrate significant differences in either external or internal locus of control.

The internal-external locus of control among white and non-white was also found not to be significant. To examine the relationship between I.E. and race, the computed F value was found to be 1.08, with the F value of the table which was 2.71 with 1.0 level of significance and (1 and 438) degrees of freedom. Since the F value of the table was

TABLE 18

DUNCAN'S MULTIPLE RANGE RESULTS FOR INTERNAL AND EXTERNAL LOCUS OF CONTROL FOR WHICH OVERALL F RATIO WERE SIGNIFICANT

DF = 446 MSE = 14.59			
Preventive Health Behavior	Low Highest Mean*	Moderate*	High Lowest Mean*
Means	11.964	11.167	10.800
Number	168	137	145

*Groups not sharing a common underline differed from each other at .10 level of significance.

greater than the computed F value, the investigator accepts the null hypothesis that white and non-white did not have any linear association in regard to internal and external locus of control.

The interactions of male and female low, moderate, and high preventive health behavior and their effect on internal-external locus of control was examined. The computed F value was found to be 0.58 and the F value of the table with 0.1 level of significance and (2 and 438) degrees of freedom was given to be 2.30. Therefore, since the F value of the table is greater than the computed F value, the investigator accepts the null hypothesis that being male or female with either levels of low, moderate, or high preventive health behavior has no effect on either being external or internal.

The low, moderate, and high preventive health behavior among white and non-white was found to have no effect on demonstration of internal or external locus of control. The computed F value was found to be 1.10 with 0.1 level of significance, and the F value of the table with (2 and 438) degrees of freedom was 2.30. Since the computed F value is less than the F value of the table, the investigator accepts the null hypothesis and concludes that low, moderate, and high preventive health behavior among white and non-white has no effect on internal-external control in the linear model.

The interaction between male white, male non-white, female white, and female non-white and their effect on the demonstration of internal or external locus of control was found not to be significant. The computed F value was found to be 0.43. The table value for (1 and 438) degrees of freedom with 0.1 level of significance was found to be 2.71. For this reason the investigator accepts the null hypothesis that sex differences among white and non-white have no effect or relationship with internal-external locus of control.

However, on overall interaction terms, preventive health behavior, male, female, and white and non-white has an effect and linear association with internal and external locus of control. The computed F value was found to be 3.04 and the F value of table with 0.1 level of significance and (2 and 438) degrees of freedom was given to be 2.30. Since the computed F value was found to be greater than the F value of the table, the investigator rejects the null hypothesis that the interactions of variables PHB, sex, and race has an effect on I.E., and conclude that sex differences and race differences of low, moderate, and high preventive health behavior have association on internal and external control.

CHAPTER V

SUMMARY, FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

1. Summary

The primary purpose of this study was to determine if there were differences in attitudes towards risk-taking and locus of control among low, moderate, and high preventive health behavior of male, white and non-white as well as female, white and non-white.

The null hypotheses that were tested in this study were: (1) There would be no significant relationship existing between preventive health behavior, sex, race, and their interactions on socially disapproved behavior. (2) There would be no significant differences in attitudes towards risk-taking behavior between groups displaying different levels of preventive health behavior. (3) There would be no significant differences in attitudes towards risk-taking behavior for males and females displaying low, moderate, and high preventive health behavior. (4) There would be no significant differences in attitudes towards risk-taking behavior for whites and non-whites displaying low, moderate, and high preventive health behavior. (5) There would be no significant relationship between the variables, preventive health behavior, sex, and race, and their interactions on dependent variable internal-external locus of control.

(6) There would be no significant differences in locus of control between groups displaying low, moderate, and high preventive health behavior. (7) There would be no significant differences in locus of control among males and females displaying low, moderate, and high preventive health behavior. (8) There would be no significant differences in locus of control among whites and non-whites displaying low, moderate, and high preventive health behavior.

The participants in this study were 475 undergraduates enrolled at the University of Tennessee, Knoxville and Knoxville College, Knoxville, Tennessee during the spring quarter of 1978.

The internal-external locus of control questionnaire was administered to 475 students for the purpose of determining the internal or external locus of control among college students.

The preventive health behavior inventory was classified into low, moderate, and high categories. Among the respondents there were male, low PHB and white (N = 56), male, low PHB and non-white (N = 30); female, low PHB and white (N = 57); female, low PHB and non-white (N = 25); male, moderate PHB and white (N = 33); male, moderate PHB and non-white (N = 14); female moderate PHB and white (N = 74); female, moderate PHB and non-white (N = 16); and male, high PHB and white (N = 30); male high PHB and non-white (N = 16); female, high PHB and white (N = 75) and female, high PHB and non-white (N = 24).

In the Risk-Taking Attitude Values Inventory with three variables (socially disapproved behavior, masculine aggressive behavior, and socially approved behavior), only socially disapproved behavior was used as an indicator of the extent of risk-taking behavior.

The statistical methods used in the analysis of the data were t-test, z-test on variable PHB and analysis of variance to determine if there were significant differences among the variables; Duncan's new multiple range test to find out significant mean group differences, and Pearson Product Moment Correlation was used to determine the correlation between internal-external locus of control and socially disapproved behavior.

2. Findings

Based on the analysis of the data in this study, the findings were as follows:

1. Significant differences were found among Preventive health behavior and socially disapproved behavior.

2. Individuals with low, moderate, or high preventive health behavior differ significantly with regard to socially disapproved behavior.

3. Males and females differ significantly in socially disapproved behavior.

4. Males demonstrate higher socially disapproved behavior than females.

5. There was no association between Whites and Blacks demonstrating socially disapproved behavior.

6. There was a relationship between males or females with low PHB, males or females with moderate PHB, and males or females with high PHB and socially disapproved behavior.

7. There was a relationship among Whites and Blacks with low PHB, Whites and Blacks with moderate PHB, and Whites and Blacks with high PHB, and socially disapproved behavior.

8. There was no association among white male, black male, white female and black female demonstrating socially disapproved behavior.

9. The overall interactions of PHB, sex, and race were found to be associated with SDB.

10. There was an association between individuals with low, moderate, and high PHB demonstrating internal or external locus of control.

11. Individuals with low preventive health behavior were shown to be more external than both groups demonstrating moderate and high preventive health behavior.

12. Males and females were not shown to be different in being internal or external.

13. Whites and non-whites were not shown to be different in being internal or external.

14. The low, moderate, and high preventive health behavior between whites and Blacks was found to have no effect on demonstrating either internal or external locus of control.

15. White and Black males and females did not show any differences in regard to being internal or external.

16. The overall interaction of PHB, male, or female, white or non-white had an effect and association with internal and external locus of control.

17. The SDB was found to have a low but definite correlation with I.E.

3. Conclusions

Based on the analysis of the research data and the derived findings, the following major conclusions are presented:

1. A significantly higher percentage of men than women with low, moderate, and high PHB demonstrated socially disapproved behavior.

2. White females with low PHB demonstrated higher SDB than Black females.

3. White females with high PHB demonstrated higher SDB than Black females.

4. White females with moderate PHB show lower SDB than Black females.

5. White males with low PHB demonstrated higher SDB than Black males.

6. White males with moderate PHB demonstrated higher SDB than Black males.

7. White males with high PHB demonstrated lower SDB than Blacks.

8. Males and females, both White and Black with low PHB showed themselves to be more external.

9. White and Black were shown not to differ in being either external or internal.

10. Black males with high PHB were slightly more internal than those with low and moderate PHB.

11. The Black population was shown to have as much sense of internal control as the White population.

4. Recommendations

The following recommendations were based primarily upon the conclusions reached in this study. It is recommended that:

1. Preventive health education programs must be focused specifically on the male population as a whole, due to the fact that they tend to engage in higher risk activities.

2. The Preventive Health Behavior Inventory be administered to other age groups and ethnic and cultural backgrounds, in order to assertain the extent of preventive behavior among them.

3. No special preventive health education program should be designed for the intergroup population since similar behavior towards preventive health was observed among Whites as well as Blacks.

4. Curricula efforts in preventive health education programs should also not be discriminatory in regard to racial differences since the Black group demonstrated as much internal control as the White group college students.

5. A longitudinal study be conducted to examine the relationship of internal and external control changes in time in relation to preventive health behavior among both the Black and White populations.

CHAPTER VI

STUDY IN RETROSPECT

1. Introduction

In recent years, concern over the proportion of people who engage in appropriate preventive health behavior has increased due to a shift of morbidity and mortality from the acute communicable diseases to the chronic diseases and accidents. These latter causes of diseases cannot be simply cured by classical medical practices alone, nor can they be easily prevented by means of community-wide measures, but depend to a large extent on the individual's behavior over a long period of time. Increased effort to understand factors that influence the individual's preventive health activities is necessary to reduce the morbidity and mortality rate of the nation.

The primary objective of this study was to increase the understanding of the nature and characteristics of prevention and to determine how this understanding might be used to modify preventive health behavior in a positive manner.

The sample, in this study, was collected from two different institutions. The University of Tennessee, Knoxville, with over 24,000 students is relatively large and the students, more or less, come from the upper-middle, and high socio-economic classes. Data were also collected from

Knoxville College, Knoxville, Tennessee. The college is located about one mile north of the University of Tennessee, and it has slightly over 600 students. The college is private and has a primarily Black student body. Unlike the University of Tennessee, Knoxville, Knoxville College has no graduate studies programs. The students are, basically, in two categories, those for whom their education is being paid by the government, and those for whom parents are paying the cost of their education. Overall, this means that there is a wide variance in socio-economic background and that there are very few students coming from typically middle class backgrounds. These extremes in socio-economic background could explain why the female Black with moderate preventive health behavior demonstrated such high socially disapproved behavior. It could also explain why the Black male with high preventive health behavior demonstrated such high socially disapproved behavior. Another explanation for the behavioral changes could be due to the fact that only 100 students participated from Knoxville College in contrast to 250 from the University of Tennessee.

Students from the University of Tennessee have shown a clear, positive correlation between low preventive health behavior and that of socially disapproved behavior among both males and females. This could be explained because the population at the University of Tennessee is relatively more homogeneous. Also, a larger sample was taken from the University of Tennessee in contrast to Knoxville College.

2. Preventive Health Behavior

To test the extent of participants' preventive health behavior in this study, items were combined into twelve scales representing medical and dental check-ups, dental care, seat-belt use, personal appearance, drinking and driving, avoiding germs, balanced diet, appropriate rest, exercise, driving habits, and protective clothing (see Appendix A).

An increasing number of studies in recent years have shown that a variety of behaviors which help to maintain health or prevent disease were related to each other. As a result, it was justifiable to conclude that people who appropriately engage in one type of preventive behavior are also likely to engage in other preventive actions as well. For this reason it is not imperative to devise a variety of separate means in order to change the general level of preventive health behavior [Langlie (66) and Rosenstock (96)].

The present study provided partial support for both the Health Belief Model of Preventive Health Behavior [Rosenstock (95)] and for the model based on Suchman's (120) hypothesis that it is differences in social groups that account for preventive health behavior. This study also supported the original health belief model of PHB which suggests that internal or external control motivates the individual to undertake PHB. As a result, individuals with

low PHB were found to be rather external. The fact remains, however, that there was no evidence in this study to support the hypothesis that the external control over one's health status among minority intergroups was correlated positively to low preventive health behavior.

3. Internal-External Locus of Control

Internal-external locus of control was found not to be significant among white and non-white populations. Non-white students demonstrated themselves to be equally internal when compared to white students. Coleman, et al. (24) using I.E. measure reported that whites were more internal than blacks among public school children. However, the importance of internality increased with age for blacks while losing importance for whites. His findings supported the present hypothesis that the black college students have demonstrated a greater sense of personal control. This sense of internal personal control predicted an increased capacity to take positive preventive actions.

The magnitude of internal control among non-whites in this study is subject to more extensive interpretation. The high internal control over preventive health behavior among blacks could be due to affiliation with a primarily white institution. In a study by Chesler and Segal (23), it is suggested that black students increased sense of personal control reflected realistic reappraisals of their

ability after contact with whites. Black students moving from segregated schools to desegregated ones increased their estimation of their academic potential considerably. A more realistic interpretation of the results may also be due to the joint presence of whites and non-whites in the same classes. "Black students, while in white classes, are more internal and demonstrate low socially disapproved behavior because they gave up 'deprived' attitudes and adopted more positive ones" [Coleman (24)]. These encouraging results manifest that non-white college students are becoming more adaptive to social mechanisms through co-educational systems. Further study is needed to explore more precisely the influence of socialization on perceived internal control and positive preventive actions.

4. Socially Disapproved Behavior

In this study, socially disapproved behavior was measured for fourteen specific behaviors such as using pills to change mode of behavior, using LSD or other hallucinogenic drugs, using marijuana, using hard narcotics, smoking cigarettes, stealing or breaking things, getting an abortion, drinking alcohol, demonstrating to protest about school or society, engaging in sexual intercourse with someone other than your spouse, fighting, cheating or lying, gambling, and dropping out of school (see Appendix B). These behaviors were measured from three perspectives, such as usefulness of

behavior giving rise to total socially disapproved behavior. However, if one views SDB as partial predispositions to kinds of preventive health activities taken by the individual, it is possible to exert an important influence upon one's perception and reaction to health hazards. Low preventive health behavior and high risk-taking attitudes, such as delay in seeking medical care or drinking while driving, are a direct reflection of one's positive tendency toward an external control spectrum.

In the Risk-Taking Attitudes-Values Inventory, neither value goals nor ways of changing behavior (Environmental Press) scores were used in this study. Value goals consisted of variables such as: affection, respect, skill, enlightenment, power, wealth, well-being, and rectitude. Ways of changing behavior were categorized into institutional and interpersonal means of changing behavior. The scores for neither of the above indicators were used in this study, and both are subject to future research.

Suchman (120) concluded that the man who recognized that driving while under the influence of alcohol may be dangerous, but interprets this danger as a challenge to his ability or as a prestige-promoting act to his friends, is more likely to expose himself to injury and unsafe acts than the person who rejects the temptation as unacceptable or inappropriate.

In relation to risk-taking, McFarland and More (76) pointed out that the attitudes of young people toward automobile driving raise the symbolic value of the automobile from that of a means of transportation to a vehicle for enhancing prestige and expressing rebellion. Similar attitudes toward low PHB and high SDB and risk-taking, as Bauer (8) suggests, may lead young people to "act out" aggressions toward an adult world or "show off" in an attempt to compensate for feeling insecure.

In this study, SDB was directly related to individuals displaying different levels of PHB. The extent of this correlation was found to be significant. The magnitude of this correlation was even more pronounced among males than females. The explanation for these observed differences is in the predominating attitude of the American male that he should be born with courage and dignity, and that giving in to illnesses and pain except in extreme conditions is a sign of weakness or infirmity. Girls, however, are more likely to be taught high preventive health practices, and to be encouraged to give in to illnesses and pain as the weaker sex when they are encountered. The childhood training of females emphasizes "clean living" far more than is the case for males, so that females are more likely than males to feel they should engage in proper preventive health. In conclusion, this research supports the fact that these results are due not necessarily to females being more internal

than males, but to the strong emphasis placed on the female sex related role.

Several difficulties were encountered during the collection of data, and questions were raised on the validity of certain information collected from the students. The administration of the test took approximately 25 minutes and some students had a tendency not to spend enough time on each question. Black students required more reassurance and explanation of the purpose of this research. This concern could be explained by the fact that they had been subjected to participation in several other studies so they wanted to be sure about the usefulness of the present research. Also, additional time had to be spent in reassuring the participants that all information on the instrument would remain completely confidential. A concern for confidentiality was more true for students from Knoxville College than for those from the University of Tennessee. This phenomenon could be explained by the fact that in such a small college most of the student body know one another. For this reason they needed additional reinforcement in order to make sure the information collected would not reach unauthorized individuals.

Data regarding the economic status of the participants in this study were found not to be accurate, and questions were raised on the validity of certain information collected. Some students reported their total family income,

and others who were married or were economically independent reported their own true income. Others simply ignored the question and did not attempt to answer it. Several interpretations are applicable and justified. One interpretation is that they simply did not know their total annual income. Another interpretation is that income was very low, and they thought the question was too personal to answer. As a result, the true picture of student economic status was not cross sectionally consistent. For this reason, the results were not included in the analysis of this study. Further study is needed to measure income and its relationship to PHB. Langlie (66) points out that persons with high socio-economic status are more likely to be "internal" and to have positive attitudes toward providers; they are more likely than low socio-economic status persons to view the benefits of PHB as high and the costs as low.

Little is known about PHB changes over an extended period of time. The purpose of health education is to increase the proportion of people who voluntarily engage in appropriate PHB throughout their lives. The manifestation of positive PHB in adulthood is the by-product of childhood's learned behavior. Kriesberg and Treiman (65) found that the best indicator of good adult dental behavior was having visited the dentist before the age of six. It is important to learn how these behaviors are formed. A longitudinal research design is necessary to measure past PHB in relation

to SDB and I-E. It would be permissible to predict and explain the proportion of variance in the individual's present PHB over a prolonged period of time. This information is valuable in forming a stable pattern of good PHB among the entire population.

Only tentative suggestions can be made with regard to the question of how to change preventive health behavior. Many of the factors that affect PHB simply can not be altered by the variables measured in this study. Of the variables measured in this study, it seems most feasible to attempt to change beliefs about benefits of PHB, and reducing activities that encourage patterns of high risk and socially disapproved behavior. For the purpose of this study, it would be valid to assume that, for the first time, these students were in an environment which would require them, rather than their parents, to take responsibility for their own well-being, and to continue to do so for the rest of their lives. Thus, it is essential to understand the preventive attitude of the students which would aid in the justification of preventive health programs. In addition, this information can aid in the identification of cultural sub-groups and the specific population in need of preventive health education.

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APPENDIXES

APPENDIX A

PREVENTIVE HEALTH BEHAVIOR QUESTIONNAIRE

College:_____

Freshman____Sophomore____Junior____Senior____

The following questions concern your health behavior. Please answer all the questions. There is no right or wrong answer, choose the statement which comes closest to how you feel.

1. About how often do you do to the doctor? (Circle the answer that comes closest to what you do.)

	Circle the Right Choice
a. go regularly for a check-up about once a year.	1
b. go regularly for a check-up every couple of years.	2
c. usually go just when something is wrong; rarely for a check-up.	3
d. go only when there seems to be something wrong.	4
e. don't go at all.	5

2. About how often do you go to the dentist?

a. go regularly for a check-up about every 6 months.	1
b. go regularly for a check-up about once a year.	2
c. usually go just when something is wrong; rarely for a check-up.	3
d. go only when there seems to be something wrong with teeth or gums.	4
e. don't go at all.	5

3. Yesterday (or within the last week, when in a car) did you use your seat belt?

a. every time you went any place in the car.	1
b. at least one time that you went out in the car that day.	2
c. not even once that day.	3
d. the car didn't have seat belts.	4
e. never use seat belts driving a car.	5

4. During the last 12 months, have you attempted to remove or open a pimple or blackhead with a sharp object or by squeezing with your fingers?

a. never	1
b. few times a year	2
c. a couple of times a month	3
d. a couple of times a week	4
e. several times a day	5

5. Drink one or more alcoholic beverages (beer, wine, cocktails, hard drinks) within an hour of driving a car somewhere?

	Circle the Best Answer
never	1
a few times a year	2
a couple of times a month	3
at least every week or so	4
several times a week	5

WITHIN A WEEK, HOW OFTEN DO YOU:

1 = Always; 2 = 5-6 times; 3 = 3-5 times; 4 = 1-2 times; 5 = never

6. Intentionally avoid people who are coughing or sneezing? 1 2 3 4 5

7. Brush your teeth three times a day? 1 2 3 4 5

8. See to it that you eat a balanced diet? 1 2 3 4 5

9. Sleep approximately eight hours each night or get equivalent in rest every day? 1 2 3 4 5

10. Walk to the third floor of a building when you have a choice rather than take the elevator? 1 2 3 4 5

11. Take along warm protective clothing (rain hat, umbrella, sweater) when there is a chance of rain or snow? 1 2 3 4 5

12. Keep safe distance from the automobile in front of you when driving? 1 2 3 4 5

APPENDIX B

RISK-TAKING ATTITUDES-VALUES INVENTORY

RISK-TAKING ATTITUDES-VALUES
INVENTORY

APPENDIX C

ROTTER INTERNAL-EXTERNAL LOCUS OF CONTROL SCALE

ROTTER INTERNAL-EXTERNAL LOCUS OF CONTROL SCALE

Please answer these items carefully but do not spend too much time on any one item. Be sure to find an answer for every choice. For each numbered question mark an "X" on the line beside either the a or b, whichever you choose as the statement most true.

In some instances you may discover that you velieve both statements or neither one. In such cases, be sure to select the one you more strongly believe to be the case as far as you're concerned. Also try to respond to each item independently when making your choice; do not be influenced by your previous choices.

Remember:

Select that alternative which you personally believe to be more true.

I more strongly believe that:

*

___ 1a. Children get into trouble because their parents punish them too much.
___ b. The trouble with most children nowadays is that their parents are too easy with them.

E 2a. Many of the unhappy things in people's lives are partly due to bad luck.
___ b. People's misfortunes results from the mistakes they make.

___ 3a. One of the major reasons why we have wars is because people don't take enough interest in politics.
E b. There will always be wars, no matter how hard people try to prevent them.

___ 4a. In the long run, people get the respect they deserve in this world.
E b. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.

___ 5a. The idea that teachers are unfair to students is nonsense.
E b. Most students don't realize the extent to which their grades are influenced by accidental happenings.

E 6a. Without the right breaks one cannot be an effective leader.
___ b. Capable people who fail to become leaders have not taken advantage of their opportunities.

E 7a. No matter how hard you try some people just don't like you.
___ b. People who can't get others to like them don't understand how to get along with others.

*
___ 8a. Heredity plays the major role in determining one's personality.
___ b. It is one's experiences in life which determine what they're like.

E 9a. I have often found that what is going to happen will happen.
___ b. Trusting to fate has never turned out as well for me as making a decision to take a definite course of action.

___10a. In the case of the well prepared student, there is rarely, if ever, such a thing as an unfair test.
E b. Many times exam questions tend to be so unrelated to course work that studying is really useless.

___11a. Becoming a success is a matter of hard work, luck has little or nothing to do with it.
E b. Getting a good job depends mainly on being in the right place at the right time.

___12a. The average citizen can have an influence in government decisions.
E b. This world is run by the few people in power, and there is not much the little guy can do about it.

___13a. When I make plans, I am almost certain that I can make them work.
E b. It is not always wise to plan too far ahead because many things turn out to be a matter of good or bad fortune anyhow.

*
___14a. There are certain people who are just no good.
___ b. There is some good in everybody.

___15a. In my case, getting what I want has little or nothing to do with luck.
E b. Many times we might just as well decide what to do by flipping a coin.

E 16a. Who gets to be the boss often depends on who was lucky enough to be in the right place first.
___ b. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.

E 17a. As far as world affairs are concerned, most of us are the victims of forces we can neither understand nor control.
___ b. By taking an active part in political and social affairs, the people can control world events.

E 18a. Most people don't realize the extent to which their lives are controlled by accidental happenings.
___ b. There really is no such thing as "luck."

*
___ 19a. One should always be willing to admit mistakes.
___ b. It is usually best to cover up one's mistakes.

E 20a. It is hard to know whether or not a person really likes you.
___ b. How many friends you have depends upon how nice a person you are.

E 21a. In the long run, the bad things that happen to us are balanced by the good ones.
___ b. Most misfortunes are the result of lack of ability, ignorance, laziness, or all three.

___ 22a. With enough effort we can wipe out political corruption.
E b. It is difficult for people to have much control over things politicians do in office.

E 23a. Sometimes I can't understand how teachers arrive at the grades they give.
___ b. There is a direct connection between how hard I study and the grades I get.

*
___ 24a. A good leader expects people to decide for themselves what they should do.
___ b. A good leader makes it clear to everybody what their jobs are.

E 25a. Many times I feel that I have little influence over the things that happen to me.
___ b. It is impossible for me to believe that chance or luck plays an important role in my life.

___ 26a. People are lonely because they don't try to be friendly.
E b. There's not much use in trying too hard to please people, if they like you, they like you.

*
___ 27a. There is too much emphasis on athletics in high school.
___ b. Team sports are an excellent way to build character.

___ 28a. What happens to me is my own doing.
E b. Sometimes I feel that I don't have enough control over the direction my life is taking.

E 29a. Most of the time I can't understand why politicians behave the way they do.
___ b. In the long run, the people are responsible for bad government on a national as well as on a local level.

(*) filler items

(E) external

VITA

Mohammed Reza Forouzesh is the son of Dr. Mahmoud Forouzesh and Homa Forouzesh. He was born in 1948 in Tehran, Iran, later receiving his primary and secondary education in that country.

In 1968 he entered the United States and attended Multnomah College, Portland, Oregon in 1969. From 1969-1970 he attended Blue Mountain Community College, Pendleton, Oregon. From 1970 to 1973 he attended the University of Oregon, Eugene, Oregon, receiving his Bachelor of Science degree in Community Health. From 1973 to 1974 he attended the University of Tennessee, Knoxville, Tennessee and received his Master of Public Health degree in Health Planning and Administration.

In 1973 he continued toward a Doctor of Philosophy degree in Health Education. In 1976 he was awarded a doctoral teaching assistantship at the University of Tennessee for two years. He was awarded the Doctor of Philosophy degree in Health Education on August 25, 1978.

He is a member of the American Public Health Association and will be working full time as of August 1978 at the University of Illinois, Urbana-Champaign, Illinois as an Assistant Professor.